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# HM 27: Major Naval Operations in European Waters, 1939–1945

Milan Vego

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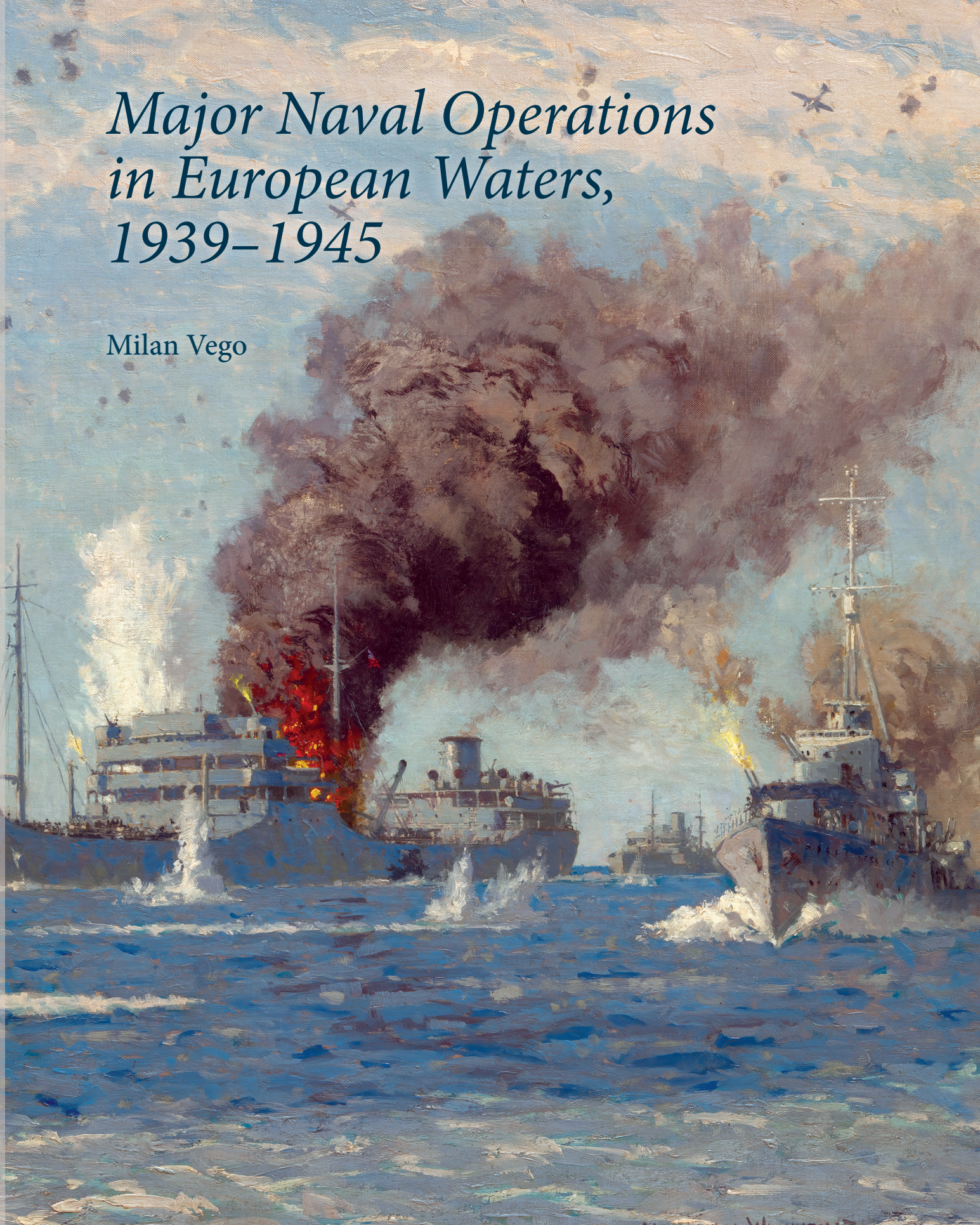

# *Major Naval Operations in European Waters 1939-1945*

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Milan Vego

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*TABLE OF CONTENTS*

*LIST OF MAPS AND FIGURES*

**Maps**



**Figures**

*ACRONYMS AND ABBREVIATIONS*

| | |
|---|---|
| 1./SKL | [German] Operations Directorate of the Naval Warfare Directorate |
| 4./SKL/III | Funkaufklärung (Division of Radio Intelligence) [same as B-Dienst] |
| AA | antiaircraft |
| AAA | antiaircraft artillery |
| AFHQ | Allied Forces Headquarters (Mediterranean) |
| AM | auxiliary minesweeper |
| AOK | Armeeoberkommando (Army High Command) |
| Armd | armored |
| ArmdDiv | armored division |
| ARS | rescue and salvage ship |
| Arty | artillery |
| A/S | antisubmarine |
| A/T | antitank |
| AVP | small seaplane tender |
| BA-MA | Bundesarchiv-Militärarchiv (Freiburg in Breisgau) |
| Bde | brigade |
| B-Dienst | Beobachtung-Dienst (Observation Service) [same as 4./SKL/III] |
| BJ | Beach Jumper |
| Bn | battalion |
| BRT | *Bruttoregistertonnen* (gross registered tons) |
| CA | heavy cruiser |
| CavRecce | cavalry reconnaissance |
| CCS | Combined Chiefs of Staff |
| CINC | commander in chief |
| CL | light cruiser |
| Co. | company |
| CS | Cruiser Squadron [CS 1, etc.] |
| DD | destroyer |
| DE | destroyer escort |

| | |
|---|---|
| Det | detachment |
| Div | division |
| DNI | [British] Director of Naval Intelligence |
| DUKW | six-wheeled amphibious vehicle [D = 1942, U = utility (amphibious), K = all-wheel drive, W = two powered rear axles] |
| DWT | deadweight tons |
| FAA | Fleet Air Arm |
| F.d.U. | Führer der Unterseeboote |
| FRG | Federal Republic of Germany |
| G-2 | staff intelligence officer |
| G-3 | operations officer |
| G-4 | staff logistician |
| GHQ | general headquarters |
| GPO | U.S. Government Printing Office |
| Gr | grenadier |
| Grp | group |
| HHMS | His Hellenic Majesty's Ship |
| HMS | His Majesty's Ship |
| HMSO | Her Majesty's Stationery Office |
| HMT | His Majesty's Trawler |
| HNLMS | Her Netherlands Majesty's Ship |
| HQ | headquarters |
| ID | infantry division |
| I. [or II.]/KG 30 | [Luftwaffe] 1st [or 2nd] Group, 30th Air Wing |
| Inf | infantry |
| InfBde | infantry brigade |
| InfRgt | infantry regiment |
| KTB | Kriegstagebuch |
| LCA | landing craft, assault |
| LCF | landing craft, flak [20 mm and quick-firing pom-poms] |
| LCG | landing craft, gun [each with two 25-pounders or 4.5-inch] |
| LCG (L) | landing craft, gun (large) |
| LCI | landing craft, infantry |
| LCI (H) | landing craft, infantry (hospital) |
| LCI (L) | landing craft, infantry (large) |
| LCT | landing craft, tank |
| LCT (R) | landing craft, tank (rocket) |
| LCVP | landing craft, vehicle, personnel |
| LSI | landing ship, infantry |
| LSI (L) | landing ship, infantry (large) |
| LSI (M) | landing ship, infantry (medium) |
| LST | landing ship, tank |
| MAS | *motoscafo armato silurante* (torpedo armed motorboat) |

| | |
|---|---|
| MGK | Marinegruppenkommando (naval group command) |
| Mk | Mark |
| MS | *motoscafo silurante* (motor torpedo boat) |
| NARA | National Archives and Records Administration |
| NID | [British Admiralty] Naval Intelligence Division |
| OIC | Operational Intelligence Centre [of the NID] |
| OKM | Oberkommando der Marine (High Command of the Navy) |
| OKW | Oberkommando der Wehrmacht (Supreme Command of the Wehrmacht) |
| OOB | order of battle |
| Para | parachute |
| ParaCorps | parachute corps |
| ParaDiv | parachute division |
| ParaInfRgt | parachute infantry regiment |
| ParaRCT | parachute regimental combat team |
| PC | patrol craft |
| POW | prisoner of war |
| PT | patrol torpedo boat |
| Pz | Panzer |
| RA | Rear Admiral (commanding); Royal Artillery |
| RAF | Royal Air Force |
| RCT | regimental combat team |
| Recce | reconnaissance |
| Rgt | regiment |
| SC | submarine chaser |
| SKL | Seekriegsleitung (Naval Warfare Directorate) |
| SS | Schutzstaffel (Protection Squadron); attack submarine |
| TankBn | tank battalion |
| TF | task force |
| USSR | Union of Soviet Socialist Republics (Soviet Union) |
| VA | Vice Admiral (commanding) |
| YMS | yard minesweeper |

## *PREFACE*

This work is the second and last sequel to *Major Naval Operations,* published by the Naval War College Press in 2008 as Newport Paper 32. The first sequel, *Major Fleet-versus-Fleet Operations in the Pacific War, 1941–1945,* was published (as Historical Monograph 22) by the Naval War College Press / Government Printing Office in 2014; a second edition came out in 2016. The focus of that volume was on the description and analysis of three major fleet-versus-fleet operations. In contrast, this work, *Major Naval Operations in European Waters, 1939–1945* (twenty-seventh in the Naval War College Press's Historical Monograph series), looks at three different types of major naval/joint operations: an attack on enemy maritime trade, the defense and protection of friendly maritime trade, and a major amphibious/anti-amphibious operation. The principal purpose is to impress on commanders and their staffs the critical importance of studying the theory and practice of major naval/joint operations. Another purpose is to present a method for analyzing a historical case study from an operational instead of a tactical perspective, and then drawing appropriate conclusions and identifying operational lessons.

The first two chapters of this book are devoted to maritime-trade warfare. However, the emphasis in chapter 1 ("The Destruction of Convoy PQ17: June 27–July 10, 1942") is on attacking enemy maritime trade, while chapter 2 ("Major Convoy Operation to Malta: August 10–15, 1942 [Operation PEDESTAL]") pertains to the defense and protection of friendly shipping. The third chapter ("The Allied Landing at Anzio-Nettuno: January 22–March 4, 1944 [Operation SHINGLE]") describes and analyzes in some detail a major amphibious operation and the major anti-amphibious operation that the German defenders planned and conducted against it. Each of these chapters is based on an article previously published in the *Naval War College Review,* but is considerably longer, with new sections based on additional primary and secondary sources.

The internal structure of each chapter is very similar to that of those of the Pacific War volume. Any major operation is planned and executed within a much broader and very important framework determined by policy and strategy. Hence,

it is necessary here to describe in some detail the strategic setting for each major naval operation. Each chapter outlines the main aspects of the operating area (e.g., physical characteristics, climate) in which the opposing forces were deployed and employed. Another section analyzes the various elements of theater geography from a military viewpoint—central and exterior positions, distances, basing areas, decisive points, lines of operation, lines of communication, and so on. Each chapter also lays out the operational command organizations and command-and-control arrangements of the opposing sides.

The decisions of operational commanders are all too commonly critiqued on the basis of what became known after the war. Such an approach is both unscientific and wrong. The proper method is to analyze such decisions in light solely of the information the commanders had when they made them. Accordingly, each chapter distills the information available prior to the planning of the operation and prior to its execution. The bulk of each chapter, of course, is devoted to the planning of, preparation for, and execution of the respective major naval operation.

Any study of major operations or campaigns is essentially a waste of time unless it attempts to draw conclusions from them and to derive from these conclusions operational lessons; each chapter ends, therefore, with such an analysis. Finally, each chapter includes detailed orders of battle and maps that graphically present the operational ideas (concepts of operations) involved.

This monograph relies critically on primary sources, especially from the collections of the German Military Archives in Freiburg; the Military Branch of the National Archives and Records Administration in College Park, Maryland; and The National Archives, Kew Gardens, Richmond, Surrey, United Kingdom.

Finally, I would like to express my gratitude and thanks to several individuals who made it possible to complete this book. As in the past, Dr. Carnes Lord, editor, Naval War College Press, provided strong and consistent support. Dr. Robert Ayer, Capt., USCG (Ret.), managing editor, edited the manuscript and helped enormously by pointing out unclear, contradictory, and sometimes erroneous statements in the draft. The Naval War College Press's Publishing Services office did a superb job of proofreading the text, as well as of coordinating the production and correction of proofs and their preparation for the press. Mr. Art Lamoureux prepared most of the superb maps and figures, Mr. Bill Miner the remainder. My heartfelt thanks go to Richard LaBranche, Capt., USN, who was chairman of the Joint Military Operations Department when most of the work on this book was performed; to Capt. Edmund Hernandez, the current chairman; and to Professor Fred Horne, Capt., USN (Ret.), the department's executive officer: all allowed me the maximum time available to work on this project.

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*Naval War College, Newport, Rhode Island*

# I *The Destruction of Convoy PQ17*
*June 27–July 10, 1942*

The most critical and urgent problem for the Western Allies in the northern European theater in 1941–42 was securing the war matériel being sent to the Soviet Union. Initially, the Germans did not react strongly against the Allied convoys sailing to northern Russia. That began to change soon after February 1942, when the Germans redeployed almost all their heavy surface forces and a large number of U-boats from home waters to northern Norway. Attacks by the Luftwaffe and U-boats became not only more intensive but increasingly deadly. Correspondingly, the Allied convoys suffered ever-larger losses. The single most devastating action was the German attack on Convoy PQ17 in July 1942, in which, during a week of attacks, the Luftwaffe and U-boats sank twenty-two out of thirty-six merchant ships and one of three rescue ships. The planned augmentation of this effort with a foray (code-named Unternehmen [Undertaking] RÖSSELSPRUNG) by the battleship *Tirpitz* and other heavy surface ships was short-lived, because Allied forces detected the German ships prematurely. Nevertheless, the Germans had achieved a significant victory against the Allies' efforts to supply their embattled Russian ally. In its aftermath, convoys to Russia via the Arctic route were suspended for almost two months; the next convoy (PQ18) did not sail until September 2, 1942. Out of forty ships in that convoy, thirteen were lost. However, during the next two years, convoys sailed to northern Russia only during the long, dark months of winter. As a result, they suffered much smaller losses than prior to September 1942: none in October–December 1942 or in 1943, three in 1944, and two in March 1945.[1]

In operational terms, the German attack against Convoy PQ17 was a *major naval/joint operation versus enemy maritime trade.* For the Allies, the defense of Convoy PQ17 amounted to a *major naval/joint operation to defend maritime trade*. Strategically, this operation was an integral part of the Allies' efforts to defend and preserve their military-economic potential at sea, and on the Germans' part, to destroy it.

## THE STRATEGIC SITUATION IN THE NORTHERN THEATER

Germany's invasion of Denmark and Norway in April 1940 had changed the strategic situation in the northern area radically in Germany's favor. By obtaining control

of the Jutland Peninsula, the Danish straits, and Norway, Germany greatly weakened Britain's strategic position in the northern area. This loss was ameliorated somewhat by the Anglo-American occupation in June 1941 of Iceland, from where their land-based aircraft could control surrounding sea areas. From Iceland the Allies also were able to raid the German-controlled Norwegian coast.[2]

Notwithstanding, German control of Norway made it impossible for the British to blockade the Shetlands–southern Norway line, as had been done in World War I (when Britain and the United States established the Northern Barrage minefield). It also weakened greatly the British position in the Shetland–Faeroes–Iceland gap. The northern portion of the North Sea was now open to German naval forces.[3] Further, control of the Norwegian coast significantly improved the effectiveness of Kriegsmarine (navy) and Luftwaffe (air force) attacks on enemy shipping in the northern Atlantic Ocean and the Barents Sea.

Nazi Germany also greatly benefited economically from the seizure of Norway. Among other things, it gave the Germans access to commodities important to their war industries, including aluminum, copper, paper, and timber. Germany also now had a more secure route, through Narvik, for Swedish iron ore.[4] Along the 1,745 nautical miles (nm) between Oslo in the south and Kirkenes around North Cape, some two hundred thousand tons of Axis shipping moved every day. At the same time, the political situation in Norway was difficult for the Germans, who realized that the majority of the populace was pro-British, hoping that the British would prevail and that the Germans and Soviets would exhaust themselves.[5]

Hitler placed great strategic importance on Germany's continued control of Norway. He was extremely concerned about the possibility of enemy landings there. Hitler's views were shared by Adm. Erich Raeder, commander in chief (CINC) of the Kriegsmarine and the Naval Warfare Directorate (Seekriegsleitung, or SKL). On October 10, 1941, Hitler issued his instruction *(Führerweisung)* Nr. 37, which assigned new missions to the German armed forces in northern Norway. The Kriegsmarine was to attack enemy sea traffic to Murmansk and protect German shipping in the Arctic. The Army High Command (Armeeoberkommando, or AOK) Norway, the Luftwaffe, and the Kriegsmarine were directed to cooperate closely during the coming months in preparing to oppose possible enemy landings in front and on the sea flanks of German forces. Hitler directed the 5th Air Fleet to return to Norway and to establish there the post of Air Leader (Fliegerführer) North.[6]

On December 14 Hitler further ordered a buildup of defense installations in Norway and the improvement of roads in the coastal area. He believed that if the Western Allies captured Norway they would be able to supply the Soviet Union regularly, thereby posing a serious threat to the German northern front. The enemy also would be able to operate in the Baltic. Information gathered by German agents as well as statements by Western leaders and reports in the Western press lent these views new urgency.[7]

In meetings with Admiral Raeder on December 29, 1941, and January 12, 1942, Hitler declared that the enemy threat to Norway required redeployment of heavy German ships as a deterrent. On the basis of information from Swedish sources, he believed the British and Americans might land between Trondheim and Kirkenes. Hitler considered Norway the *Schicksalzone* ("zone of destiny") of the entire war.[8] Meeting again with Raeder on January 22, Hitler stated his belief, based on the latest information, that Britain and the United States were planning to attack northern Norway and that if successful they would influence the war decisively.[9]

In Hitler's view, every German heavy surface ship that was not in Norway was in the wrong place; Raeder fully agreed.[10] The battleships *Scharnhorst* and *Gneisenau* and heavy cruiser *Prinz Eugen* would be moved from Brest to Norway, additional S-boats would be moved to northern Norway, and heavy coastal artillery would be significantly increased.[11] Hitler also directed Reichsmarschall Hermann Göring, CINC of the Luftwaffe, to reinforce the air forces in Norway. Hitler demanded unconditional execution of his orders for the security of the northern area.[12] All these measures had to be accelerated: the danger was immediate.[13]

## THE ALLIED DECISION TO SEND AID TO THE SOVIET UNION

The importance of Norway and adjacent sea areas increased significantly after Germany invaded the Soviet Union (USSR) on June 22, 1941. There was a real possibility that the Germans ultimately might prevail in the war and thereby endanger the survival of Great Britain. Hence, the British government, led by Prime Minister Winston S. Churchill, and that of the United States, led by President Franklin D. Roosevelt, were determined to do everything possible to help the Soviet war effort. At a conference in Moscow (September 29–October 1, 1941) both governments gave assurances of aid and support in the common struggle against Nazi Germany. The protocol of that meeting, signed on October 1, referred to "the provision of supplies, which will be made available at British and U.S.A. centres of production, for the Soviet Union by Great Britain and the United States of America within the period beginning from October 1941 till the end of June 1942. Great Britain and the U.S.A. will give aid to the transportation of these materials to the Soviet Union and will help with the delivery."[14]

After significant successes on the Eastern Front within the first few months, the Germans suffered a series of setbacks in that theater during the fall of 1941 and early winter of 1941–42. Their forces were stopped at the gates of Leningrad (Saint Petersburg today) and in southern Russia and were obliged to retreat in the battle of Moscow (October 2, 1941–January 7, 1942). Yet, despite these reverses, the Wehrmacht's power was not broken. Because there was no prospect of a second (i.e., Western) front in 1942, it was vitally important for the Western Allies to keep the Soviet Union in the war; otherwise, victory over Nazi Germany would be impossible. Hence, they made every effort to supply the USSR with increasing amounts of war matériel.

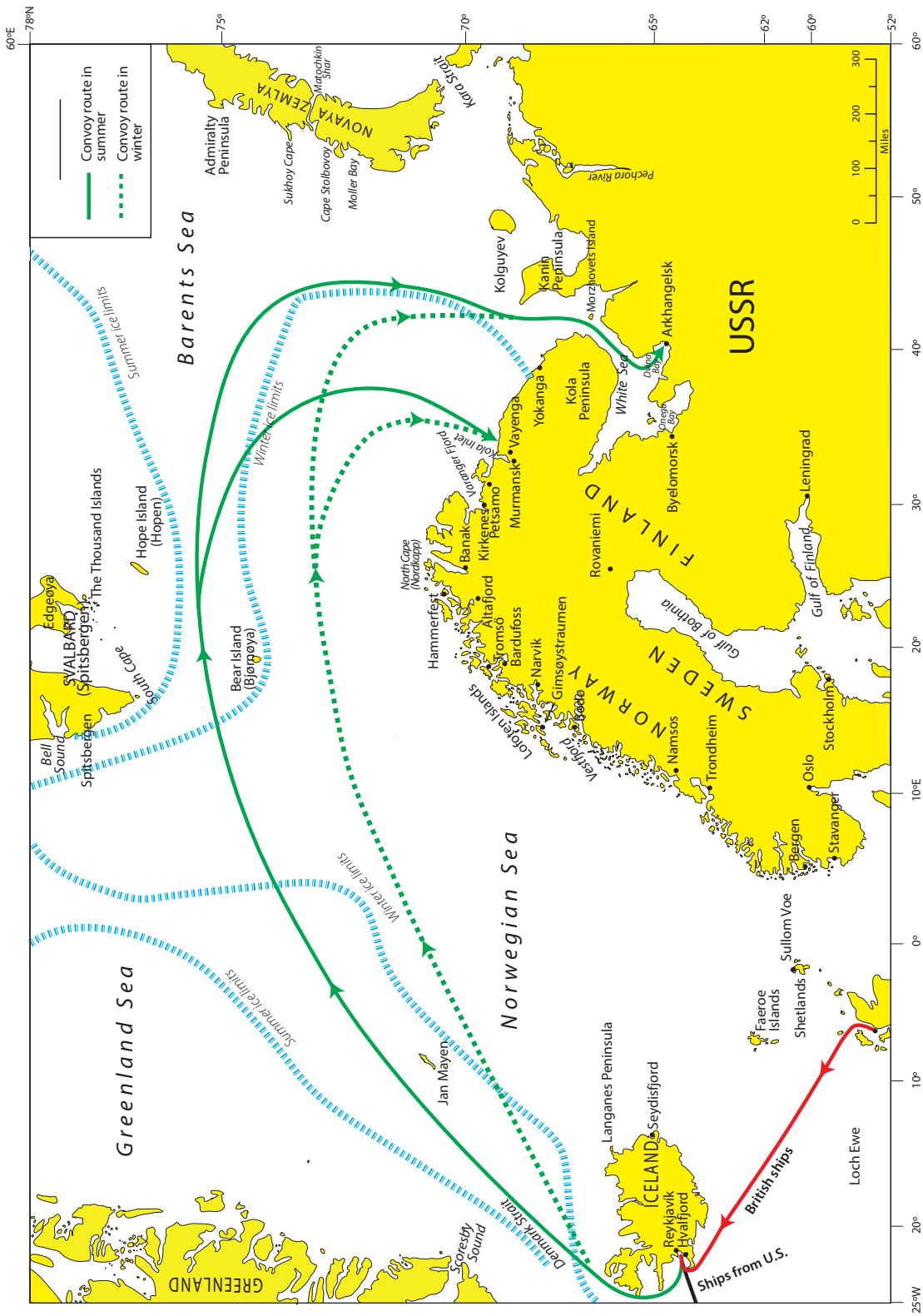
The Western Allies faced serious difficulties in doing so. Three main routes were available: across the Pacific to Vladivostok; across the southern Atlantic and around the Cape of Good Hope to the port of Basra in the Persian Gulf and thence upriver and overland (called the "Persian Corridor"); and the Arctic route, across the northern Atlantic to Iceland and then to the north Russian ports of Arkhangelsk and Murmansk. Each had advantages and disadvantages. The Pacific route to Vladivostok passed near northern Hokkaido, and once Japan opened hostilities with the United States and Britain in December 1941, it could be used only by Soviet-flag ships. This route was also the longest of the three. As for the Persian route, the trip around the Cape of Good Hope (which shipping from American East Coast ports had to use until July 1943, when the Mediterranean route was opened) was about 14,500 miles long and required seventy-six days.[15] The third and shortest, but most dangerous, route was the one from Scotland/Iceland to northern Russian ports. The Germans posed a serious threat to this route: Luftwaffe aircraft, U-boats, and heavy surface ships were based in northern Norway. The Allied problem was made worse by extreme cold, bad weather, and ice. Despite all the difficulties of the northern route, however, the Soviets adamantly insisted on it, because it could deliver badly needed war matériel more quickly and closer to their forces at the front. Another possible reason was Soviet fear of too strong an Anglo-American presence in Persia.[16] Ultimately, the decision to establish the Arctic route was made by Churchill, with the full support of Roosevelt.[17] Adm. Sir Dudley Pound, the British First Sea Lord (1939–43), and Adm. Sir John Tovey, commander in chief of the Home Fleet, were opposed.[18]

Between August 1941 and May 1945, the Western Allies shipped some 2.3 million tons of war supplies to the Soviet Union. More than half, about 1.2 million tons, went via the Arctic route, six hundred thousand were sent through the Persian ports, and five hundred thousand arrived via the North Pacific route. These supplies included a substantial quantity of war matériel desperately needed by the Soviets; 1,880 aircraft, 2,150 tanks, 2,250 field guns, 8,300 trucks, and 6,400 other vehicles.[19]

## OPERATING AREA

During the attack on and defense of Convoy PQ17 in July 1942, the opposing naval and air forces operated in both the Norwegian and Barents Seas (see map 1); however, the majority of combat actions took place in the Barents. The Barents Sea is one of the marginal seas of the Arctic Ocean. It extends for about 650 miles and has an area of 550,000 square miles. It borders in the west on the Greenland Sea, in the north on the Svalbard Islands (of which the largest is Spitsbergen) and Franz Josef Land (Zemlya Frantsa Iosifa), in the east on Novaya Zemlya, and in the south on the Kola Peninsula and northern Norway.

The Barents Sea is relatively shallow, with an average depth of about 125 fathoms. In over half of it, depths range between 109 and 273 fathoms. The maximum




*Map 1*
*Operating area*

depth is found in the western part of the Bjørnøyrenna Channel; depths of less than fifty-four fathoms predominate near the Svalbards and in the southeast.[20] In the eastern part of the Barents Sea the depth of water varies from fifty-five to around 190 fathoms.[21] The Norwegian Sea encompasses an area of 425,000 square miles, has an average depth of 1,093 fathoms, and is divided into a deep basin (1,640 to 2,185 fathoms) and a continental shelf off the Norwegian coast. This shelf varies in width from a hundred miles (at 55° north latitude) to only fifteen miles off Vesterålen. Its depths vary between fifty-five and 220 fathoms; several troughs in the shelf exceed 164 fathoms.[22]

The White Sea (Beloye More), at 34,700 square miles, is bounded by Karelia in the west, the Kola Peninsula to the north, and the Kanin Peninsula to the northeast. Its average depth is 32.5 fathoms, with a maximum depth of 191. The northern part of the White Sea contains few islands but is encumbered greatly by shoals and reefs.[23]

The 23,560-square-mile Svalbards are some four hundred miles north of Norway. Spitsbergen, at 15,075 square miles, is the largest island in the Svalbard group. The Svalbards are highly mountainous, with peaks up to 5,600 feet, and are characterized by many large and small glaciers that collectively cover some 60 percent of the land surface. There is a large number of fjords; the longest, Wijdefjorden, is sixty-seven miles long.[24]

Bear and Jan Mayen Islands are the most important islands in the Barents Sea. The seventy-square-mile Bear Island (Bjørnøya) is the southernmost of the Svalbards. Its highest elevation is about 1,760 feet. It lies some 250 miles north-northwest of North Cape (Nordkapp) and 140 miles south-southeast of Spitsbergen. This triangular-shaped island is some ten miles long and eight miles wide. The southern and eastern part of the island is mountainous. The thirty-four-mile-long, 144-square-mile Jan Mayen is a mountainous, volcanic island partly covered by glaciers. It consists of two islands, the larger Nord-Jan and smaller Sør-Jan, which are linked by an isthmus 1.6 miles wide. Jan Mayen is about 310 miles from the central part of Greenland, 370 miles northeast of Iceland, and 620 miles west of North Cape.

Iceland's 39,770 square miles occupy the most important strategic position in the northern Atlantic, some 150 miles east of Greenland, four hundred from northern Scotland, and 550 from Norway. The Faeroes are only about 250 miles away.[25] The Denmark Strait, 172–460 miles wide and 358 to 3,587 fathoms deep, separates Iceland from Greenland.[26] Iceland is volcanic and has numerous mountain ranges. Its coast, especially in the north, is highly indented by fjords and large bays. The fjords seldom freeze except at their heads; however, drifting ice often interferes with navigation. Some of the best harbors are on the western coast. Iceland's entire coast is fronted by an extensive 109-fathom shelf that extends forty to sixty miles offshore.

The southern approaches to the Barents Sea are guarded by the Shetland and Faeroe groups of islands. The 540-square-mile Faeroe Islands (Føroyar in Faeroese) comprise eighteen islands. The most important are Suðuroy, Sandoy, Vágar, Streymoy, Eysturoy, Kalsoy, Kunoy, Borðoy, and Viðoy.[27] The Faeroes are located 267 miles southeast of Iceland and two hundred miles north-northwest of Scotland. The Shetlands occupy 567 square miles and are about fifty miles north-northeast of the Orkneys and 170 miles southeast of the Faeroes. They consist of more than a hundred islands and islets. The most important islands in this group are Mainland, Yell, and Fair Isle.[28]

Northern Norway encompasses some 148,726 square miles (including the Svalbards and Jan Mayen). It extends for about 1,100 miles from northeast to southwest. It has one of the longest, most rugged, and most indented coastlines in the world. The coastline stretches some 1,572 miles; 15,627 miles, when fjords and bays are included; and 51,747 miles, counting the fifty thousand islands and islets that front the coastline.

The Kola Peninsula covers some fifty-six thousand square miles and extends from north to south for about 242 miles and 342 from east to west.[29] Its northern coast is steep, the southern flat. The highest peak on the peninsula is Mount Chasnachorr, 3,900 feet. The Kola Inlet (Kol'skiy Zaliv), the largest fjord on the peninsula, extends for some thirty-five miles and has three branches. Depths vary between 109 and 164 fathoms. During the period in question, the northern branch was always free from ice; only during the most severe winters could ice floes be found in February or March.[30]

In the southeastern part of the Barents Sea, the largest island is the 1,350-square-mile Kolguyev, forty-seven miles north of Mys Svyatoy Nos.[31] Novaya Zemlya, 35,000 square miles in area, consists of two islands separated by the Matochkin Shar, a narrow, fifty-five-mile-long strait separating the northern and southern islands of Novaya Zemlya. The southern island consists of a level plain backed by hills and mountains. The Matochkin Shar is backed by high mountains reaching a height of 3,445 feet. The northern island is mostly covered by ice caps.[32]

The duration of a day in the Barents Sea varies greatly with season and latitude (see figure 1). Depending on the latitude, the polar day starts between mid-March and mid-May, the polar night between mid-September and mid-November.[33] Above the Arctic Circle (66° 33′ 46″ north) the summer sun does not go down for weeks. At latitude 74° north the midnight sun lasts ninety-nine days, the polar night eighty-four days. At Jan Mayen (69° 64′ north, 18° 09′ east) the midnight sun extends from May 14 to July 28, the polar night between November 7 and January 21.[34] On January 1 it is dark all day; on March 30 daylight lasts thirteen hours, forty-eight minutes; and on July 1 the sun shines all day. At Bear Island the midnight sun

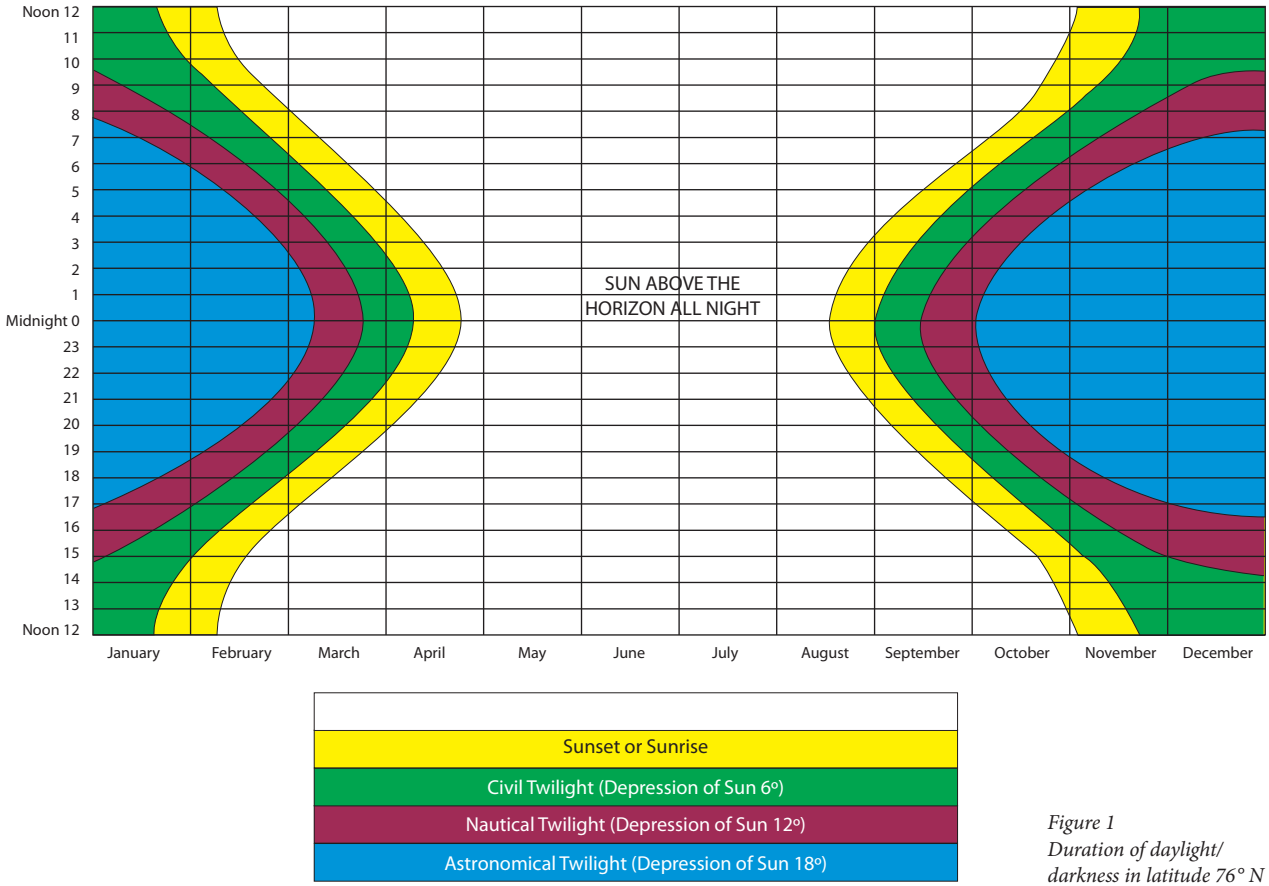



*Figure 1*
*Duration of daylight/ darkness in latitude 76° N*

lasts from May 1 to August 10, the polar night from November 7 to February 4.[35] At the time of the German attack on Convoy PQ17, there was a midnight sun.[36]

The oceanographic features of the Barents Sea and the surrounding sea areas are influenced heavily by topography and prevailing weather conditions. In the Barents Sea, the water temperature in June–July 1942 was several degrees above freezing but could go as low as 28.4°F (–2°C).[37] Tides in the Barents Sea are semidiurnal; their ranges vary from three feet in the Proliv Yugorskiy Shar (linking the Kara and Pechora Seas) to seven feet in the southeastern part of the Barents. Off Novaya Zemlya, tides vary from 1.4 to 1.8 feet.[38]

The Barents Sea has a very complex system of currents, because of the mixing of relatively warm water from the Atlantic with the cold Arctic Current. One branch of the Gulf Stream, the North Atlantic Current, enters the Norwegian Sea across the Faeroes–Shetlands gap and the Iceland–Faeroes Ridge. At the northern slope of the Iceland–Faeroes Ridge, the encounter of warm Atlantic and cold Arctic water produces the Iceland–Faeroes Front. The North Atlantic Current after entering the Barents Sea mostly flows northward. After reaching the Bjørnøyrenna Channel

one branch becomes the Nordkapp Current, while another of its branches flows north of the Hopenrenna (Hopen Trench). It is then divided into several smaller branches. One of these, the West Spitsbergen Current, flows northward into the Fram Strait (between the Svalbards and Greenland). West of the Fram Strait the East Greenland Current flows south from the Arctic Ocean. A major branch of the North Atlantic Current flows along the western and northern coast of Norway and is called the Norwegian Current (or Norwegian Coastal Current). During winter the current is deep and narrow, in the summer wide and shallow.[39] It is divided into two main branches; one flows in an easterly direction (and changes its name to the Murman Current) as it leaves the Norwegian area, then flows along the Kola Peninsula coast to the White Sea. The influx of Arctic water into the Barents Sea takes place along two routes, one between Spitsbergen and Franz Josef Land, the other between Franz Josef Land and Novaya Zemlya.[40]

The climate in the Barents Sea is subarctic. It is influenced by geographic latitude, the incidence of solar radiation, and the entry and circulation of the relatively warm Atlantic water. In the northern part, air temperatures in the winter months average –13°F (–25°C), in the summer months 23°F (–5°C). In the southwestern part the corresponding temperatures are 32°F (0°C) and 50°F (20°C). In the east, air temperatures can be –4°F (–20°C) over the ice-free area, –22°F (–30°C) in the north and southeast. On land and in remote areas, the air temperature can go as low as –58°F (–50°C).

In the Barents Sea, the winds tend to be moderate, typically eight to ten knots. Stronger winds, when they occur, generally do so close to mountainous coasts.[41] In the southwestern part of the sea, the prevailing winds are easterly, gales (Force 8) and storms usually coming from the northeast-to-northwest sector. Winds in the southeastern part of the Barents Sea and the Kara Sea in the fall, winter, and early spring generally come from the south-southwest to south. Severe gales accompany the passage of cyclonic storms, with winds reaching or exceeding Force 7 along the open coast for seven or eight days a month from November to the end of February.[42] The weather and climate in northern Norway are influenced heavily by depressions arriving from the Atlantic, relatively warm currents, and the very rugged coastal terrain. The Barents Sea is well-known for rough weather and high seas that occur frequently and last for extended periods. A high sea state results in very wet decks for surface ships—that is, their bows bury themselves in oncoming waves.[43] In the summer, the dominant winds are from the west, while in the winter months they are generally from the northeast.[44] These winds can generate waves in the fifty-foot range, higher in the western than the eastern part of the sea.[45]

Northern Norway experiences variable weather conditions because of its rugged topography and its multitude of fjords and offshore islands. The strength and direction of the wind can change often and quickly. Strong winds may blow from

different directions at locations that are fairly close to each other, and a strong wind may blow outside a fjord while calm weather prevails within it.[46] The frequency of gales varies greatly depending on the time of the year. For example, at Tromsö in midwinter the wind averages between Forces 2 and 3, while from July through September it remains below Force 2. There is little seasonal variation in the strength of wind near Altafjord, most often Force 2. Gales occur once a month on average. At Vardø, the winds are strongest (Forces 4 and 5) in January and February and lightest (Force 3 on average) in August.[47] In the area from the Russian-Norwegian border to the White Sea, winds, fog, and rain arise with great suddenness and change rapidly. Prevailing winds are easterly in the summer, strong and variable in the fall; in the winter months, southwesterly winds prevail, accompanied by strong storms.[48]

In the Barents Sea, cloudiness is always common; the highest incidence is in July, the lowest in March and April. In the southeastern part of the Barents Sea skies are cloudy on average 75 percent of the year. Extensive stratus clouds and ceilings below a thousand feet are quite common—especially in summer, less so in winter.[49] There are fewer than thirty clear days and more than 180 cloudy days annually.

Near Jan Mayen, most precipitation occurs during the winter months. In February there are on average nineteen days with precipitation—seventeen days with snow and one or two with hail. Over an entire year there are on average 173 days with precipitation, 118 of them with snow and four with hail.[50] In the southeastern part of the Barents Sea, from November through May it is relatively dry; a short season of moderate rain lasts from June through October. In the winter months, snow falls ten to fifteen days a month, accumulating until the spring thaw.[51]

Visibility is at its worst in fog and snow. In the Barents Sea, July and August each average ten days of fog; in the winter, fog is very rare.[52] Fog is most frequent over loose ice; on the boundary of solid ice, the weather is mostly clear.[53] In the southwestern part of the Barents Sea, fog occurs most frequently in calm weather or in easterly and southeasterly winds. Near Iceland, fog is frequent in the summer months, its frequency depending on location. For example, in the winter months there is little or no fog on Iceland's west coast and in summer only one or two foggy days each month; there are only nine days of fog, on average, during the entire year. On the island's north coast, there are on average only one or two foggy days each winter month and seven each summer month; the most fog occurs in July—thirteen days. On the northern coast there are on average fifty-three days with fog during the entire year. On the east coast of Iceland, winter sees one or two foggy days per month, eight in summer. The months with the most fog are June and July, with thirteen days each. The east coast experiences fog on some sixty-three days over the entire year. On the southern coast, winter months have two to three foggy days each month and five per month in summer. The month with the most fog is June—eight days. The southern coast experiences fifty-two foggy days in a year.

Fog over Iceland is often very dense; especially near the ice boundary, visibility is often as little as 330 feet. Fog represents the greatest problem for ships off Iceland's northern coast and in the zone where the cold polar current collides with warm water from the south.[54]

In northern Norway, fog forms more often just off the coast than over the open sea. Coastal fog is more frequent in the summer than in the winter; from the Norwegian border to the White Sea, thick fog usually occurs at the end of May and the beginning of June, especially off the coast. These fogs penetrate fjords but are very patchy there; conversely, it can be foggy inside a fjord but clear outside. Mirages frequently occur in calm weather in the summer, mainly in the morning and evening.[55]

In the southeastern part of the Barents Sea visibility is often poor during all seasons. Fog is prevalent during the entire year, although less frequent in winter. After the beginning of April, fogginess increases, reaching a maximum in July and August, then decreases. "Sea smoke"—low fog floating over the sea—can be seen in the fall and the first half of winter, anywhere that sharp decreases in air temperature occur. In the area of the Kola Inlet, fog is most prevalent from June through August and from October through March. Dense Arctic sea smoke can persist for extended periods, especially amid weather patterns that produce strong southerly and southeasterly winds.[56]

In 1942 the four hundred nautical miles of sea between Greenland and Spitsbergen was covered by ice the entire year. The ice moves with the polar current from the Greenland Sea.[57] By mid-June, the Barents Sea is navigable to latitude 75° north and as far east as longitude 50°.[58] In September, almost the entire Barents Sea is ice-free; in the winter months, about two-thirds of it is covered with ice. The eastern part is ice-free in early July; the entire Barents Sea south of 77° north also is navigable, because of the influence of the North Atlantic Current.[59] Despite the presence of large ice fields, the western and northern coasts of Norway rarely see ice. Only in strong northern and northwest winds might drift ice appear off the island of Mageröy (northeast of Hammerfest).[60] In the eastern part of the Barents Sea, during the navigation season (June–October) a large volume of ice from the Kara Sea enters the Barents through the Kara Strait, then scatters.[61] In the southeastern part of the Barents ice is found in small bays and inlets beginning in early October. This area is closed for navigation from November through May. The White Sea is generally free from ice from June through October.[62]

The weather, ice conditions, and duration of daylight in the Barents Sea and the adjoining littoral area greatly influenced the combat employment of surface ships, submarines, and aircraft during World War II. In the summer months, good visibility and low sea state generally prevailed.[63] This facilitated air reconnaissance and shadowing. At the same time, long hours of daylight made it considerably

more difficult for submarines to conduct their typical night surface attacks. Lack of cloud cover made it difficult for torpedo bombers to achieve surprise.[64] Moreover, in summer visibility frequently was reduced by fog, which could conceal targets and so leave attackers at a great disadvantage.[65]

During the winter months, fully laden eastbound convoys frequently met gales of great violence. Heavy deck cargo—tanks, wagons, locomotives—endangered the stability of ships and forced some to return. Heavy snow and ice on a ship's upper deck and top-hamper are dangerous if allowed to accumulate—they can cause a ship to capsize—and once formed increase a ship's silhouette significantly. In the Barents Sea, such topside icing represents a serious hazard: thick layers of ice can form on decks, sides, superstructure, hatches, masts, rigging, deck-mounted machinery, and antennae.[66] The most common form, spray icing, occurs when seawater spray hitting a ship freezes, creating a shell of ice.[67] Icing also can be very dangerous for aircraft; it can greatly increase drag and weight and reduce wing lift. Not only rain but small water droplets may freeze on contact with aircraft. The most severe ice accretion occurs at air temperatures just below 32°F (0°C).[68]

The westbound convoys from Russia did not carry much cargo. Therefore, the light ships ballasted their sterns down, so as to submerge their propellers, and their bows up, which sometimes made them unmanageable. Escorts also suffered badly; they lost boats, davits, and men on many occasions.[69] The employment of destroyers was made difficult by high sea states.[70]

In the Greenland and Barents Seas, pack ice affected routing of Allied ships bound to and from northern Russia. Generally, it was desirable to keep as far as possible from the German airfields in northern Norway and from U-boats lurking between Jan Mayen and Bear Islands. One way to do this was to take ships through the ice; however, the Allies soon learned that the thin hulls of escorts were easily damaged. Also, ice prevented a convoy from maneuvering as a whole.[71] In general, ice was always a danger for surface ships, even outside the pack—small floes could not be detected easily—so it was preferable to leave a margin of about forty miles from an ice boundary.[72]

Pack ice and icebergs were carried down the east coast of Greenland through the Denmark Strait. Between mid-August and November or December there was little ice in the strait. However, navigation was more restricted by darkness during the rest of the year, especially from March to June, when the strait was mostly covered by ice. However, ice seldom was found within the hundred-fathom line, along which usually lay the boundary between the northward-flowing, warm Irminger Current (a branch of the North Atlantic Current) and the cold East Greenland Current. Sometimes ice crossed that line and came within the sight of Iceland's coast.[73] The ice situation in the Denmark Strait greatly affected the routing of Allied convoys to northern Russia. Generally, ice along Iceland's north coast meant that

Allied ships could not pass around the west and north coasts from Reykjavík but had to be routed "south-about" if bound northeastward.[74]

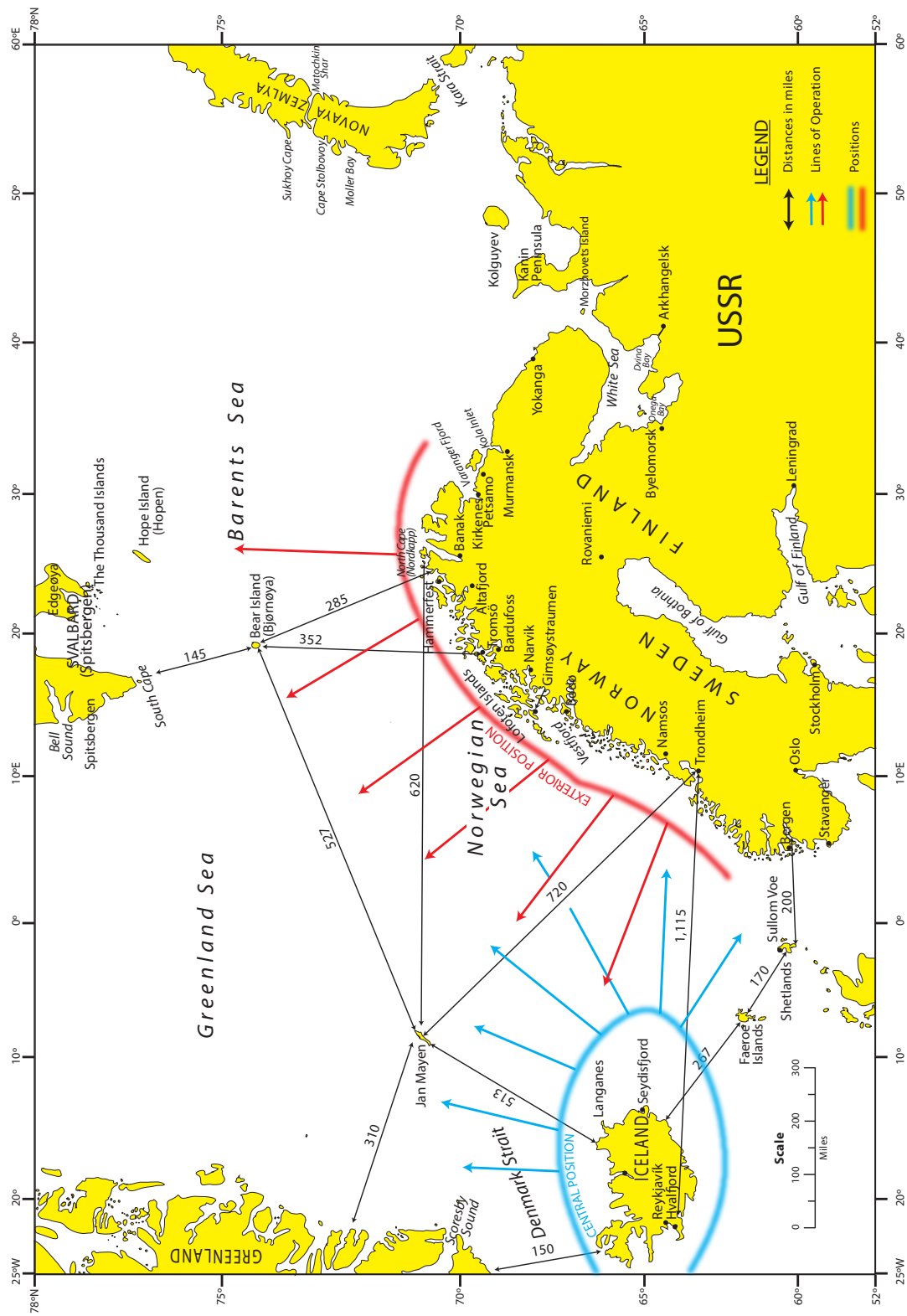
The boundaries of the pack ice in the Barents Sea change considerably over the course of a year. From December to early June, pack ice normally extends close to or beyond Bear Island. For example, in March the pack ice's southern limit is the northwestern tip of Jan Mayen Island and the west coast of Spitsbergen, extending from there to Bear Island and the Kanin Peninsula.[75] In April 1942, when ice conditions were the worst, with the pack ice boundary at its southernmost, it might be necessary to route ships nearly a hundred miles farther south—leaving only 150–200 miles to the Norwegian coast. In contrast, when the pack ice boundary moved northward, it was possible to sail in a west-to-east direction in the area between North Cape and Spitsbergen. In a mild season, there was a passage of fifty miles between Bear Island and the ice edge, which allowed the routing of convoys farther north to avoid contact with the German surface ships based in northern Norway.

Because of the ice conditions in 1942, Allied ships had to traverse the 260 nautical miles between longitudes 20° and 35° east while only 230 nautical miles from the Norwegian coast. These conditions prevailed through the end of June.[76] In March and April 1942 the ice limits were farther south than at any other time of the year. This forced the convoys to northern Russia to pass south of Bear Island and thus within about 250 miles of the Norwegian coast.[77] After April, the sea area gradually enlarged, because the ice boundary moved north and east. Thereafter, it was more difficult for German surface ships to attack Allied convoys. In August, pack ice ran northward from Scoresby Sound off Greenland, then from Bell Sound (in western Spitsbergen) south of South Cape and Hope Island, then in a northeastern direction.[78]

**BASING/DEPLOYMENT AREAS**

The deployment areas of the opposing forces were Iceland and the Faeroes, Shetlands, and Orkneys for the Allies, northern and central Norway and the Kola Peninsula for the Germans (see map 2).

In northern Norway, the Germans used several large fjords for basing their naval forces operating in the Arctic. Altafjord, some twenty nautical miles long, is the largest fjord in western Finnmark. It contains three wide and deep passages: Stjernsund, Rognsund, and Vargsund.[79] Tides in Altafjord are strong, especially in Rognsund.[80] Altafjord can accommodate ships of any size.[81] The largest port in Finnmark, Tromsö, is some 190 miles north of the Arctic Circle. Another basing area for the German heavy ships was the 110-nautical-mile-long, forty-nautical-mile-wide Vestfjord, between the Lofoten Archipelago and the Salten district on Norway's mainland. It is fronted by numerous islands and skerries (small rocks, reefs, and islets). Its smallest width is seven hundred yards, at Tranøy. The depth of water between Røst and Flein Islands is about 164 fathoms.[82] Gimsøystraumen was




*Map 2*
*Theater geometry*

a temporary anchorage for the German surface ships; located between Gimsøya and the western side of Austvågøy, it provides access to Vestfjord.

The forty-eight-mile-long Ofotfjord, or Narvikfjord, has a maximum depth of about three hundred fathoms. It backs up to very mountainous terrain, the highest peaks at about five thousand feet. The port of Narvik, near the head of Ofotfjord some thirty miles from the entrance, is almost completely surrounded and sheltered by high mountains. It was the transshipment point for iron ore from Swedish mines and a base for German surface ships and U-boats. The German heavy combatants and their accompanying destroyers also used the eighty-one-mile-long Trondheimfjord, about four hundred miles to the south. It is more than three hundred fathoms deep and mostly ice-free year-round.

For the Allied convoys, the main ports in Iceland were Reykjavík and Hvalfjord. Reykjavík, a major port, comprises Gamla Höfnin (Old Harbor) and Sundahöfn. Hvalfjord, seven miles southwest, is on the Álftanes Peninsula at the end of a fjord seventeen miles long and three miles wide, with an entrance 492 feet wide and thirteen to thirty-nine feet deep.[83] The fjord is navigable throughout—ice rarely presents a problem—and tides in the port vary from ten to thirteen feet. Seydisfjord (Seyðisfjörður), on the northeastern coast of Iceland, was also used, mostly by the Allied ships assigned to protect convoys to northern Russia. It extends west-southwest for about eight miles and is surrounded by steep mountains. Depths in the fairway vary from 121 to 295 feet.

The fifty-six islands of the Orkneys have many excellent harbors. One, Scapa Flow, was the main base for the Home Fleet. It is the best anchorage in the Orkneys, an almost landlocked shelter. Its depths range up to 118 feet, and tidal currents within the harbor itself are almost negligible. However, gale force winds might generate considerable surge in velocity of currents.[84]

The principal destination in northern Russia for the Allied convoys was Murmansk, twenty-five miles south of the Kola Inlet's entrance. Tides there range from 4.6 to 8.0 feet, and prevailing winds are from the west and southwest.[85] Moderate gales can be expected from two to four days each month throughout the year, the most severe weather coming between November and February. From January through April, heavy fog makes navigation difficult, sometimes impossible, for days at a time.[86] The Allied ships also occasionally used the six-mile-long Yokanga roadstead, about 190 sea miles to the southeast; its main anchorage could accommodate ships of all sizes, with depths varying from nine to eighteen meters; other parts of the roadstead contain extensive shoals.[87] The main Russian naval base in the area was then Polyarny (formerly Aleksandrovsk), at the entrance to the Kola Inlet; a naval airfield was at Vayenga, about sixteen miles farther up the inlet, near Severomorsk.[88] The second most important port for the Allied ships was Arkhangelsk, on the Severnaya (Northern) Dvina River in the White Sea. The port is on

the east bank, twenty-eight miles upriver. Tides are negligible, from 1.3 to 2.3 feet, but because of ice the port was normally open only from the end of April through October. There are numerous shoals, many uncharted, between Ostrov (i.e., island) Zelenets and Ostrov Kego at the western approaches to the Severnaya Dvina.[89]

The German base of operations in northern Norway extended from Trondheim to Altafjord, a distance of about seven hundred miles. Naval forces and aircraft based in central and northern Norway occupied an exterior position with respect to convoys in the Barents Sea and attacked along multiple, converging, and relatively short lines. Trondheim is about 485 miles from Narvik and another 215 miles from Altafjord. The sea distance from Trondheim to Reykjavík is about 1,116 miles, from Bear Island to Tromsö 352 miles and Bear Island to Trondheim 470. Jan Mayen occupies a central position within the Barents Sea—some 720 miles from Trondheim, 620 miles west of North Cape, 513 northeast of Iceland, and 310 east of Greenland. Bear Island lies 145 miles from the southern tip of Spitsbergen and about 285 miles northwest of North Cape.

The Allied forces that deployed from the Orkneys, northern Scotland, and Iceland also operated from an exterior position, but their lines of operation were fewer and much longer than those of the Germans. Iceland is 150 miles east of Greenland, four hundred miles northwest of Scotland, and six hundred miles west of Norway. The distance between Reykjavík and Jan Mayen is 590 miles, and another 527 miles separate Jan Mayen and Bear Islands. Pentland Firth (a strait separating the Orkneys from Caithness, in northern Scotland) is about 788 miles from Reykjavík. The distances from Scapa Flow to Stavanger, Trondheim, and Narvik are 239, 794, and 1,248 miles, respectively.

## ALLIED OPERATIONAL COMMAND STRUCTURE

The highest British naval authority was the Admiralty, under the civilian First Lord, Albert V. Alexander. (His position was the equivalent of today's Secretary of the Navy in the United States.) The Admiralty itself consisted of five uniformed "sea lords" plus four other high officials. The First Sea Lord and Chief of Naval Staff was Admiral Pound. He was the senior naval officer responsible for naval operations. In contrast to the Air Ministry, the Admiralty's responsibilities included both operational planning and execution. Its most important divisions were Plans and Operations, Trade, and Intelligence. The Plans and Operations Division coordinated closely with the Intelligence Division.[90]

The principal operational-level command for European waters was the Home Fleet. At the outbreak of war in September 1939, it consisted of the 2nd Battle Squadron, the 1st Battle Cruiser Squadron, aircraft carriers, cruisers (the 2nd, 7th, 12th, and 18th Squadrons), Destroyer Command (6th, 7th, 8th, and 18th Destroyer Flotillas), submarines (2nd and 6th Submarine Flotillas), and minesweepers (the

1st Minesweeping Flotilla), plus Orkney and Shetland forces. The majority of the Home Fleet's ships were based at Scapa Flow and on the Channel coast at Portland. Other bases were at Rosyth and Dundee in Scotland and on the North Sea coast of England at Blyth and on the Humber River.[91]

With the outbreak of war, the composition of the Home Fleet underwent significant changes, in that many heavy units were reassigned. The CINC of the Home Fleet after November 1940 was Admiral Tovey. On March 26, 1942, to reinforce the Home Fleet, the U.S. Navy formed Task Force (TF) 39, initially led by Rear Adm. John W. Wilcox. On that day the task force—composed of the battleship *Washington* (BB 56), the carrier *Wasp* (CV 7), and heavy cruisers *Wichita* (CA 45) and *Tuscaloosa* (CA 37), plus eight destroyers—sailed from Portland, Maine, for Scapa Flow. One day later Admiral Wilcox was lost overboard in a heavy sea; he was replaced by Rear Adm. Robert C. Giffen.[92]

The Home Fleet's geographic area of responsibility was never formally defined but in practice encompassed the northern part of the North Sea and the waters north of the Shetlands–Faeroes–Iceland–Greenland line. Initially, its main mission was to prevent German naval forces from breaking out of the North Sea and operating in the Atlantic. After the summer of 1941, its focus shifted to Norwegian waters and the Barents Sea. Overall responsibility for convoys to northern Russia rested with its commander in chief, Admiral Tovey.

The southern part of the North Sea and the English Channel constituted separate commands deploying light forces. The squarish ocean area bounded by the northernmost tip of Scotland, the southwestern tip of England, and longitude 30° west was the responsibility of the Western Approaches Command, in Liverpool (moved from Plymouth on February 7, 1941). Its commander in chief, Adm. Sir Percy Noble (after February 17, 1941), was mainly concerned with the protection of convoys between North American and British ports.[93] However, Western Approaches Command also provided the ships necessary for the close, direct screening of convoys to the northern USSR.

## CONVOYS TO NORTHERN RUSSIA

The first convoy (code-named DERVISH) to the USSR by the Arctic route departed from Hvalfjord, Iceland, on August 21, 1941—only two months after the Nazi invasion of the Soviet Union. This convoy consisted of only six merchant ships, and all reached Arkhangelsk after a ten-day voyage.[94] From September 13, 1941, serial numbers were given to each convoy heading to (the PQ series) or from (QP) northern Russia.[95] The first of the eastbound, PQ convoys left Hvalfjord on the 28th.[96] The first westbound convoy, QP1, left Arkhangelsk on September 28 and arrived at Dunnet Head in northern Scotland on October 11.[97] Between 1941 and 1945, forty-two eastbound escorted convoys (comprising 848 ships) and thirty-six westbound

escorted convoys (735 ships), plus one eastbound and one westbound unescorted convoy, sailed the Arctic route between Russia and the West.[98]

Ports of origin for the Allied convoys to the Soviet Union were on the American East Coast and in northern Scotland. The American ships sailed from Philadelphia and then joined one of the transatlantic convoys in Halifax or Sydney, Nova Scotia, Canada. Afterward they sailed under U.S. or Canadian escorts across the northern Atlantic to a point where their escorts turned westward to their home bases while the merchant vessels continued to Iceland. There, at Hvalfjord or Reykjavík, they were joined by British ships that had been organized at Gare Loch or Loch Ewe on the western coast of Scotland. Together, they formed PQ convoys.[99]

The port facilities in both Murmansk and Arkhangelsk, the principal destinations, were very primitive.[100] However, as noted previously, Murmansk is always ice-free, but Arkhangelsk was closed to large ships for six months out of the year because of ice.[101] The sea routes from Reykjavík to Murmansk and Arkhangelsk are 1,500 and 1,900 nautical miles long, respectively; however, the run to Murmansk was actually some two thousand nautical miles, to keep as far as possible from the Luftwaffe's aircraft (see map 3). Transit time for a convoy from Iceland to Murmansk was about ten days, to Arkhangelsk twelve days.[102] The merchant ships from the United States had already steamed a long distance merely to assembly points in Iceland. For example, a merchant vessel out of Philadelphia had to travel 645 nautical miles to Halifax or 960 to Sydney; the distances from Halifax and Sydney to Reykjavík are 1,940 and 1,655 nautical miles, respectively. PQ convoys ran generally through the Denmark Strait (which was mined); then eastward, keeping as far north as ice conditions allowed; then south toward the Kola Inlet or southeastward to Arkhangelsk.[103]

Allied convoys to Russia varied in size between fifteen and thirty ships, although some were larger. Smaller convoys ran to the USSR until early 1942, when it was decided to increase their size.[104] On February 26, 1942, Admiral Tovey requested that westbound and eastbound convoys sail simultaneously so that their transits through the most dangerous areas could be synchronized. This would entail fourteen-day cycles for convoys to and from Russia.[105] The first pair sailed in early March 1942, and the synchronization became standard thereafter.[106] In May, Admiral Tovey further requested reducing the number of convoys during the coming summer months, because improved weather would greatly aid enemy reconnaissance, whereas the ice boundary would not have receded northward sufficiently to avoid air attacks.[107] However, his second request was not accepted by the Admiralty.

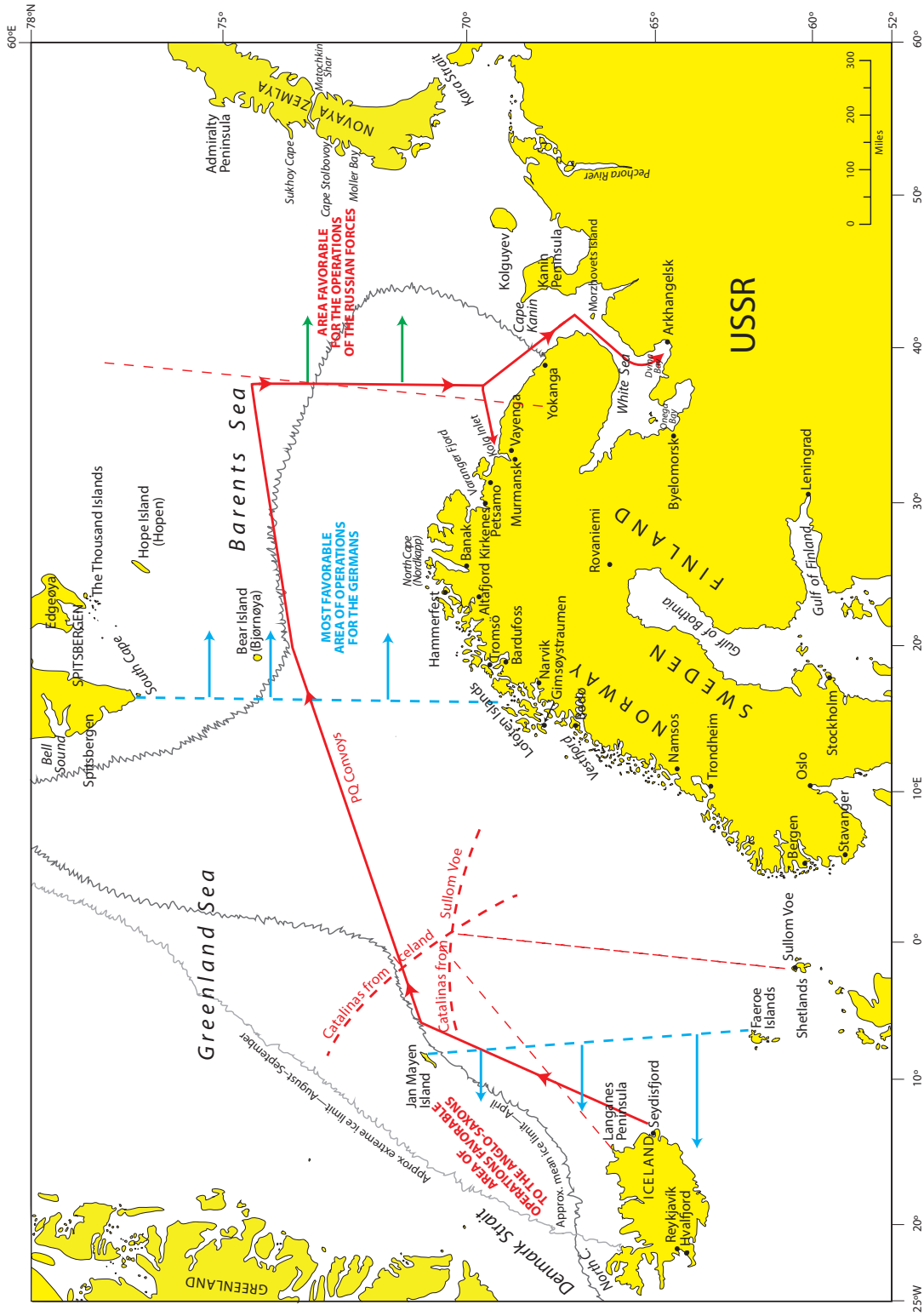
The Allied convoys were very vulnerable to attack by surface ships and U-boats the entire way and by aircraft for some 1,400 miles.[108] Both ends of the convoy route were within range of Luftwaffe reconnaissance aircraft. In contrast, the British reconnaissance seaplanes operated from a single base, Sullom Voe in the Shetland Islands. (The Germans believed that seaplanes were also based on the Langanes

Peninsula, Iceland.) The maneuvering area for a convoy and its covering forces was limited northward and westward by ice and southward and southeastward by the enemy-occupied coast. Within that zone the currents were uncertain, and frequent gales could disperse a convoy, driving ships many miles from their intended routes.[109]

Initially, the Allied convoys to northern Russia were defended only weakly. This highly unfavorable situation began to change for the better when in late April 1942 additional destroyers, corvettes, and trawlers were transferred from Western Approaches Command to the Home Fleet, bringing the number of antisubmarine (A/S) escorts for each convoy to about ten.[110] However, the Allies' continuing shortage of destroyers and the difficulty of refueling them at sea (each convoy was accompanied by at least one fleet oiler for refueling the short-legged destroyers and corvettes) limited the ability to hunt U-boats at significant distances from convoys.[111] Each eastbound convoy was accompanied by two submarines to discourage enemy surface attack. Several British and Soviet submarines patrolled northwest and west of North Cape.[112]

The Allies tried repeatedly to involve the Soviet Northern Fleet further in protecting convoys. Admiral Tovey pressed the Admiralty "for strong and continuous Russian patrol activity off the Kola Inlet, to make that area untenable by U-boats, and for short-range and long-range fighter protection."[113] Tovey believed that fighter cover during what was the most dangerous part of the voyage—both long-range (two hundred miles off the Kola Inlet) and short-range (sixty miles off)—was both crucial and within Soviet capabilities. The Northern Fleet had enough destroyers and smaller A/S ships to operate farther from its bases than heretofore. Specifically, Tovey felt the Soviets should take responsibility for defense of the convoys while in the White Sea and that their submarines based in Polyarny, on the Kola Peninsula, could be employed for scouting and intercepting heavy German surface ships.[114]

The inadequacy of the protection of convoys east of Bear Island was a matter of great urgency for the Allies. On May 9, 1942, Churchill argued to Stalin that "it is essential that U.S.S.R. Naval and Air Forces should realize that they must be largely responsible for the convoys whether incoming or outgoing, when to the Eastward of the meridian of longitude 28° East in waters which are out of sight of Murman Coast."[115] The British also asked the Russians not only to reinforce escorts at the eastern end of the voyage with long-range fighters or A/S aircraft but also to bomb enemy airfields during convoy transits to discourage German surface attacks east of Bear Island.[116] In his response to the prime minister on May 13 Stalin did not specifically mention 28° east longitude but assured him that "you may not doubt that on our part all possible measures will be taken immediately. It is necessary, however, to take into consideration the fact that our Naval Forces are very limited, and that our Air Forces in its [*sic*] vast majority are engaged at the battlefront."[117] On May 24 Stalin wrote, "On our part our naval and air forces will do their utmost




*Map 3*
*Operational situation, June 1942 (German perspective)*

for the protection of these transports which was indicated in your message to me on 9th May, i.e., when Eastward of the 28th Meridian."[118]

The Soviets promised repeatedly to provide adequate protection to the Allied convoys but seldom did so in practice.[119] Formally, the Soviets did in fact take responsibility for protecting Allied convoys once they crossed longitude 28° east.[120] They also conducted intensive reconnaissance of the German naval and air bases in northern Norway. Submarines of the Northern Fleet patrolled off the Norwegian coast, covering the possible deployment routes of German surface forces.[121] However, the fact is that the Soviets were unable to protect the Allied convoys effectively during the most dangerous phase of their run.[122]

## THE GERMAN OPERATIONAL COMMAND STRUCTURE

The Germans' command organization in the northern theater was highly fragmented. The Germans never established a true multiservice or joint command in this theater; instead, each of the three services controlled its own forces. Cooperation was supposed to be achieved through liaison officers posted at the main headquarters of each service. The highest command echelon controlling army troops in Norway and Finland was Armeeoberkommando Norwegen (High Army Command Norway), led by General Nikolaus von Falkenhorst from Command Post Finland in Rovaniemi, Finland. His command had been created from Army Group XXI in Norway in December 1940. On January 14, 1942, a part of AOK Norway was designated AOK Lappland (Lapland) for operations in Finland; two weeks earlier, General Falkenhorst had been directed to move his headquarters back to Norway.[123]

Admiral Raeder and Reichsmarschall Göring each had operational command over all their respective forces. Raeder led the High Command of the Navy (Oberkommando der Marine, or OKM, established January 11, 1936). The Naval Warfare Directorate, SKL, formed on April 1, 1937, had responsibility for the conduct of naval warfare as a whole; its Operations Directorate (1./SKL) was the most important of its six staff subdirectorates in 1942. The OKM had a permanent representative at Hitler's headquarters (see figure 2). Contact with the Luftwaffe was also maintained through a liaison officer, at the Luftwaffe CINC level.[124]

By the end of 1941, the highest operational headquarters of the Kriegsmarine overall were the Fleet Command (Flottenkommando) and four naval group commands (Marinegruppenkommandos, or MGKs): North, East, West, and South. Other major commands were Naval Station Baltic (Marinestation Ostsee), Naval Station North Sea (Marinestation Nordsee), and German Naval Command Italy (Deutsches Marinekommando Italien). Naval Group Command North (MGK Nord) was led at this time by Gen. Adm. Rolf Carls; the month before he arrived his new command had been renamed (originally Naval Group Command East, established in November 1938) and moved from Kiel to Sengwarden, near

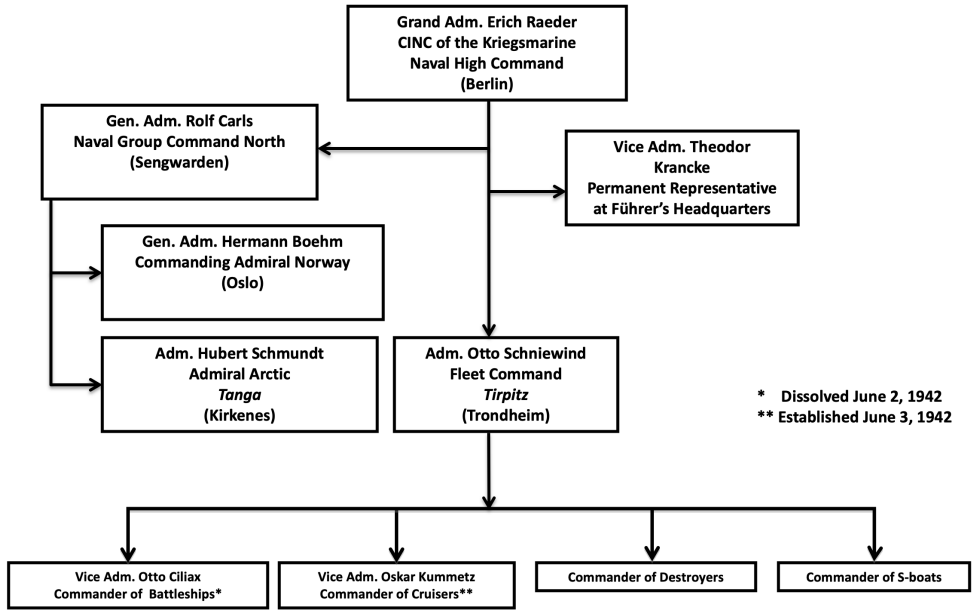



*Figure 2*
*German naval organization in Norway, June 1942*

Wilhelmshaven, on August 8, 1940.[125] MGK Nord was responsible for all Kriegsmarine activity in the Baltic, the German Bight, Denmark, and Norway.[126]

MGK West was established in August 1939, its original area of responsibility encompassing the German Bight, the North Sea, and the Atlantic. When its headquarters moved to Paris in August 1940, the German Bight and central and northern part of the North Sea were transferred to MGK Nord. MGK West, retaining operational control in the Atlantic, now became specifically responsible for the southern part of the North Sea, the English Channel, Bay of Biscay, and the "southwest approaches" to the British Isles.[127] (Subordinate to the Flottenkommandant, fleet commander, were various "type" commanders.) In general, the establishment of naval group commands transferred ashore the operational control of seagoing forces, in essence reducing the fleet commander to a tactical commander in combat.[128]

In 1942, the bulk of the German fleet was deployed to northern Norway. The fleet commander was Adm. Otto Schniewind, flying his flag in *Tirpitz*. His direct subordinates were the commanders of battleships (Befehlshaber der Schlachtschiffe, or B.d.S.), of destroyers (Führer der Zerstörer), and of T(orpedo)-boats (Führer der Torpedoboote). The commander of battleships was retitled Befehlshaber der Kreuzer (commander of cruisers), or B.d.K., in June 1942, and the leader of torpedo boats became Führer der Schnellboote (leader of S-boats, which displaced a hundred tons and were capable of forty-four knots) in April 1942. At Kirkenes was the 8th S-boat Flotilla (dissolved on July 10, 1942), while the 6th S-boat Flotilla was temporarily deployed to northern Norway.[129]

The post of leader of U-boats (Führer der U-Boote) had been renamed commander of U-boats (Befehlshaber der U-Boote) on October 17, 1939, the latter

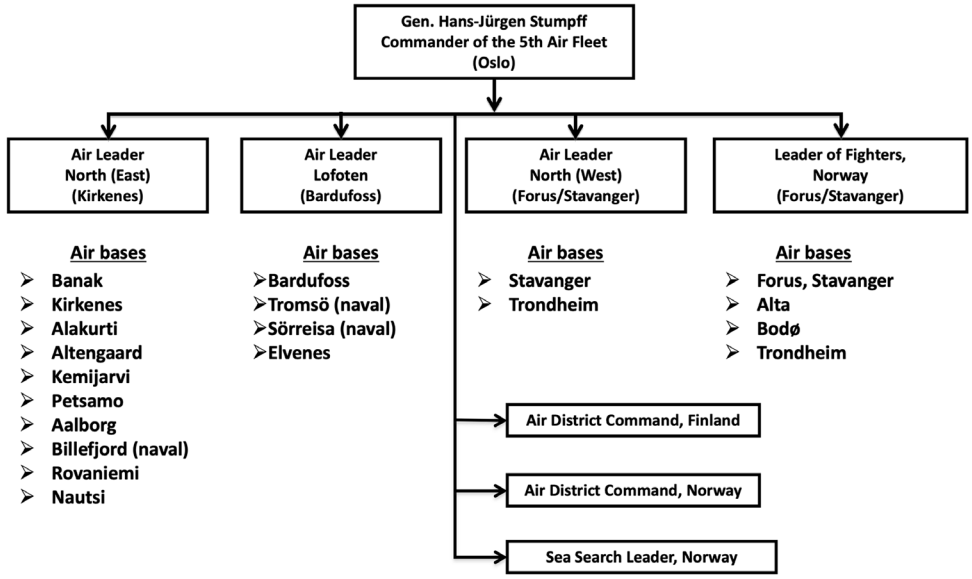
German term signifying enhanced importance. In the operational chain of command, that made the U-boat commander, Adm. Karl Dönitz, directly subordinate to the OKM; administratively, U-boats still reported to the fleet command.[130]

Directly under Naval Group Command North was the Commanding Admiral Norway (Kommandierende Admiral Norwegen), Gen. Adm. Hermann Boehm. The entire Norwegian coast was divided into three geographically based commands: Admiral Norwegian Polar Coast (at Tromsö), Admiral Norwegian Northern Coast (at Trondheim), and Admiral Norwegian Western Coast (at Bergen). There was also a Commandant of Naval Defenses Oslofjord (at Horten). In accordance with Hitler's Instruction Nr. 37, the post of Admiral Arctic was established on October 16, 1941. Admiral Norwegian Polar Coast became subordinate to Admiral Arctic.[131] Adm. Hubert Schmundt, with headquarters in Kirkenes, was the first Admiral Arctic (October 1941–August 1942), reporting to Commanding Admiral Norway. However, at the beginning of 1942 the latter proposed that Admiral Arctic be directly subordinated to Naval Group Command North, to unify conduct of the naval war in Arctic waters. Another reason was that Commanding Admiral Norway lacked the necessary communications means.[132]

After April 1942, Commanding Admiral Norway became responsible for the security of sea traffic around North Cape to supply the frontline forces in Finland and for the sustainment of Mountain Corps Norway in Finnmark.[133] For his part, Admiral Arctic was directed to attack enemy maritime traffic, protect German coastal shipping, and conduct defensive mining of coastal waters and ports. A special naval commander was to be appointed for these tasks.[134] However, in practice it was Admiral Carls who controlled all operations in the Arctic—Admiral Schmundt essentially relayed Carls's orders to subordinates.[135]

On June 18, 1942, the SKL made Admiral Arctic responsible for U-boat warfare against shipping and escorts east of the Denmark Strait and Jan Mayen Island. The weight of the main effort *(Schwerpunkt)* would be the U-boat attacks on PQ convoys; however, should an Allied landing occur, the main effort would shift to enemy transports and their escorts.[136]

After the invasion of the Soviet Union on June 22, 1941, the 5th Air Fleet (Luftflotte 5), under Gen. Hans-Jürgen Stumpff, was the highest Luftwaffe command echelon in Norway and Finland. Until the end of 1941, Air Leader North (West) in Stavanger was its principal subordinate (see map 4). His forces were based in the area of Stavanger and Trondheim.[137] In Instruction Nr. 37 of October 1941, Hitler directed that a major part of the 5th Air Fleet be transferred from Finland back to Norway. Headquarters was moved to Oslo, while a command post was established at the Finnish town of Kemi (on the Gulf of Bothnia and near Sweden's border). Air Leader North (West) was in Forus/Stavanger, Air Leader Lofoten in Bardufoss, and Air Leader North (East) in Kirkenes (see figure 3).[138]

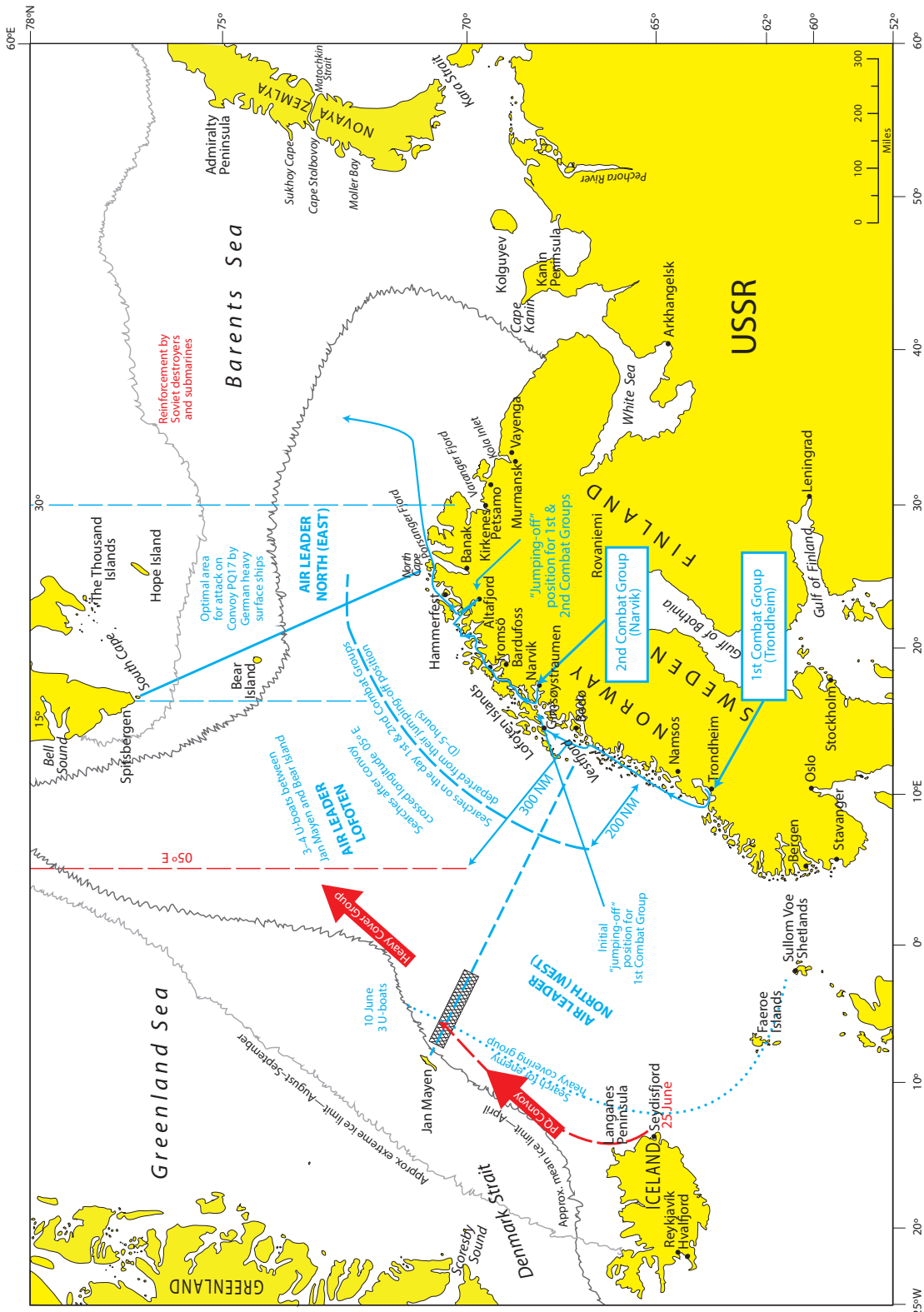



**Source:** Müller-Meinhard, "Der Einfluss der Feindlagebeurteilung . . . (I)," p. 519.

*Figure 3*
*Organization of the 5th Air Fleet, June 1942*

The 5th Air Fleet's operational area *(Operationsgebiet)* encompassed the Skagerrak (between Norway and Denmark), the northern part of the North Sea, northern Scotland, the northern Atlantic, the Arctic Ocean, and the Murmansk front.[139] Its main missions were defending against any enemy amphibious landing, reconnoitering coastal waters, and attacking Arctic convoys in cooperation with the Kriegsmarine.[140] Specifically, it was responsible for cooperation with naval forces, security for German sea supplies, offensive mining, and defense against raids. With respect to U-boats, the Luftwaffe's main tasks were to scout the operating areas of boats engaging convoys, combat any fighter aircraft posing a threat to U-boats, and attack, jointly with the U-boats, the PQ convoys. With naval surface forces, the Luftwaffe's main missions were reconnaissance of operating areas and attacks on naval targets within the framework of an operation.[141]

In practice, cooperation between the Luftwaffe and the Kriegsmarine in the northern area was unsatisfactory, primarily because both practiced rather rigid, centralized command and control. For example, if Admiral Arctic needed air reconnaissance, he had to send a request to Naval Group Command North in Sengwarden, from where it was forwarded to the 5th Air Fleet in Oslo or the command post in Kemi. This arrangement resulted in a long delay in obtaining permission. If the request was granted, the headquarters that granted it gave orders to the appropriate air commanders.[142] Other factors that made radio communications difficult were a lack of interoperability (the Kriegsmarine and Luftwaffe used different transmitters) and the highly mountainous and fragmented terrain of Norway.[143] All




*Map 4*
*Operational idea for the attack on Convoy PQ17, July 1942*
*(Rösselsprung, Knight's Move)*

of this made it very difficult to organize cooperation between the Luftwaffe and the Kriegsmarine. Raeder complained about the problem to Hitler, who ordered the Luftwaffe to reinforce its units in Norway and improve its cooperation with the Kriegsmarine. The leaders of the Luftwaffe and the Kriegsmarine discussed the matter and decided to exchange liaison officers between the 5th Air Fleet and Admiral Arctic.[144]

## ALLIED VERSUS GERMAN NAVAL INTELLIGENCE

For both the Allies and the Germans, accurate and timely intelligence about the enemy's order of battle (OOB), plans, intentions, and movements was essential. The British Admiralty's Naval Intelligence Division (NID) was responsible for preparing daily, often hourly, reports regarding enemy forces anywhere in the world. The Operational Intelligence Centre (OIC), created in February 1939 as the most important of NID's eight sections, was headed by a navy captain.[145] The Director of Naval Intelligence (DNI) worked closely with his counterparts in the War Office and the Air Ministry within the Joint Intelligence Committee.[146]

The British relied on several sources of intelligence: direction finding, photographic reconnaissance, captured enemy documents, prisoners of war, and signals intelligence, the last being the most important. The main source of decrypted enemy messages was the Government Code and Cypher School at Bletchley Park, Buckinghamshire, England.[147] Normally, German ships at anchor in Trondheim did not use radio communications, but ships anchored at Vestfjord and Altafjord did, between themselves. Shore commands communicated by radio with the heavy ships when they were at sea—sending a steady stream of messages, in fact. So, the absence of such signals was a good indicator that the ships were still in port or in some other fjord.[148]

British air reconnaissance of the German naval bases and anchorages and of airfields in northern Norway was extremely difficult, because of the long distances involved and the often appalling weather. The British deployed submarines between North Cape and Bear Island to observe enemy naval movements. The Allies' network of Norwegian agents, which would prove so valuable later in the war, had not yet been established fully.[149] However, the British were lucky in having some excellent Swedish sources on German forces in Norway. The British naval attaché in Stockholm, Capt. Henry M. Denham, established good relations with the Swedish secret service, especially a Major Törnberg (assistant to Maj. Carl Petersén, head of C-Bureau, engaged in secret intelligence collection). The Swedes, in turn, had a good source of intelligence: the Germans' telegraph and teleprinter lines to their naval, army, and Luftwaffe forces in Norway passed through Swedish territory. The Swedes tapped those lines, broke a number of German ciphers, and often provided the results to Denham. To avoid suspicion being cast on the Swedish secret service, Denham met his contacts in parks or other public places; he would memorize the

information, get back to his embassy, and send a signal to the DNI in London. It was these Swedish sources, for instance, that gave the first positive clues about the movements of the battleship *Bismarck* and the heavy cruiser *Prinz Eugen* in May 1941.[150]

The single most critical factor in the ultimate success of the British in the Battle of the Atlantic was their own ability to read the German navy's radio messages. Yet not all messages were read, and the codes were generally difficult to crack.[151] But the British did break the German naval cipher HYDRA, which was used by not only the patrol vessels and minesweepers but also the U-boats based in Norway, as well as the heavy ships. (The exception was that in special operations the Germans used their NEPTUNE cipher, which the British code breakers at Bletchley Park only partially penetrated.) Major changes in the German cipher settings occurred every forty-eight hours and minor ones every twenty-four hours. Bletchley Park largely mastered the daily changes of cipher settings; it was the major changes that caused a problem. Once a major code change was broken, the lesser ones usually were cracked quickly.[152] However, delays did occur, leaving gaps varying in length from four to forty-eight hours.[153] Hence, there were cases when the British were blind, or at least not "current," at critical moments. The British were unable to learn anything about landline communications except for what they received from Stockholm. They also were unaware of German written instructions. In short, the British intelligence service, excellent as it was, could not be relied on to give a complete and continuous picture even of what *was happening,* let alone what was *going to happen,* on the other side of the North Sea.[154]

Further, on February 1, 1942, the Germans directed all U-boat cipher operators to abandon the HYDRA codes. To tighten security, they introduced a new version of the ENIGMA coding machine, the Triton M4, which used four rotors instead of three. Codes generated by the Triton M4 (called SHARK by the British) were unreadable by existing methods;[155] it was not until late 1942 that Bletchley Park was able to read these SHARK messages.[156]

For the Kriegsmarine the primary intelligence agency was the Naval Intelligence Service (Marinenachrichtendienst), established in June 1941, replacing the Naval Intelligence Inspectorate (Marinenachrichten Inspektion).[157] It was initially the 2nd Office Group (Amtsgruppe) of the SKL (2./SKL) and in 1944 became the 4th Division, one of the most important office groups. Its Division of Radio Intelligence (Funkaufklärung) (4./SKL/III), better known as B-Dienst (Beobachtung-Dienst, Observation Service), had primary responsibility for monitoring, deciphering, and evaluating enemy radio communications.[158]

B-Dienst was regarded highly by the rest of the Kriegsmarine for its professionalism and the excellent quality of its analysis. Admiral Raeder praised its work highly.[159] B-Dienst and German Military Intelligence (the Abwehr) had at least a loose administrative relationship, because two of the Abwehr's departments dealt with

"naval matters"—Group IV (Radio Intelligence) and Group V (Naval Espionage).[160] B-Dienst played a pivotal role in the first part of the Battle of the Atlantic.[161] It generally had a reasonably clear and current picture of the convoy situation and provided U-boats information essential to their attacks.[162] It achieved a great success when in March 1942 it cracked the Allied convoy code and became able to give Dönitz decoded signals within twenty-four hours of their transmission. From June through November 1942, almost all orders to U-boats were based on knowledge of decoded signals.[163]

The Germans had fairly good knowledge of the Allies' naval OOB in northern Scotland and Iceland, mostly from radio intercepts obtained by B-Dienst, photographic reconnaissance by Luftwaffe aircraft, and reports from U-boats. Initially, however, they did not have precise information on Allied efforts to supply the Soviet Union via the Arctic route. Yet as early as September 1941 the German Supreme Command of the Wehrmacht and the OKM noticed their increased importance. They believed at first that these convoys were intended solely to support Soviet forces on the Murmansk front. They also thought that the Soviets, with the help of the British and Canadians, would try to capture the vital nickel mines at Petsamo, in Finland. This estimate of the situation informed Hitler's Instruction Nr. 36, issued September 22, 1941, for winter operations in Norway.[164]

In time, air reconnaissance and information obtained from agents indicated that the enemy convoys were bringing in supplies to be used on the entire Eastern Front. The Germans also deduced that Murmansk and Arkhangelsk were their principal destinations. German radio intercepts revealed that eastbound convoys were designated PQ, westbound QP. The Germans knew that the enemy had sent seven eastbound convoys (PQs 1–7) by the end of 1941. However, because of bad weather conditions in the Arctic, the Germans never learned the positions of those convoys or the compositions of their screens.[165]

By mid-January 1942, the SKL had a clearer picture of the operational situation. It learned that convoys originated in Scottish ports, but erroneously believed that partial convoys from the United States stopped at Seydisfjord, Iceland, and from there sailed to northern Russia, three or four times per month (see map 1). Their screens were composed of cruisers and destroyers, sometimes with a single aircraft carrier.[166] In mid-February the Germans learned that the PQ route ran from Iceland to the southern tip of Bear Island, then eastward to longitude 38° 40′ east, then southward to latitude 70° north, where the routes to Murmansk and Arkhangelsk separated. The return QP convoys left the northern Russian ports at the same time as the PQ convoys heading to those ports and were routed southward of the PQs. The intervals between successive convoy pairs, the Germans concluded, were about fifteen days.[167]

## ATTACKS ON THE ALLIED CONVOYS, JANUARY–JUNE 1942

Until the winter of 1941–42, the operational situation for the Allies in northern waters was highly favorable: the German forces were not strong enough to endanger the convoys to Russia. This situation gradually changed after Hitler directed Admiral Raeder to deploy all available heavy ships and U-boats to Norwegian waters. During the first few months of 1942, the Kriegsmarine sent all of its combat-ready heavy surface ships and a major part of its destroyers. The battleship *Tirpitz* was sent to Norway on January 16, 1942. The battleships (often referred to as battle cruisers) *Gneisenau* and *Scharnhorst* and the heavy cruiser *Prinz Eugen* were to be redeployed from Brest to German ports. However, *Scharnhorst* and *Gneisenau* were damaged during that redeployment on February 11–13, 1942 (Operation CERBERUS), and their arrival in Norway was delayed. *Prinz Eugen* and the heavy cruiser *Admiral Scheer* were ordered to Norway. However, *Prinz Eugen* was torpedoed by the British submarine *Trident* on February 23 and put out of action for nine months; it was to serve for the remainder of the war in the Baltic. The Germans also deployed about 20 percent of all their U-boats to Norway.[168] *Tirpitz* and *Admiral Scheer,* which arrived in Norway safely, were based at Trondheim, from where they could either operate in the Arctic or break out into the northern Atlantic.[169]

Between January 1 and the end of June 1942, the Allies ran nine eastbound convoys (PQs 8–16) to, and eight westbound convoys (QPs 5–12) from, northern Russia. PQs 8 and 9 consisted of seven and eight merchant ships, respectively. The third convoy (PQ10) had only three; the fourth (PQ11), thirteen. The Germans made only halfhearted efforts to stop these convoys. Out of thirty-one ships in these four convoys, none were sunk and only one was damaged.[170] Eighteen merchant ships sailed in the first three westbound convoys (QPs 5–7), and none suffered any loss before reaching Icelandic ports.[171]

In contrast, from March through the end of June 1942 virtually every convoy to Russia came under attack.[172] Initially, the Germans used their surface ships timidly; had they been more aggressive, it is difficult to see how convoys to northern Russia could have continued.[173] The Germans progressively increased their efforts against the Arctic route, starting with the PQ12/QP8 convoys. The eastbound PQ12, of sixteen merchant ships, sailed from Reykjavík on March 1 and arrived at Murmansk twelve days later. The westbound QP8, with fifteen ships, also left Murmansk on the 1st, arriving at Reykjavík on the 11th.[174]

PQ12 was the first heavily protected convoy to northern Russia. Cover was provided by the entire Home Fleet up to longitude 14° east. Admiral Tovey was unable to obtain escorts for antiaircraft (AA) defense beyond that line; the Russians had promised long-range fighter cover for convoys approaching the Kola Inlet, but only at some future, unspecified date. PQ12 was detected by a Luftwaffe aircraft on March 5, and the next day the Germans sent out *Tirpitz* with three destroyers

(Operation SPORTPALAST) to find and destroy the convoy. (Tovey believed that the Germans must have assumed the convoy was carrying troops.) However, after two days of searching, *Tirpitz* failed to detect the convoy, which arrived at Murmansk on the 12th without loss. From the westbound QP8 only one straggler was sunk, by the *Tirpitz*'s destroyers on March 7. Aircraft from the carrier *Victorious* attacked *Tirpitz* on its way back to Trondheim, but unsuccessfully; *Tirpitz* took refuge in Narvik and then completed its sortie on the 15th. In the meantime, Tovey sent the 8th Destroyer Flotilla to sweep up the Norwegian coast, to latitude 66° north, to intercept *Tirpitz,* and on the night of March 12/13 five British submarines were off the southern entrance to Trondheim. None of these forces were able to attack.[175] Nevertheless, the Germans realized they had been lucky that *Tirpitz* had survived the attack by the British carrier planes. Afterward, Hitler issued strict orders that in the future *Tirpitz* should not be put at risk unless any enemy carrier in striking range had been detected and neutralized.[176]

Admiral Raeder briefed Hitler on March 12 that *Tirpitz*'s inability to detect the enemy convoy PQ12 showed the weakness of the German naval situation in the northern area. The enemy, it was seen, would react to any German foray with a strong combat group, possibly including aircraft carriers. Carriers were the most dangerous threat to the German heavy ships. They could operate close to the Norwegian coast, obscured from the air, and not be destroyed by the Luftwaffe. The German destroyers and torpedo boats were numerically weak and could be threatened from the air.[177] Raeder argued that because the Kriegsmarine had no aircraft carriers, a successful foray in the Arctic absolutely required support, especially for reconnaissance, from a strong air force in the Norwegian area. Any operation in the Arctic would involve German naval forces, but these had to maintain readiness against an enemy landing; they would be employed only if air reconnaissance was effective. The Luftwaffe must also, he asserted, be employed against any enemy carriers; their destruction at sea or in their bases must be the Luftwaffe's highest objective in the northern area. Taking out the enemy carrier would mean a fundamental improvement in German operational possibilities.[178] In Raeder's view, the best ultimate solution was to speed up the construction of German aircraft carriers and carrier aircraft. A serious threat to the enemy in the northern area would be posed by a combat group composed of *Tirpitz, Scharnhorst,* one carrier, two heavy cruisers, and twelve to fourteen destroyers.[179]

From March to May 1942, the Germans attacked Convoys PQs 13–15 with land-based bombers, other aircraft, destroyers, and U-boats. Results were meager: only a single enemy cruiser, two destroyers, and several steamers were sunk. However, the Germans learned some valuable lessons from these operations.[180]

Convoys PQ13 and QP9, each consisting of nineteen ships, sailed on March 20 and 21, respectively. PQ13 sailed from Reykjavík to Murmansk; QP9 (after a

delay of forty-eight hours because of the presence of U-boats off the Kola Inlet) left Murmansk for Reykjavík.[181] The A/S escort for PQ13 consisted of two destroyers, one minesweeper, and two trawlers and for the QP9 convoy one destroyer and two minesweepers. One cruiser accompanied each convoy as close screen; another cruiser west of Bear Island and a third covering the western half of the route guarded against the enemy surface forces in Trondheim. Five minesweepers and one Russian destroyer reinforced the A/S escort off the Kola Inlet. However, no air support was available outside the immediate vicinity of the inlet.[182]

Convoy PQ13 was detected by the Luftwaffe off Bear Island on March 28. Shortly afterward dive-bombers attacked the convoy repeatedly, sinking three Allied ships. The next day, the eight-thousand-ton light cruiser *Trinidad* and the 1,940-ton (full load) destroyer *Eclipse* came in contact with enemy destroyers. In a brief engagement in low visibility one German destroyer was sunk and another damaged; *Trinidad* was hit by a torpedo, while *Eclipse* suffered damage as well. The convoy ran into heavy weather and became widely scattered. Nevertheless, all ships but two that were sunk by U-boats reached Murmansk on the 31st. Convoy QP9 was fortunate: it was not attacked. It arrived at Reykjavík on April 3.[183] The SKL considered the operation against Convoy PQ13 to have been successful. *Tirpitz* did not take part in the attack, because bad weather prevented good air reconnaissance.[184]

The next eastbound convoy, PQ14, twenty-three ships, left Reykjavík on April 8 for Murmansk. The westbound QP10's ten ships left Murmansk on April 10 bound for Reykjavík.[185] PQ14 was escorted by five destroyers, four corvettes, two minesweepers, and four A/S trawlers. Close cover was provided by the cruisers *Edinburgh* and *Norfolk* and two destroyers. QP10 was accompanied by the cruiser *Liverpool,* five destroyers, one minesweeper, and two trawlers; for heavy cover there were two battleships *(King George V* and *Duke of York),* one aircraft carrier *(Victorious),* two cruisers *(Kent* and *Nigeria),* and eight destroyers.[186] Convoy PQ14 ran into ice southwest of Jan Mayen, and about two-thirds of the convoy lost touch. Some fifteen ships returned to Iceland, with several escorts that had been damaged by ice. The remaining eight ships with most of the escorts carried on, to be sighted by enemy aircraft on April 13. Three days later they were attacked by U-boats east of Bear Island, which sank one ship. The remaining seven arrived safely at Murmansk on the 19th.[187] Convoy QP10, attacked by the Luftwaffe and U-boats for three days between the Kola Inlet and Bear Island, lost four ships; one ship returned to the Kola Peninsula; the remaining eleven reached Iceland on the 21st.[188] From the German perspective, the results of the attack on Convoys PQ14 and QP10 were unimpressive for so many aircraft and ten U-boats. The reasons were probably the Allies' strong distant and close screens and the continuous daylight; these factors together made it impossible to employ the Luftwaffe on the most decisive days.[189]

In early April, however, Admiral Pound warned the cabinet's Defence Committee that geographic conditions in the Arctic, especially the ice boundary, were so heavily in the enemy's favor that convoy losses might well reach a point at which their sailing became an uneconomical proposition. During the third week of April, Admiral Tovey proposed that if the convoys could not be postponed until the ice boundary moved northward, they should at least be limited in size.[190] On April 27, however, President Roosevelt cabled to Churchill that the United States, it seemed to him, had made such a tremendous effort to get supplies to Russia that it would be a serious mistake to allow them to be interrupted "except for most compelling reasons."[191] Roosevelt informed Churchill soon afterward, at the end of April, that 107 U.S. ships were already loaded or were being loaded in Britain and the United States and he wanted to use them within the next month. On May 2 Churchill replied, "With great respect, what you suggest is beyond our power to fulfill." Churchill could not press the Admiralty any further.[192]

In the meantime, eastbound Convoy PQ15, twenty-five ships, sailed from Reykjavík on April 26, while westbound Convoy QP11, thirteen ships, left Murmansk two days later.[193] PQ15 was escorted by four destroyers, one AA ship, and three minesweepers, QP11 by five destroyers, five corvettes, and two trawlers. A light cruiser *(Edinburgh)* was in close cover for QP11; distant cover for both convoys was provided by a force in which for the first time U.S. ships operated as part of the Home Fleet: two battleships *(King George V* and USS *Washington),* one aircraft carrier *(Victorious),* two U.S. heavy cruisers *(Wichita* and *Tuscaloosa),* and ten destroyers (four of them American).[194] Four British submarines off the Norwegian coast moved northeastward with the convoy to provide cover from enemy surface forces based in Trondheim. One British submarine sailed with the convoy itself as far as longitude 5° east.[195]

Convoy PQ15 was detected by enemy aircraft on April 28 and the next day by U-boats as well. It was attacked by six Junkers Ju-88 bombers on May 1. Admiral Tovey directed two heavy cruisers *(Nigeria* and *London)* then west of Bear Island to stay out of the U-boat operating area unless the convoy was threatened by enemy cruisers or battleships.[196] PQ15 lost three ships before it reached Murmansk on May 5.[197] For some reason, the Germans tried harder to destroy QP11 than PQ15; QP11 was attacked five times by three destroyers east of Bear Island. QP11 lost one merchant ship and had one escorting destroyer *(Amazon)* damaged but suffered no further losses before it arrived at Reykjavík on May 7.[198] However, three German destroyers clashed with and torpedoed the cruiser *Edinburgh,* which had to be abandoned. Two British destroyers, *Foresight* and *Forrester,* received serious damage. The Germans lost one destroyer, and two others were damaged.[199] On May 2, a Polish submarine *(P551)* was mistakenly attacked by the British escorts and sunk.[200] The

Allied heavy covering forces, meanwhile, had been detected by the German aircraft while coming out from Scapa Flow and shadowed up to the latitude of Seydisfjord.[201]

The British believed that *Lützow* (formerly *Deutschland*) moved to Norway on May 12 and ten days later to Narvik to join *Admiral Scheer*. Conversely, Tovey asserted—incorrectly—in a dispatch that all German destroyers based in northern Norway had been either sunk or damaged and accordingly he changed the protection afforded to Arctic convoys. Four cruisers accompanied by three destroyers would provide close cover west of Bear Island for defense against "pocket" battleships.[202] Admiral Tovey surmised that the enemy would leave the eastern part of the route to the U-boats and Luftwaffe but assign its surface ships to attack convoys between Jan Mayen and Bear Islands. There the convoys would require heavy cover.[203] Henceforth the main body of the Home Fleet would cruise northeast of Iceland in case *Tirpitz* sortied.[204]

Convoy PQ16, of thirty-five ships, sailed from Hvalfjord on May 21.[205] It was escorted by five destroyers, four corvettes, four trawlers, one minesweeper, and one AA sloop (a rough equivalent of the U.S. destroyer escort type).[206] Some degree of protection from U-boats was provided as far as longitude 10° east by four flying boats based in Iceland. The Soviets promised to support the operation by attacking German air bases in northern Norway with two hundred bombers. In the event, they carried out only a minor attack—after the Germans ended their attacks on PQ16.[207]

Convoy PQ16 was detected by enemy aircraft on May 24 and for the next six days was shadowed continuously. The first air attack came on the evening of the first day, about 380 miles from the German air bases in Norway. Over the next five days the Germans used no fewer than thirty-four torpedo bombers and two hundred other bombers against the convoy. They sank seven ships and damaged three others at a cost of, according to British sources, three aircraft confirmed lost and twelve others probably shot down. U-boats tried repeatedly to attack the convoy but, with one exception in which they sank a ship, were driven off by escorts.[208] The ships of Convoy PQ16 entered Murmansk and Arkhangelsk on May 30 and June 1, respectively.[209] After five days of attack, out of its thirty-four ships (one having turned back), seven had been sunk by Luftwaffe aircraft, only one by U-boats. The Germans lost two U-boats.[210]

The westbound QP12, with fifteen ships, left Murmansk on May 21 escorted by six destroyers, one AA ship, and four trawlers. It was sighted by German aircraft shortly after it sailed but was not attacked; the Germans concentrated on PQ16.[211] QP12 arrived at Reykjavík on the 29th.[212]

## ALLIED PLANS

Allied planning for Convoys PQ17 and its "pair," QP13, followed a well-established pattern. While the Admiralty and the Home Fleet were gravely concerned about the safety of convoys to northern Russia during the summer months, they had no

choice but to send them; political reasons—support of the embattled Soviet Union—trumped purely military considerations.[213] The sailings of the convoys could not be concealed from the Germans for more than a day or two. It was clear to Admirals Pound and Tovey that sooner or later a disaster was bound to occur, especially when perpetual summer daylight prevailed. Pound believed firmly that another sortie by *Tirpitz* was inevitable, notwithstanding the failure of its first foray, against Convoys PQ12 and QP8. His urging to the War Cabinet that convoys be postponed until winter being overruled, preparations for Convoy PQ17 went ahead.[214]

Admiral Tovey received information in June 1942 that the enemy intended to bring out his main force to attack an eastbound convoy. This meant that enemy surface ships would be between Norway and Spitsbergen—where British ships would be operating about a thousand miles from friendly air bases. The British destroyers also would be too short on fuel to escort any damaged ships.[215] The only hope, Tovey argued, was to induce the Germans to use their heavy ships toward the west. That might be done by holding an eastbound convoy at longitude 10° east for twelve to eighteen hours (unless it was known that the German heavy ships were still in port or weather prevented shadowing by enemy aircraft). Tovey hoped that this seeming withdrawal would either tempt the German heavy ships to pursue, cause them to return to port, or draw them into the operating area of the British and Soviet submarines.[216] The Admiralty rejected Tovey's proposal, although, interestingly, its instructions of June 27 envisaged the possibility, under certain circumstances, of the convoy being temporarily turned back on Admiralty orders.[217] The same document stated that the safety of the convoy against surface attack west of Bear Island "must be met by our surface forces, and to the eastward of that meridian [10° east] must be met by submarines; and that the cruiser covering force was not intended to go east of Bear Island, unless the convoy was threatened by the presence of a surface force which the cruisers could fight, or in any case to go beyond longitude 25° E."[218]

Convoy PQ17 consisted of thirty-six merchant ships (twenty-three of them American), plus three rescue ships, which technically were not part of the convoy. Cdre. John C. K. Dowding was in command.[219] The convoy carried 156,492 tons of weapons, equipment, and other supplies, including 594 tanks, 4,246 motor vehicles, and 297 aircraft.[220] Two oilers (designated Force Q) would accompany the convoy to refuel destroyers accompanying Convoys PQ17 and QP13 and the Cruiser Covering Force.[221]

The route ran from Hvalfjord around the western and northern coasts of Iceland; through the Denmark Strait; past the east coast of Jan Mayen; northeast to the vicinity of latitude 75° north, longitude 19° east; from there due east, passing north of Bear Island, and then southeast.[222] Upon crossing the longitude of the Kola Inlet (approximately 33° east), the track would split, one leading into Murmansk and the other to Arkhangelsk.[223] This route passed farther north than usual, because the ice boundary

had moved farther from Bear Island, allowing the convoy to be routed farther from the enemy air bases in northern Norway.[224] It was also thereby longer than usual.[225]

Defenses for the PQ17/QP13 convoys were similar to those for PQ16/QP12. They comprised a direct A/S screen and "long-range escort force" sailing with the convoy, a Cruiser Covering Force for close cover, and a Battle Fleet for distant cover and support. The direct screen and long-range escort were under Cdr. John E. Broome, RN. The direct A/S screen consisted of four corvettes, two auxiliary AA ships, four minesweepers, and four armed trawlers; the long-range escort consisted of six destroyers and two submarines. (See "Allied Order of Battle" sidebar.)[226]

The Cruiser Covering Force comprised the ships of the 1st Cruiser Squadron (CS 1), under Rear Adm. Louis H. K. Hamilton, RN, with a substantial U.S. Navy augmentation. CS 1 consisted of two British *(London* and *Norfolk)* and two American *(Tuscaloosa* and *Wichita)* heavy cruisers, plus one British *(Somali)* and two American *(Wainwright* and *Rowan)* destroyers. The force was organized into the 1st Division *(London* and *Norfolk),* 2nd Division *(Tuscaloosa* and *Wichita),* and 3rd Division *(Somali, Wainwright,* and *Rowan).*[227] This force would provide cover as far as Bear Island.[228] The Battle Fleet, under Admiral Tovey, was composed of the British battleship *Duke of York,* the U.S. battleship *Washington,* the British carrier *Victorious,* the British heavy cruiser *Cumberland* and light cruiser *Nigeria,* and twelve destroyers.[229]

Tovey's plan was for the Battle Fleet to reach latitude 65° 56′ north, longitude 10° 30′ east at 0730 on July 1. Four destroyers from Seydisfjord would join the force, the others would be detached to Seydisfjord, and the Battle Fleet would station itself so as to provide distant cover for Convoy PQ17. CINC Rosyth (Scotland) was asked to arrange antisubmarine and long-range fighter escorts for the Battle Fleet as far northward as possible.[230]

Initially, eight British submarines and one Free French patrolled between North Cape and Bear Island.[231] British submarines north of latitude 51° north were informed that the main German units might be near the longitude of Bear Island south of their patrol lines prior to attacking the convoys. Ice conditions might force the convoy to pass south of Bear Island. Hence, the submarines were told, it was of utmost importance to report their positions accurately, particularly with regard to latitude.[232] Five Soviet submarines patrolled north of Ingøy Island (thirty-seven miles west of North Cape).[233]

Admiral Hamilton issued on June 25 an operation order positing that the Germans would be tempted sufficiently by PQ17 and QP13 to send their heavy ships to sea. The British believed that two pocket battleships and some destroyers had been moved to more northerly ports in Norway, and more aircraft as well. Hamilton assumed that the enemy units most likely to be encountered would be *Tirpitz, Lützow, Admiral Hipper,* and *Admiral Scheer,* plus some ten destroyers. Considering

**Allied Order of Battle**

Convoy PQ17
(Cdre. John C. K. Dowding; total 39 ships)

*Merchant Ships*
(Total 36: 23 U.S., 8 U.K., 2 Soviet, 2 Panamanian, 1 Dutch)

*Alcoa Ranger* (U.S.) (sunk)
*Azerbaijan* (Soviet)
*Bellingham* (U.S.)
*Benjamin Harrison* (U.S.)
*Bolton Castle* (U.K.) (sunk)
*Carlton* (U.S.) (sunk)
*Christopher Newport* (U.S.) (sunk)
*Daniel Morgan* (U.S.) (sunk)
*Donbass* (Soviet)
*Earlston* (U.K.) (sunk)
*El Capitan* (Panamanian) (sunk)
*Empire Byron* (U.K.) (sunk)
*Empire Tide* (U.K.)
*Exford* (U.S.) (returned to Reykjavík)
*Fairfield City* (U.S.) (sunk)
*Hartlebury* (U.K.) (sunk)
*Honomu* (U.S.) (sunk)
*Hoosier* (U.S.) (sunk)
*Ironclad* (U.S.)
*John Witherspoon* (U.S.) (sunk)
*Navarino* (U.K.) (sunk)
*Ocean Freedom* (U.K.)
*Olopana* (U.S.) (sunk)
*Pan Atlantic* (U.S.) (sunk)
*Pan Kraft* (U.S.) (sunk)
*Paulus Potter* (Dutch) (sunk)
*Peter Kerr* (U.S.) (sunk)
*Richard Bland* (U.S.) (returned to Reykjavík)
*River Afton* (U.K.) (sunk)
*Samuel Chase* (U.S.)
*Silver Sword* (U.S.)
*Troubador* (Panamanian)
*Washington* (U.S.) (sunk)
*West Gotomska* (U.S.)
*William Hooper* (U.S.) (sunk)
*Winston-Salem* (U.S.)

*Rescue Ships*
(Total 3, U.K.)

*Rathlin*
*Zaafaran* (sunk)
*Zamalek*

Convoy Screen
(Cdr. John E. Broome, RN, in *Keppel*)

*Long-Range Escorts*
6 destroyers: *Fury, Keppel, Leamington, Ledbury, Offa, Wilton*
2 submarines: *P614, P615*

*A/S Screen*
4 corvettes: *Dianella, Lotus, Poppy; La Malouine* (Free French)
4 A/S trawlers: *Ayrshire, Lord Austin, Lord Middleton, Northern Gem*
2 auxiliary AA vessels: *Palomares, Pozarica*
4 minesweepers: *Bramble, Britomart, Leda, Salamander*

Supply Group
(Force Q)
2 fleet oilers: *Gray* (for QP13); *Grey Ranger* (damaged by ice on June 28; replaced by *Aldersdale* [sunk])
1 destroyer: *Douglas*

Cruiser Covering Force
(Cruiser Squadron 1, Rear Adm. Louis H. K. Hamilton, RN)
4 heavy cruisers
2 British: *London* (flag), *Norfolk*
2 U.S.: *Tuscaloosa* (CA 37), *Wichita* (CA 45)
3 destroyers
1 British: *Somali*
2 U.S.: *Rowan* (DD 405), *Wainwright* (DD 419)

Battle Fleet
(Adm. Sir John Tovey, CINC Home Fleet, in *Duke of York*)
2 battleships
1 British: *Duke of York*
1 U.S.: *Washington* (BB 56) (Rear Adm. R. C. Giffen—TF 39)
1 aircraft carrier: *Victorious* (Vice Adm. Sir Bruce Fraser)
1 heavy cruiser: *Cumberland*
1 light cruiser: *Nigeria*
12 destroyers
10 British: *Ashanti, Blankney, Escapade, Faulknor, Marne, Martin, Middleton, Onslaught, Onslow, Wheatland*
2 U.S.: *Mayrant* (DD 402), *Rhind* (DD 404)

Submarines
(Total 14)
8 British: *Sahib* (P212), *Sea Wolf* (47S), *Sturgeon* (73S), *Tribune* (N76), *Trident, Unrivalled* (P45), *Unshaken* (P54), *Ursula* (N59)
1 Free French: *Minerve*
5 Soviet

Operation E.S. (Deception)
1st Mining Squadron
4 colliers
2 light cruisers (*Sirius, Curacoa*)
5 destroyers
Several trawlers

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**Sources:** Naval Staff, *Royal Navy and the Arctic Convoys*, p. 57; Dowding, "Report of Convoy from Iceland to Time of 'Scatter'"; "War Diary U.S.S. *Washington*, for Period from July 1, 1942, to July 31, 1942," folder BB 56 Washington War Diary—with Home Fleet, box 1554, Wasatch to Washington, RG 38, Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity during World War II, NARA; Harriman (NAVCOM LONDON) to OPNAV, 2148/29TM (29 June 1942).

those ships' respective speeds, the most likely combination would be *Tirpitz* with *Admiral Hipper* and *Lützow* with *Admiral Scheer*.[234]

In Hamilton's view, CS 1's primary objective was to get PQ17 to Russia. A slightly less important objective was to bring the enemy heavy ships into action with the Battle Fleet and Cruiser Covering Force. To increase the chances of the latter, PQ17 probably would be turned back at approximately 10° east longitude and then run eastward again. The hope was, he explained, to lure the German ships thereby farther from their bases or keep them longer at sea within Allied submarine zones.[235]

The Battle Fleet would begin covering an area in the vicinity of 71° north, 0° east by the afternoon of the sixth day since leaving Iceland (D+6) and remain until D+8, keeping south of latitude 72° 30′ north.[236] The Cruiser Covering Force would leave Seydisfjord on the morning of D+5 to reach its covering area at latitude 73° north, longitude 4° east at about noon on D+6. It would remain there until D+8—longer if circumstances dictated. Hamilton's expressed intent was to avoid being drawn close to enemy shore-based aircraft or submarine concentrations.[237]

In support of the operation, Allied planners devised a deception (Operation E.S.), a dummy convoy aimed at deceiving the Germans into believing that an Allied attack on Norway was imminent. Five ships of the 1st Mining Squadron, four colliers, two light cruisers *(Sirius* and *Curacoa),* five destroyers, and some trawlers were assembled at Scapa Flow, in the Orkneys.[238] This group would sortie several days prior to the departure of PQ17 and pass west of the Shetlands, hoping to be seen and reported by enemy aircraft; at latitude 61° 30′ north, longitude 1° east it would turn back toward Scapa Flow. The deception would be reinforced by the bombing of targets in southern Norway, as if the "convoy" was heading there.[239]

In June 1942, arrangements were made with the Soviets to deploy a few British PBY-2 Catalinas (the aircraft of No. 210 Squadron) to Arkhangelsk for reconnoitering the area between Altafjord and Convoy PQ17 on July 1–3 as it moved eastward. (The resulting patrol encountered nothing remarkable.)[240] Rear Adm. Geoffrey J. A. Miles, head of the British military mission to Moscow, informed the Admiralty on June 16 that the people's commissar (minister) of the navy, Adm. Nikolay Kuznetsov, had promised that all Soviet resources would be devoted to convoy protection. Kuznetsov, Miles reported, had not been satisfied with the Soviet air effort for PQ16 but was optimistic about the future and would again ask the State Defense Committee (chaired by Stalin) for more long-range fighters. In addition, bombers, instead of bombing aerodromes, might in the future help long-range fighters. The Royal Air Force would send as many long-range Hurricane fighters as possible to the air base at Ponoy, near Murmansk, before Convoy PQ17's arrival.[241]

**GERMAN PLANS**

German general plans for the employment of heavy surface ships against PQ convoys were based on "appreciations" (staff studies) prepared by various naval commands during the winter and spring of 1941–42. As was the custom in the Kriegsmarine (and the Wehrmacht in general), the highest command echelon, in this case Naval Group Command North, issued an "operational instruction" *(operative Weisung),* on the basis of which the subordinate commanders issued "operation orders" *(Operationsbefehle)*. The Kriegsmarine and the Luftwaffe prepared separate operation orders for the attack on Convoy PQ17, but the plan of each service envisaged close cooperation with the other.

On June 4 Admiral Carls issued an operational instruction for employing the Trondheim and Narvik groups (designated the 1st and 2nd Combat Groups, respectively) against the next PQ convoy. The instruction anticipated that because the PQ/QP convoys ran at fourteen-to-fifteen-day intervals, the next could be expected in the Jan Mayen area on June 20. Generally, the PQ convoys sailed in column formation, four or five merchant ships in each column. The screen usually consisted of one cruiser in the convoy's midsection and three to four destroyers some 5,500 yards ahead. Individual destroyers and any other escorts secured the flanks. The last convoy had sailed close to the ice boundary, and now a heavy security group that included a carrier had been positioned by the enemy eastward of the Jan Mayen–Faeroes area.[242]

The operational instruction established two chains of command, one for the first phase (deployment of the combat groups to their "jumping-off" positions) and another for the second phase (movement from the jumping-off positions to the attacking positions). In the first phase, for the Trondheim force, Naval Group Command North would exercise operational control, while the fleet commander in *Tirpitz* would have tactical control. For the Narvik group, operational control would be in the hands of Admiral Arctic on board the S-boat mother ship *Tanga,* while tactical command and control would be exercised by the commander of cruisers, in *Lützow*.[243] In the second phase of the operation, the groups would proceed to a rendezvous at a point to be determined; overall operational control over both surface forces and U-boats would reside with Commander, Naval Group Command North, though Admiral Arctic would retain operational control of the S-boats operating in the Kola Peninsula area. After both groups joined, tactical command and control would rest in the hands of the fleet commander. The headquarters of Admiral Arctic would serve as radio relay for the U-boats. The fleet commander would not directly control the U-boats.[244]

The June 4 instruction also specified the composition of the Trondheim and Narvik combat groups: the Trondheim group would be composed of *Tirpitz, Admiral Hipper,* two destroyers, and three torpedo boats; at Narvik *Lützow, Admiral Scheer,* and six destroyers would assemble. Besides two combat groups, Admiral Carls expected to have three U-boats northeast of Jan Mayen by June 10 to obtain early contact with the next PQ convoy and its heavy covering forces. Additional U-boat groups would be between Jan Mayen and Bear Islands.[245]

Operationally, RÖSSELSPRUNG was simple in concept but difficult in execution. Almost everything depended on a timely and covert joining of the two combat groups, followed by unobserved movement toward the anticipated position of Convoy PQ17 (see map 4). Specifically, the Trondheim group's jumping-off position would be Gimsøystraumen, in Vestfjord; at the same time, the Narvik group, directed by Admiral Arctic, would move to its jumping-off position at the northern

exit of Altafjord, in the skerries of Sørøya. Both groups were to be at their jumping-off points within twenty-four hours. Destroyers and torpedo boats were to be fully refueled. After the combat groups joined, the torpedo boats would refuel at Altafjord and remain there on three-hour alert. Owing to their short radius of action, the destroyers' speed would be limited.[246] There was danger of torpedoes from not only enemy surface forces and aircraft but also submarines; the latter had been used to screen the previous PQ convoy. On signal from Commander, Naval Group Command North both combat groups would sortie so as to arrive at a meeting point he would promulgate.[247] Orders to break off the action, if necessary, would either come from MGK Nord or result from an independent decision of the fleet commander.[248]

**German Order of Battle**

1st Combat Group
(I Kampfgruppe, Trondheim)

1 battleship: *Tirpitz* (flag)
1 heavy cruiser: *Admiral Hipper*
5 destroyers:
5th Destroyer Flotilla: Z-14 (flag) *Friedrich Ihn,* Z-4 *Richard Beitzen*
6th Destroyer Flotilla: Z-20 (flag) *Karl Galster,* Z-10 *Hans Lody,* Z-6 *Theodor Riedel*
2 torpedo boats: *T-7, T-15*

2nd Combat Group
(II Kampfgruppe, Narvik)

1 pocket battleship *(Panzerschiff): Lützow*
1 heavy cruiser (formerly pocket battleship): *Admiral Scheer*
8th Destroyer Flotilla
5 destroyers: *Z-28* (flag), *Z-24, Z-27, Z-29, Z-30*
1 oiler: *Dithmarschen*

9 U-boats: *U-88, U-251, U-255, U-334, U-355, U-376, U-456, U-457, U-703*

5th Air Fleet

*Reconnaissance*
I./K.G. 40, 1. (F)/22, 1. (F)/124; 2./406; 3./406; 3./906; 1./125 Vestfjord; 74 reconnaissance aircraft (including three squadrons of Focke-Wulf FW-200 Condors and four squadrons of Blohm & Voss BV-138 Seedrache seaplanes)

*Combat Units*
K.G. 30; I./K.G. 26 (LT); 1./406 (LT); 1./906 (LT) 103 Ju-88 bombers; 42 He-111 torpedo bombers; 15 He-115 torpedo bombers (on floats); 30 Ju-87 dive-bombers

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**Sources:** Flottenchef/B.d.S., "Operationsbefehl. Einsatz der Flottenstreitkräfte im Nordraum gegen einen PQ-Geleitzug (Deckname Rösselsprung)," 14 June 1942, pp. 100–102, Akte VIII, 13 (PQ17) May 1942–July 1942, RM 7/1024, BA-MA; Marinegruppenkommando Nord to Seekriegsleitung, Abschlussbericht, "Rösselsprung," 20 July 1942, p. 32, Akte VIII, 13 (PQ17) May 1942–July 1942, RM 7/1024, BA-MA; Vertragsnotiz Unternehmung "Rösselsprung," Juli 1942, p. 81, RM 7/1024, BA-MA; *Operationen von Flottenstreitkräften im Nordpolarmeer im Jahre 1942*, pp. 19–21; Irving, *Destruction of Convoy PQ.17*, p. 40.

**Legend:**
(F) = Fern Aufklärungsgruppe (Long Range Reconnaissance Group)
K.G. = Kampfgeschwader (Battle Wing)
LT = Lufttorpedo (Aerial Torpedo)

The situation would require massing German forces rapidly and keeping the duration of the operation short—here the commander had the suspected heavy covering group in mind. The primary mission was the quick destruction of the enemy's merchant ships. The heavy surface ships should merely neutralize the cargo ships; their actual sinking should be left to the U-boats and Luftwaffe. Among these the tankers would be especially important targets. It also would be desirable to capture several enemy ships. In any case, it was attacking the convoy, not the heavy covering group, that was the primary mission of *Tirpitz* and *Admiral Hipper.*[249]

The enemy convoy was to be detected by U-boat patrol lines, after which the Luftwaffe would maintain continuous contact. The Luftwaffe also would search for the enemy heavy group, in the Shetland–Faeroe–Iceland–Jan Mayen area. If the heavy group was not detected there, it would be critically important next to reconnoiter the sea 250 nautical miles around the convoy. The Luftwaffe also was tasked with scouting the vicinities of Reykjavík, Scapa Flow, and the Firths of Forth and Moray (in Scotland).[250] On the day the combat groups sortied from their Trondheim and Narvik bases, the Luftwaffe would reconnoiter a quadrant out to two hundred nautical miles from the coast northeastward from latitude 62° north to the longitude of North Cape. The day they left the jumping-off positions, the Luftwaffe would search an arc two hundred nautical miles offshore from the latitude of the southern tip of Lofoten to the longitude of North Cape.[251]

Pursuant to an instruction from Hitler on March 14, 1942, Naval Group Command North requested that the 5th Air Fleet assign three squadrons of Focke-Wulf (FW) 200 Condor long-range reconnaissance aircraft, four squadrons of Blohm & Voss (BV) 138s and several three-plane "chains" *(Kette)* of bombers and Ju-88 fighter-bombers for air reconnaissance.[252] However, the 5th Air Fleet informed Naval Group Command North on June 19 that its request could not be fulfilled. In the 5th Air Fleet's view, the attack on PQ16 in late May had shown clearly that the Luftwaffe was capable of inflicting heavy losses on convoys by itself but only at the cost of further diluting the 5th Air Fleet's already inadequate forces.[253]

On June 14, Admiral Schniewind, the fleet commander, issued a six-and-a-half-page operation order, "Employment of Fleet Forces in the Northern Area against a PQ Convoy." The mission was simple: "destroy a PQ-convoy in cooperation with U-boats and Luftwaffe."[254] In keeping with the overall instruction, Schniewind's order divided his forces into three: the Trondheim group, the Narvik group, and the U-boats. (See "German Order of Battle" sidebar.) The Trondheim group consisted of *Tirpitz, Admiral Hipper* (with the fleet commander embarked), and five destroyers (in contrast to the two envisaged in Carls's operational instruction). The Narvik group had *Lützow, Admiral Scheer,* and five destroyers. Three U-boats would be stationed northeast of Iceland beginning on the 10th. Other available U-boats, "probably three to four," would be in the attacking position between Jan Mayen

and Bear Islands. Any other U-boats available later would be stationed off Bear Island. At the time the operation order was issued, there were only two destroyers in Trondheim *(Ihn* and *Lody);* four other destroyers were to be transferred from Germany to Norway within the next few days. There were also two or three torpedo boats in Trondheim to escort the group.[255] In the skerries of Vestfjord and other coastal waters would be minesweepers and submarine chasers. The U-boats would follow a route through Andfjord; a former fishing steamer *(Schiff 31)* would escort them.[256]

Upon issuance of a coded signal from Naval Group Command North, the fleet forces would move to their jumping-off points as had been specified by Naval Group Command North, arriving, combat ready, within twenty-four hours.[257] About five hours prior to the sortie of the combat groups from jumping-off points, Air Leader Lofoten and Air Leader North (East) would fly reconnaissance in the quadrant bounded by latitude 68° north and longitude 25° east, out to two hundred nautical miles offshore. Within the effective range of the Luftwaffe's fighter aircraft, close air support would be provided during all phases of the operation.[258]

Admiral Schniewind reiterated the need for quick massing, concentrated employment, and quick destruction of the enemy. The primary objective was destruction of the enemy's merchant ships; screening ships were to be attacked only if they jeopardized the primary objective. The most favorable conditions for the attack would be found east of Bear Island, between longitudes 20° and 30° east. The main objective would be accomplished faster and more effectively if the U-boats and the Luftwaffe provided reliable reconnaissance.[259]

In his written intent *(Absicht),* Admiral Schniewind laid down that suppression of the strongest enemy force would be the responsibility of the 1st Combat Group. As soon as Convoy PQ17 was detected and located, the combat groups would take up their stations—but as late as possible, to reduce the reaction time available for the enemy.[260] The enemy should be attacked on the bow sectors and from the east; the enemy was to be encircled only when his combat power was broken up.[261] If the enemy's close screen consisted of no more than two cruisers, the attack could be conducted from two directions from the outset; this would result in quicker destruction of the convoy.[262]

Schniewind stressed that engagement with superior enemy forces should be avoided. The operation, he reaffirmed, was to be executed quickly, before an enemy force composed of battleships and carriers and believed to be in the Faeroes–Iceland area would have an opportunity to intervene.[263] If enemy heavy forces were encountered, the action should continue only as long as the prospects for success were favorable.[264]

On June 2 Admiral Schmundt (Admiral Arctic) issued his operation order for the movement of the pocket-battleship group from Narvik to Altafjord (code name

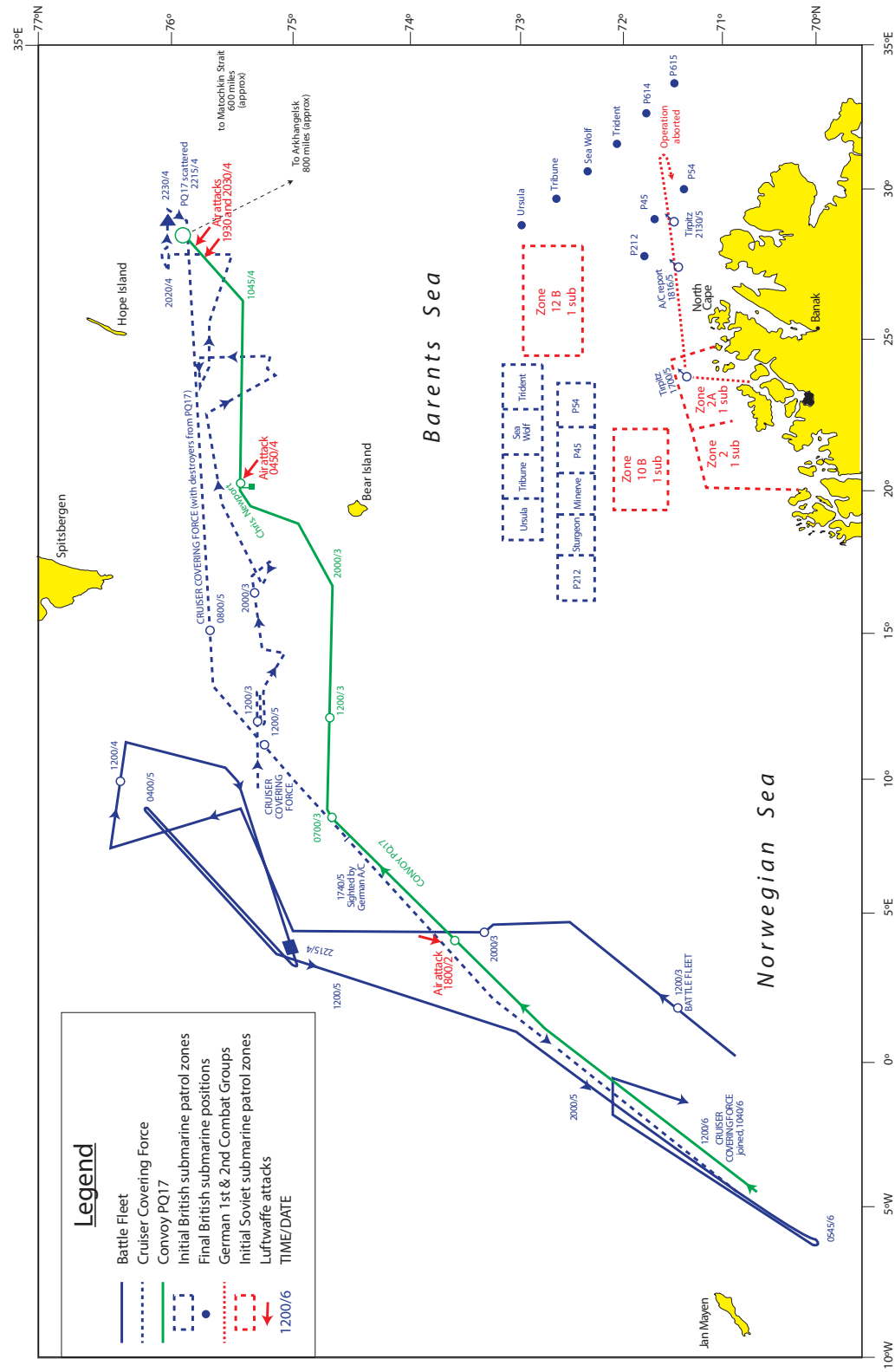
KONZERT). In addition to *Lützow, Admiral Scheer,* and the five destroyers, the Narvik combat group included the 6th S-boat Flotilla (seven boats) and a supply ship.[265] Close air support en route to Altafjord would be provided by Luftwaffe fighters based in Bardufoss and Altengaard (near Altafjord). Air reconnaissance would search primarily for enemy carriers from latitude 67° north, longitude 26° east out to two hundred nautical miles off the Norwegian coast. Higher-density reconnaissance would be flown between latitudes 69° and 79° north and longitudes 14° and 19° east. Air reconnaissance would be conducted throughout the movement.[266]

On June 11 Admiral Schmundt directed three U-boats, organized as the Eisteufel ("Ice Devil") group, to take up patrol positions in the Denmark Strait to watch for the first sign of PQ17. These U-boats' primary mission was first detecting and then tracking the convoy. Surface ships of destroyer size and larger could be attacked only when positively identified as hostile. In any uncertain situation, such as thick weather, all attacks on warships were prohibited. The German ships also were directed not to attack enemy submarines but otherwise "to act as though submarines they meet are hostile."[267]

The 5th Air Fleet issued its operation order on the 14th. It gave as the main missions air reconnaissance and the close support of naval forces. Subordinate commanders were to use all available forces in attacking the PQ convoy.[268] Upon execution of RÖSSELSPRUNG Luftwaffe aircraft would begin a three-hundred-nautical-mile-wide search off the Norwegian coast. Specific assignments were the following: Air Leader North (West), from latitude 62° north to a line from the southern tip of the Lofotens to the southwestern tip of Jan Mayen; Air Leader Lofoten, from the southern tip of the Lofotens to a line connecting North Cape to the southern tip of Spitsbergen; Air Leader North (East), from the line between North Cape (longitude 25° east) and the southern tip of Spitsbergen out to longitude 30° east.[269]

Air Leader North (West) was to cover the Trondheim group, Air Leader Lofoten the Narvik group.[270] Fighter protection would be organized by the commander of fighters, Norway, in cooperation with the fleet commander at Trondheim, and by Air Leader Lofoten in cooperation with the commander of cruisers.[271] After the PQ convoy crossed longitude 5° east, Air Leader Lofoten would be responsible for the sea area to three hundred nautical miles off the Norwegian coast, from a line connecting the southern tip of Lofoten and the southwestern tip of Jan Mayen to another between the southern tip of Spitsbergen and North Cape. Air Leader North (West) would have the zone west and southwest of the Lofoten–Jan Mayen line (see map 4).[272]

In the meantime, on June 6, Admiral Raeder met with Hitler to discuss operations in the Arctic. Hitler was informed of the pending operation in which *Tirpitz* was to participate; his agreement was lukewarm at best, but he did not reject the idea. Hitler was unclear about the operation's form but felt it should not be risky for heavy




*Map 5*
*German attack on Convoy PQ17, July 3–6, 1942*

ships in any case. After the meeting, Raeder directed Vice Adm. Theodor Krancke, OKM's liaison to the Führer's headquarters, to explain to Hitler once again that the operation, on which the SKL placed great importance, would require sufficient Luftwaffe air cover; it could not be successful otherwise.[273]

Hitler formally approved the plan for RÖSSELSPRUNG on the 9th. However, Raeder failed to respond forcefully to Hitler's remark that he now saw "great danger for heavy ships by the [enemy] aircraft carrier," a reservation meaning that the enemy carrier had to be located prior to the attack on the convoy and eliminated. The SKL was allowed to move the Trondheim group to Altafjord but then had to await orders to attack, orders that could come only with Hitler's approval. Raeder's unwillingness to act energetically—to confront Hitler and get him to lift his restrictions on the employment of the heavy ships—was the key element in the ultimate failure of RÖSSELSPRUNG, notwithstanding the German forces' overall success against Convoy PQ17.[274]

## EXECUTION

Convoy PQ17, now consisting of thirty-six ships plus one rescue ship, sailed from Hvalfjord at 1600 on June 27 at six knots (see map 5).[275] The next day the convoy encountered heavy fog and ice floes in the Denmark Strait. One merchant vessel ran aground, and an oiler was damaged so heavily by ice that it had to return. Several other ships suffered slight damage from ice.[276]

The Home Fleet's Battle Force sailed from Scapa Flow on June 29 and steamed northward so as to support both PQ17 and QP13.[277] Convoy PQ17 was fully formed at 1200 on the 30th when it was joined by a long-range escort force under Commander Broome and two rescue ships.[278] The convoy was then about a hundred miles southwest of Jan Mayen Island.[279] The next day, the Cruiser Covering Force sailed from Seydisfjord.[280]

Operation E.S.'s dummy convoy sailed on the 29th and carried out its movement eastward toward the Norwegian coast on June 30 and July 1. However, Luftwaffe reconnaissance aircraft did not observe it, and so the Germans did not react at all.[281] The entire deception plan was a failure.

At 1640 on June 30, Luftwaffe aircraft detected westbound Convoy QP13, reporting it as consisting of thirty-nine ships and ten escorts, some two hundred nautical miles north of North Cape. However, because of heavy fog they were unable to maintain contact.[282] At 1050 on July 1, QP13 was sighted by *U-88* 250 nautical miles northeast of Jan Mayen but was not attacked.[283] At 1615 on the 1st, *U-255* reported the convoy's position as sixty nautical miles east of Jan Mayen and its composition as thirty-eight steamers and ten to twelve destroyers and other escort vessels. *U-255* estimated the convoy's speed at eight knots; B-Dienst later confirmed this.[284]

At noon on July 1, the British first noted German shadowing aircraft over Convoy PQ17. The weather was calm, all the Allied destroyers had been refueled, and the convoy was two hundred miles west of Bear Island.[285] The PQ17 and QP13 convoys passed each other at latitude 73° north, longitude 3° east at a distance of some ten miles on the afternoon of the 1st.[286] The Cruiser Covering Force overtook Convoy PQ17 and sailed parallel to it but forty miles north, so as to avoid German detection.[287]

In the meantime, Bletchley Park learned that the Luftwaffe had detected PQ17.[288] The OIC began to decrypt special intelligence traffic of between noon on July 1 and noon on July 2 and learned that the Germans' Narvik group had arrived at Altafjord that morning. It also knew that *Tirpitz* had sortied from Trondheim the previous night; a British aircraft confirmed its absence. Yet *Tirpitz* was not actually located by air reconnaissance that day.[289]

On July 2, one fleet tanker and one destroyer left PQ17 to join westbound QP13. That evening PQ17 ran into fog, which persisted until the forenoon of the 3rd. Bad weather prevented Allied aircraft from reconnoitering the Norwegian ports for several days.[290]

Admiral Carls, despite the failure to detect the enemy's heavy surface group, believed that the pending operation, including the heavy surface ships, was fully justified. Deployment of the German ships would start when the enemy PQ convoy crossed 5° east longitude, anticipated for the evening of July 2.[291] Accordingly, Naval Group Command North requested during the forenoon of the 2nd that 1./SKL issue "execute" orders. This request was approved, and signals were sent at 1257. At 1200, the Trondheim group received an order to be in three-hour readiness.[292] On the basis of reports from *U-266,* Admiral Arctic decided to keep four U-boats in continuous contact with the convoy. By 1400 on July 2 a patrol line of six U-boats was in place halfway between Jan Mayen and Bear Islands.[293] As planned, the Trondheim group sortied at 2000 for Gimsøystraumen, and four hours later the Narvik group left for Altafjord.[294] *Lützow* ran aground in the Tjeldsund and took no further part in the operation. Likewise, three destroyers *(Lody, Riedel,* and *Galster)* of the Trondheim group touched ground in Gimsøystraumen and suffered damage; they returned to Trondheim the next day.[295] The Germans believed (wrongly, as it turned out) that the enemy did not notice the deployment of the Trondheim and Narvik groups.[296]

At about midnight on July 2/3, the U-boats and aircraft lost contact with Convoy PQ17.[297] At 0700 on the 3rd, the convoy changed course to due east, to pass Bear Island into the Barents Sea. The Admiralty reported that the ice boundary was even farther north than had been anticipated, and Admiral Hamilton suggested to Commander Broome that he change to a more northward course. Broome did not entirely accept that suggestion, being anxious to make progress eastward;[298] he changed the convoy's course northward, to 021 degrees.[299]

At 1600, Admiral Carls asked for a decision regarding RÖSSELSPRUNG. He shared his intention to deploy the *Tirpitz* group to Altafjord with Raeder and the SKL. Afterward, Raeder directed Admiral Krancke to transmit Raeder's approval of Carls's intent to Hitler, explaining to Hitler that movement of the *Tirpitz* group to Altafjord was only a preliminary and did not constitute execution of RÖSSELSPRUNG. In a message sent at 1720, Carls ordered Schniewind to carry out the redeployment.[300] With the *Tirpitz* group at Altafjord, only a few hours would have been lost if Hitler's approval for the larger operation came before midday on July 4.[301]

In the early morning of the 3rd, the Admiralty informed CINC Home Fleet that a PBY-2 Catalina seaplane, backed by one B-24 Liberator heavy bomber if necessary, would patrol between latitude 71° 30′ north, longitude 19° 10′ east and latitude 71° 55′ north, longitude 23° 40′ east from 1530 on July 3 to 0300 on July 5. This patrol was intended to cover the approaches from Altafjord to the convoy's route. Aircraft from Sullom Voe would fly additional searches westward of Lofoten. Five Catalinas would be available at Arkhangelsk to search ahead of the convoy after it crossed longitude 35° east.[302]

At 0130 on the 4th, PQ17 changed course to the northeast and entered an area full of heavy ice growlers.[303] At 0415, Luftwaffe aircraft detected it eighty nautical miles northeast of Bear Island, equidistant from that island and Spitsbergen.[304] At 0450, Convoy PQ17 suffered its first loss when an aircraft torpedoed the American merchantman *Christopher Newport,* of seven thousand gross registered tons (in German documents, *Bruttoregistertonnen,* or BRT).[305] During the day German aircraft maintained contact, with only short interruptions caused by bad weather.[306] As of 1700, however, the Germans still did not have definite information on the heavy cover group—with probably one battleship, two or three cruisers, and three destroyers—reported at 1352 northeast of Convoy PQ17 and on a southeasterly course.[307] The area north of latitude 71° north was, as Admiral Carls reported to the SKL at 1745, not being observed continuously. Accordingly, Admiral Carls believed that RÖSSELSPRUNG should be launched no later than 1700 on July 5. The 1st and 2nd Combat Groups were in a three-hour readiness status at Altafjord.[308]

In the meantime, at about 1230 on July 4, the Admiralty bypassed Admiral Tovey to give his subordinate Admiral Hamilton, with the Cruiser Covering Force, permission to pass east of longitude 25° east should the situation require it. However, the Admiralty had no information that specifically justified the change in Tovey's plans, so Tovey qualified it, directing Hamilton that "once the convoy is east of 25° E or earlier at your discretion, you are to leave the Barents Sea unless assured by Admiralty that *Tirpitz* cannot be met."[309] At 1520, Hamilton signaled that he would stay with the convoy until the enemy surface threat had been clarified, but certainly no longer than 1200 on the 5th.[310] These Admiralty messages marked the beginning

of interference by Admiral Pound in the decisions and actions of subordinate commanders during the operation.[311]

During the afternoon of the 4th, British aircraft reported that *Tirpitz* and *Admiral Hipper* had left Trondheim. Admiral Tovey's force was then 180–200 miles northwest of Bear Island, within the mutually supporting distance of the carrier *Victorious*.[312] At 1640, Hamilton ordered the convoy to change course from 090 to 045 degrees to open the distance from the enemy airfield at Banak to four hundred miles.[313] Also that afternoon, Bletchley Park assessed that although there was no verification via photographic reconnaissance, it was "tolerably certain" that *Admiral Scheer* and *Lützow* had been in Altafjord since 1400 on July 3 (when it became known they had left Trondheim). By then all four German heavy ships might be at sea heading toward the convoy.[314]

At 1809, Admiral Hamilton replied to the Admiralty that he intended to withdraw to the westward of Convoy PQ17 at about 2200 on July 4, after refueling his destroyers.[315] The Admiralty at 1839 directed Hamilton, because new information might be available shortly, to remain with the convoy "pending further instruction."[316] At that time, Hamilton's Cruiser Covering Force was between ten and twenty miles ahead of the convoy.[317] Some 350 miles away the Battle Fleet was hovering southwest of Spitsbergen.[318]

All that day the weather north of Bear Island had steadily improved; however, the cloud ceiling was low (985 to 1,640 feet), making it easier for enemy aircraft to attack the convoy.[319] The first attack, by a few bombers, came at 1930. It scored no hits, but Luftwaffe aircraft carried out a series of more-deadly raids during the evening. At about 2030, twenty-three Heinkel (He) 111 torpedo bombers attacked the convoy. They torpedoed three ships; two of these had to be sunk by the escort, but the other was able to continue the voyage. Four enemy planes were shot down.[320] Convoy PQ17 had come out of heavy air attacks remarkably well—its antiair defense had proved very effective.[321]

At 2325, Bletchley Park sent the Admiralty an intercepted message:

> Most Secret Source (Ultra):
>
> 1. [The Germans have] located westbound convoy from Russia on North Cape meridian P.M. yesterday July 2nd and have since lost in fog.
>
> 2. Eastbound convoy is expected to be sighted shortly and will be attacked in accordance with plan;
>
> 3. Warships are expected to move from Trondheim and Narvik (? 36) hours before convoy reaches meridian 5 deg E. Main attack to be concentrated during passage between 15th and 30th meridian;
>
> 4. U-boats already on station close to Arctic. A two repeat A two. [*A2* was the level of reliability of this part of the report.][322]

## THE DECISION TO SCATTER THE CONVOY

On the evening on the 4th, Admiral Pound personally went to Bletchley Park to get a close look at the stream of decrypted messages.[323] The OIC received good news at about 1900: the "break-in" for the most recent ENIGMA rotor settings had been accomplished and decrypts for the twenty-four hours up to noon that day could be expected very shortly.[324] At 1918, Bletchley advised Tovey that the German "CINC of the Fleet in *Tirpitz* arrived to Alta[fjord] 0900/4th. Destroyers and torpedo boats [were to] complete with fuel at once. *Scheer* was already present at Alta[fjord]. [Actually, *Hipper* and *Lützow* were also.] At 1623/3 two U-boats were informed their main task was to shadow convoy."[325] Cdr. Norman Denning of the OIC wanted to add a comment that the new evidence indicated that *Tirpitz* was still at Altafjord. However, after discussion with Admiral Pound, Denning's assessment was deleted from the message sent at 1918.[326]

It was not known how long refueling the destroyers would take. Although expected, the German ships' arrival in Altafjord reinforced the view that a move against the convoy was imminent if not already under way.[327] But it was not certain, Denning was convinced, that the German ships had yet left Altafjord. He was supported in his view by his superior, John "Jock" Clayton, the deputy director of the OIC. (Clayton, a rear admiral on the retired list, had been brought back on active service as a captain.) Further support came from Harry Hinsley, the German-traffic analyst at Bletchley. For Denning, who compared the current situation with *Tirpitz*'s foray against Convoy PQ12 in March, the absence of any signal from Naval Group Command North to *Tirpitz* was an indicator that the heavy ships were still at Altafjord. There also were no reports from the British submarines. Denning briefed Pound but was given little opportunity to explain his reasoning; the admiral instead asked direct questions to which he expected short, factual answers. At one point Pound asked Denning whether he *knew* that *Tirpitz* was not at sea.[328] Denning responded that the German sortie against Convoy PQ12 suggested that the Germans would not now risk *Tirpitz* if there were danger from the "Home Fleet, particularly its aircraft carriers."[329] He also assured Pound that "if *Tirpitz* has put out to sea you can be sure that we should have known very shortly afterward[,] within four to six hours."[330]

Denning also pointed to several "negative" indicators. For example, Bletchley Park knew that the Germans had sighted CS 1 but erroneously thought it included a battleship. That would indicate a large force, and therefore the Germans would not send *Tirpitz* to sea. (Bletchley had found no evidence that the Germans had detected the heavy covering force.) Another point was that the Germans had not warned their U-boats to stay clear of the convoy (i.e., so as not mistakenly to attack German ships). Neither had the German wireless-telegraphy traffic markedly increased since noon. The British and Soviet submarines off North Cape had

reported no sightings. Collectively, all these "negatives" made a good case that *Tirpitz* was still at Altafjord.[331]

Nonetheless, to Admiral Pound's question, "Can you assure me that *Tirpitz* is still at anchor in Altafjord?" Denning could only respond, "No. I shall have information only after the *Tirpitz* has left."[332] On this question, in fact, hung the entire future of Convoy PQ17, but Denning was not in a position to give the desired assurance.[333] Pound then asked, "Can you at least tell me whether *Tirpitz* is ready to go to sea?" To which Denning responded, "I can at least say that she will not leave in the next few hours. If she were on the point of sailing, the destroyer escort would have preceded her and made an antisubmarine sweep. They have not been reported by our submarines patrolling the Altafjord."[334]

At 2000 the expected stream of decrypts began to reach the OIC but provided no new "positive" information bearing on Admiral Pound's question. At 2030, Pound convened a staff meeting, at which Clayton was present.[335] (Coincidentally, that meeting was held just as Convoy PQ17 was repelling enemy air attacks.)[336] At 2031, the OIC received a decrypt of a German message from 1130 on July 4 confirming that *Tirpitz* had not left Altafjord as of noon. This signal, which was included in the 2110 ULTRA summary, had informed the U-boats that no German surface ships were then in their operating area and that the British heavy ships, if encountered, should be their main targets. However, this information did not change the situation, because an assessment already had been made that the destroyers and torpedo boats accompanying *Tirpitz* would not have completed refueling until about noon.[337]

At the 2030 meeting, Admiral Pound and his staff opined that the enemy attack could occur anytime after 0200 on the 5th; if that happened, Admiral Hamilton's cruisers would be destroyed. The participants also (falsely) believed that the farther apart the merchant ships were, the better their chances of escape: once the alarm was given, the enemy would stay in the vicinity no longer than necessary to pick off a few ships. However, an eight-knot convoy might require a good deal of time to disperse over a large area, whereas the air and U-boat attacks had started already and were certain to continue.[338]

When Clayton returned to the OIC at about 2130, he informed his own staff that Admiral Pound was now taking the view that the convoy had to be dispersed, that *Tirpitz* had sortied and could reach the convoy by 0200 on July 5. Clayton's staff persuaded him to go back to Admiral Pound and make the case that instead Admiral Tovey should be advised that *Tirpitz* had *not* sailed out and *would* not until the Germans had information on the strength of the Allied heavy covering force.[339] The naval section at Bletchley Park agreed. But Clayton was unable to convince Admiral Pound, who had made up his mind.[340]

The fate of Convoy PQ17 was now decided, by three short Admiralty messages. At 2111 Pound sent a signal to Hamilton (repeated to Tovey): "Cruiser force

withdraw to westward at high speed." Another (repeated to Hamilton) went directly to Broome, the screen commander, at 2123: "Owing to threat from surface ships convoy is to disperse and proceed to Russian ports." This was followed by another at 2136: "[Reference] My 2123/4th. Convoy is to scatter."[341]

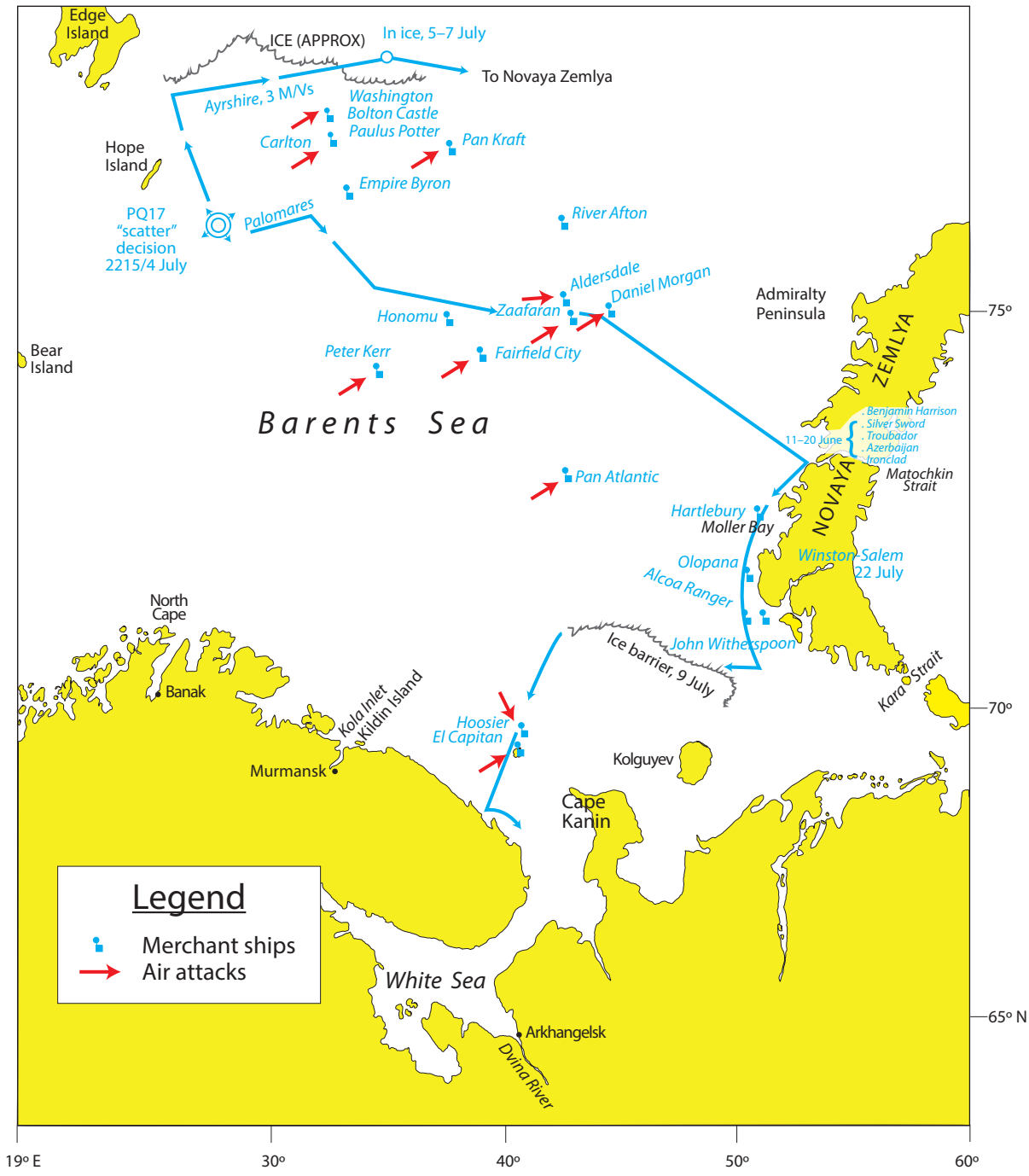
At the time Admiral Pound made his decision, Convoy PQ17 was some 130 miles north-northeast of Bear Island and almost due north of North Cape (bearing 008) at a distance of about 240 miles (see map 6).[342] The Allied ships had some 450 miles to go to reach Novaya Zemlya. The Battle Fleet was then some 230 miles from the convoy and four hundred from the *Tirpitz* group—too far away from either the convoy or the enemy heavy ships.[343]

At 2215, Commander Broome passed the signal to scatter to the convoy commodore. The convoy was then at latitude 75° 55′ north, longitude 22° 52′ east. Broome, with his destroyers (other ships of the A/S screen remained with the convoy), steamed away to join Admiral Hamilton's force.[344] Commodore Dowding sent a message to Broome: "Many thanks. Goodbye and good hunting"; Broome replied, "It's a grim business leaving you here."[345]

At 2230, Hamilton turned his force onto a westerly course that would pass south of the convoy—that is, between the convoy and the probable enemy forces. The visibility was extremely variable, with numerous fog patches. The Cruiser Covering Force, with the destroyers, withdrew westward at twenty-five knots.[346]

Both Hamilton and Broome were affected less by the content of Pound's three messages than by the quick succession in which they had been sent. Their cumulative effect—especially since the last signal had a more urgent priority marking than the previous one—was to imply that danger was pressing.[347] From that they inferred that an attack by *Tirpitz* was imminent. Commander Broome duly obeyed the order to scatter the convoy—for which he was never to forgive himself.[348] In a bitter irony, the third message's order to "scatter" the convoy was actually a merely technical amendment of the term "disperse" that had been used in the second signal; Hamilton and Broome could not have known this. Later, the official Royal Navy history would explain the two terms in a footnote: "disperse" meant ships should break formation and proceed at convenient speed toward their destinations, remaining for some hours in proximity to each other; by contrast, to "scatter" was to turn to widely varying courses, in accordance with a scheme laid down in convoy instructions.[349]

Officially, the decision to scatter the convoy was explained later in this way. Convoy PQ17 still had thirty ships intact. The combined threat of air and U-boat attacks was considerable. The convoy had reached a position beyond the effective range of the Battle Fleet, even if that force were put at risk to engage *Tirpitz* and the enemy's other heavy ships. In the Admiralty's view, if the convoy continued on its way, it would be harassed by enemy U-boats and aircraft. Any enemy heavy ships




*Map 6*
*Movements of remnants of Convoy PQ17, July 4–17, 1942*

that approached most likely would be encountered east of North Cape. The enemy would need no more than ten hours to reach the convoy and could return to safety in even less time. Thus, the decision to scatter the convoy: the losses to be anticipated from a surface attack were worse, by this argument, than those that would be inflicted by U-boats and aircraft. But as it turned out, the convoy lost twenty ships after the signal to scatter was given, and only fourteen ships reached Soviet ports.[350] The Admiralty's reasoning was faulty: the effectiveness of Luftwaffe bombers and Kriegsmarine U-boats in attacking individual merchant ships had been proved. The threat of enemy aircraft could be neutralized only by superior airpower—unlikely to be provided by the Soviets.

This was only the second time an Allied convoy had been scattered. In the first instance, Convoy HX84 (Halifax to Liverpool) had received such an order on November 5, 1940, when *Admiral Scheer* was about to attack. However, there were significant differences: the area in which HX84's thirty-seven ships could disperse was much larger, and neither German aircraft nor U-boats were attacking. Also, the earlier convoy was protected by only a single ship, the armed merchant cruiser *Jarvis Bay*. *Admiral Scheer* subsequently sank five ships, including the escort.[351]

The order to scatter Convoy PQ17 was given in glaring contravention of the "Atlantic Convoy Instructions and Orders" that Admiral Tovey had issued in March 1942. They stipulated that in the face of enemy heavy ships, convoy escorts should remain in the vicinity to track and, if circumstances allowed, attack enemy surface ships. Tovey was to note that Convoy PQ17 had more than half completed its voyage, to within eight hundred miles away from Arkhangelsk, having lost only three ships. In his view, the decision to scatter had been premature—and disastrous.[352]

In a personal letter to Admiral Noble of the Western Approaches Command on July 12, 1942, Admiral Tovey would place responsibility for the destruction of Convoy PQ17 squarely on the Admiralty for the "scattering of [the] convoy unnecessarily early and . . . the appalling conditions of panic suggested by the signals they made." He had sent an officer "down to the Admiralty to make clear to them what the reactions at sea were to the information passed out and to those three signals in particular." Tovey, he wrote to Noble, had himself told the Admiralty by telephone that he considered it "wrong for the Admiralty to issue definite orders to the convoy and escort." The Admiralty should "give them information by all means and, if they wish make a recommendation, but leave it to the fellow on the spot to decide the action to be taken." The Admiralty had responded to the last point that it "consider[ed] it putting an unfair responsibility on to an officer of Commander's rank [i.e., Broome]."[353]

Whatever the merit of the Admiralty's reply, it did not absolve Admiral Pound of bypassing Admirals Tovey and Hamilton. Tovey also wrote to Noble that Hamilton was entirely responsible for the inaction, having "failed completely to appreciate the altered situation due to his imagining that there was still a strong likelihood of his being

brought to action by the *Tirpitz*." Hamilton had thought it best to have the convoy's destroyer escort join his own three destroyers in CS 1's screen. "I deeply regret," Tovey commented, "this mistake of his as there was not the slightest doubt that if the destroyers had returned to the convoy within a reasonable time they could have helped materially in its defence and in rescuing survivors."[354] Indeed, the presence of destroyers obviously would have strengthened Convoy PQ17's AA defenses; however, it is unlikely that they would have reduced significantly the number of merchant ships sunk.

At 0115 on the 5th, Admiral Hamilton sent the following message to his ships, addressing also Commodore Dowding, the convoy's merchant ships, and the remaining escorts:

> I know you will all be feeling as distressed as I am at having to leave that fine collection of ships to find their own way to harbor. The enemy under the cover of his shore-based aircraft has succeeded in concentrating a far superior force in this area. We were therefore ordered to withdraw. We are all sorry that the good work of the close escort could not be completed. I hope we shall all have a chance of settling this score with them soon.[355]

Hamilton was very much concerned about the potential effect on morale of the escort force's apparent desertion of the merchant ships. Had he known that the Admiralty possessed no more information regarding the enemy heavy units than he did himself, he would have remained in a covering position until the convoy had dispersed widely.[356] It was claimed later that Admiral Pound would not have made his fateful decision except for the presence of two U.S. cruisers; the American ships were operating under British command for the first time, and he did not want to lose them.[357]

## DESTRUCTION OF THE CONVOY, JULY 5–8

On July 5, the weather in the operating area was variable, between four-tenths and fully overcast, with fog banks. Atmospheric disturbances sporadically interrupted radio traffic. Convoy PQ17 was being shadowed continuously by Luftwaffe aircraft.[358]

After the order to scatter was issued, most merchant ships proceeded alone, some in groups of two or three—most to seek shelter at Novaya Zemlya, a few toward Arkhangelsk. Two AA ships *(Palomares* and *Pozarica)* joined a small convoy of merchant ships protected by one corvette and two or three minesweepers; on July 5, these ships headed for Novaya Zemlya. One corvette *(Dianella)* escorted the submarines until they separated from the merchant ships to patrol to the west; the corvette carried on eastward and alone. One minesweeper, *Salamander,* escorted a rescue ship and two merchant vessels.[359]

Less than half of PQ17's merchant ships that remained by the end of July 4 reached safety. On July 5 and over the following two days, eighteen, including the oiler *Aldersdale* and the rescue ship *Zaafaran,* were sunk, most of them between approximately latitudes 74° and 77° north and longitudes 35° to 45° east. Eight, including the rescue ship and oiler, were sunk by bombs and six were torpedoed

by U-boats. Between the evening of the 6th and the early morning of the 8th, four more ships were torpedoed off the southwest coast of Novaya Zemlya, probably by a single U-boat.[360]

## HITLER FINALLY GIVES PERMISSION, JULY 5

In the early morning on July 5, the Admiralty was still in the dark about whether German heavy forces had left Altafjord. At 0238 on July 5, Admiral Tovey received this ULTRA message:

> 1. It is not repeat not known if German heavy forces have sailed from Altenfjord [Altafjord], but they are unlikely to have done so before 1200/4th
>
> 2. It appears that Germans may be in some confusion whether a battleship is in company with CS 1. Germans do not repeat not appear to be aware of positions of C-in-C Home Fleet.[361]

At 0322, the Admiralty informed Admiral Miles in Moscow that air reconnaissance indicated that

> enemy heavy units have moved from Trondheim to Narvik and [are] believed to be using a base in Altafjord area from which to operate against PQ17. British forces other than close escort for PQ17 have been withdrawn west of Bear Island and convoy ordered to scatter in approximate position 76 degs North 28 degs East at 2200B/4 [in the +2 time zone, on the 4th] to proceed to North Russia ports. British submarines are being moved from previous patrol positions to area between latitudes 73 degs and 72 degs N and longitudes 23 degs and 32 degs E. Catalina aircraft temporarily based in Arkhangelsk will carry out reconnaissance between positions 74 degs N 28 degs E and 73 degs N 32 degs E.

The Admiralty requested that Admiral Miles try to arrange with Soviet authorities for regular air reconnaissance of the Altafjord area, for air attacks against enemy heavy units in harbors or at sea, and for the bombing of enemy airfields, "which is of added importance with convoy scattered."[362]

At 1625, an ULTRA message was sent to Rear Adm. Richard Bevan, the senior British naval officer in northern Russia, advising him that the "most likely time of enemy surface attack is now tonight 5/6 July or early hours of tomorrow 6th July." The "enemy may strike on 065 degs direction from North Cape. Submarine and Catalina aircraft might sight enemy. Request striking force [presumably Soviet] may be at short notice from 2000 today 5th July."[363]

In the meantime, at 0655 German air reconnaissance had reported an enemy force composed of the aircraft carrier *Ark Royal,* one possible battleship, four heavy cruisers, eight destroyers, and two torpedo boats, proceeding on a westerly course at fifteen knots.[364] This group was some five hundred miles away from the convoy, which the Germans now knew had scattered. For the Germans, this new sighting confirmed the aircraft report concerning the enemy cruiser force received the previous afternoon to the effect that no enemy heavy units were anywhere near the convoy. It was this report that enabled Admiral Raeder to get Hitler's final permission for the *Tirpitz* foray.[365]

During the forenoon of the 5th, the operational situation for the Germans was mixed. On the positive side, the convoy had been dissolved, probably, they thought, because of the aerial and U-boat attacks. Most of its ships were still to be found within an area approximately sixty nautical miles on a side, but that was too large an area to allow its composition to be determined precisely.[366] The Germans mistakenly believed that the enemy cruiser group's retirement westward must mean it had lost a heavy cruiser. The heavy covering force was well to the west of Bear Island, making full use of fog banks to disguise its location and makeup, 450 nautical miles from the convoy and from North Cape. This distance meant there would be minimal danger to the German forces if they approached the convoy unobserved and got the engagement over with quickly. If the enemy heavy force were spotted during the Germans' approach to the convoy, there would be sufficient time to turn away.[367] In sum, the Allied heavy covering force was too far off to interfere with an attack on PQ17 by the 1st and 2nd Combat Groups.[368] On the negative side, general conditions for an attack by the German heavy ships on July 5 were less favorable than they had been the previous day. The convoy was now farther away—the combat would be eastward of North Cape. Also, during the withdrawal phase the distance to the enemy heavy forces would decrease steadily. But the risk was still bearable.[369]

Admiral Carls believed, first, that if any enemy battleship close to the convoy were damaged by U-boats and aircraft by 1200, he would be justified in carrying out the operation regardless of the presence of an enemy carrier; and second, that carrier aircraft would have less impact if the convoy were attacked above latitude 72° north. The deadline for initiating RÖSSELSPRUNG was 1300 on the 5th; after that, the attack would take place too close to the Russian coast.[370] Carls accordingly requested Admiral Raeder not only to issue the code word for executing the operation but also to leave no option to cancel the order later *(Rückbefehl)*. However, Raeder refused to do either, because of Hitler's precondition that the enemy carrier must be taken out of the equation first. This was communicated at 0915 to Admiral Carls, who pressed the matter. The precondition, he argued, made everything dependent on the quality of air reconnaissance. The enemy was unwilling to operate its heavy covering group within the effective range of Luftwaffe torpedo and heavy bombers. However, Admiral Carls understood the group to have been already at sea on July 1 and doubted it could continue to operate for long. It might withdraw to refuel and then take up a waiting position. Therefore, he was convinced, the enemy carrier group would not pose a threat to the German heavy ships.[371]

Hitler finally gave permission for the operation during the forenoon of the 5th, the latest favorable time. The code word was issued at 1137, and Naval Group Command North took operational control of the U-boats in Arctic waters.[372] The Führer's approval for RÖSSELSPRUNG was transmitted to Admiral Carls three minutes

later, with a caveat from Raeder that the conditions permitting its execution would no longer exist if the enemy carrier were detected or the German combat groups were found by enemy aircraft. Forces that had been on one-hour combat alert since 0900 were directed at 1052 to be in immediate readiness to sortie. At 1141, the combat groups received the requisite code word from Naval Group Command North. At 1230, Naval Group Command North took control of the entire operation and directed Admiral Schniewind in *Tirpitz* to sortie toward North Cape, passing Breisund and escorted by minesweepers.[373]

At 1700, the Soviet submarine *K21* reported (inaccurately) the presence of *Tirpitz, Admiral Scheer,* and eight destroyers at latitude 71° 25′ north, longitude 23° 40′ east, or some forty-five miles southwest of North Cape, on a northeasterly course. The submarine claimed to have hit *Tirpitz* with two torpedoes.[374] However, British intelligence considered that, in view of subsequent sightings, "improbable."[375] *Tirpitz* had not in fact been hit; nevertheless, *K21*'s sighting report was of great value to Admiral Tovey.[376] At 1816, Allied reconnaissance aircraft reported eleven enemy ships at latitude 71° 31′ north, longitude 27° 10′ east on a northeasterly course at ten knots. The British submarine *Unshaken* (P54) shifted farther east and at 2029 reported *Tirpitz* and *Admiral Hipper,* escorted by at least six destroyers, in latitude 71° 30′ north, longitude 28° 40′ east, steering 060 degrees at twenty-two knots.[377]

At 1700 the Germans received an important message, an intercepted Allied submarine sighting report of two battleships at latitude 71° 25′ north, longitude 23° 40′ east, moving northeasterly. The Allied 1816 sighting report also was intercepted, and the two together left no doubt that the enemy had detected the German combat groups.[378] Also, at 1945 the Germans learned that the enemy had begun systematically to jam radio communications on all channels, making the transmission of orders difficult.[379]

## RÖSSELSPRUNG IS CANCELED

Naval Group Command North concluded at 2000 on July 5 that the enemy heavy group was in generally the same position as on the 4th. The enemy heavy cruisers had been detected at 1745 on a westerly course and had been tracked until 2010, when they disappeared in fog. The Germans calculated that the enemy heavy covering group would have to close the German combat groups to about two hundred nautical miles to attack but would not go closer, because of the danger of attacks from the Luftwaffe. This meant that RÖSSELSPRUNG could be carried out only between 2000 on July 5 and 0200 the next morning. The chances of success in attacking a now widely dispersed convoy were small. Hence, although an attack on PQ17 might have psychological benefits for the Germans, it was not worth the risk of engaging an enemy carrier force.[380] Carls had been told by Raeder that if the enemy sighted the German combat groups, the entire operation would have to be aborted. A clash with the enemy heavy covering group must be avoided in any

case; the possibility that its carrier might cut off the combat groups' withdrawal was unacceptable.[381]

Raeder and Carls conferred by telephone at 2035 and 2103 and agreed that, given where it had been sighted, the enemy would be able to bring his heavy covering group to bear against the German combat groups during their return to base.[382] On that basis, Raeder decided to abandon the entire operation; at 2132, Admiral Carls sent a message to Admiral Schniewind aborting RÖSSELSPRUNG.[383] Schniewind was directed to take *Tirpitz, Admiral Scheer, Admiral Hipper,* and five destroyers to North Cape and then through the "inner leads" (the channel between Norway's mainland and outer island chain) to Vestfjord. Operational control of the U-boats was returned to Admiral Arctic.[384] *Lützow,* two destroyers, and the torpedo boats were directed to Trondheim and were put under the control of Admiral Arctic.[385]

Raeder's decision was based on Hitler's view that Germany could not afford to put its few remaining heavy ships at risk. Because Allied air reconnaissance had detected the German combat groups prematurely, it was highly possible that the *Tirpitz* group would be attacked by carrier aircraft. Another factor was that, the convoy already having dispersed widely, the risk entailed in employing surface forces against it would not be commensurate with the remaining mission elements—that is, finishing off the enemy convoy would be better left to the U-boats and aircraft.[386]

At 0230 on July 6 the Admiralty sent a message to Convoy PQ17's escorts stating that an "attack by enemy surface forces is probable in next few hours. Your primary duty is to avoid destruction to enable you to return to scene of attack and pick up survivors after enemy have retired."[387] Shortly afterward, the Admiralty requested that after such an attack, once it was clear "that enemy heavy ships have retired to westward," the escorts "arrange for a search for survivors by all available means including my Catalinas in north Russia not required for searching and shadowing enemy."[388]

At 1946, however, the Admiralty advised that the "risk of attack by enemy surface vessels is now greatly lessened" and directed the remaining escorts to pick up survivors from the sunken ships.[389] Those unable to do so but in contact with several merchantmen should form them into groups and escort them to Yokanga "unless otherwise directed by S.B.N.O. North Russia [Senior British Naval Officer, Rear Admiral Bevan]." Escorts short on fuel should proceed to Arkhangelsk, where they would be refueled. The two auxiliary AA ships should not risk taking part in rescue operations but instead proceed without delay to Arkhangelsk.[390]

At 1040 on the 6th, Admiral Hamilton's force joined the Battle Fleet. The weather in the area was unfavorable for air reconnaissance. Tovey felt that nothing was to be gained by steering northeastward and so detached Hamilton's cruisers and eight destroyers to Seydisfjord at 1230. Shortly afterward, the Battle Fleet turned southward. All the ships reached their home bases on July 8.[391]

In the meantime, the Germans continued their efforts to detect and attack the remnants of Convoy PQ17. On the morning of the 6th, those remnants covered an area of three hundred kilometers by sixty (186 by 37 miles), east of longitude 40° east. The U-boats at that point had no contact with the remnants of PQ17 and were directed by Admiral Arctic to search between longitudes 42° and 48° east. Two U-boats returned to Narvik during the night of July 6/7; two other boats were on their way to Kirkenes, where they would arrive on the evening of the 6th.[392]

On the 7th, Commodore Dowding (who had survived the sinking of his ship by a U-boat on the 5th) collected five merchant ships and one rescue ship in the Matochkin Shar, organized them as a convoy, and headed for Arkhangelsk that evening. They were accompanied by the two auxiliary AA ships, three corvettes, three minesweepers, and three trawlers, all remnants of Convoy PQ17's escort force.[393] Ashore in the USSR, Admiral Bevan planned to send a British corvette to reinforce the escorts and bring the ships to Arkhangelsk on a track passing near the east coast of Novaya Zemlya, south of Kolguyev Island, and around Cape Kanin. Bevan also informed the Admiralty that "C. in C. White Sea [commander of the White Sea Flotilla] is requesting C. in C. Northern Fleet that additional cover may be provided by 3 Soviet Union destroyers. Catalina leaves for reconnaissance 1000B 8th. 4 more Flying boats approaching Svyatoy Nos."[394]

The ensuing voyage of the Convoy PQ17 remnants was a succession of accidents. The ships encountered heavy fog and then ran into a solid ice barrier south of Byelushya Bay, Novaya Zemlya (the British had not known about the ice, but the Germans did). Several ships were forced to head for the Yokanga anchorage; Admiral Bevan was completely unaware that remnants of PQ17 had left the Matochkin Shar until these ships reported entering Yokanga. The Soviet Northern Fleet had failed to inform him. Neither had the Soviets given Bevan information about ice conditions.[395]

During the night of July 8/9, German aircraft reconnoitered off Novaya Zemlya, the Kanin Peninsula, other western waterways, the piers at Yokanga, the Murmansk–Leningrad railway, and airfields in the Byelomorsk area (Onega Bay).[396] Because of heavy fog, they did not fly north of latitude 72° north on the 8th or 9th. However, at 1151 on the 9th German aircraft reported five enemy merchant vessels. Attacks by thirty-eight aircraft in two groups from 1st Group, 30th Battle Wing (I./KG 30) at Banak followed. The Germans claimed one seven-thousand-ton vessel and another of eight thousand tons damaged. Because of fog at Banak on the flyers' return, I./KG 30 was diverted to Petsamo, while II./KG 30 reached Banak.[397]

The Luftwaffe received information on the convoy from U-boats operating in the area. During the night of July 9/10 some forty German bombers carried out a high-level attack against them for four hours, ending at 0230. Two Allied merchant ships were sunk, while four German aircraft were believed to be shot down.

The surviving ships reached Arkhangelsk on July 11.[398] Also on the 10th, German aircraft attacked docking facilities and fuel tanks at Rost and airfields in the Murmansk area and suppressed coastal batteries on the Rybachy Peninsula.[399]

On July 16 Commodore Dowding returned northward, with three corvettes, to Byelushya Bay, Novaya Zemlya, to find more remnants of PQ17, organize them as a convoy, and bring it to Arkhangelsk. After a stormy voyage, he arrived on the 19th to find five merchant ships, two British trawlers, and one Soviet icebreaker at anchor. The new convoy soon got under way, to be joined by another merchant ship at Moller Bay, Novaya Zemlya, on the morning of the 21st. The convoy's defenses were reinforced on July 22, by one auxiliary AA ship, one corvette, two minesweepers, and two Soviet destroyers. Two days later it arrived in Arkhangelsk, having suffered no losses.[400]

To sum up: between July 2 and 10, the 5th Air Fleet employed 130 Ju-88s, forty-three He-111s (twenty aborted), and twenty-nine He-115s (six aborted) in attacking Convoy PQ17. U-boats were able to sink many ships heavily damaged by the Luftwaffe. The 5th Air Fleet stopped its attacks on Convoy PQ17 only when it could find no more ships.[401] German losses in these attacks totaled only five aircraft: one BV-138, two He-111s, one He-115, and one FW-200.[402] In the aftermath, the Germans would grossly exaggerate their success. On the basis largely of B-Dienst radio intercepts, they were to claim that between July 4 and 11, their aircraft and U-boats had sunk thirty-seven ships of combined 231,090 BRT.[403] They firmly believed that of these, U-boats had sunk sixteen ships of 107,947 combined BRT, while the 5th Air Fleet had sunk twenty-one, of 136,081 combined BRT (figures that actually add up to 244,028).[404]

The true losses were heavy enough. The Luftwaffe and U-boats destroyed twenty-two merchant ships (fourteen American) of Convoy PQ17's thirty-four that tried to get through (or 65 percent; thirty-six and three rescue ships had started).[405] The ships sunk carried 430 tanks, 210 aircraft, and 3,350 motor vehicles, plus 99,316 tons of other cargo.[406]

## POLITICAL AND MILITARY CONSEQUENCES

The almost total destruction of PQ17 had significant military, psychological, and political effects. In purely military terms, the Germans accomplished a major tactical objective. The decision of the British chiefs of staff on July 13 to recommend that convoys "not be sent to Northern Russia in present circumstances" had a negative operational effect. The Royal Navy suffered a major loss of confidence regarding its ability to protect convoys to northern Russia.[407]

On the 14th Churchill informed Roosevelt of the situation. Only four ships had reached Arkhangelsk, with "four or five more precariously in the ice off Nova Zembla [Novaya Zemlya] out of the thirty-three included in Convoy P.Q.17. If a half [of the convoy] had got through we should have persevered, but with only about a quarter arriving the operation is not good enough." Churchill pointed out that out of six

hundred tanks, only slightly more than one hundred had arrived. The British Admiralty "cannot see what better protection can be devised, nor can they hazard battleships east of Bear Island." He claimed that Adm. Harold R. Stark, the commander of U.S. naval forces in Europe in London, agreed with the Admiralty's view and "that all possible was done by us last time." Also, the U.S. battleship *Washington* had already been withdrawn to the Pacific. Churchill advised against "running P.Q.18 [convoy] which must start 18th [July] at latest." He asked Roosevelt "how you feel about it," inasmuch as twenty-two ships in the planned convoy were American. Churchill concluded that "future prospects of supplying Russia by this northern route are bad. Murmansk has been largely burnt out and there are several signs of an impending German attack upon it. By the time that perpetual daylight gives place to the dark period, Archangel will be frozen." He also wanted to know Roosevelt's view of a draft of a forthcoming message to Stalin about suspension of all convoys to northern Russia.[408]

On July 16, Churchill sent another message to Roosevelt in which he laid out the possibility of only a temporary stoppage of convoys to northern Russia. He wrote that if the planned major effort to resupply Malta in August (PEDESTAL) was carried off "without serious losses it might render possible an attempt in September to run an even more powerfully mounted and protected convoy to Russia." Further, "The Malta convoy will decide whether very strong sea-borne fighter protection is effective. That can only be proved by trial."[409] Roosevelt replied the same day: after consultation with Adm. Ernest J. King, he was obliged "reluctantly [to] agree to the position which the Admiralty has taken regarding the Russian convoy to the North and I think your message to Stalin is a good one. I assume you will send it at once."[410]

Churchill did so the next day: "In the case of P.Q.17, however, the Germans at last used their forces in the manner we had always feared. They concentrated their U-boats to the westward of Bear Island and reserved their surface forces for attack to the eastward of Bear Island. The final story of P.Q.17 convoy is not yet clear. At the moment only four ships have arrived at Archangel, but six others are in Nova Zembla harbours. The latter may, however, be attacked from the air at any time. At the best, therefore, only one-third will have survived."[411] In the same telegram, Churchill explained

> the dangers and difficulties of these convoy operations, when the enemy's battle-squadron takes its station in the extreme North. We do not think it right to risk our Home Fleet east of Bear Island or where it can be brought under the attack of the powerful German shore-based aircraft. If one or two of our very few most powerful battleships were to be lost or even seriously damaged while *Tirpitz* and her consorts, soon to be joined by *Scharnhorst,* remained in action, the whole command of the Atlantic would be lost. Besides affecting the food supplies by which we live, our war effort would be crippled; and above all the great convoys of American troops across the ocean, rising presently to as many as 80,000 in a month, would be prevented and the building up of a really strong second front in 1943 rendered impossible.[412]

Moreover, Churchill's naval advisers had told him that

> if they had the handling of the German surface, submarine and air forces, in present circumstances, they would guarantee the complete destruction of any convoy to North Russia. They have not been able so far to hold out hopes that convoys attempting to make the passage in perpetual daylight would fare better than P.Q.17. It is, therefore, with the greatest regret that we have reached the conclusion that *to attempt to run the next convoy, P.Q.18, would bring no benefit to you and would only involve dead loss to the common cause*. At the same time, I give you my assurance that, if we can devise arrangements which give a reasonable chance of at least a fair proportion of the contents of the convoys reaching you, we will start them again at once. The crux of the problem is to make the Barents Sea as dangerous for German warships as they make it for ours. This is what we should aim at doing with our joint resources.

At the same time, however, Churchill promised that "we are prepared to despatch immediately to the Persian Gulf some of the ships which were to have sailed in P.Q. convoy. Selection of ships would be made in consultation with Soviet authorities in London in order that priorities of cargo may be agreed."[413]

In his response on July 23, Stalin was direct, crude, and dismissive. He falsely charged, "First, the British Government refuses to continue the sending of war materials to the Soviet Union via the Northern route. Second, in spite of the agreed communique concerning the urgent tasks of creating a second front in 1942 the British Government postpones this matter until 1943." Stalin's own naval experts "consider[ed] the reasons put forward by the British naval experts to justify the cessation of convoys to the Northern ports of the U.S.S.R. wholly unconvincing. They are of the opinion that with goodwill and readiness to fulfil the contracted obligations these convoys could be regularly undertaken and heavy losses could be inflicted on the enemy." Stalin continued,

> Of course I do not think that regular convoys to the Soviet Northern ports could be effected without risk or losses. But in war time no important undertaking could be effected without risk or losses. In any case I never expected that the British Government will stop despatch of war materials to us just at the very moment when the Soviet Union in view of the serious situation on the Soviet-German front requires these materials more than ever. It is obvious that the transport via Persian Gulf could in no way compensate for the cessation of convoys to the Northern ports.[414]

In the same telegram Stalin criticized the Admiralty's decision to disperse Convoy PQ17: "Our [naval] experts find it also difficult to understand and to explain the order given by the Admiralty that the escorting vessels of the P.Q.17 should return whereas the cargo boats should disperse and try to reach the Soviet ports one by one without any protection at all."[415]

The most probable reason for Stalin's accusatory tone was that he had become intensely suspicious of Churchill's true motives. He even believed that Britain might seek a separate peace with Nazi Germany.[416] Churchill and his cabinet agreed not to respond to Stalin's unfounded charges, to "avoid a wrangle, which would be of no advantage to either of us."[417]

On July 29, Churchill wrote instead to Roosevelt, that he hoped "to resume convoys in September, if Russians can provide necessary air force to deny the German

surface ships use of the Barents Sea and that if the battle in Egypt goes well we should be able to make a firm offer of air support."[418] Roosevelt responded that he agreed with Churchill's reply to Stalin but at the same time cautioned that "we have got always to bear in mind the personality of our ally and the very difficult and dangerous situation that confronts him, no one can be expected to approach the war from a world point of view whose country has been invaded."[419] On the 31st, Churchill informed Stalin that "we are making preliminary arrangements for sailing a convoy of forty ships during the first week in September." He also made it clear that "there is little chance of even one-third of the ships getting through to you, as was the case in P.Q.17, unless the air threat to the German surface forces in the Barents Sea is such as to deter the latter from operating against the convoy."[420]

PQ18, with forty ships, the first eastbound convoy after PQ17, left Loch Ewe in northwest Scotland on September 2, 1942. It was attacked by U-boats and Luftwaffe aircraft. Thirteen ships were lost, three to U-boats and the rest to torpedo bombers. The remaining twenty-seven ships reached Arkhangelsk on the 17th. The westbound QP15, with twenty-eight ships, sailed out of Arkhangelsk on November 17 and reached Loch Ewe on November 30 and December 3, having lost only two ships, both to U-boats.[421]

## CONCLUSION AND OPERATIONAL LESSONS LEARNED

The decision to send badly needed supplies to the Soviet Union was made purely for political and strategic reasons. Admirals Pound and Tovey were opposed to that decision. Their main concerns seem to have been the lack of adequate forces to support such an effort and the possibility of large losses in naval ships and personnel. (The Soviets, for whatever reasons, were either unable or unwilling to provide much support in defense of the Allied convoys.) The British admirals' concerns were well-founded. The convoy route to northern Russia was not only long but open to deadly attacks by the Luftwaffe and U-boats. The problem was compounded by the prevalence of bad weather and ice conditions and by the long daylight hours in summer. Yet in retrospect, the decision to help the Soviet Union was sound and fully justified strategically. It played a critical role in the Soviet ability to withstand the German offensive on the Eastern Front in 1941–42.

*Political and military strategic decisions always should be made by the highest national political leadership, the highest alliance/coalition political leadership, or both. At the same time, military leaders always should forcefully present their views on whether political or military strategic objectives or both are achievable with the forces that are available or becoming available. Ultimately, strategic decisions made by the highest political leadership must be accepted and faithfully carried out by subordinate military and naval leaders.*

The Allied operational command organization seemed fairly simple and straightforward. However, for some reason the Home Fleet's area of responsibility

was not defined formally. The Home Fleet was the single largest British naval command available for keeping the Kriegsmarine in check. However, its forces were never adequate, because of competing demands from other theaters. In fact, it was forced repeatedly to provide ships to other fleets. The Home Fleet was composed primarily of heavy surface ships and carriers; it lacked an adequate number of smaller ships suitable for convoying duties. That is why Western Approaches Command provided most of the A/S escorts for Allied convoys to northern Russia. The U.S. Navy also reinforced the Home Fleet, sending its newly formed TF 39.

The German operational command organization in Norway and the adjacent area was highly unsatisfactory. No multiservice (joint) command was established in that theater throughout the entire war. This meant that each service prepared and executed its own operational plans. The effectiveness of the joint employment of naval forces and the Luftwaffe depended almost entirely on close cooperation among middle- and low-level commanders. For the Kriegsmarine, the problem was not made much easier by the Fleet Command forces' being within the area of responsibility of Naval Group Command North. In addition, Naval Group Command North's headquarters was too far away from its subordinate commands in Norway. To make things yet worse, the Kriegsmarine had a penchant for changing both the titles of and the subordination among various forces. This was especially the case with the Fleet Command. Another major problem was the insufficient freedom of action allowed to subordinate naval commanders, the result of too-close supervision by seniors. This was seen especially in the relationship between Naval Group Command North and Admiral Arctic.

Both the Allies and the Germans in preparing plans for and employing their respective forces in combat required well-organized and effective intelligence apparatuses. British naval intelligence proved much more effective, thanks especially to the superb abilities of the decoders at Bletchley Park who decrypted German naval messages. Despite widely held belief to the contrary since the program became public knowledge, this task was never easy, because the German codes were difficult to crack; there were many times when Bletchley and the OIC were in the dark about German intentions, plans, and movements. Critically, for a large part of 1942 Bletchley Park was unable to read coded messages sent to U-boats.

German naval intelligence was well organized and quite effective at providing naval commanders with fairly accurate and timely intelligence on the Allied OOB, convoys, and the losses inflicted by U-boats and the Luftwaffe. B-Dienst was especially effective at reading messages regarding the composition, departure dates, and routes of Allied convoys. All this proved invaluable to the Kriegsmarine, particularly its U-boat arm.

*Operational intelligence is one of the main prerequisites of developing sound operational plans and executing them successfully. Intercepting enemy messages and*

*decoding them in a timely manner can provide a decisive advantage. Nonetheless, one should never assume either that the enemy does not have positive knowledge that his radio traffic is being intercepted and read or that he is not feeding back false information. Hence, when obtaining information on the enemy, it is prudent to use diverse sources of information and to avoid overreliance in operational planning on information obtained by cryptanalysis. No code is unbreakable. Hence, one should change one's codes often and on short notice.*

The Allies refined their plans for convoying to northern Russia over time. Although changes were made for each convoy, the pattern was consistent. Geography and ice conditions in the Barents Sea simply gave planners little or no choice in routes and defense forces for each convoy. Admirals Pound and Tovey were strongly opposed to sending convoys during the summer months, when ships were highly vulnerable to attacks by enemy aircraft and U-boats but they had to execute the decisions made by the British and American governments. Purely political considerations dominated Allied planning for convoys to northern Russia.

The German plans for RÖSSELSPRUNG were the result of numerous studies prepared by all the major naval commands in Norway concerning the possibility of employing heavy surface ships and U-boats in the Arctic. As usual in the German military, the operational-level command issued an operational instruction, on the basis of which subordinate commanders issued operation orders. However, the absence of joint force commanders meant that no single plan was produced for the employment of heavy surface ships, U-boats, and Luftwaffe aircraft.

The operational instruction that Naval Group Command North issued on June 4 envisaged employing both the Trondheim and Narvik groups of surface ships. A major flaw in the plan was the unnecessarily complicated command structure: the Trondheim group was subordinate to Naval Group Command North, the Narvik group under Admiral Arctic. Only during the second phase of the operation were both groups under the operational command of Naval Group Command North.

A major prerequisite for the success of RÖSSELSPRUNG was comprehensive air reconnaissance of the potential operating area, followed by the weakening by air attack of the enemy heavy covering force. Naval Group Command North duly requested the 5th Air Fleet to assign more aircraft for reconnaissance—but the 5th Air Fleet simply refused to do so.

*One of the main disadvantages of the lack of sound theater or operational command organization is the resultant highly negative effect on the planning and execution of major naval/joint operations. Optimally, a single commander should have full authority and responsibility for the combat employment and support of assigned subordinate multiservice forces; otherwise, it is very difficult, if not impossible, to develop and execute a plan for a major naval/joint operation.*

But perhaps the single greatest problem was Hitler's unwillingness to risk heavy surface ships to attack enemy convoys. This risk aversion, in essence, precluded any effective employment of the German heavy surface ships based in Norway, from where they might well have prevented the Allies from running convoys to northern Russia. The German ships retained value only "in being"—that is, to the extent that they deterred enemy amphibious landing and invasion.

Convoy PQ17 went ahead as planned. Although early detected and thereafter tracked by German U-boats and aircraft, only three merchant ships were sunk until the evening of July 4. Admiral Pound's decision to "scatter" the convoy at that point was perhaps understandable but cannot be considered sound. No convoy should be left to proceed independently without direct and distant cover. If the convoy was considered to be faced with destruction by a superior force, it should have been directed to withdraw temporarily to a safer distance or return to a safe port. Admiral Pound also violated basic principles of sound naval command and control by directly interfering with and bypassing Admirals Tovey and Hamilton. Tovey's criticism of the Admiralty was fully justified. Higher commanders normally should leave their subordinate commanders freedom of action to exercise initiative in the course of an operation.

*An operational commander ashore should not unnecessarily bypass the next-subordinate commander and issue orders directly to lower tactical commanders. Doing so shows distrust of the professional abilities of the subordinate commander and cannot but have a highly detrimental effect on the exercise of initiative by the subordinate commander and on morale in general. It also diminishes the bypassed commander's prestige and influence among tactical commanders. Generally, an operational commander should intervene only when the decisions and actions of a next-echelon commander endanger the success of the operation as a whole or the success of adjacent commanders.*

The positioning of the Home Fleet's Battle Fleet in relation to Convoy PQ17 on July 5 was clearly unsound. The heavy ships remained too far away either to provide distant cover and support to the convoy or to engage the enemy heavy surface group effectively.

Finally, Admiral Raeder's decision to cancel RÖSSELSPRUNG on the evening of July 5 was unavoidable: there was little to gain from asking heavy surface ships to destroy the now widely dispersed ships of (the former) Convoy PQ17. The time to employ those heavy surface ships would have been prior to the 5th. Yet doing so then had been clearly impossible, given the strictness of Hitler's conditions for employing *Tirpitz* and its ilk. Yet *Tirpitz*'s presence in Altafjord and the ever-present possibility of its attacking Convoy PQ17 were the most important factors in the fateful British decision to scatter the convoy, with its subsequent consequences.

NOTES

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# II *Major Convoy Operation to Malta*
## *August 10–15, 1942 (Operation PEDESTAL)*

The fifteen-mile-long central Mediterranean island of Malta had played a vital role in British theater strategy since its capture by Britain in September 1800. Its importance was most dramatic, however, during World War II, when it served as an air and naval base from which the British could attack Axis convoys to Libya. For the Allies, resupplying Malta with fuel, ammunition, and foodstuffs was a major problem, however, because of intensive efforts—by land-based Axis aircraft on Sicily and Sardinia and in North Africa, in combination with heavy surface forces, submarines, and mines—to cut off the island from the outside world.

The resupply convoy to Malta of August 1942 (Operation PEDESTAL, or Operation MEZZO AGOSTO, "Mid-August," in Italian accounts) was, in operational terms, a major defensive naval/joint operation aimed to ensure survival of the island as a major naval and air base. For the Germans and Italians, it was a major offensive naval/joint operation to destroy a large convoy.

The Allies were aware of the enormous risks of an all-out effort to supply besieged Malta. Yet supplies were badly needed, and the consequences of failing to mount an attempt would have been even more disastrous—for the Allied campaign in North Africa and possibly the entire Mediterranean theater. The execution of PEDESTAL did in fact result in horrendous losses for the Allies. However, the ships that reached Malta brought sufficient quantities of fuel and food to keep the island alive until the great Allied victory at El Alamein, Egypt, in November 1942 turned the tide of the war in North Africa.

Despite the passage of time, the planning, preparation, and execution by both sides of this major naval/joint operation offer many lessons on how to employ one's naval forces in the littorals—lessons that remain valid today.

### OPERATIONAL SITUATION

When Italy entered the war on the side of Germany in June 1940, Malta ceased to be the main base for the British Mediterranean Fleet. A major part of the fleet moved to Alexandria, Egypt. After June 1940, the newly created Force H, at Gibraltar, became responsible for the operations in the western Mediterranean and eastern

Atlantic. Force H was directly subordinate to the Admiralty in London. The high effectiveness of the German Luftwaffe and the Italian air force units based on Sicily and Sardinia had closed the central Mediterranean to Allied ships sailing to the Persian Gulf and the Indian Ocean via the Suez Canal. The British forces deployed in the Middle East had to be supplied, mostly from the United Kingdom and United States, by the much longer route around the Cape of Good Hope. Ships from the United States had to steam some fourteen thousand miles (passing around the Cape of Good Hope) before reaching the Suez Canal. Other supplies were carried by ships from India, Australia, and South Africa.[1]

In the late spring of 1942, the situation in the central Mediterranean was extremely unfavorable for the Allies. The British Eighth Army in North Africa was in retreat. The Allied airfields near Benghazi and Derna fell; single-engine fighters such as Spitfires in bases farther east could not reach Malta. The loss of air bases also greatly restricted the ability of British Desert Air Force bombers to attack the Axis lines of supply to North Africa.[2] All this gravely threatened the survival of Malta as a base for the Allied aircraft and submarines. The island came under constant and increasingly effective attacks by Axis aircraft based in Sicily and Sardinia, and in North Africa. By April 1942 Malta's reserves of wheat and flour, fodder, benzene, and kerosene fuel would last only until mid-to-late June. Stocks of white oil and aviation fuel were sufficient only through mid-August. About 920 tons of diesel fuel and two thousand tons of furnace oil for refueling warships were by then available. Stocks of antiaircraft ammunition were sufficient for only about six weeks of fighting.[3]

For these reasons, the Allies attempted a dual resupply convoy operation in mid-June 1942, one from the west (Operation HARPOON) and another from the east (Operation VIGOROUS). However, both resulted in significant losses for the Allies. In HARPOON, out of a convoy composed of six merchant ships totaling forty-three thousand tons' burden, only two, carrying some eighteen thousand tons of supplies, reached Malta.[4] In VIGOROUS, out of eleven ships carrying 81,500 tons only two ships, with fifteen thousand tons of supplies, reached the island. The Germans and Italians had sunk only two merchant ships in the VIGOROUS convoy, but seven had been directed to return to Alexandria or to Tobruk, Libya. In addition, damage had been suffered by three cruisers, a special service ship, a corvette, and two merchant ships.[5] Nevertheless, the governor of Malta, Gen. John S. S. P. Vereker, Viscount Gort, was able to report to London on June 20 that the unloading of the ships that had arrived was almost completed and that he was examining how best to husband supplies until late September.[6]

After the failure of the dual-convoy operation (HARPOON/VIGOROUS) in June 1942 and the destruction of the convoy PQ17 to northern Russia in early July, the mood among senior British civilian and military leaders was distinctly gloomy.

Nevertheless, they decided to run another major convoy to Malta, but only from the west. The intent was essentially to repeat the HARPOON operation but with much stronger air cover.[7]

For the Germans and Italians, Malta was a growing problem for their efforts to transport troops and matériel to North Africa. At a conference in Garmisch, Germany, on January 14–15, 1942, the German navy's Naval Warfare Directorate (Seekriegsleitung), and the Italian Admiral Staff fully agreed that in the Mediterranean their most urgent problem was getting supplies to North Africa. For that the prerequisite was neutralization and elimination of Malta as a base. Hence, there had to be a Luftwaffe offensive against Malta, and effective blockades of both Malta and the Sicilian Narrows.[8] The German and Italian navies also agreed to employ their submarines jointly; for that, a prerequisite was considerable improvement in air reconnaissance.[9] Another problem discussed at the conference was the difficulty being experienced in supplying Greece and the Aegean, including Crete. The Italian navy promised to do everything possible to speed up the supply to Greece, especially of coal.[10]

At a meeting with Hitler on March 12, 1942, Adm. Erich Raeder discussed the Mediterranean problem. Among other things, Hitler agreed that an offensive should be carried out against the Suez Canal in 1942 but only if it did not reduce the Luftwaffe's strength in the Mediterranean. Malta, he agreed, should be captured by Axis troops or at least, if that was not possible, continue to be attacked by the Luftwaffe; otherwise, the enemy would build up its forces there. That, in turn, would jeopardize Axis supply traffic to North Africa. Hitler was greatly concerned that the planned capture of Malta, set for July 1942, might be delayed because of the Italians. He promised to Raeder to raise the issue of Malta with Benito Mussolini, the Italian dictator, at their next meeting.[11]

In June 1942, the SKL assessed that the outcome of the next offensive by Field Marshal Erwin Rommel, commander of the Panzerarmee Afrika (Panzer Army Africa, formerly Panzer Group Africa), against Egypt would depend heavily on the naval situation in the Mediterranean. The British, the SKL posited, clearly recognized that they needed to avoid catastrophe in Egypt; that doing so meant cutting off the Axis supply routes to North Africa; and that doing that, in turn, would require the employment of all the submarines in the central Mediterranean and the use of Malta as a base. The SKL assumed that the British would employ all naval forces available in Gibraltar and Alexandria and would transfer more from the Indian Ocean. They would deploy the British troops in Syria to defend Egypt. In addition, they would bring in strong air forces from the Middle East, the Red Sea, India, and the eastern Mediterranean.[12] The SKL argued that the German reaction to the British actions should include stronger defense of convoys, stronger air cover for transports, and diverse routing. The most important objective was at least

the aerial "suppression" (isolation) of Malta, and ideally its capture. This objective could not be abandoned: Malta in British hands represented the greatest danger to Axis sea routes to North Africa.[13]

In North Africa in late June the Allies abandoned defensive positions in Al-Gazala, Libya, and nearby Tobruk fell on the 21st. Seven days later Axis forces were at Mersa Matrûh, Egypt, and in possession of airfields 160 miles from Alexandria. The British dispersed merchant vessels and warships from the Suez Canal zone to the ports of Haifa and Beirut. They also prepared to block Alexandria's harbor and port facilities. Vice Adm. (Acting Adm.) Henry H. Harwood, CINC of the British Mediterranean Fleet, moved his headquarters to Haifa on July 2.[14] The retreat on land and the withdrawal of the fleet greatly increased the lines of operation the Royal Air Force and the Royal Navy would have to cover to attack Axis convoys to Libya.

By early July 1942, the Panzer Army Africa was forced to stop its offensive at the first battle of El Alamein.[15] However, the engagement was inconclusive, and the Germans intended to renew the advance in the fall of 1942, in preparation for which they intensified their resupply to North Africa by sea. The Allies too were preparing to go on the offensive, in the fall. Among their most important tasks was restoring Malta's ability to support attacks on Axis convoys to Libya. Success was contingent on having sufficient reserves of fuel, food, and other supplies on Malta; otherwise, Allied submarines and bombers that returned to Malta in mid-July 1942 would have to leave again. In addition, starvation threatened the civilian populace.[16] Nevertheless, and despite the mounting losses incurred in resupplying Malta, British resolve remained unbroken.[17]

**Operating Area**

The Mediterranean Sea, with its 970,000 square miles, is the largest of the globe's narrow seas. Geographically, the Mediterranean is divided into western and eastern basins: the western basin consists of the Alborán, Balearic (or Iberian), and Ligurian Seas, while the eastern basin contains the Tyrrhenian, Adriatic, Ionian, Aegean, and Levantine Seas. The link between the two basins is the Sicilian Narrows.[18] The western Mediterranean and the Sicilian Narrows were the principal operating areas for the forces opposing each other during PEDESTAL.

The Mediterranean extends more than 2,400 miles from west to east. The distance from Gibraltar to Beirut, Lebanon (then still part of the French Mandate of Syria and Lebanon), is about 2,015 nautical miles; Gibraltar to Malta is 935 nautical miles; Naples and Taranto in Italy are 983 and 1,250 nautical miles, respectively, from Gibraltar. The distance from Malta to Alexandria is 823 nautical miles. From the Strait of Gibraltar to Marseille (France) the distance is about 710 nautical miles. The maximum width of the Mediterranean is about a thousand miles, but only some 410 separate Marseille and Tunis.

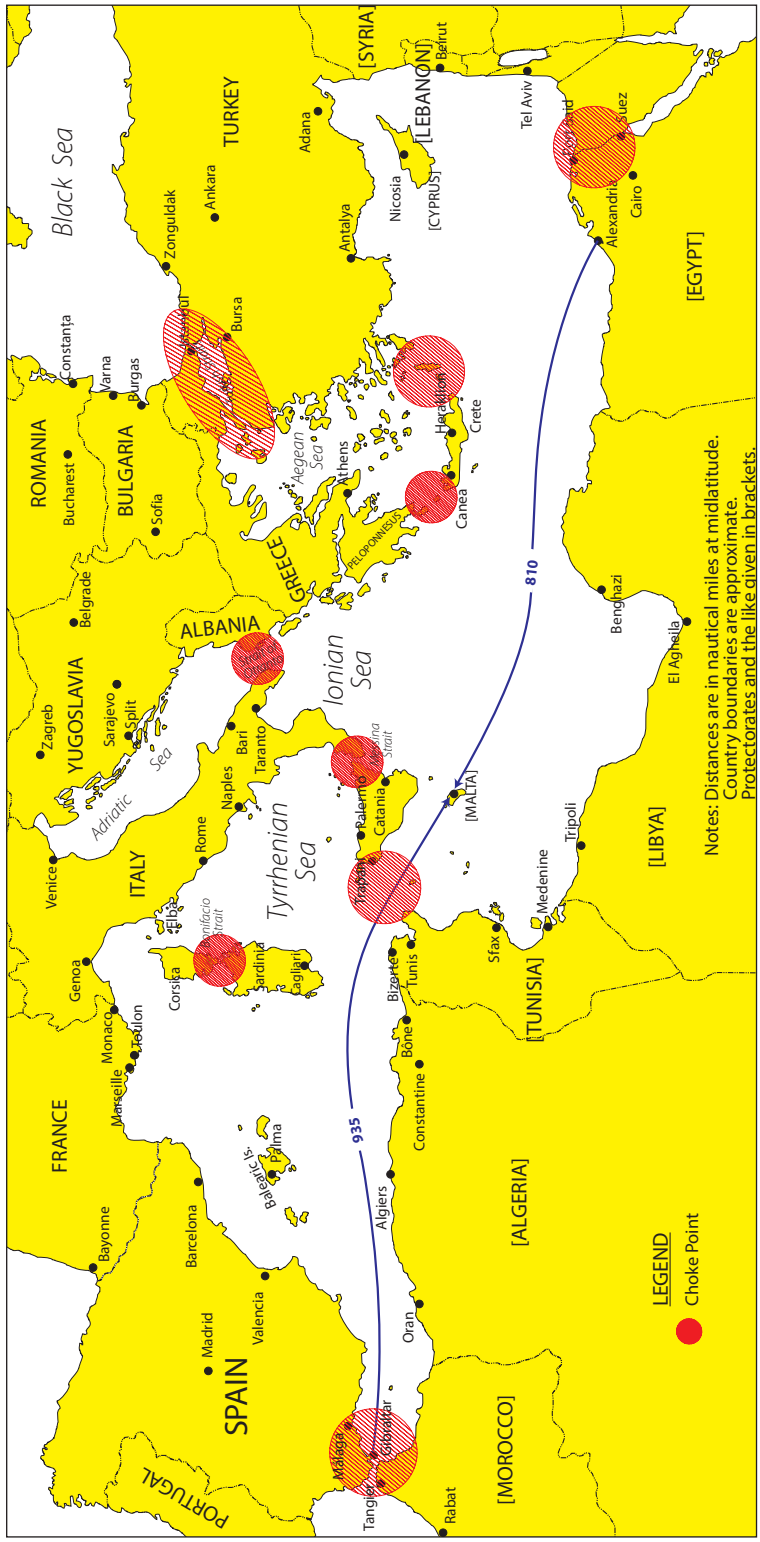
The average depth of water in the Mediterranean is 820 fathoms. The eastern Mediterranean is generally deeper than the western part; the greatest depth, 2,815 fathoms, is found off Cape Matapan in the Ionian Sea. The greatest depth of water in the western basin is 1,914 fathoms, although the waters off the Algerian coast are generally very deep, reaching 1,367 fathoms.

The Mediterranean contains some 3,300 islands, most of them in the eastern basin. In the west, the largest islands are Sicily (10,000 square miles), Sardinia (9,300), Corsica (3,350), and the Balearics (1,927 combined). Other, smaller islands and groups are Malta (115 square miles), the Tuscan Archipelago (114), the Aeolian Islands (34), and the Aegadian Islands (14.5).

The Strait of Gibraltar, Bonifacio Strait, Messina Strait, and Sicilian Narrows are the most important choke points in the western basin (see map 7). The thirty-three-mile-long Strait of Gibraltar runs generally east and west. Navigation presents no difficulties. The strait is deep—more than six hundred fathoms at some places. Its width varies from ten to twenty-four miles, and the narrowest navigable width (i.e., between the ten-fathom curves) is about seven miles. There are no islands or drying banks (islets exposed at low tide) in the strait other than a few detached dry rocks very close inshore. Ships usually sail close to either the Spanish or North African shore to take maximum advantage of currents and tidal streams.[19]

The Bonifacio Strait between Corsica and Sardinia varies in width in its western part from nine to twenty-two miles; its narrowest point is three and a half miles wide. The strait is navigationally difficult because of shoals and frequent bad weather. It is obstructed by numerous islands and rocks. Maddalena is the largest among the ten islands of the Bucinarian group guarding the eastern approaches to the strait. Depths in the western approaches to the Bonifacio Strait vary between twenty-seven and eighty fathoms. In the strait proper, the water in the fairway is from twenty-seven to forty fathoms. Depths in the strait's eastern approaches vary from forty to fifty fathoms.[20] The thirty-mile-long Strait of Messina, between the eastern tip of Sicily and the western tip of Calabria, is between seven and a half and twenty miles wide and between 150 and 300 fathoms deep.[21] The seventy-six-mile-wide Sicilian Narrows, connecting the western and eastern Mediterranean, is about 137 fathoms deep at the maximum. East of the Sicilian Narrows is the forty-six-mile-wide Malta Channel, between southern Sicily and Malta; to the west of the Narrows is the 150-mile-wide Sardinian Channel, between Sardinia and Tunisia.

The thirty-two-square-mile volcanic island of Pantelleria (ancient Cossyra) is fifty-six miles southwest of Cape Granitola, Sicily, and forty-six miles east-southeast of Cape Bon (six miles northwest of Bizerte; today Watan-el-Kibli, Tunisia). Its terrain is high and broken, rising to some 2,730 feet in the center. The hundred-fathom curve generally lies between three-quarters of a mile and a mile offshore. The




*Map 7*
*Operating area*

eight-square-mile island of Lampedusa, the largest of the Pelagie Islands, is around seventy miles east-southeast of Cape Bon, 127 miles south of Sicily, and 110 west of Malta. Some thirty-five miles north-northwest of Cape Bon is Skerki Bank, or Skerki Channel (Ras al Tib). Composed of rock, coral, and shells, it extends thirty-six miles in a northeasterly and southwesterly direction. It is significant because its waters are less than a hundred fathoms deep, shallowest over the half-mile-long, seven-hundred-yard-wide Keith Reef.

Tides in the Mediterranean are relatively small—for example, three feet on average in the Strait of Gibraltar. They are almost nonexistent off Algeria's coast between Ténès and Jijel and, elsewhere off the Algerian and Tunisian coasts, slightly less than one foot. The exception is the Gulf of Gabès, where tides reach six and a half feet.[22]

The surface current patterns in the Mediterranean are very different from those in the Atlantic Ocean. The main reason is the existence of two major basins and several lesser ones. Evaporation exceeds precipitation. Surface heat loss is significant, especially in the eastern part of the Mediterranean. Surface currents are generally from west to east. Water from the Atlantic entering through the Strait of Gibraltar moves first northeastward, then generates a clockwise gyre in the eastern Alborán Sea, its average speed dropping from 1.75 knots to about 0.75 knots in the vicinity of Alborán.[23] Afterward, the water mass flows eastward along Algeria's coast, becoming the Algerian Current, to Cape Bizerte at a speed of 0.75 knots. East of Cape Bizerte the current veers away from the coast toward the east and flows into the Sicilian Narrows. Between Cape Bon and the Gulf of Tunis the speed of the current is between 0.5 and 1.0 knots; however, currents over Skerki Bank and Keith Reef can, in westerly winds, reach four knots.[24] In the Sicilian Narrows the current divides into two main branches. One branch, two-thirds of the Algerian Current, flows through the Narrows and the Malta Channel, then east of Sicily and toward the Tyrrhenian Sea. Its speed is between half and three-quarters of a knot; strong west-northwest winds in the winter can increase the current's speed to two knots, whereas strong easterly winds in the fall and spring can temporarily reverse its direction.[25] Afterward this branch follows the Italian, French, and Spanish coasts westward until it returns to the Strait of Gibraltar. The other main branch flows west of Sicily into the Tyrrhenian, then along the western Italian coast to the Ligurian Sea. There it becomes the Ligurian Current and continues to flow off the Gulf of Lion (Golfe du Lion, on which Marseille lies) and Spain's Catalonian coastline.[26] Its speed increases after it encounters Spain's northeastern coast. Afterward, the Ligurian Current flows along the continental slope in the northern and southern part of the Catalonian Sea. A minor branch of the Ligurian Current is deflected to the northeast, toward the Balearic Islands. The rest flows along the Spanish coast and exits through the Strait of Gibraltar to the Atlantic.[27]

The water in the western Mediterranean ranges in color from green in the vicinity of the Strait of Gibraltar to greenish blue around the Balearics, to blue elsewhere. The average depth of water transparency is about sixty-three feet.[28] This factor made it relatively easy to detect enemy submarines at periscope depth.

The Mediterranean climate is characterized by hot, dry summers and temperate and wet winters. The south and southeast have an arid, even desert climate. Most rainfall occurs in late fall and winter, mainly in the form of heavy showers. Winds of Force 7 (twenty-eight to thirty-three miles per hour, or nearly "moderate-gale force" on the Beaufort scale) and higher are possible but rare in the summer months. In the Gulf of Lion, the frequency of gales increases steadily during October.[29]

Weather in the Mediterranean is greatly influenced by local winds. Along the eastern coast of Spain blows an easterly wind that brings storms from the northeast and east-northeast to between France and Algeria, commonly in the fall and spring. The northwesterly wind known as the "mistral" blows down the Rhône Valley into the Gulf of Lion, usually coinciding with low pressure in the Balkans. During the winter, these winds are reinforced by cold air moving down from the Alps and the Massif Central of France. Not surprisingly, then, the Gulf of Lion is notorious for bad weather and northwestern gales. In the winter it is given to cloud cover, heavy rainfall, and occasional snow, accompanied by violent squalls.[30] The warm southwesterly wind called the "sirocco" is most common in the spring, as subtropical high pressure moves northward across the Mediterranean.

In the western Mediterranean, the sea is roughest during a "levanter." These easterly winds are particularly strong off the eastern and southern coast of Spain and the northern coast of Morocco. Gibraltar is largely protected from them. Rough seas around the Balearics and Sardinia are often generated by winds up to gale force blowing from between the northwest and northeast—in some cases from the southwest, when it is called the "libeccio." Strong winds from the west and northwest produce rough seas off the North African coast from Oran to Cape Bon, as can those from the north and east off the eastern coast of Tunisia. In the vicinity of Malta, northwesterly and northeasterly winds called "gregales" generate rough seas for several days at a time between October and April.[31]

In the western Mediterranean, rains are frequent in the winter but very rare in summer. For example, in August 1932 average rainfall in Cagliari, Sardinia, was 0.2 inches; in Palermo, Sicily, 0.3 inches; Catania, Sicily, 0.6 inches; and Naples 0.8 inches. In Sicily, Sardinia, and adjacent waters July has the most sunny days, December the fewest.[32] Fog over the open sea occurs only rarely, except east of Gibraltar, where it forms more often, between July and September. Generally visibility is reduced during a sirocco wind. Sandstorms off the North African coast can reduce visibility to less than two miles; however, they are generally short-lived

and localized. South and east of Sicily and around Malta, visibility might be poor for several days during siroccos.[33]

**Effect of the Physical Environment**

The geographic characteristics of the western Mediterranean offered both advantages and disadvantages to the opposing forces. The Allies had de facto strategic dominance of the Mediterranean, because they controlled the Strait of Gibraltar and the Suez Canal. Another strategically important exit was the Bosporus and the Dardanelles (collectively the Turkish Straits), controlled by Turkey, a neutral. On the Atlantic side, the approach to the Strait of Gibraltar runs from Cape Saint Vincent (the southwestern corner of Portugal) to Rota (some eight miles northwest of Cádiz) to Tarifa (the southern tip of Iberia) and Ceuta (on the African side); the Alborán and Balearic Islands lie in the background.[34] Alborán Island and the Balearics lie just outside the eastern approaches, distant from the strait respectively about 130 miles to the east and 520 miles to the northeast. The Allied control of the Strait of Gibraltar was made much easier by the control of Alborán.

Within the western Mediterranean the islands of Corsica, Sardinia, and the Balearics occupied the most important positions, affecting the employment of naval and aerial forces. Sardinia occupied a flanking position with regard to the Allied sea route from the Strait of Gibraltar. Axis aircraft based there had to fly 150 to 200 miles to attack ships approaching the Sicilian Narrows from the west or sailing westward to Gibraltar.

In the central Mediterranean, the Apennine (or Italian) Peninsula occupies a commanding geostrategic position with regard to the surrounding lands and seas. One leg of the peninsula (the "toe," as often called) faces the Messina Strait, while the other (the "heel") borders the Strait of Otranto. Whoever controlled the southern part of the peninsula held the key to Sicily and guarded the exit to and from the Adriatic Sea. Any power that controlled Sicily, in turn, was in an excellent position to dominate the approaches to the central Mediterranean. In 1942 that power was the Axis: the Italian air force and the Luftwaffe had nine major airfields on Sicily and four on Sardinia, as well as numerous airstrips and landing grounds.[35]

The Italian cruisers, destroyers, and torpedo boats based on Sicily and Sardinia could effectively attack Allied traffic to and from Malta. The distance from Sicily to Cape Bon is only ninety miles, which a cruiser or destroyer at high speed could cover in about three hours. An Italian or Luftwaffe bomber needed only some thirty minutes. The Italian position was strengthened by control of the island of Pantelleria.[36] Pantelleria, strongly garrisoned, was a base for Italian fighters housed in underground hangars.[37]

As for Malta itself, its great military/naval importance largely lay in its commanding position in the approaches to both the western and eastern Mediterranean. Malta lies only about eighty nautical miles from Licata, Sicily, and 360 from

Benghazi, Libya. The distances from Malta to the Libyan coast and to Cape Bon are 190 and 175 nautical miles, respectively. The distances in nautical miles between Malta and the Italian naval bases at Cagliari (in Sardinia) and Naples and Taranto (on the Italian mainland) are 330, 322, and 337, respectively. Toulon, France, and Palma, in the Balearics, are 605 and 620 miles from Malta.

The Sicilian Narrows posed a particular hazard for Allied ships because of Italian mines and the short distances to Axis airfields on Sicily. The mines and the restricted sea room of the Narrows made it next to impossible to use battleships and carriers beyond Skerki Bank. Hence, for the last 250 miles of the voyage to Malta every convoy had to rely on protection from cruisers and destroyers.[38] The Sicilian Narrows were also well suited for the employment of Italian and German torpedo craft, cruisers, and destroyers. In the early days of the war the Allies swept the mines easily but with more difficulty and danger later, when the Italians laid new and more advanced German mines.

Operation PEDESTAL was conducted over very long distances. About 2,350 nautical miles separate Glasgow and the harbor at Valletta, Malta, via Bishop Rock (off the southwestern corner of the British Isles) and Gibraltar. From Gibraltar to Malta a convoy had to sail 1,145 nautical miles (or seventy-six hours, at fifteen knots) and within 150 miles of enemy airfields on Sardinia and Sicily.[39]

There were also navigational hazards. Prior to the war, steamers en route to Malta would steer directly to Cape Caxine (northwest of Ras Sidi-Ferruch, Algeria) and thence along the North African coast, passing to the south of the two Sorelles Rocks (submerged some eleven miles west of the La Galite Islands) and the La Galite group itself (twenty-four miles northwest of Cape Serrat, Tunisia), toward Cape Bon, then northward of Pantelleria and Gozo.[40] Ships had to stay well clear of Keith Reef (forty-six nautical miles north of Cape Bon).[41] Bound westward from Malta to Gibraltar, they would pass north of the La Galite and then toward Cape Gata (Almería, Spain) to avoid adverse currents, then steer for Gibraltar.[42]

Allied naval forces at Gibraltar that accompanied convoys sailed essentially along a single, long line of operations. In contrast, the German and Italian air bases on Sardinia and Sicily and in North Africa occupied flanking positions, and their aircraft operated on lines of operation that were multiple, exterior, and short. The lines of operation of Allied aircraft on Malta, in its central position, though similarly multiple and short, were divergent.

## OPERATIONAL COMMAND STRUCTURE

One of the worst problems of the Allies was their highly fragmented command organization in the Mediterranean. Even two years after the outbreak of hostilities there was no single theater commander responsible for planning and executing all operations, whether involving the army, the Royal Air Force (RAF), or the Royal Navy. In June 1939 the British established the Middle East Command, with

headquarters in Cairo, responsible for all operations there and in the Western Desert, later in Greece, British Somaliland, Aden, the Persian Gulf, and Libya as well. However, the three services were individually responsible for defense of the eastern Mediterranean and the Middle East.

For the army, the CINC of the Middle East (Gen. Sir Claude Auchinleck until August 15, 1942, then Gen. Harold Alexander) controlled only ground forces. Directly subordinate to him were the British troops in Egypt, Sudan, Persia, and Iraq, comprising the British Eighth Army (formerly Western Desert Force), the Ninth Army (formerly forces in Palestine and Transjordan), and the Tenth Army (formerly Persia and Iraq forces), and also the troops on Malta.[43] The RAF commander in the theater was Air Officer, CINC Middle East Command (Air Marshal Arthur W. Tedder); in August 1942, the RAF units were deployed in the Western Desert, Malta, Palestine and Transjordan, Iraq, Aden, East Africa, and Sudan.[44]

The naval counterpart was CINC, Mediterranean Fleet, Adm. Sir Andrew B. Cunningham. The principal British naval commanders reporting to him in the summer of 1942 were Vice Admiral (VA) 1st Battle Squadron and Second in Command Mediterranean Fleet (H. D. Pridham-Wippell); Flag Officer Force H (Vice Adm. Edward N. Syfret); Flag Officer Commanding Red Sea and Canal Area (Vice Adm. R. H. C. Halifax); Rear Admiral (RA) Mediterranean Aircraft Carriers (A. L. St. G. Lyster); RA 15th Cruiser Squadron (Philip L. Vian); RA 7th Cruiser Squadron (H. B. Rawlings); RA Destroyers (I. G. Glennie); VA in Charge Malta (Ralph Leatham); RA Alexandria (G. A. Creswell); and RA Training Establishment (R. J. R. Scott).[45]

The Axis command structure in the Mediterranean was centralized at the national-strategic level but disjointed at the operational level. Mussolini concentrated all authority over Italian armed forces in his own hands. He was simultaneously minister of war, minister of the navy, and minister of the air force from late 1933 until his regime ended in July 1943. He appointed undersecretaries who served as chiefs of staff of the respective services. The chief of the Supreme General Staff (Capo di Stato Maggiore Generale) was essentially a technical adviser, with no command authority.

The German command structure in Italy was highly fragmented, hampering full cooperation in the conduct of operations—a problem considerably worsened by service rivalries. Hitler, in his Instruction No. 38 of December 2, 1941, appointed Luftwaffe field marshal Albert Kesselring as CINC South (Oberbefehlshaber Süd). On one hand, Kesselring became responsible for the overall conduct of war in the Mediterranean and North Africa, directed specifically to "obtain control of the air and the sea in the area between southern Italy and North Africa, ensuring the safety of communication to Libya and Cyrenaica, cooperation with the German and allied [Italian] troops employed in North Africa, stopping enemy traffic in the Mediterranean and also English supply of Tobruk and Malta in cooperation with

available German and Italian naval forces." Kesselring was nominally (not in reality) subordinate to Il Duce (Mussolini) and was to conform in general to guidance and tasks from the Italian High Command (Comando Supremo). On overarching questions affecting warfare in the Mediterranean and North Africa, Kesselring was at the same time subordinate to the Supreme Command of the Wehrmacht (Oberkommando der Wehrmacht, OKW).[46]

But on the other hand, Kesselring did not control all the German ground, air, and naval forces in his theater. He had full control only of all the Luftwaffe units in the Mediterranean and North Africa. Directly subordinate to him were the commanders of the 2nd Air Fleet (Luftflotte 2): II Air Corps (Fliegerkorps-Gen. Bruno Lörzer), X Air Corps (Gen. Hans Geisler), and Air Leader Africa (Fliegerführer Afrika, Gen. Otto Hoffmann von Waldau). However, Kesselring did not have authority over the naval forces in the central Mediterranean; these remained subordinate to Admiral Raeder. Yet Kesselring was authorized to issue instructions to Naval Group Command South (Marinegruppenkommando Süd), in Sofia, Bulgaria. This command, established in July 1941, replaced Admiral Southeast (Admiral Südost), which had been set up in April.[47] Also, Kesselring did not control the German-Italian campaign in North Africa, which was the responsibility of OKW.

As for coordination with the Italians, Kesselring could send instructions to the German liaison at the Italian naval high command, Rear Adm. Eberhard Weichold. Kesselring's requests for joint employment of German and Italian naval forces had to be routed through Admiral Weichold. On December 1, 1941, the German Naval Command Italy (Deutsches Marinekommando Italien) was formally established, under Weichold. Administratively, this new command was subordinate to Naval Station North Sea.[48] Directly subordinate to the German Naval Command Italy was the chief of German Sea Transport Italy (Deutscher Seetransportchef Italien), Rear Adm. Günther Horstmann, in Rome.[49] In November 1941, all the U-boats in the Mediterranean became subordinate to a newly created command, Leader of the U-boats Italy (Führer der Unterseeboote [F.d.U.]–Italien), in La Spezia. Its chief was, in turn, directly subordinate to Adm. Karl Dönitz. F.d.U.-Italien comprised the 29th U-boat Flotilla, with six boats.

To make all this complexity even worse, there was little unity of effort between Germany and Italy in the Mediterranean theater. Neither the Germans nor the Italians fully trusted their nominal partners. Kesselring had the authority only to coordinate, but not to prepare plans for, the joint undertakings. He had some influence on the employment of Italian air squadrons for the defense of convoys to North Africa, but the Italian navy resisted all such German attempts. Italian ships from different squadrons never trained together. Supermarina constantly interfered with its tactical commanders.[50]

**What the Allied Commanders Knew**

The Allies had fair knowledge of Italian and German naval and air dispositions in the central Mediterranean. Their most important sources of intelligence were intercepted and decoded German ENIGMA messages. The Allies had solid knowledge not only of air dispositions but also of Luftwaffe operation orders, air-reconnaissance reports, and U-boat observations, even appreciations of the situation by Kesselring and his subordinate commanders. Such intelligence obtained was distributed to major Allied commanders in the form of "special intelligence summaries" prepared by the OIC in London.

On the basis of analysis of ENIGMA messages, the Allies assessed that on July 22, 1942, the Italians had deployed at Taranto four battleships (one *Littorio*-class, three *Cavour*-class); three light cruisers *(Abruzzi, Garibaldi,* and *Aosta)* at Navarino (Pylos today), Greece; two heavy cruisers at Messina, Sicily; five destroyers, two torpedo boats, two submarines, and eighteen motor torpedo boats at various other bases in Sicily; four torpedo boats at Pantelleria; and two light cruisers, six submarines, and three destroyers at Cagliari, Sardinia.[51]

Allied intelligence estimated that at Naples there were one Italian light cruiser (in dock, out of service), three destroyers, and eight submarines. It noted that the number of destroyers at Taranto varied between ten and twenty, according to the requirements of convoys from Italy to Greece, Crete, and North Africa.[52] Allied intelligence assessed that if Axis high commanders suspected the Allies of mounting convoys to Malta, the Italians most likely would establish a patrol line of three or four submarines between Sardinia and the French North African coast and that four other submarines probably would patrol the Cartagena–Ibiza–Algiers triangle. To Allied intelligence analysts the German U-boats did not appear "to have maintained patrols in the western Mediterranean." Yet their view was mistaken, as was their presumption that boats encountered in that area "so far were apparently on transit." More reliably, Allied intelligence also provided detailed analyses of French naval deployment and shipping routes across the western Mediterranean.[53]

With regard to enemy air strength, the Allies estimated that on July 23 the Luftwaffe had in service 315 aircraft, including one hundred long-range bombers and torpedo bombers on Sicily and fifty on Sardinia. In their view, the increase in the number of long-range bombers was owing to the removal of two air groups (each of sixty-five to seventy aircraft) from Crete, supposedly because of not any operational need but rather a lack of fuel on Crete.[54] The Allies believed the Luftwaffe had on Sardinia twenty Ju-88 multirole bombers, and the Italian air force had fifteen long-range bombers, thirty single-engine fighter aircraft, thirty-five torpedo bombers, twenty reconnaissance aircraft, and thirty coastal seaplanes. On Sicily the Luftwaffe had 120 long-range bombers, twelve reconnaissance bombers, and thirty-six and twenty-seven single- and twin-engine fighters, respectively. The Italian air force

had there about eighty long-range bombers, 120 single-engine fighters, twenty torpedo bombers, fifteen dive-bombers, ten reconnaissance aircraft, and fifty coastal seaplanes.[55]

On August 5, 1942, the Allies learned from ENIGMA intercepts that the Germans interpreted the reduction in RAF activity over Malta and Egypt as an indication of a planned large-scale operation to resupply Malta. The Germans also believed, intercepts revealed, that the Allies would launch diversionary attacks on the Panzer Army Africa and a combined operation against Mersa Matrûh. The Allies also knew that the Germans planned to counter these possible moves by redeploying Luftwaffe aircraft from Greece to Sicily and increasing the combat readiness of air units in both areas. They also planned to discuss with the commander of the Italian air forces on Sicily joint bombing, torpedo attacks, and training exercises.[56]

Allied intelligence revised its estimates of enemy air dispositions on August 9, 1942. It now erroneously concluded that no German aircraft were based on Sardinia. Actually, the Germans then had 144 long-range bombers, twenty-seven reconnaissance bombers, and sixty-six single-engine fighters on the island.[57] The Italian air force had deployed on both Sicily and Sardinia a total of some seventy long-range bombers, thirty-five to forty torpedo bombers, fifteen to twenty dive-bombers, forty reconnaissance aircraft, fifty coastal seaplanes, fifteen to twenty fighter-bombers, and ninety-five single-engine fighters. Roughly 55 percent of these aircraft were operational.[58]

**What the Axis Commanders Knew**

In contrast to the Allies, the Italians and Germans lacked information about Allied plans and intentions prior to August 10. However, they had a reasonably accurate knowledge of the enemy order of battle and movements once enemy vessels entered the Mediterranean. Their main sources were Abwehr agents in the Gibraltar area and in Ceuta and reconnaissance aircraft and submarines. The German and Italian aircraft regularly reconnoitered the Strait of Gibraltar, its eastern approaches, Malta, Alexandria, the Suez Canal area (especially Port Said and Suez), and Haifa. For example, at about 1800 on August 2, German aircraft reported the presence in Gibraltar of one enemy carrier, three cruisers (two in dry docks, one at pier and under repair), twelve destroyers (two under repair), eight submarines (one under repair), two auxiliary cruisers, twenty-six freighters (one under repair, four damaged), and eight tankers.[59]

At 2100 on August 4, the Germans sighted one armed tanker and four destroyers arriving at Gibraltar from the east and, at 0300, the carrier *Eagle,* one cruiser *(Charybdis),* and four destroyers steaming westward from there.[60] On August 5, German naval intelligence reported two destroyers, four submarines, five other warships, and two steamers in Malta. Several small warships, three tankers, and ten steamers were sighted in Alexandria. At Port Said observers located one mock-up battleship, one

cruiser, four destroyers, four submarines, one tanker, four ferries, and twenty-two freighters. At Suez were four destroyers, a torpedo boat, a depot ship, a submarine, eight tankers, and thirty-three freighters, plus three other craft.[61] At 1800 on August 5 the Germans sighted in Gibraltar two cruisers (one under repair), eight destroyers (two under repair), five submarines (one under repair), two auxiliary cruisers, twenty-eight freighters (one docked, four damaged), and eight tankers.[62]

According to Italian agents' reports, two freighters at Gibraltar were preparing to leave. At midnight on August 5/6, the cruiser *Liverpool* with three destroyers sailed out from Gibraltar, direction unknown. At about 1100 one tanker, two destroyers, and one submarine proceeded eastward from Gibraltar.[63] At about 1200 the next day, Luftwaffe aircraft sighted two destroyers, two escort boats, two patrol boats, and two merchant ships at latitude 32° 29′ north, longitude 34° 45′ east, twenty-six nautical miles southwest of Haifa.[64] Around noon, German aircraft sighted two enemy cruisers *(Dido* and *Aurora),* two destroyers, three escort boats, four tankers, and seven freighters. In Beirut was one C-class light cruiser.[65]

On the morning of August 8, the same German report indicated (erroneously) that one *Argus*-class carrier and four destroyers had entered Gibraltar. The Abwehr reported intensive shipping traffic in the Strait of Gibraltar on the night of August 8/9.[66] Finally, the B-Dienst reported that on August 9 there had been observed in Gibraltar *Cairo* (light cruiser), *Maidstone* (depot ship), fourteen destroyers, two submarines, twenty-three small craft, twenty freighters, six tankers, and one gunboat (in a dock). The Germans also noticed intensified activity by enemy submarines in the eastern Mediterranean.[67]

## OPERATIONAL PLANNING

In the aftermath of the failed dual-convoy operation in June, the need to mount another resupply of besieged Malta was obvious. The First Sea Lord, Adm. Sir Dudley Pound, agreed with Prime Minister Churchill that the loss of Malta would be a disaster of the first magnitude to the British Empire, probably fatal in the long run to the defense of the Nile valley.[68] The Allies were willing to accept high risk to resupply Malta, but their decision became easier when, after the Convoy PQ17 disaster, it was decided to suspend Arctic convoys to the Soviet Union. At the same time, the easing of the situation in the Indian Ocean freed forces that could be applied to a convoy operation to relieve Malta.[69]

### Allied Preliminary Plans

The dual-convoy experience had demonstrated the inability of Allied naval and air forces to defend the Malta convoys against Axis air forces in the central Mediterranean. Hence, the next major convoy operation to Malta would be mounted from the west only.[70]

The overall commander of the new convoy operation, code-named PEDESTAL, was to be Vice Adm. Edward N. Syfret. He was on his way back from capturing the

Vichy base at Diégo-Suarez (Antsiranana today), on Madagascar, when he received orders to disembark at Takoradi, Gold Coast, and fly directly to the United Kingdom. Planning for the new operation started on July 13, 1942, and was conducted at high intensity.[71]

The Allies considered four variant plans—known as A, B, C, and D—to resupply Malta from the west. Most of them required the availability of the U.S. aircraft carrier *Ranger* (CV 4, of 17,580 tons full load) for the operation. The Admiralty was in favor of plan A, if *Ranger* and its five destroyers were available at Scapa Flow. Under that plan, the battleships *Nelson* and *Rodney,* then with the Eastern Fleet in the Indian Ocean, also would take part. The Admiralty received information from Malta that the island could survive until September. Hence, there was no great urgency to run a convoy in July. This latitude would affect the degree to which the British government pressed the Americans to release *Ranger* as envisaged under plan A.[72]

Plan B would require *Ranger* to move to Scapa Flow, to transfer twenty-four folding-wing Martlet fighters (U.S. F4F Wildcats) with their crews to the carrier HMS *Victorious. Ranger* would operate with the Home Fleet to relieve *Victorious* during its absence. *Ranger* would need to retain at least twelve Martlets. However, the Admiralty believed that execution in July 1942 would not allow adequate time for *Victorious* and the transferred U.S. fighter squadrons to become familiar with each other. Therefore, should the Americans reject plan A, the Admiralty favored a delay to the August new moon period. Modified plan B would not interfere with the schedule of PQ convoys bound for Russia but could be pursued only if *Ranger* would be available for service with the Home Fleet until the end of August.

Plan C—simply to employ *Victorious* alone and with its usual air wing—was considered unacceptable at the outset, because the obsolete Fulmar fighters that *Victorious* carried were inadequate to protect both the convoy and the battleships south of Sardinia, where the threat was expected to be greatest. This assessment was based on the heavy losses to enemy land-based aircraft during Operation HARPOON.[73]

Plan D contemplated execution in August using British forces exclusively. This plan would not require American help and would make more time available for training and for building up a heavy-bomber force in the Middle East to support the operation. Another advantage was that in August there would be one more hour of darkness than in July. However, a major disadvantage of plan D was that it would delay relief to Malta by a month and tie up the merchant ships destined for the convoy for that month. It also would postpone the assembly and training of the Eastern Fleet by two and a half months, because that fleet's sole carrier, *Indomitable,* and its two battleships *Nelson* and *Rodney* would be in the Mediterranean.[74]

The Admiralty favored plan A, if *Ranger* could reach Scapa Flow by July 30; otherwise the modified plan B would be executed in August. Failing either of those two plans and setting aside C, the Admiralty would have no alternative but to adopt

plan D.[75] However, adopting plan D would make it unnecessary to send *Ranger*. Because the Royal Navy was severely short of cruisers and destroyers, Deputy Prime Minister Clement Attlee and the chairman of the Chiefs of Staff Committee, Gen. Alan Brooke, suggested that the government request the service with the Home Fleet of the U.S. heavy cruisers *Tuscaloosa* and *Wichita* and four destroyers be extended until the end of August 1942.[76]

**The Allied Final Plan for the Main Operation**

All planning for the convoy (now officially Operation PEDESTAL) was in the hands of the Admiralty in London. Among other things, this centralization considerably reduced the need for transmitting proposals and decisions. In addition, the Admiralty's planners were already knowledgeable regarding general policy and were able on short notice to get help and advice from the Naval Staff.[77]

The final plan for Operation PEDESTAL was similar to that for HARPOON in June.[78] The planners assumed that surprise would be difficult to achieve, because the Axis had excellent intelligence in the Gibraltar area.[79] In its broad outlines, the plan visualized assembling sufficient forces to counter the diverse threats posed by Axis air and naval forces based in Sardinia, Sicily, southern Italy, and Tripolitania.[80] The planners posited that Operation VIGOROUS had failed because Allied airpower had been unable to force enemy battleships to withdraw. Also, there had been an acute shortage of AA ammunition and fuel. This was part of the reason why the convoy had to sail after dark on June 15. Because it was impossible to increase the number of land-based aircraft, the only way to bolster the defenses of the next Malta convoy was to assign much stronger surface forces.[81] Enough fighter aircraft would be required to match the enemy fighters and also deal with the heavy and torpedo bombers that would threaten the convoy.[82]

The lessons drawn from the experience of convoys to northern Russia and Malta emphasized the need for tankers. While the British merchant marine did not have fast (sixteen-knot) tankers, the U.S. Maritime Administration operated two, *Kentucky* and *Ohio.* After some difficult negotiations, the British government was able to lease these tankers. However, *Kentucky* was sunk on June 15, 1942, during VIGOROUS. *Ohio* alone, of 14,150 deadweight tons (DWT) and carrying 11,500 tons of black and white oil, was assigned to the convoy.[83]

In planning PEDESTAL, the Allies correctly assumed that the enemy would concentrate his heavy surface forces south of Sardinia, where they would either attack the convoy or draw off its escorts to open the way for attack by light forces. They also expected synchronized attacks by high-level bombers, torpedo bombers, and dive-bombers on the third and fourth days of the operation and, on the second and fifth days, high-level bombing and torpedo bomber attacks.[84] To minimize losses to aircraft the convoy would transit the Sicilian Narrows at night.[85]

**Allied Order of Battle**

Operation Pedestal (August 10–15)

*Main Forces*

*Force F*
(Vice Adm. Edward N. Syfret [*Rodney*])

*Force Z (Rear Adm. A. L. St. G. Lyster)*
2 battleships *(Nelson* [flag], *Rodney)*
3 aircraft carriers
*Victorious* (6 Sea Hurricanes, 16 Fulmars, 12 Albacores)
*Eagle** (16 Sea Hurricanes)
*Indomitable*** (10 Martlets, 24 Sea Hurricanes, 16 Albacores)
(Total: 72 fighters, 28 torpedo bombers)
3 light cruisers *(Charybdis, Phoebe, Sirius)*
15 destroyers (19th Destroyer Flotilla: *Laforey, Lightning, Lookout, Quentin, Eskimo, Tartar, Wilton, Westcott, Wrestler, Somali, Wishart, Zetland, Ithuriel, Antelope, Vansittart*)

*Force P (Convoy WS.5.21.S, Cdre. A. G. Venables)*
13 freighters
*Empire Hope**
*Dorset**
*Wairangi**
*Rochester Castle***
*Waimarama**
*Brisbane Star***
*Port Chalmers*
*Almeria Lykes* (U.S.)*
*Santa Elisa* (U.S.)*
*Clan Ferguson**
*Glenorchy**
*Melbourne Star*
*Deucalion**
1 oiler *(Ohio)* (U.S.)**
5 destroyers (accompanied convoy from Clyde to Gibraltar: *Keppel, Malcolm, Amazon, Venomous, Wolverine*)

*Force X (Rear Adm. Harold M. Burrough)*
4 light cruisers (10th Cruiser Flotilla: *Nigeria*** [flag], *Kenya,** Manchester,* Cairo**)
11 destroyers (6th Destroyer Flotilla: *Ashanti, Intrepid, Icarus, Foresight,* Fury, Derwent, Bramham, Bicester, Ledbury, Pathfinder, Penn*)
1 ocean tug *(Jaunty)*

*Reserve Escort Group*
8 destroyers *(Keppel, Westcott, Venomous, Malcolm, Wolverine, Amazon, Wrestler, Vidette)*

*Force R*
2 fleet oil tankers *(Brown Ranger, Dingledale)*
4 corvettes *(Jonquil, Spiraea, Geranium, Coltsfoot)*
1 tug *(Salvonia)*

*Supporting Forces*
*Submarine Group: 10th Submarine Flotilla*
2 submarines off Milazzo and Palermo *(P.42, P.211)*
6 submarines between Malta and Tunisia *(P.31, P.34, P.44, P.46, P.222, Utmost)*

*Malta Escort Force*
4 minesweepers (17th Minesweeping Flotilla: *Speedy, Hythe, Hebe, Rye*)
7 motor launches *(121, 126, 134, 135, 168, 459, 462)*

*Land-Based Aircraft on Malta*
(Air Vice Marshal Keith Park)

9 fighter squadrons
- Fighters: Supermarine Spitfire Mk V B
- Night fighters: Bristol Beaufighter Mk IV F
- Fighters / dive fighters: Hawker Hurricane Mk I
- Heavy fighters: Bristol Beaufighter Mk I F

3 torpedo-bomber squadrons
- Torpedo bombers: Bristol Beaufighter Mk VI C
- Torpedo bombers / recce: Bristol Beaufort I

4 bomber squadrons
- Heavy bombers: Consolidated Liberator B-24
- Attack/antiship: Bristol Beaufighter Mk I C

2 air recce squadrons
- Attack/recce: Short Sunderland Mk II
- Recce bombers: Vickers Wellington Mk III; Martin A-30/Baltimore (U.S.)

Secondary Operations

*Operation Bellows*
1 aircraft carrier (*Furious:* 38 Spitfires, ferried to Malta)
2 destroyers, August 6–11 *(Laforey, Lookout)*
5 destroyers, after fly-off on August 11 *(Keppel, Venomous, Wolverine, Wrestler)*

*Operation Ascendant*

*Force Y*
2 freighters *(Troilus, Orari)*
2 destroyers *(Matchless, Badsworth)*

*Operation MG 3*

(Adm. Sir Henry Harwood, Port Said)
Convoy MW 12: 3 merchant vessels
Escort: 2 cruisers, 10 destroyers

*At Haifa*
(Rear Adm. Philip Vian)
1 merchant vessel
2 cruisers
3 destroyers

Key: * sunk, ** damaged

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**Sources:** Llewellyn-Jones, *Royal Navy and the Mediterranean Convoys,* pp. 129–31; *Between Hostile Shores,* pp. 237–40; Nassigh, *Operazione Mezzo Agosto,* pp. 206–207, 221–22; Fioravanzo, *Azioni navali in Mediterraneo,* pp. 410–11.

The planners also made major changes in the convoy screen, based on the lessons learned in June. The escorts had to be powerful enough to thwart an attack by Italian heavy surface forces.[86] The Admiralty considered it too risky to employ the two battleships in the Sicilian Narrows, so close to the enemy airfields in North Africa and Sicily.

All three available large British aircraft carriers *(Eagle, Indomitable,* and *Victorious)* were assigned to the protection of the convoy. Sea Hurricanes and Martlets gradually replaced Fulmars. The carriers would be positioned inside the destroyer screen and in the convoy's rear. The Italian heavy surface ships were based at Messina, Taranto, and Naples.[87] The carriers' aircraft would have the critical task of damaging them and thereby slowing them down, should they pose an active threat.[88]

The planners had considerable difficulty in assembling merchant ships, owing to the heavy losses being inflicted by U-boats in the northern Atlantic. On

the basis of a July 3 request by Malta's governor to the Admiralty, the planners at first envisaged a convoy composed of ten merchant ships with a total capacity of 75,000 DWT.[89] In mid-July, however, they decided on thirteen freighters and one tanker, totaling 123,000 DWT.[90] The freighters would carry mainly flour and ammunition. The planners allocated cargo so at least some of every commodity would get through even if the expected heavy losses occurred.[91] To enhance its survival chances, the convoy's speed of advance (average overall speed) had to be at least fifteen knots. On the basis of a lesson from HARPOON, an ocean tug would accompany the convoy.[92] The Admiralty also decided that—so as not to lose both escorts and convoy—merchant vessels damaged during the operation would be scuttled, whereas every effort would be made to preserve warships.[93]

The convoy was to leave the United Kingdom about August 2 and arrive at Malta on the 13th. In an attempt to confuse German intelligence, the convoy was designated WS ("Winston Special") 5.21.S, which would ordinarily indicate a convoy bound around the Cape of Good Hope to Suez.[94] Primarily, however, the success of PEDESTAL would depend on the Allied ability to assemble a powerful support force and to time the passage so as to outwit the Italians and Germans. Specifically, the convoy would need to cross the critical area in a moonless period, which meant between August 10 and 16. The planners selected August 10 as the day the convoy and its escorts would enter the Mediterranean at Gibraltar: first day of the operation, or D.1 (D+0 in American terms).

The objective of PEDESTAL, as stated in the plan, "was to pass a convoy of 14 motor vessels through the western Mediterranean to Malta and to cover the passage of two merchant ships and two destroyers from Malta to Gibraltar."[95] The principal objective was to deliver enough fuel, ammunition, and food to allow Malta to operate as a major naval and air base beyond September 1942—an objective that was operational in its scale. Major tactical objectives in PEDESTAL were defense and protection of the convoy, neutralization of the enemy airfields on Sardinia and Sicily, and diversion of enemy forces from the western to eastern Mediterranean. An essential element of operational planning is determination of the overall force's size and composition. The principal factors in this process are the type of operation, the combat potential of friendly and enemy forces, the number and scale of intermediate objectives and their sequencing, the distances between the base of operations and the prospective operating area, weather and climatological conditions, and, notably, intelligence and logistics. Yet the operational commander's judgment and experience are most important. For PEDESTAL the Allies assigned the largest available force of aircraft carriers, cruisers, and destroyers to Admiral Syfret.[96] He commanded Force F, composed of the convoy and the naval forces of direct screen and distant cover and support, collected from the Home and Eastern Fleets.

Not under Syfret's command but assigned to his defense and support were submarines in the eastern Mediterranean, subordinate to the CINC of the Mediterranean Fleet in Haifa, and land-based aircraft, controlled by the RAF's Middle East Command. Force Y at Malta consisted of two destroyers. The Malta Escort Force (the 17th Minesweeping Flotilla) comprised four minesweepers and seven motor launches. In addition, the Admiralty assigned eight destroyers as reserve escorts to screen Force R (the refueling group—two fleet oilers, corvettes, and a tug) and the carrier *Furious*.[97]

Initial lines of operation are critical in both the planning and the execution of a major naval operation. (In contrast, a geostrategic position is more important in a campaign.) This Allied convoy and its supporting forces moved along a very long exterior line of operation. Once in the Mediterranean, all the Allied forces taking part in the operation used a single line of operation, stretching from the Strait of Gibraltar to Malta—and accordingly, all faced increasing threat from the air as they entered the effective range of Axis bombers.

After determining the ultimate objective of the operation, the commander and his planners must determine corresponding enemy and friendly operational "centers of gravity," sources of the massed strength, physical or moral, or leverage whose serious degradation, dislocation, neutralization, or destruction would have the *most decisive impact* on one's own or the enemy's ability to accomplish a given military objective. The principal value of determining the proper enemy center of gravity is to enhance significantly the odds that one's forces will be used in the quickest and most effective way to accomplish a given military objective.

Once the enemy center of gravity is destroyed or effectively neutralized, the objective has been accomplished but the combat success must be consolidated. Of course, one's forces have a center of gravity of their own, which the commander must assign highly capable, but not overly strong, forces to protect; otherwise, the operation could be open to a devastating attack.

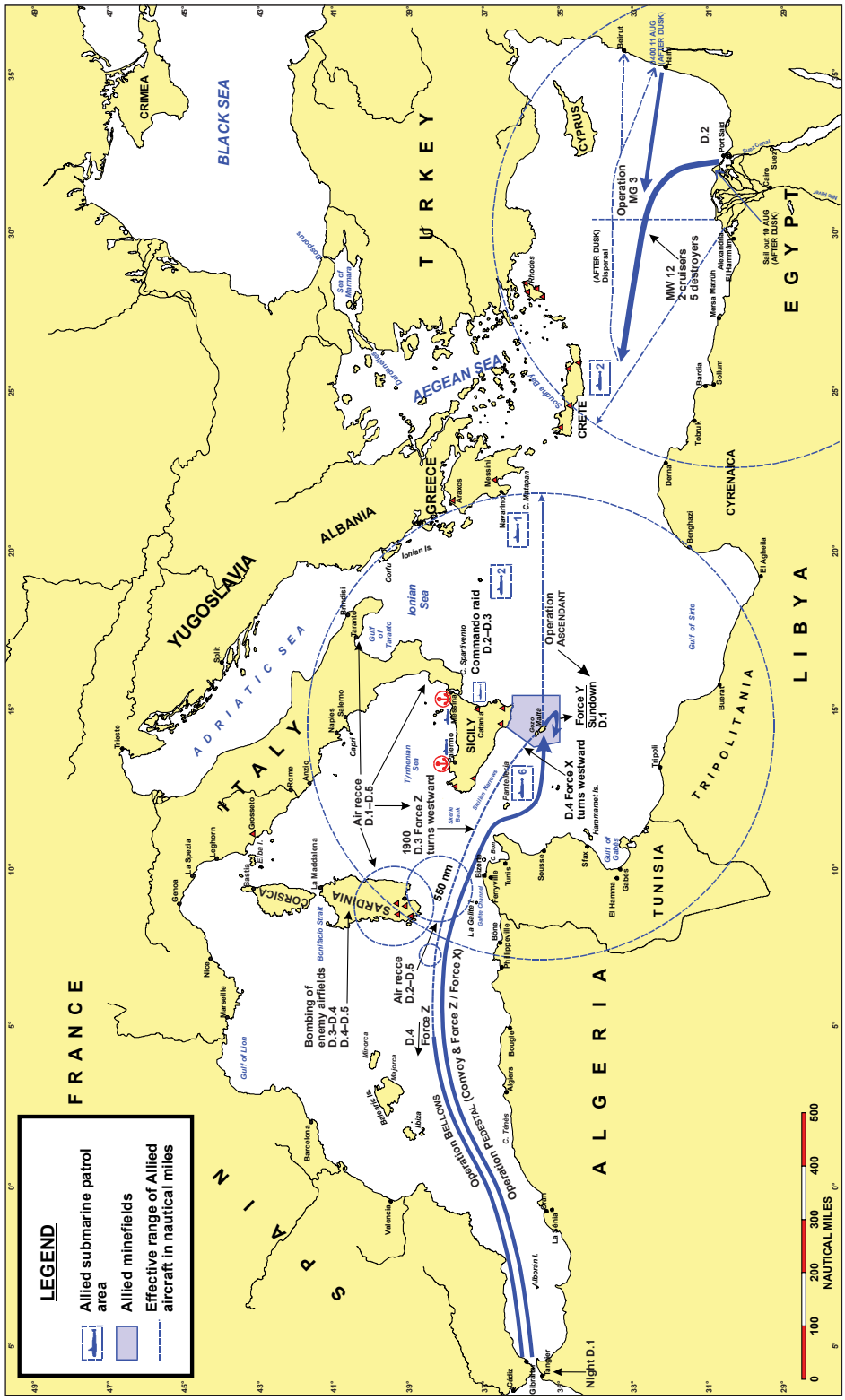
From the Allied perspective, the enemy's operational center of gravity in the second phase of the operation (from Gibraltar to the Sicilian Narrows) was clearly the German heavy bombers and dive-bombers based on Sicily and Sardinia. However, in the third phase, south of Sardinia, it would shift to the Italian heavy surface forces (if they sortied from their bases). For the Axis, the enemy operational center of gravity in the second phase was Force Z (three large aircraft carriers, with their fighter aircraft). Once through the Sicilian Narrows, Force X (the convoy's direct screen) became the Allied operational center of gravity. Finally, the operational center of gravity would shift to the Allied fighter aircraft on Malta, once the convoy was within their effective radius. The reasons there were three successive operational centers of gravity were the flanking position occupied by the enemy land-based aircraft, the restricted operating area, and the high threat posed by the enemy aircraft and submarines.

Forces assigned for the defense of the convoy would have to be withdrawn when they reached the area where the odds of their survival were too low.

The operational idea (or scheme) is the very heart of a design for a major naval operation. In essence, it is identical to what is today commonly called "concept of operations" (or CONOPS, sometimes "scheme of maneuver"). Ideally, it should be bold and provide for speedy execution. The simpler the operational idea, the higher the chances of its successful execution. The operational idea also should be flexible, so that it can accommodate changes to the situation during its execution. It should ensure decisive employment of one's forces by focusing their efforts on the destruction or neutralization of the enemy center of gravity. It should present the enemy with multidimensional threats that he has little or no chance of countering successfully.

Perhaps most important, the operational idea should be novel, avoiding stereotyped patterns: it should surprise and deceive the enemy. The operational idea for PEDESTAL, however, was traditional (see map 8). The unfavorable initial geographic position was a major reason that it was, while bold, not novel; lines of operation for each force element were so constrained as to allow little or no flexibility. The Italians and Germans were neither surprised nor deceived; the objective of the operation was all too transparent. The Allies were also unable to achieve surprise because of the large number of Axis agents in the Gibraltar area.[98] The speed of execution was limited to the fifteen-knot speed of the convoy.

The Allied operational idea envisaged both simultaneous and successive movements of several force elements in both the western and eastern Mediterranean. Force F would pass through the Strait of Gibraltar on the night of D.1. Its component Force Z (the battleships, carriers, and their escorts) would turn westward, but remain in the vicinity, on reaching the entrance to Skerki Bank (an area of relatively shallow water in the Sicilian Narrows) at about 1900 on D.3.[99] Force X (the direct screen) and convoy WS.5.21.S would proceed toward Malta. Force X would halt in the approaches to Malta during the afternoon of D.4, when the Malta Escort Force would take over escort duties.[100] Force Z would remain near the entrance to Skerki Bank until the night fighters from Malta took over protection of the convoy (Force P) and Force X. At that point, on D.4, Force Z would operate to the westward of Sardinia to distract attention from Force Y (a secondary operation, described below); once its support was no longer necessary, it would return to Gibraltar. Force X would return to Gibraltar as soon as Vice Admiral in Charge of Malta released it from protecting the convoy.[101] Minesweepers would clear the waterways, thereby avoiding the loss of merchant vessels to mines that the June convoy had suffered.[102]




*Map 8*
*Allied operational idea for Operation* PEDESTAL

The Allied initial operational center of gravity—the carrier forces—was well protected by the fighter aircraft and AA defenses of the carriers' screens. However, Force X—the second operational center of gravity—had to rely solely on its own AA defenses.

The Allied sector of main effort in PEDESTAL was the western Mediterranean, the eastern Mediterranean that of secondary effort—necessarily, because the convoy would steam from Gibraltar to Malta. Normally, the sectors of effort in a major naval operation dictate where the main forces and supporting forces are deployed. In the case of a defensive major naval/joint operation, as was PEDESTAL, the main forces and most of the supporting ones operate in the sector of main effort—in this case, the western Mediterranean.

A major naval operation cannot be successful unless it is adequately and reliably supported and sustained logistically. In general, sustainment is the extension of logistical support from the start of combat actions until the ultimate objective is accomplished. Operational sustainment is required to support combat forces throughout all phases of a major operation. Because of the long distances involved, the short-legged destroyers needed refueling during the convoy transit. Malta was not in a position to provide fuel. The lessons of the Arctic and Malta convoys showed the need to have tankers to accompany the convoy and escorts. Force R would perform this critically important task. The plan provided that Force R would enter the Mediterranean via the Strait of Gibraltar with the main force and then wait near the convoy route to refuel the destroyers as needed.[103]

The planners for PEDESTAL had great difficulty in preparing a plausible deception plan. The enemy could not be easily deceived, because the geography severely limited false objectives toward which attention might be diverted. The deception target, the Axis high commanders, would simply assume that any large convoy with heavy escort from either Gibraltar or Alexandria was bound to Malta: the ultimate objective of PEDESTAL was obvious. The Allied planners accordingly did not attempt a deception but only a feint, in the eastern Mediterranean (Operation MG 3), hoping to convince the Axis commanders not to commit all their forces in the west.

Specifically, a convoy (MW 12) composed of three merchant ships covered by a force of two cruisers and five destroyers would sail from Port Said, in Egypt, toward a position about one hundred miles south of Crete.[104] The group would get under way on D.2, as soon as possible after learning that the WS.5.21.S convoy had passed through the Strait of Gibraltar, or on D.3 if it did not receive that report.[105] The intent was to lure out the Italian 8th (Naval) Division at Navarino and keep the Luftwaffe's aircraft based on Crete on the ground. One Allied submarine would be off Navarino, while two other boats would be farther west to intercept any Italian ship from Taranto. To divert further the Italians' attention from the events in the western Mediterranean, an Allied submarine would land commandos off Catania to raid a nearby airfield.[106]

**Secondary Operations**

Under the cover of the convoy operation, the Admiralty planned two secondary operations: to reinforce Malta with fighter aircraft (Operation BELLOWS) and (Operation ASCENDANT) to bring back from Malta the ships that had survived June's dual-convoy operation. The former was undertaken when, during the planning of PEDESTAL, the British chief of the air staff, Marshal Sir Charles Portal, raised the issue of the number of fighter aircraft on Malta: by the end of July the island had only about eighty fighters still in service and was losing about seventeen per week.[107] Hence, the planners decided to reinforce Malta's air defenses by some forty Spitfires, ferried by an aircraft carrier prior to the arrival of WS.5.21.S.[108] These new aircraft would not only buttress Malta's defense but improve the chances of success of PEDESTAL itself. The carrier *Furious* was selected for BELLOWS, because the other available carrier, *Argus,* required (because of its relatively slow speed) wind of at least fifteen knots to launch aircraft, which it was unlikely to encounter in the western Mediterranean in August.[109] The Admiralty directed Admiral Syfret that Operation BELLOWS should interfere as little as possible with Operation PEDESTAL. *Furious* (carrying four Albacore torpedo bombers and forty Spitfires) would enter the Mediterranean with the convoy and without making a stop at Gibraltar proceed to a position south of Sardinia and about 550 miles west of Malta. The Spitfires would fly off on D.2 or D.3 at any time during daylight.[110] Force F would provide fighter protection until *Furious* was well west. Five destroyers would escort *Furious* back to Gibraltar and then the United Kingdom immediately after the fly-off.[111]

The second subsidiary operation was meant to get the merchant ships *Troilus* and *Orari* and a screen, collectively Force Y, out of Malta and to Gibraltar. The intent was to mount ASCENDANT after dark on D.1 (August 10).[112] Force Y would pass a point thirty nautical miles south of Lampedusa, pass Kélibia on Cape Bon, hug the Tunisian coast to Galite Channel, then proceed to Gibraltar.[113]

**Support from Other Forces**

The Allies planned to employ submarines and fighter aircraft based on Malta, patrol aircraft based in Gibraltar, and long-range bombers of the RAF Middle East Command in support of PEDESTAL. The initial plan, drafted on July 20, contemplated stationing eight submarines near Sicily to prevent Italian surface forces in the Tyrrhenian from attacking the convoy during the last leg of its transit. Of these, three submarines would take positions between Cape Gallo and Trapani (patrol areas A, B, and C), four submarines between Cavallo and Marettimo (patrol areas D, E, F, and G), and one between Vulcano and Cape Milazzo, on Sicily's northeastern coast (patrol area H). These patrols were to be established by D.1.[114]

By late July, however, the plan for employing Allied submarines had changed. Now, one submarine would deploy off Milazzo, one off Palermo, and six between

Malta and Pantelleria.[115] All would reach their assigned positions by dawn on D.4 (August 13).[116] They would have complete freedom of action in attacking enemy ships, making Italian battleships and cruisers their primary targets. After the convoy passed their patrol line, the submarines would screen it, proceeding on the surface, on a parallel course. They also would report the presence of enemy aircraft in the convoy's vicinity.[117]

The outcome of PEDESTAL was contingent also on close cooperation with RAF units based on Malta and elsewhere in the Mediterranean. By August 3 the number of serviceable aircraft on Malta had grown somewhat over the July figure, to between ninety and ninety-five Spitfire fighters and about fifty-five bombers. By August 10, the number of Spitfires had dropped again to eighty. On August 12, estimated air strength would be 202 aircraft, including 113 Spitfires.[118] At any given time during the operation itself, there would be serviceable about a hundred Spitfires, thirty Beauforts (twin-engine bombers), thirty-six Beaufighters (a Beaufort variant whose multiple roles included torpedo bombing), three Wellingtons (long-range medium bombers), two Liberators (the U.S. B-24 design), two Baltimores (U.S.-designed light attack bombers), and three Albacores and Swordfish belonging to the Royal Navy's Fleet Air Arm (FAA). In addition, some sixteen reconnaissance aircraft (five Baltimores, six Spitfires, and five Wellington VIIIs) were available at any one time.[119]

The Allied aircraft on Malta would conduct reconnaissance day and night along the probable routes of enemy naval forces; attack the Italian and German bases on Sicily, Sardinia, and Pantelleria; protect the convoy after it came within their effective range from Malta; and attack with torpedoes Italian naval forces entering Taranto.[120]

The Allied aircraft based in North Africa primarily supported the British Eighth Army. Their additional tasks were to locate, shadow, and report all enemy surface ships, protect the Allied convoys from air attack, destroy enemy surface ships, and dislocate enemy air forces on the ground. The enemy bases on Sardinia would be attacked during the day by low-flying Beaufighters, and during the night by Liberators, from the RAF Middle East Command.[121]

On August 3, Sir Ralph Leatham, VA in Charge Malta, requested from the Middle East Command four Liberators for bombing enemy airfields on Sardinia and Sicily during the nights of D.3/D.4 and D.4/D.5. He suggested using also six Boston light bombers (a variant of the U.S. Douglas A-20 Havoc) or similar aircraft suitable for high-speed daylight bombing.[122] Leatham wanted the RAF to send long-range escort aircraft from Gibraltar and Malta to the limits of their effective ranges. He specifically requested, to keep track of enemy surface vessels, air reconnaissance between Sardinia and North Africa from D.2 to D.5; between Cavallo Island Lighthouse and Marettimo (in the Aegadian Islands) during daylight hours on D.3 and D.5; and reconnaissance of the Italian naval bases at Taranto, Messina, Palermo,

**Axis Order of Battle**

Italian Surface Forces

*3rd (Naval) Division (Messina, Rear Adm. Angelo Parona)*
3 heavy cruisers *(Gorizia* [flag], *Bolzano,** *Trieste)*
7 destroyers *(Aviere, Geniere, Camicia Nera, Legionario, Ascari, Corsaro, Grecale)*

*7th (Naval) Division (Cagliari, Rear Adm. Alberto Da Zara)*
3 light cruisers *(Eugenio di Savoia* [flag], *Raimondo Montecuccoli, Muzio Attendolo**)*
4 destroyers *(Maestrale, Gioberti, Oriani, Fuciliere)*

*8th (Naval) Division (Navarino, Rear Adm. Raffaele de Courten)*
3 light cruisers *(Duca degli Abruzzi, Giuseppe Garibaldi, Emanuele Filiberto Duca d'Aosta)*
5 destroyers

Submarines

*18 Italian submarines*
*Bronzo, Ascianghi, Alagi, Dessié, Avorio, Dandolo, Emo, Cobalto,* Otaria, Axum, Asteria, Brin, Wolframio, Granito, Dagabur,* Giada,** Uarsciek, Vellela*

*Leader of U-boats, Italy (F.d.U. Italien) (La Spezia)*
29th U-boat Flotilla
2 U-boats in western Mediterranean *(U-73, U-333)*
4 U-boats in eastern Mediterranean

Light Forces

*Italian torpedo boats*
6 MSs (2nd MS Squadron: *MS 16, 22, 23, 25, 26, 31*)
13 MASs (15th MAS Squadron: *MAS 543, 548, 549, 563;* 18th MAS Squadron: *MAS 533, 553, 556, 560, 562;* 20th MAS Squadron: *MAS 552, 554, 557, 564*)

*German torpedo boats*
4 S-boats *(S30, S36, S58, S59)*

Land-Based Aircraft

*328 Italian aircraft*
144th, 146th, 170th, 197th, 287th Air Squadrons (Sardinia, Sicily)
90 torpedo bombers: Savoia-Marchetti S.M.79 Sparviero
62 bombers: Savoia-Marchetti S.M.84
25 dive-bombers: Regianne Re 2001; Fiat Rosatelli CR. 42
151 fighters: Aeromacchi Castoldi MC 202, G.50 / G.50 bis A / G.50 ter
Reconnaissance aircraft: (long-range) Cant. Z 107 bis; (seaplane) Cant. Z 501/506B

*456 Luftwaffe aircraft*
II Air Corps (II Fliegerkorps, at Sala Consilina, 73 miles SE of Naples, Gen. Bruno Lörzer)
Stab (F)/122 (Trapani)
1.(F)/122 (Catania), Stab/JG 53 (Comiso), II./JG 53 (Comiso), I./NJG 2 (Comiso), I./NJG 2 (Heraklion, Crete), Stab/KG 54/Kü.Fl.Gr. 806 (Catania)

X Air Corps (Athens-Kifissia, Gen. Hans Geisler)
2.(F)/123 (Greece-Crete); Jagd Sta. (Eleusis-Athens); 1./JG 53 (Greece-Crete); 2./NJG 2 (Greece); I./LG, 1/II./LG, 1/III./LG, 1/2./SAGr, 126/1./SAGr, 126/3./SAGr 126 (Greece-Crete)

328 dive-bombers: Ju-87 B-2/D-3/R-2 Stuka
32 bombers / dive-bombers / torpedo bombers: Ju-88A/A-4, He-111
96 fighters / heavy fighters: Me-109 G-2/G-6 / Bf-109 G-2/G-6, Me-109 F-4 / Bf-109 F-4; (heavy) Me-110 C / Bf-110C; Me-110 C-4 / Bf-110 C-4; Me-110/Bf-110

Airfields

*Sicily*
Augusta (seaplanes); Biscari / San Pietro,‡ Caltagirone,‡ Catania, Catania/Torazzo,§ Chinisia, Comiso, Corleone,‡ Enna,‡ Gela, Gerbini (14 satellite fields), Licata,‡ Marsala/Stagnone (seaplanes), Milazzo (seaplanes), Oratel,‡ Pachino,‡ Palermo (seaplanes), Palermo / Bocca di Falco, Ragusa, Salemi,‡ Sciacca,‡ Syracuse (seaplanes), Taormina,‡ Termini,‡ Torre di Faro,‡ Trapani/Milo

*Sardinia*
Alghero / Porto Conte (seaplanes), Borore,‡ Cagliari/Elmas, Cagliari/Elmas (seplanes), Cagliari/Monserrato, Capoterra,‡ Casa Zeppara,‡ Chilivani, Decimomannu,‡ Milis, Olbia,‡ Oristano, Oristano (seaplanes), Ottana,‡ Pabillonis, Piscina Mendola,‡ Senorbi,‡ Tortolì, Venafiorita,‡ Villacidro‡

**Key:**

| | |
|---|---|
| * | sunk |
| ** | damaged |
| ± | landing strip |
| § | satellite strip |
| (F) | Aufklärunggruppe (reconnaissance group) |
| Jagd Sta. | Jagd Station (fighter station) |
| JG | Jagdgeschwader (fighter wing) |
| KG | Kampfgeschwader (battle wing) |
| Kü.Fl.Gr. | Küstenfliegergruppe (coastal air group) |
| LG | Lehrgeschwader (training wing) |
| NJG | Nachtjagdgeschwader (night-fighter wing) |
| SAGr | Seeaufklärunggruppe (naval reconnaissance group) |
| Stab | staff |

**Sources:** Fioravanzo, *Azioni navali in Mediterraneo,* pp. 410–13; Llewellyn-Jones, *Royal Navy and the Mediterranean Convoys,* pp. 129–31; "Operation Pedestal," supplement, *London Gazette,* p. 4506; Nassigh, *Operazione Mezzo Agosto,* pp. 218–22; DeZeng, *Luftwaffe Airfields,* pp. 8–255.

Naples, and Cagliari from D.1 to D.5. Daylight air patrols between Cavallo and Marettimo would be flown from D.3 to D.5, dawn patrols between Sardinia and North Africa from D.2 to D.5.[123] Beaufighters would protect Force X from 1930 to dark on D.3 and from daylight on D.4 until Spitfires could take over. Torpedo bombers would maintain readiness to attack surface ships and cover the westward passage of Force X to Gibraltar on D.4.[124] RAF aircraft based at Gibraltar would fly an antisubmarine patrol east of the Strait of Gibraltar.[125]

Finally, Admiral Syfret expected the British army to support the operation by staging an attack in Egypt. But he was disappointed—the army refused to take any action.[126] The British army never seemed to understand the importance of Malta to ultimate Allied victory in the Mediterranean.

**Axis Planning**

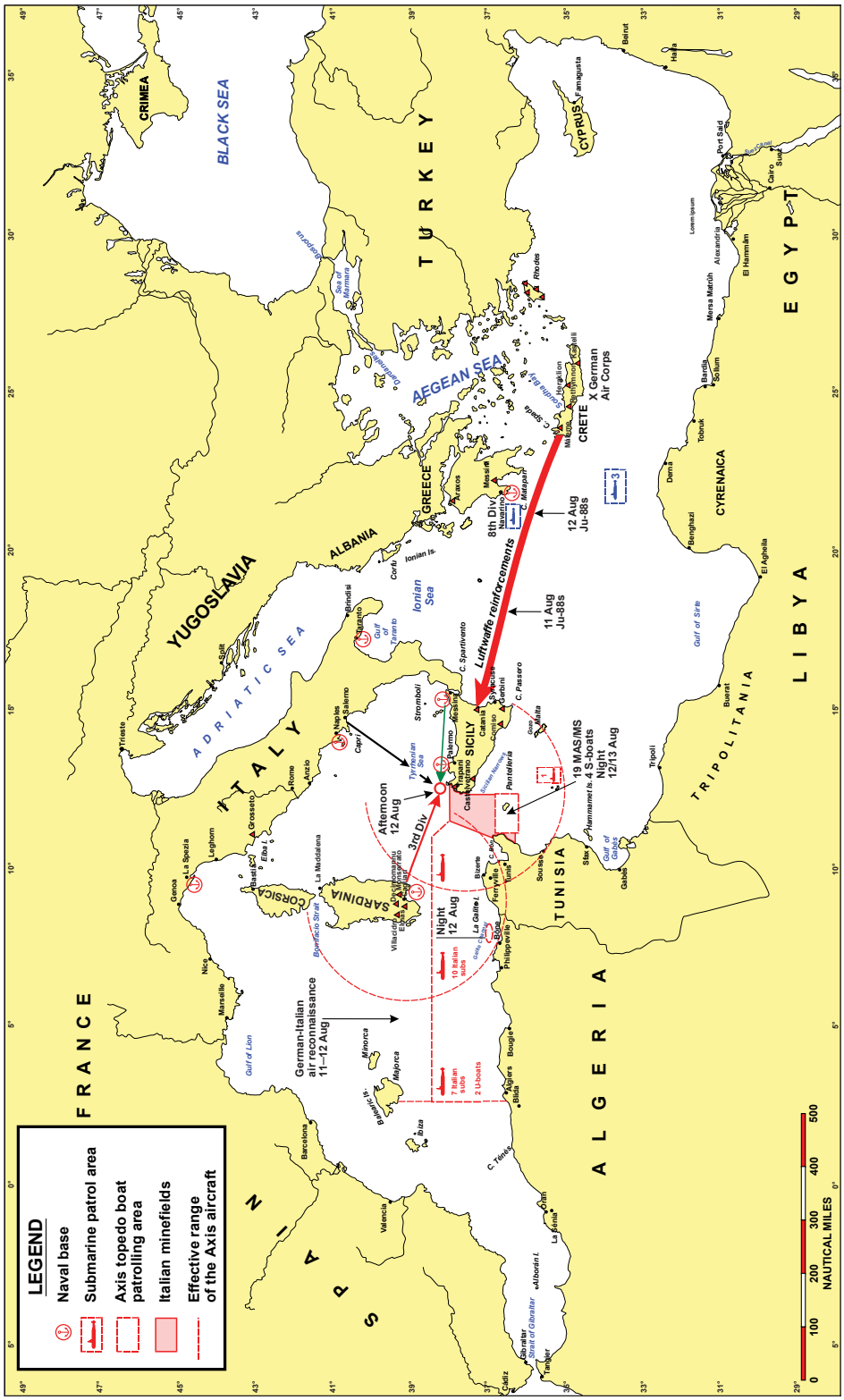
German and Italian operational planning focused on the employment of land-based aircraft from Sicily and Sardinia. The partners prepared their plans separately but agreed to coordinate their attacks; specifically, the Luftwaffe's II Air Corps in Sicily coordinated its planning with the sector command of the Italian air force in Sicily.[127] The Axis plans were prepared on very short notice, because the enemy intent was not discerned until a few days before the convoy operation started. On August 5, reliable reports from Abwehr agents convinced CINC South, Field Marshal Kesselring, that the enemy was preparing a large-scale attempt to supply Malta from the west.[128] The Germans believed that the enemy would try to pin down Axis forces by a simultaneous attack against the Panzer Army Africa; they assumed

there would be a combined sea, ground, and air attempt to capture Mersa Matrûh. The activity of the enemy air forces in Egypt and on Malta was remarkably light, considering their known strength; the Germans took this as a sign that preparations were being made for a large-scale operation.[129] The enemy was holding forces in reserve on Malta, probably to support the transit of a convoy through the Sicilian Narrows with fighter protection and by bombing Italian naval forces.[130] At the same time, the Germans correctly inferred the possibility of a simultaneous threat to Crete by enemy forces in the eastern Mediterranean. Accordingly, Kesselring directed increased readiness for Luftwaffe units on Sicily and Crete. On August 5, the day the intelligence was received, he directed aircraft be moved from Crete to Sardinia and Sicily.[131] Kesselring also opened discussions with the Italian air force about joint employment.[132]

II Air Corps increased the combat readiness of its bombers and fighters but planned to employ them sparingly. Kesselring directed II Air Corps also to prepare to accommodate reinforcements from X Air Corps that would be transferred for short-term employment. These reinforcements would, in cooperation with the Italian air force, strengthen the ground organization at Elmas, Sardinia.[133]

The Allies learned through ENIGMA that the Luftwaffe on Sardinia was having difficulty with supplies, which prevented full deployment of long-range bombers and fighters. They also learned that the Germans transferred from the eastern to the western Mediterranean forty to forty-five long-range bombers and six twin-engine fighters. This, in turn, complicated the German situation in North Africa. Air Leader Africa had been obliged to shift from ground support to provide air cover for the Axis convoys in the Tobruk area. However, if Field Marshal Rommel had been engaged heavily at the time, it seems doubtful that even these limited reinforcements could have been made available.[134]

The Germans observed in July 1942 the increased activity of enemy forces in the Strait of Gibraltar area and the western Mediterranean. In their view, if the enemy were to employ heavy and medium ships for screening convoys to Malta, they required U-boats in the western Mediterranean. Because British forces had operated in the Majorca–Algiers area, the Operations Division of SKL (1./SKL) believed that it was necessary to keep two U-boats in that area.[135] It also insisted that the weight of main effort *(Schwerpunkt)* of U-boat employment should be in the eastern Mediterranean. Now, however, because of the increased threat Malta posed to the Axis supply traffic to North Africa, SKL directed four U-boats be redeployed from the eastern to the western Mediterranean. (In the event, they were not on station in time to attack the convoy.) What the Germans considered strong enemy defenses made employment of U-boats west of longitude 2° east difficult; accordingly, they were deployed on the Ibiza–Algiers line. The plan was to send one U-boat out of La Spezia each day from August 1 to the 3rd. The Germans had four U-boats deployed in the eastern




*Map 9*
*Axis operational idea for the battle of mid-August 1942*

Mediterranean. It was also thought desirable to employ U-boats jointly with the Italian submarines. However, that could not be done effectively, because a message from an Italian submarine to the U-boats required, on average, four hours to arrive.[136]

In Rome, Supermarina considered four options the enemy might pursue: first, to use superior naval strength in direct escort of the convoy; second, to sortie the main battle force to lure the Italians to react in kind; third, to use a strong covering force to force a passage north of Pantelleria (whereas the Allies planned, instead, to turn the covering force westward at the entrance to Skerki Bank); and fourth, to attack the Italian airfields on Sardinia with carrier-based aircraft.[137]

The Axis operational idea was simpler than that of the Allies (see map 9). The Germans and Italians essentially followed the same script they had used against a Malta convoy in September 1941 (Operation HALBERD). There would be joint, special air reconnaissance of the western Mediterranean by Italian and Luftwaffe aircraft on August 11 and 12.[138] Also, Italian and German aircraft on Sicily and Sardinia, Italian submarines and German U-boats, Italian and German torpedo boats, and minefields would form successive barriers. These four barriers were intended to cause the convoy to disperse, allowing a powerful cruiser-destroyer force to attack successfully.[139]

The Germans and Italians planned the main air attack on the convoy for August 12, south of Sardinia, when fighter escorts would be available to the bombers.[140] There would be twenty-two torpedo bombers, 125 dive-bombers, and forty high-level bombers, all in a tightly synchronized attack. The Italian air force would deliver the main attack; the Luftwaffe would attack in two waves.[141] The principal objective would be the aircraft carriers (the enemy operational center of gravity, in operational terms), to render them unable to intervene when the Italian heavy surface forces closed in.[142] The Italians planned to deploy eighteen submarines in the western Mediterranean.[143] Seven Italian submarines and two (not four as originally planned) U-boats would be deployed along the convoy's estimated route south of the Balearics, between longitudes 1° 40′ and 2° 40′ east.[144] Ten Italian boats would be deployed between the Fratelli Rocks and the northern entrance to Skerki Bank.[145] Some of these boats would operate in cooperation with aircraft northwest of Cape Bon.[146] One Italian submarine would patrol west of Malta, another off Navarino, and three more about a hundred miles west-southwest of Crete.[147]

The Germans and Italians assumed that the enemy convoy would have a stronger screen than they had in June. However, they did not expect the enemy to use battleships.[148] The Italian plan had the 3rd and 7th (Naval) Divisions joining about a hundred miles north of Marettimo (westernmost of the Aegadian Islands) in the afternoon of August 12 and then sailing on an intercept course south of Pantelleria through the night.[149] Both would attack the remnants of the convoy and its direct screen (Force X) south of Pantelleria at first light on August 13.[150] The Italian

planners based this timing on the possibility that Axis aircraft could provide effective cover with fighters, because of the larger number of enemy aircraft based on Malta. Any enemy convoy from Egypt would be dealt with by the 8th (Naval) Division, based at Navarino.[151]

However, the issue of providing strong air support to the Italian heavy surface forces was hotly debated between Kesselring and Mussolini and the Italian high command. The problem was that there were not enough fighters to escort bombers and torpedo bombers and provide air support to surface ships at the same time.[152] Mussolini personally favored cover for surface forces but ultimately decided in favor of fighter escorts for the bombers.[153] The Italian chief of the General Staff, Marshal Ugo Cavallero, believed the Italian surface forces should be employed, but Supermarina was unwilling to do so without air cover.[154] Admiral Weichold argued that the Luftwaffe should provide that air cover.[155] However, Kesselring did not agree.[156] Reportedly, Kesselring was convinced not only that there were too few fighters but that, based on the experience of the second battle of Sirte, of March 22, 1942, and the encounter off Pantelleria on June 15, the Italian heavy cruisers would fail with or without air cover.[157] Ultimately, the Germans used the pretext of lack of fuel to refuse to provide air cover for the Italian heavy surface forces.[158]

As for other arms, the Axis planned to have nineteen Italian MAS *(motoscafo armato silurante)* boats and four German *Schnellbooten* (fast torpedo-armed boats, or S-boats) attack the convoy, for which they would wait off Cape Bon, Pantelleria, and south of Marettimo.[159] Also, between June 1940 and April 1942 the Italians had laid 2,320 mines between Cape Granitola (the southwestern tip of Sicily) and Pantelleria; 1,020 between Pantelleria and Ras el Mustafa, Tunisia; 6,880 between the Aegadians and Cape Bon; and 1,040 between Bizerte and Keith Reef.[160] One Italian destroyer would lay more mines in the Sicilian Narrows during the night of August 12.[161]

**Opposing Forces**

The entire resupply operation to Malta was under the command of Acting Vice Admiral Syfret (see "Allied Order of Battle" sidebar).[162] He was in command of Force F, composed of the convoy and direct-screen and distant-cover forces. Assigned to the operation was a collection of ships from the Home Fleet and Eastern Fleet. Submarines deployed in the eastern Mediterranean were subordinate to CINC of the Mediterranean Fleet, in Haifa. Most of the land-based aircraft were controlled by the RAF's Middle East Command.

Supporting naval forces were divided into four force elements, designated Forces Z, X, Y, and R. Force Z, led by Syfret himself, consisted of two battleships and three large aircraft carriers (with seventy-two fighters and twenty-eight torpedo bombers), three cruisers, and the 19th Destroyer Flotilla, with fifteen destroyers. Force X, under Rear Adm. H. M. Burrough, was composed of three light cruisers and one AA ship of the 10th Cruiser Flotilla, eleven destroyers of the 6th Destroyer Flotilla,

and one ocean tug.[163] Two of these cruisers, *Nigeria* and *Cairo,* were fitted for fighter direction.[164] An additional five destroyers were assigned to provide antisubmarine escort for the convoy during its transit from Britain to the Strait of Gibraltar.[165]

Force Y, at Malta, consisted of two freighters and two destroyers. Force R(efueling) was composed of two fleet oilers and one ocean tug, plus four corvettes for escort.[166] Malta Escort Force (the 17th Minesweeping Flotilla) consisted of four minesweepers and seven motor launches. In addition, the Admiralty assigned eight destroyers as reserves; they were intended to provide escort for Force R and a screen for the carrier *Furious*.[167]

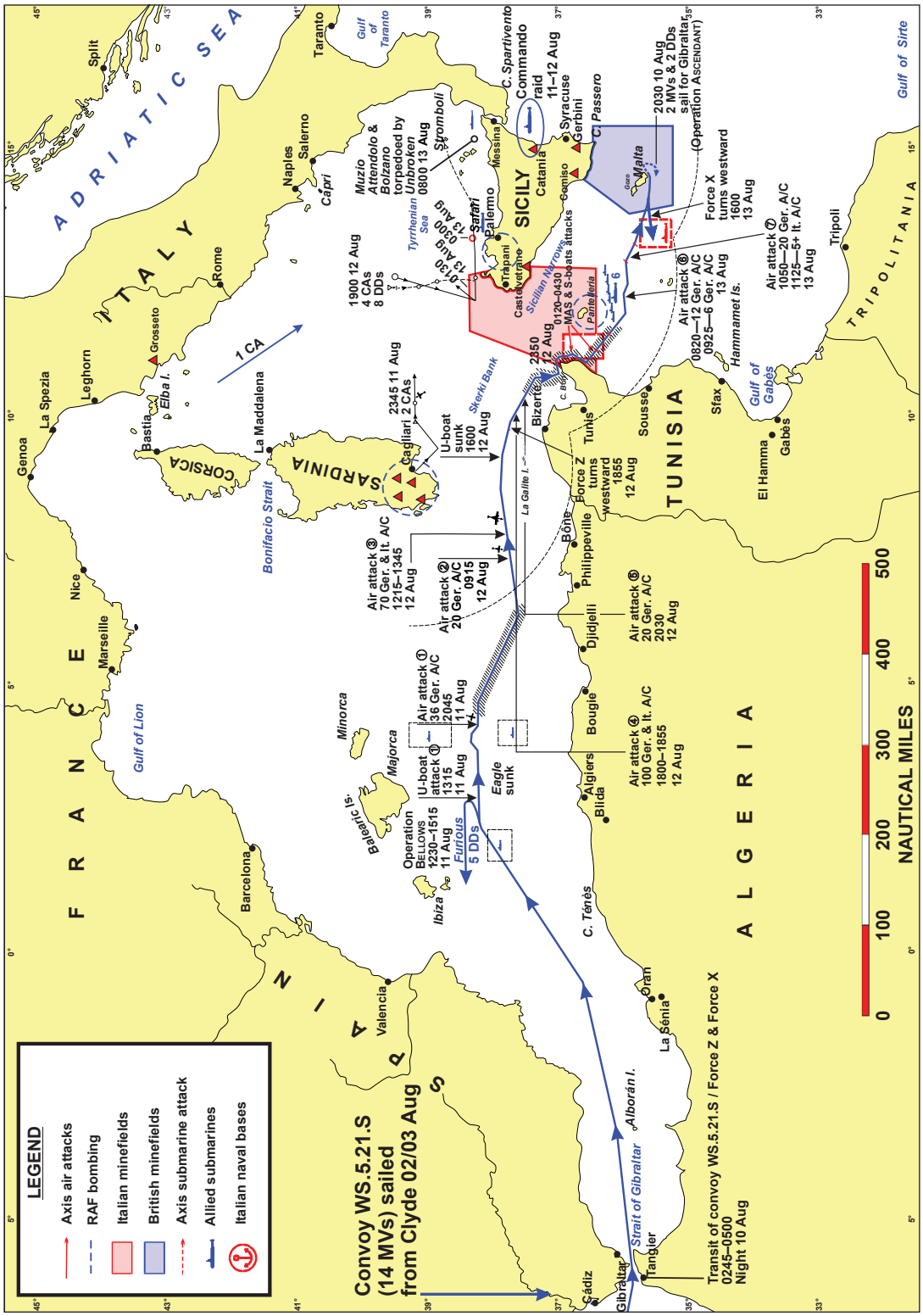
The Germans and Italians possessed substantial and diverse forces in the theater, sufficient to inflict heavy losses on the Allied convoy and its covering forces. The Italians had available for the operation 328 aircraft (ninety torpedo bombers, sixty-two bombers, twenty-five dive-bombers, and 151 fighters), the Germans 456 (328 dive-bombers, thirty-two high-level bombers, and ninety-six fighters).[168] (See the sidebar for details of the Axis order of battle.) The German II Air Corps mainly supported the Panzer Army Africa. Some twenty Ju-88s from two air groups of X Air Corps on Crete moved to Sicily on August 11 and were ready for action the next morning. Eight more Ju-88s from Crete flew to Sicily on August 12, after completing convoy escort duties in the Aegean. However, most of the torpedo bombers, whose crews were newly trained, moved from the Mediterranean to Norway in June 1942 and did not return in time for the operation.[169]

The Italian navy had theoretically available four battleships, three heavy and ten light cruisers, twenty-one destroyers, twenty-eight torpedo boats, and sixty-four submarines. However, the Italians were unable to deploy most of these, lacking fuel and adequate air cover. The Italian navy had received twelve thousand tons of fuel in June 1942—only about one-fifth the amount consumed by convoys (fuel reserves then amounted to about 121,000 tons); its battleships were directed to transfer their fuel to the escorts. Because of this shortage, Mussolini suggested to Hitler that further enemy attempts to supply Malta be opposed using submarines and land-based aircraft alone.[170]

Supermarina planned to employ for the pending operation three cruiser-destroyer formations: the 3rd (Naval) Division, with three heavy cruisers and seven destroyers; the 7th (Naval) Division, with three light cruisers and four destroyers; and the 8th (Naval) Division, with three light cruisers and five destroyers. The Italians also had eighteen submarines in the western Mediterranean. Nineteen torpedo boats (six *motoscafo silurante* [MS] and thirteen of the larger MAS) were based within striking range of the Sicilian Narrows. The Germans had available two U-boats and four S-boats.[171]

## EXECUTION

Operation PEDESTAL consisted of four related phases (map 10): assembly of the convoy at the Clyde River estuary, in Scotland, and transit to Gibraltar; from Gibraltar




*Map 10*
*Operation PEDESTAL: execution, August 10–15, 1942*

to the Sicilian Narrows; from the Narrows to Valletta, Malta; and return of the distant- and direct-screening forces to Gibraltar.

The movements of the support groups for PEDESTAL started on July 31, when the carrier *Victorious* with its escorts sortied from Scapa Flow.[172] On August 6–9 all three large carriers and their escorts conducted an exercise (Operation BERSERK) between the Azores and Gibraltar. The main purpose was to rehearse fighter direction and cooperation among the three carriers.[173] Taking part were Force M, from the United Kingdom (*Victorious,* the cruiser *Sirius,* and three destroyers); Force K from Freetown, Sierra Leone (*Indomitable,* the cruiser *Phoebe,* three destroyers, and two corvettes); Force J from Gibraltar (*Eagle,* the cruiser *Charybdis,* and three destroyers); and Force W from Freetown (one fleet oiler and two corvettes).[174]

Prior to the sortie from the Clyde, Admiral Burrough, the Force X commander, held a meeting on board his flagship with the masters of all the merchant ships and explained the plan in detail. Convoy WS.5.21.S, escorted by the light cruisers *Nigeria* (Burrough's flagship) and *Kenya* and several destroyers, sailed during the night of August 2/3 and joined the main body the next morning.[175] On August 9, Force R left Gibraltar and sailed to a position south of Majorca, Balearics.

The assembled Force F passed through the Strait of Gibraltar between 0245 and 0500 on August 10 (D.1) in a dense fog, visibility only about 650 feet.[176] The transit, however, was uneventful. Admiral Syfret believed at the time that because of the fog and the moonless night enemy agents were unlikely to have observed the Allied convoy; subsequently, however, he would acknowledge later reports that showed the enemy was "fully cognizant of our passage of the strait."[177] By 0600 the Germans had the information: some twenty-four ships had entered the Strait of Gibraltar from the west, without lights. They also knew that in Gibraltar were a cruiser, eight destroyers (two under repair), five submarines (one under repair), two auxiliary cruisers, twenty-two freighters, and seven tankers.[178] A German agent reported that between 0000 and 0200 on August 10 some fifty enemy ships of various sizes had transited the strait. At 0700, the carrier *Argus* and four destroyers were (mistakenly) reported in Gibraltar.[179] At about 0800, B-Dienst reported that during the night of August 9/10 an enemy convoy sailing in three groups had passed through the strait on an easterly course.[180]

At 1130, after the visibility in the area had improved, an Italian agent reported the presence of the cruiser *Cairo* and destroyers.[181] Also at about 1130, the Tetuán station (in Morocco) was directed to pass sighting reports from Alborán Island to Madrid.[182]

Around noon on August 10, Supermarina too received information that fifty-seven British ships had transited the Strait of Gibraltar eastbound.[183] One hour later the Italians concluded that a large number of enemy warships and merchant vessels, including six large warships, had passed into the Mediterranean during the night.[184] The Italians assigned five air squadrons to reconnoiter the sea area west

of Sardinia. Seven Italian submarines and two German U-boats were sent to patrol north of Algiers.[185]

At 1245 on August 10, Luftwaffe aircraft reported that the enemy convoy was about seventy nautical miles north of Algiers. The main group was composed of three battleships, probably of the *Nelson* class (actually this class comprised only two ships, *Rodney* and *Nelson*). The convoy was accompanied by three carriers, including what the Germans erroneously believed was USS *Wasp,* plus twenty to twenty-five cruisers and destroyers, and twenty large steamers trailing westward of the van. A separate group of six destroyers was reported to be some seventy-five nautical miles northwest of Algiers.[186]

On the afternoon of August 10, Kesselring learned, on the basis of visual observations from Tarifa and Ceuta, that a large enemy convoy, forty to fifty units including possibly two carriers and nineteen freighters, had entered the Mediterranean. The enemy convoy was on an easterly course and sailing at a speed of thirteen or fourteen knots. The Germans estimated the convoy would be south of Majorca, in the Balearic Islands, by 0600 on August 11 and south of Sardinia at about 0600 the next day.[187]

At 1700 on August 10, a Vichy French aircraft reported two aircraft carriers, two battleships, two light cruisers, fourteen destroyers, and twelve merchant vessels forty-two nautical miles north-northwest from Cape D'Aiguille (some twenty miles northeast of Oran) on an easterly course.[188] (This report was intercepted by Allied intelligence analysts.)[189]

German naval intelligence situation analysis at 1800 asserted that given radio traffic and the enemy ship movements there was a possibility of a "large English combined operation from the west and the east." A German agent in Gibraltar reported the movement of some fifty ships including three passenger liners and warships between 0000 and 0200 on the 10th and the arrival of the carrier *Argus* and four destroyers at 0700. An Italian agent in Gibraltar reported the arrival of the cruiser *Cairo.*[190] The observation station at Melilla on the North African coast reported that by 1800 there were no enemy ships in sight. Madrid placed its agents at both Tangier and Ceuta in a state of increased alertness.[191] At 1815, some forty-seven nautical miles east of Alborán, German aircraft sighted two enemy destroyers.[192]

At 1800 on August 10, the Italians believed that an enemy force consisting of one battleship, two aircraft carriers, four cruisers, twenty-three torpedo craft, and nineteen merchantmen were present in the western Mediterranean.[193] They assumed that the British carrier-based aircraft would attack the Italian air bases on Sardinia. Supermarina estimated that the enemy convoy would transit longitude 10° east at noon on August 11 and reach Cape Bon around noon on the 12th.[194] During the following night, the convoy would pass through the Sicilian Narrows in the area of Pantelleria.[195]

German aircraft sighted at 1900 on August 10, forty-two nautical miles north (bearing 004°) of Cape D'Aiguille, two enemy carriers, two battleships, two cruisers, fourteen destroyers, and twelve steamers steaming eastward.[196] A French report had placed the same formation at 1700 forty-two nautical miles northwest (bearing 334°) of Oran. At 1815 two enemy destroyers were detected forty-seven miles east of Alborán.[197]

From air reconnaissance reports, Kesselring directed II Air Corps to put its long-range bombers in the highest state of combat readiness. He also ordered preparations for the transfer of aircraft, including fighters, from Sicily to Sardinia. Kesselring transferred the Ju-88 torpedo-bomber squadron at Grosseto, in Tuscany, to Catania, Sicily. However, because of the shortage of fuel on Crete, it was not possible to use German transport aircraft to carry personnel and torpedoes to Sicily on August 11. Italian fighter aircraft would be transferred from Sicily to Sardinia. It was also decided that the Italian fleet would operate against the convoy, as it had against HARPOON in mid-June.[198]

On August 10, the Allies learned from radio intercepts that during the night of August 9/10 the Italian Admiralty (Supermarina) had reported, from preliminary information, that on August 8 British naval forces consisting of one or two carriers, possibly one battleship, four cruisers, twenty-three torpedo craft, and nineteen merchant vessels had been moving westward toward the central Mediterranean.[199] They also learned that during the morning of August 10 the Luftwaffe had reconnoitered between Crete and North Africa as far as Port Said.[200] The Allies also knew that in the evening of August 10 orders were given to fly twenty-five Luftwaffe aircraft from Greece to Catania, with absolute priority. Luftwaffe planes and Italian fighters were also being deployed to Sardinia.[201]

The Germans and Italians had fairly accurate knowledge of the operational situation in the eastern Mediterranean. In particular, British radio traffic revealed to the Germans the movements of British forces in the eastern Mediterranean, which indicated they were operating in conjunction with those in the west. On August 10, German reconnaissance reported intense enemy activity in the eastern Mediterranean. There were four enemy cruisers and ten destroyers about 150 nautical miles off Port Said on a westerly course and in Alexandria a destroyer, six smaller naval vessels, and thirteen steamers.[202] Luftwaffe reconnaissance detected at the Suez anchorage five destroyers, one repair ship, and one *Southampton*-class cruiser.[203]

The first report on the enemy convoy itself on August 11 was received by the Germans at 0450. It was based on a report (mentioned earlier) from a Vichy French civilian aircraft made at 1900 on August 10. (It was transmitted to the Germans through the Armistice Commission.)[204] This report had been passed from Algiers to Toulon in French naval cipher at 1940 on August 10. By 0600 on August 11 German air units in Africa and Sicily had that information.[205] By then the Allied convoy was south of the Balearics, headed toward Cape Bon.[206]

On August 11 and 12, the Italian air force organized, in cooperation with the Luftwaffe, reconnaissance of the entire western Mediterranean.[207] At about 0620 on August 11, a U-boat sighted the enemy convoy and its screen. At 0815, a German aircraft reported the convoy approximately ninety-five miles northwest of Algiers.[208] However, other German sources say it was not located by German observers until 0910, when it was near Cape Ténès (about a hundred miles west of Algiers).[209] Afterward and throughout the day, Ju-88 bombers at twenty and twenty-four thousand feet maintained continuous contact with the enemy convoy and its covering groups.[210]

Nevertheless, the Germans apparently did not have a completely clear picture of the operational situation on August 11. Their reconnaissance reports were often contradictory with respect to the position and composition of the convoy and its screening forces. For example, at 1021 a German aircraft reported that the enemy force was divided into three groups, all sailing easterly. The first of these, the main force, composed of probably two (possibly three) carriers, twenty to twenty-five cruisers and destroyers, and twenty merchant vessels, was some forty nautical miles southeast of Formentera Island (near Ibiza, in the Balearics). The second group—one carrier *(Eagle),* four cruisers, seven destroyers, and one large merchant ship—was seventy nautical miles north of Algiers. At about 1220 the third group, six destroyers, was sixty-five miles southeast of Formentera.[211] Another German aircraft report also described three groups but with different compositions: one, with a carrier, four cruisers, seven destroyers, and an unidentified unit, seventy-two nautical miles from Algiers at 1240; the second, with three carriers (including possibly *Wasp*), three battleships (including possibly *Rodney* and *Nelson*), twenty to twenty-five cruisers and destroyers, and twenty merchant ships larger than eight thousand tons, ninety-eight nautical miles west-northwest (bearing 326°) of Algiers at 1021; and the third, with six destroyers, some seventy-five nautical miles west-northwest (bearing 321°) from Algiers at 1220, steaming northeasterly (070°) at between ten and twenty-three knots. At 1746, the enemy's main group was north of (bearing 22°) and some ninety miles from Algiers.[212]

Thus, once the convoy was positively identified, the Germans and Italians had reacted quickly to move submarines and warships to the western and central Mediterranean. The Luftwaffe and the Italian air force had quickly shifted their main efforts from the eastern to the western and central basins.[213] The 3rd, 7th, and 8th Italian (Naval) Divisions received orders to be in readiness for combat.[214] Allied cryptanalysts learned that in the early morning on August 11, ten torpedo-carrying Ju-88s had been transferred from Grosseto to Catania.[215] Also that morning of August 11 they learned of a sighting by a French aircraft the afternoon before of two enemy carriers, two battleships, two cruisers, fourteen destroyers, and twelve merchant ships off Cape Ferrat (north of Oran).[216] At about noon on August 11 the convoy

was in fact about seventy-five miles south of Majorca and zigzagging eastward. The French intelligence service in Algiers observed the convoy off that city at 1300, proceeding east, and so informed German agents in Casablanca.[217]

BELLOWS, the RAF reinforcement of Malta, was executed between 1230 and 1515 on August 11 from approximately 585 miles out. Out of thirty-eight Spitfires that flew off from *Furious,* all but one reached Malta safely.[218] On the way back to Gibraltar one of the destroyers escorting *Furious* sank an Italian submarine.[219]

The Allies had learned from decrypted ENIGMA messages that on August 11 the II Air Corps and the Italian Air Command, Sardinia and Sicily had received orders to attack the convoy early on August 12, before it reached Malta. All Axis shipping traffic in the Sicilian Narrows had been suspended.[220] Also on the 11th they read an intercept in which Kesselring averred that if a British threat to Crete existed at all it could not materialize before August 14.[221] Allied intelligence read the results of a Luftwaffe reconnaissance of Alexandria, Port Said, and Malta on August 10.[222] Finally for the 11th, the Allies knew that twenty Ju-88 bombers were to move from Crete to Sicily.[223]

The Allies learned from ENIGMA decrypts that at 1155 on August 11 the Italian light cruisers *Eugenio di Savoia* and *Raimondo Montecuccoli* (7th Division) at Cagliari had been placed by Supermarina at two hours' notice from 1800 on (both cruisers, in fact, would leave Cagliari at that time, with two destroyers). These cruisers, together with heavy cruisers *Bolzano* and *Gorizia* at Messina, were informed at 1300 that Italian submarines were in an area sixty miles long and forty wide north of Bizerte. Three Italian submarines, ENIGMA further disclosed, had left Cagliari at 2045. Light cruisers *Raimondo Montecuccoli* and *Eugenio di Savoia* and two destroyers sailed on an easterly course.[224]

The Italian plan was to assemble the three heavy cruisers of the Messina group with eleven destroyers in the Tyrrhenian Sea for a joint foray toward Pantelleria early in the morning on August 13.[225] The Navarino group of three light cruisers and five destroyers—one of them the German destroyer *Z.G. 3* (or *Hermes,* ex-Greek *Vasilefs Georgios*)—would be in readiness against the eastern British group.[226] The Italians doubted that their battleships could be employed: only one battleship was fully fueled, and no destroyers were available for their protection. They believed that the cruisers would be sufficient to deal with the British light forces. However, a sole Italian battleship would not be able to counter the British heavy ships.[227] In case of a British attack on the Libyan coast, both cruiser groups would be employed in defense.[228]

Both U-boats on patrol in the western Mediterranean received orders to attack the enemy convoy. Six Italian submarines were in a waiting position north of Algiers, one north of Bizerte. The Italians had twelve submarines between Bizerte and Cape Bon. In addition, one submarine was deployed southwest of Malta and five off Genoa, in case the enemy attempted a landing or bombardment.[229]

The Italian plan was to send torpedo boats during the night of August 12/13 south of the newly laid mine barrier, within French territorial waters.[230] Also, five German S-boats based at Porto Empedocle, on the southern shore of Sicily, were to operate north of Cape Bon, while the Italian MASs would operate eastward of the cape.[231] On August 11, the Germans sent two more S-boats in Soudha Bay to Empedocle. The same order was given to the S-boats in Augusta, Sicily. The two in Mersa Matrûh remained there, at the disposal of the commander in North Africa.[232]

In the meantime, the Allies had suffered a major loss on August 11, when at about 1315 *U-73* penetrated the screen and fired four torpedoes at the carrier *Eagle* (27,230 tons full load), about eighty miles north of Algiers (latitude 38° 5′ north, longitude 3° 3′ east).[233] The carrier sank in only eight minutes, with heavy loss of life and all its aircraft.[234]

B-Dienst reported that at about 1807 the enemy convoy, twenty-one merchant ships, was some eighty-five nautical miles north-northeast of Algiers and had been joined by three carriers, two battleships, six cruisers, and twenty destroyers. At 1955, German aircraft reported one carrier and five cruisers or destroyers plus one steamer seventy-seven nautical miles north of Algiers on a south-southeasterly course at ten knots.[235]

At 1425 on August 11 the convoy's main body was about seventy nautical miles north of Algiers. German aircraft counted three carriers (including *Furious* and *Wasp*), the two *Nelson*-class battleships, four light cruisers, eleven destroyers, twenty merchant ships, and one tanker. Aircraft also reported north of Algiers another enemy group, composed of a carrier, probably one battleship, two cruisers, fifteen destroyers, and eight merchant ships.[236]

At 2045 (one hour after sunset), when the convoy was about two hundred miles west of Sardinia, thirty-six German Ju-88 bombers and He-111 torpedo bombers carried out several attacks. The Ju-88s dove from about eight thousand feet to between two and three thousand. Thanks to the convoy's strong AA defenses, no ship was hit.[237] At 2010 and 2135, Allied Liberators and Beaufighters attacked the Axis airfields near Cagliari and inflicted some damage.[238] During the night of August 11/12 (or one day before the anticipated passage of the convoy) an Italian destroyer laid a temporary minefield (i.e., to be active for only seventy-two hours) in French waters between Cape Bon and Ras el Mirh (adjacent to Kélibia, about twenty miles southeast).[239]

During the morning of the 11th, the X Air Corps had ordered a comprehensive reconnaissance of the eastern Mediterranean east of longitude 25° east.[240] One of those aircraft sighted four cruisers and ten destroyers southwest of Cyprus, moving west.[241] The same group was sighted at 1700 by a U-boat 155 nautical miles west of Haifa, still on a westerly course. These reports suggested to the Germans that another major enemy operation was possible, this one in the eastern Mediterranean. However, comprehensive air reconnaissance on August 12 sighted no major enemy forces in the eastern basin.[242]

The Abwehr had unconfirmed information that on August 12 several freighters at Alexandria were loaded and ready to sail for Malta. This report, coupled with several sightings of submarines off Italian and Greek ports, led the Italians to believe that the enemy movement in the western Mediterranean was more than just a relief convoy to Malta.[243] Indeed, Allied intelligence learned on August 11 that the Panzer Army Africa believed that the convoy posed a direct threat to Tobruk. Kesselring too believed that the enemy might attempt to land on the North African coast. The Germans therefore put their forces in North Africa on the highest alert.[244]

At 0020 on August 12, the Allies learned from ENIGMA intercepts that Italian intelligence believed that four enemy cruisers, ten destroyers, and part of the convoy from Gibraltar might be headed for the eastern Mediterranean.[245] Later that morning Allied intelligence read ENIGMA messages in which the Germans claimed that the Luftwaffe aircraft operating from Sicily had made direct hits with two two-thousand-pound bombs on an enemy aircraft carrier, one five-hundred-pound bomb had hit what was believed to be an aircraft carrier, a cruiser had been hit by a torpedo, and a large enemy merchant ship had been hit by a two-thousand-pounder. A cruiser and a destroyer were possibly on fire.[246] The Allies also read that Supermarina had suspended until further notice sailings of Axis ships from Africa to Italy or Greece.[247]

The Allies also intercepted and decoded operation orders issued for the 12th by the II Air Corps to the 77th Fighter Wing, at Elmas, on Sardinia. The wing was to expect an enemy formation approaching the Sicilian Narrows early that morning. The II Air Corps would cooperate with the Italian air force in Sicily and Sardinia from the early morning of the 12th, operating in waves with fighter escorts.[248]

On August 12, Allied decrypts indicated that during the evening of August 11 Supermarina was informed of the sighting of four enemy cruisers and ten destroyers south of Cyprus proceeding west. The Italians concluded (erroneously) that part of the convoy from Gibraltar would proceed west (into the Atlantic). They also considered employing a single German destroyer *(Z.G. 3)* jointly with the 6th (Naval) Division in Navarino if the latter were called on to operate. This division was put on three hours' notice for action until further orders.[249]

Allied intelligence decrypted an ENIGMA message in which Göring informed Kesselring on August 12 that the destruction of the Malta convoy was of vital importance, and the destruction of aircraft carriers and transports should be the first priority.[250] Allied analysts also learned that the same day Kesselring had issued an order of the day that, among other things, stated that "for the third time the English with very strong forces were trying to break through the Sicilian Straits and that it was possible they would attempt landing in order to influence the military situation in North Africa." He insisted that "this must not be allowed to happen. If the British were successful lives of many Germans, which had already been lost in Africa would have been in vain."[251]

On August 12, the Germans believed that "landings on the African coast between Tripoli and Benghazi were likely on the 13th and 14th in view of very strong Malta convoy which was attempting to pass through the Sicilian Channel."[252] Hence, Kesselring decided to deploy fighter aircraft and dive-bombers from Sicily and to move ammunition and fuel to Castel Benito (near Tripoli).[253] A single-engine-fighter squadron and long-range bombers at Derna would be moved to Benghazi or Tripoli as necessary. The Germans increased readiness of the Ju-52 transport aircraft.[254] Aviation fuel would be transported to Benghazi by all available aircraft—flying without fighter escort—and Tripoli would be supplied with ammunition and fuel by using all available transport aircraft and an Italian submarine.[255] The Panzer Army Africa held motorized detachments ready to repel landings. It moved some forces to the Sollum–Mersa Matrûh area to defend the coast east of Tobruk with three large motorized groups of artillery. Additional troops were prepared for deployment. (These measures were lifted on August 13 in the light of the success in the attacks on the convoy).[256] In the morning of August 12, the convoy was north of Cape Bougarouni (Cap Bougaron today, Algeria).[257] German and Italian aircraft started to shadow Force F at 0500 on August 12.[258] At about 0610, the Allied carriers launched twelve fighters to protect the convoy. That number of aircraft was maintained throughout the day.[259] At 0830, intercepts of German radio indicated the presence of two Allied destroyers and merchant ships some thirty nautical miles west of La Galite on a westerly course.[260]

The first attack, carried out by twenty or more Ju-88s, came at about 0915. The German aircraft were intercepted by FAA fighters some twenty-five miles from the convoy and inflicted no damage. The Allies claimed eight enemy planes were shot down.[261] At 1100 German aircraft assessed that the convoy consisted of two or three battleships, two carriers, five cruisers, twenty-one destroyers, and nineteen merchant ships, including a passenger ship, and passing eastward fifty nautical miles north of Cape Bon at thirteen to fifteen knots. The convoy was dispersed over a large area.[262]

At about noon on August 12, some seventy enemy aircraft based on Sardinia, with a strong fighter escort, approached the convoy. At 1215, the first wave, some ten Italian torpedo bombers using new parachute-dropped "circling" (pattern-running) torpedoes, attacked the convoy.[263] They did not score any hits. They were followed by a few German fighter-bombers. The main attack, by forty-two Italian torpedo bombers, was to have followed after a five-minute interval, but was not carried out for thirty minutes. The torpedo bombers had been reduced to between twenty-five and thirty machines when they reached their targets at 1245. They scored no hits, because of the skillful maneuvering of the convoy.[264]

The Italian torpedo bombers were followed at 1315 by some twenty German dive-bombers. Their attack was broken up by the Allied fighters, and only twelve penetrated to the convoy. However, these hit and heavily damaged a merchant ship,

*Deucalion*. At 1345, Italian aircraft attacked the carrier *Victorious* without result. Axis losses in the 1315 and 1345 attacks were nine aircraft to Allied fighters and two shot down by the ships' AA defenses.[265]

Allied intelligence at this point concluded (erroneously) that the combination of a large convoy with strong naval forces from Gibraltar and a feint in the eastern Mediterranean had induced great uncertainty and apprehension along the entire North African coast and on Crete, lest a landing take place. The Germans had been obliged to take several precautionary measures. Yet in fact the Germans recognized by August 11, as has been seen, that Crete could not be threatened before August 14, and the Allies saw little indication that the Germans were much concerned about the possibility.[266]

B-Dienst reported that at 1700 on the 12th the convoy was twenty-six nautical miles northeast of Cape Bon steaming eastward at sixteen knots.[267] At 1820 it plotted the main body of the Allied convoy near Bizerte.[268] Between 1800 and 1850 about eighty German and twenty Italian torpedo bombers attacked. Three bombs struck the carrier *Indomitable,* and two or three were near misses. As a result, *Indomitable* was unable to operate aircraft, but it continued steaming at twenty-eight and a half knots.[269] An aerial torpedo hit and heavily damaged the destroyer *Foresight,* which was subsequently sunk by the British.[270]

The Allies learned from ENIGMA messages that the Luftwaffe had been informed at 1830 on August 12 that an S-boat flotilla of five (actually four) boats had left Porto Empedocle at 1600 on a westerly course for Cape Bon. After completing their mission, the S-boats would leave Cape Bon at about 0430 on August 13, run on a northerly course as far as latitude 39° north, turn south toward Marettimo, and then hug the coast to Augusta.[271]

In general, that evening the Allies' situation looked promising. *Eagle* had been lost to a U-boat, but the mass air attacks south of Sardinia had damaged just one merchant ship and, among warships, only the carrier *Indomitable,* lightly, and one destroyer, heavily.[272] However, things would change radically for the worse later that night.

Admiral Syfret had intended that Admiral Lyster's Force Z would turn back to the west upon reaching Skerki Bank at 1915, and he had informed the fleet accordingly. However, because of a twenty-minute delay in reaching that point (because of the enemy air attacks) Syfret decided to turn back at 1855. He believed further air attacks prior to darkness were unlikely. Syfret was wrong in that, and wrong too in assuming that after the convoy reached Skerki Bank the threat from submarines would be eliminated. In his view, the greatest dangers were aircraft by day and torpedo boats by night. Soon after Force Z reversed course, at 1855, Ju-87s attacked Force X and the convoy. The convoy was obliged to change the formation from five columns to four columns at the entrance of Skerki Channel; at 2000, just as it was doing so, an Italian submarine, *Axum,* torpedoed the light cruisers *Nigeria* and *Cairo* and the tanker

*Ohio. Nigeria,* damaged, was directed to head to Gibraltar escorted by two destroyers (and later by a third). *Ohio* was heavily damaged but remained afloat and was taken under tow. *Cairo* was abandoned and eventually sank.[273]

In the aftermath of the submarine attacks, as several destroyers were helping damaged ships, at 2030 some twenty Ju-88 bombers and torpedo bombers attacked again. To compound the problem, fighters from Malta were fired on by Allied ships. The convoy was protected by only six Beaufighters. The German aircraft hit two merchant ships, *Empire Hope* and *Clan Ferguson,* with bombs and another, *Brisbane Star,* with torpedoes. *Empire Hope* had to be sunk, and *Clan Ferguson* blew up, but *Brisbane Star* would eventually reach Malta.[274]

Owing to the submarine and air attacks, the convoy was now widely dispersed. The light cruisers *Kenya* and *Manchester,* two merchant ships, and three minesweeping destroyers *(Intercept, Icarus,* and *Fury)* sailed ahead along the convoy's intended track across Skerki Bank. One destroyer, *Pathfinder,* was rounding up the remaining nine merchant ships, spread over several miles to the northwestward.[275] At 2112 *Kenya* was torpedoed by an Italian submarine; it was damaged but remained with the convoy. The already heavily damaged *Deucalion* was torpedoed and sunk by the destroyer *Bramham* at 2212 near the Cani Rocks in the Sicilian Narrows.[276] At 2230, the rest of the convoy was near Cape Bon.[277]

Because of the loss of *Nigeria* and *Cairo,* Admiral Syfret decided to reinforce Force X by detaching to it one light cruiser, *Charybdis,* and two destroyers, *Eskimo* and *Somali,* from Force Z. However, the latter was already far to the west, and it would take these reinforcements several hours to join. Force X's situation was critical. Syfret had information on the approach of enemy surface forces from the north. That force was reported at 1922 to be some ninety miles north of Marettimo.[278]

The Allies intercepted a Luftwaffe report at 1955 of damage probably inflicted on a carrier, five light cruisers, and one merchant ship. Later in the evening, the Luftwaffe reported hits on two enemy carriers and probably a cruiser and a destroyer. A ship had been seen afire. A merchant ship larger than twenty thousand tons had been hit with heavy bombs by Luftwaffe and Italian aircraft. The Italians probably hit one cruiser and two merchant ships.[279] By decrypting ENIGMA messages, Allied intelligence learned that the Germans believed they had damaged an aircraft carrier, a cruiser, a destroyer, and a twenty-thousand-ton merchant ship.[280]

While the German and Italian bombers and submarines were attacking, Supermarina executed its plan for intercepting the convoy. The Allies read in intercepted messages that the eight-inch-gun cruiser *Trieste* had sailed southward from a northern Tyrrhenian port during the night of August 11/12. Between 0840 and 1000 on the 12th, the eight-inch cruisers *Bolzano* and *Gorizia* had left Messina with four destroyers and steamed northward, and at 0930, the six-inch cruiser *Muzio Attendolo,* with two destroyers, had sailed from Naples.

ENIGMA further indicated that an (unidentified) Italian naval force received orders at 1835 on August 12 to proceed south at twenty knots and join with other forces ninety miles north of Trapani. Allied analysts inferred correctly that these orders had been addressed to the cruisers based at Messina and Cagliari. The Allies also read Supermarina's orders at 1945 to the cruiser divisions to be ten miles east of Pantelleria at 0530 the next morning. Supermarina also informed the cruiser force that all Italian torpedo boats, thirteen torpedo-armed MASs and six MSs, and four German S-boats, would patrol from south of Marettimo to Cape Bon, keeping west of longitude 11° 40′ east, until dawn on August 13, when they would proceed toward Pantelleria. At 2200, the cruiser force was directed to reduce speed so as not to arrive off San Vito, northeast of Trapani, before midnight on August 12/13.

However, at 2345 on the 12th, the Italians abruptly abandoned this operation. The light cruisers *Eugenio di Savoia* and *Raimondo Montecuccoli,* with three destroyers, received orders to proceed to Naples, the heavy cruisers *Gorizia, Bolzano,* and *Trieste,* the light cruiser *Muzio Attendolo,* and the remaining destroyers to Messina.[281] Supermarina now directed the 7th (Naval) Division to move into the Ionian Sea in indirect support of the 3rd Division. Eventually that too was reversed and the 7th Division returned to its base.[282]

The British official history would later claim that the reason Supermarina aborted the operation was probably an RAF demonstration meant to give the impression that a much larger Allied striking force was on the way.[283] An Italian source argues (implausibly) that the problem was inadequate combat readiness of the Italian ships.[284] However, what really forced Supermarina to abandon the operation was lack of air support for its cruiser/destroyer force. As Admiral Weichold, the German liaison to Supermarina, had been told, there were enough Luftwaffe and Italian fighter aircraft to protect either the bombers or surface forces but not both.[285] Weichold had argued that if the choice were not in favor of the warships a great opportunity would be lost to obtain numerical and weapon superiority, after the withdrawal of the enemy heavy covering forces, and therewith to destroy the convoy.[286] In the event, so it was.

To avoid enemy minefields in the Sicilian Narrows, the convoy's route had been laid south of Zembra Island and then close to the coast as far south as Kélibia.[287] At about midnight on August 12/13 the convoy passed near Cape Bon.[288] Its attenuated merchant ships and escorts provided the torpedo boats lying in ambush off Kélibia many opportunities for attack. The first torpedo boat was detected at about 0040; between 0120 and 0430, they carried out a large number of attacks on the convoy and its screen. They were very successful, perhaps surprisingly so. The small torpedo boats were extremely difficult for the cruisers and destroyers to engage. The first major loss was the cruiser *Manchester,* torpedoed by two Italian boats near Kélibia at 0120; the cruiser had to be scuttled, and it sank at 0500. Between 0315

and 0430, enemy boats torpedoed five merchant ships, all stragglers: *Glenorchy, Wairangi, Almeria Lykes, Rochester Castle,* and *Santa Elisa*. By 0330, *Charybdis, Somali,* and *Eskimo* had joined Admiral Burrough's main body.[289]

At daylight the enemy torpedo boats stopped their attacks.[290] The scattered ships were now comparatively easy prey for enemy aircraft.[291] At this point (0740), B-Dienst estimated, the convoy was widely dispersed some twenty-five nautical miles southeast of Pantelleria and consisted of three or four cruisers, ten destroyers, and ten merchant ships.[292] As all this was happening, early in the morning of August 13, the British submarine *Unbroken,* in an ambush position twelve miles south of Stromboli Island, hit and damaged the heavy cruiser *Bolzano* and light cruiser *Muzio Attendolo* with four torpedoes.[293]

At dawn on August 13, Force X comprised two light cruisers *(Charybdis, Kenya)* and seven destroyers *(Ashanti, Intrepid, Icarus, Fury, Pathfinder, Somali,* and *Eskimo).* It protected directly only three merchant ships, *Rochester Castle, Waimarama,* and *Melbourne Star.* One destroyer, *Ledbury,* accompanied the heavily damaged tanker *Ohio* some five miles astern of the main force. Some ten miles northwest was the merchant ship *Port Chalmers* and two destroyers, *Penn* and *Bramham.* The merchant vessel *Santa Elisa* was dead in the water and on fire; another, *Dorset,* sailed alone; and *Brisbane Star,* torpedoed the previous night, hugged Tunisia's coast.[294]

By 0700 on August 13, Force X and the convoy were about 120 miles west of Malta.[295] At 0740, German aircraft reported that the enemy convoy, fifteen light units and nine merchant ships, was seventy-two nautical miles east of Cape Mahmur, moving southeastward.[296] The convoy had been delayed by torpedo boat attacks but, some thirty miles south-southeast of Pantelleria, was finally within the effective range of Malta's long-range fighters. Beaufighters and Spitfires had begun to patrol above the convoy 170 miles from Malta and, although without fighter direction, inflicted considerable losses on enemy aircraft.[297]

On August 13, the first air attack on the convoy came at about 0810. Twelve Ju-88s made shallow dives from six thousand to two thousand feet. One merchant ship, *Waimarama,* was hit and blew up. Soon afterward, two more merchant ships, *Dorset* and *Port Chalmers,* were attacked too. The next attack, at 0925, was carried out by six Ju-87s diving to between a thousand and 1,500 feet; *Ohio* suffered further damage.[298]

German and Italian aircraft together struck again at 1017. The Italian aircraft dropped pattern-running torpedoes on the convoy's flanks. At 1050, the convoy was attacked by some twenty bombers, mostly Ju-88s but a few Ju-87s.[299] *Ohio,* although not directly hit, suffered damage from four or five near misses. The last attack on the convoy's main body came at 1125. It was carried out by about five Italian Savoia-Marchetti S.M.79 torpedo bombers accompanied by several aircraft dropping pattern-running torpedoes. Beaufighters and Spitfires shot down at least four of them.[300] By 1240 the convoy had come within the effective range of the

short-range Spitfires on Malta. Operating seventy to eighty miles from their bases, they were able to provide solid protection of the convoy.[301]

At 1355, German aircraft reported that the convoy consisted of four to six light units, four or five merchant ships, two damaged merchant ships screened by two destroyers, and an aircraft mother ship, *Unicorn* (which in fact was still under construction). The group was some twenty miles west of Malta, moving east at thirteen knots. In the area of Cape Bon were, they claimed to have sighted, one heavily damaged carrier, probably of the *Wasp* class, and three burning merchant ships, including one tanker.[302] The enemy heavy units that had been reported as turning westward on August 12 were now, at midday on the 13th, twenty-six miles north of Cape Bougarouni, steaming west at sixteen knots. They comprised a battleship, a cruiser, and four destroyers. While the aircraft did not observe them, it was assumed that a second battleship and a fourth carrier too were on a westerly course.[303]

Around 1430 that afternoon the convoy was joined by the Malta Escort Force. The main convoy now had only three merchant ships. At about 1600, Admiral Burrough with two cruisers and five remaining destroyers turned westward toward Gibraltar.[304] That evening at about 1800 *Port Chalmers, Melbourne Star,* and *Rochester Castle* reached Malta. At 1900, enemy aircraft hit and sank the merchant vessel *Dorset*. At daylight on August 14, *Ledbury* arrived at Valletta after its unsuccessful search for the torpedoed cruiser *Manchester* in the Gulf of Hammamet. *Brisbane Star,* attacked twice after daylight on the 14th by a single enemy aircraft, reached Malta the same day at 1530. *Penn* and *Bramham* towed the heavily damaged *Ohio* about a hundred miles to Grand Harbour, Valletta, in Malta, arriving in the morning of the 15th. Shortly afterward, the cargo having just been removed, *Ohio* broke in two and became a total loss.[305]

The German intent for the night of August 13/14 was to employ two S-boats near Cape Bon. Between twelve and fifteen torpedo boats were sent south of latitude 36° 40′ north, longitude 12° east. Luftwaffe aircraft were to carry out night attacks.[306] However, because of engine malfunctions the S-boats had to be withdrawn before they came in contact with the enemy.[307]

Force X, meanwhile, having left the convoy, had passed twelve miles off the island of Linosa and then steered toward "position R," seven miles south of Kélibia. That point was reached at 0012 on August 14. At 0450, when Force X was near the Fratelli Rocks, *Granito,* an Italian submarine, fired five torpedoes at the destroyer *Ashanti,* Admiral Burrough's flagship, but scored no hits. By daylight Force X was south-southeast of La Galite, where it was shadowed by German aircraft. The first attack, by a few Ju-88s, came at 0730.[308]

On August 14, German and Italian aircraft continued their reconnaissance of the western and central Mediterranean. At 1000 an Italian aircraft reported an enemy group including a carrier, some thirty nautical miles north of Cape Fer, moving westward. German analysts commented that if the report was true, the ship might

be the fourth enemy carrier, which had not been observed for a long time. German aircraft reported, from some forty nautical miles west-southwest of Malta, a carrier and a large merchant ship under tow.[309]

At 1110, an enemy destroyer was sighted thirty nautical miles east of La Galite Island steaming west at high speed. At 1310 a force estimated to consist of two cruisers and five destroyers was sighted thirty-two nautical miles northwest of Cape Bougarouni moving to the west at between twenty-three and twenty-five knots.[310]

Between 1030 and 1050, Force X was attacked by some thirty Ju-88s and Ju-87s and an hour later by about fifteen Italian high-level bombers. Afterward and until about 1315 twenty Italian S.M.79s struck, nearly hitting several ships but causing no serious damage. After the S.M.79s broke off, Force X was left alone. At about 1800 on August 14, Force X rejoined Admiral Syfret's Force Z at latitude 37° 29′ north, longitude 3° 25′ east.[311]

In the central Mediterranean, German aircraft sighted an enemy group of probably four steamers, two or three light cruisers, and three or four destroyers.[312] However, a German photoreconnaissance aircraft during the forenoon of August 14 was unable to obtain a clear picture, because of a high-density smoke screen. Later in the day German aircraft reported the presence in Valletta of four freighters and the tanker that had been observed under tow the previous day. During the night of August 14/15, despite the unclear operational picture, Italian MASs and German S-boats were directed to operate on the route to Malta yet did not establish contact with the enemy.[313]

The remainder of Force X arrived at Gibraltar independently. *Nigeria* and the destroyers *Derwent, Bicester,* and *Wilton* reached Gibraltar at 0010 on August 15. Several hours later two other destroyers, *Somali* and *Eskimo,* also arrived. The three destroyers that had helped *Ohio—Penn, Ledbury,* and *Bramham*—returned on the 21st.[314] Force R cruised in the western basin until it was certain it would not be required, then received orders to return to Gibraltar, where it arrived on the morning of August 16.[315]

**Secondary Operations**

While the main action was taking place in the western Mediterranean, there was rather intense Allied activity in the eastern basin. As planned, the Allies carried out MG 3, a feint to distract enemy attention away from the western Mediterranean. The convoy, MW 12, composed of three merchant ships, left Port Said after dusk on August 10, accompanied by two cruisers, ten destroyers, and two other escorts; one more merchant ship, escorted by two cruisers and three destroyers, left Haifa at 0300 on the 11th. These two groups joined in the early morning, then sailed westward to the longitude of Alexandria, where they turned back and dispersed. Their specific aim had been to lure the Italian 8th (Naval) Division out from Navarino and to keep Luftwaffe aircraft on Crete in place.[316] German aircraft observed

these movements. Early in the morning of August 12, Kesselring informed X Air Corps of the position (latitude 33° 40′ north, longitude 28° 34′ east) of four enemy merchant vessels, six cruisers, and an unknown number of destroyers sailing on a northeasterly course at twelve knots. He believed this convoy to be possibly an English "spoof" but did not exclude the possibility of a simultaneous supply operation bound for Malta from the eastern Mediterranean. He directed the X Air Corps to arrange exhaustive reconnaissance of the entire eastern Mediterranean area on the morning of August 12.[317]

During the night of August 12/13 Allied cruisers and destroyers shelled the port of Rhodes, and that day RAF aircraft attacked the airfield at Maritsa, on the northern tip of Rhodes. Also, that day a British submarine put commandos ashore at Simeto, near Catania, to set explosives on the pylons of a cable-stayed bridge. However, the Allied actions apparently did not faze the Italians: the 8th (Naval) Division remained in port, where it was reinforced by a German destroyer. The Italians contented themselves with holding up local traffic along the North African coast and, as noted above, shipping between Italy and Greece. MG 3, then, did not deceive the Axis and therefore failed to reduce the intensity of attacks on the main convoy in the western Mediterranean.[318]

The Allies also executed Operation ASCENDANT—the return to Gibraltar of the two merchant ships that had survived the June convoy—as originally planned. Force Y, with the two freighters, left Malta at about 2030 on August 10. It reached the area of Cape Bon the next day and arrived at Gibraltar at about 1000 on the 14th.

The RAF's long-range bombers made only sporadic attacks against enemy airfields on Sardinia and the airfield on Pantelleria. In addition to the night attack on Cagliari on August 11, the next day RAF bombers attacked the airfields near Cagliari from 0045 to 0315 and Pantelleria at 0245 and from 2110 to 2203. On August 13, they attacked Trapani from 0105 to 0345 and Pantelleria from 0515 to 0545.[319]

**Aftermath**

Despite the all-out Axis effort to destroy the Allied convoy and then its remnants, five merchant ships—four freighters and the heavily damaged *Ohio*—out of fourteen eventually reached Malta. The convoy and its defensive forces had been subjected to intense attacks by some 240 enemy bombers and ninety torpedo bombers.[320] Two of the ships that reached Malta had sustained so much damage that they almost sank on the way.[321] *Ohio* never sailed again. The Allies had lost a carrier *(Eagle),* two light cruisers *(Manchester* and *Cairo),* and one destroyer *(Foresight);* another carrier *(Indomitable),* two light cruisers *(Nigeria* and *Kenya),* and one destroyer were put out of commission for a considerable time. Some 350 men had lost their lives. The Fleet Air Arm had lost thirteen aircraft in combat, plus sixteen others sunk with *Eagle*.[322]

The RAF had lost five. The enemy losses were thirty-five aircraft, including two shot down over Malta.[323] The Allies were unable to risk such losses in warships again anytime soon; they would not attempt another large convoy operation to resupply Malta until November 1942.[324]

For their part, as of August 16 the Germans estimated that the enemy had committed forty-one ships for the defense and protection of the convoy from August 12 through the 15th: three carriers, two battleships, five cruisers, twenty-six destroyers, one submarine, and four corvettes. They considered that of the enemy order of battle remaining on August 12, one carrier *(Eagle)* and one cruiser *(Manchester)* had been sunk.[325] The next day the Germans concluded the enemy convoy had consisted of twelve merchant ships, including at least one tanker, had sailed from Greenock, Scotland, and was bound to Malta. They correctly assessed that each ship was loaded with gasoline, petroleum, cooking oil, ammunition, and soup and other food. The convoy did not include any U.S. carriers, they noted, but an American unit had taken part in the night battle off Kélibia. The French confirmed from prisoners that the convoy had consisted of twelve ships, not twenty-one, as B-Dienst had thought at one point.[326]

The Germans estimated enemy losses as at least seven warships and sixteen merchant ships, one transport, and one tanker, for a total of twenty-five units. The merchant ship tonnage destroyed was 180,000 BRT (the average size of the ships being eleven thousand BRT).[327] Specifically, they claimed to have sunk the carrier *Eagle,* the cruisers *Manchester* and *Cairo,* and a destroyer.[328] They estimated that the enemy had also lost three other destroyers and other units were variously damaged. The enemy had lost—for certain, it was assessed—nine freighters and probably more, up to sixteen.[329] The Germans believed that thirty-nine enemy ships (three carriers, two battleships, four cruisers, twenty-two destroyers, plus eight other units of unknown class, probably destroyers) had returned to Gibraltar.[330]

Nevertheless, despite these successes, the Germans concluded, with reason, that the outcome of the operation was unsatisfactory. The enemy had succeeded in getting four freighters and one tanker to Malta. The Germans also presumed (correctly) that cargo had been distributed among the freighters in such a way that if any of them reached Malta, the island would be supplied with some of everything it needed. The arrival of even so few freighters would have prolonged its survival for several weeks, enabling the enemy to interfere seriously with Axis supplies during the decisive phase of the struggle in North Africa.[331]

The Axis forces, then, did not accomplish their stated operational objective. They had achieved, however, a great tactical victory. German and Italian aircraft carried out twenty-nine attacks, all but two against ships at sea; of the total attacks, Italian aircraft conducted eleven. Axis aircraft sank the destroyer *Foresight* and four merchant ships and damaged the carrier *Indomitable* and three merchant vessels. A

single German U-boat sank one large aircraft carrier, *Eagle*. Italian submarines sank the light cruiser *Cairo* and two merchant ships (one of them in cooperation with aircraft). Italian submarines also damaged two light cruisers *(Nigeria* and *Kenya)* and one merchant ship. An Italian submarine and German bombers heavily damaged the tanker *Ohio*.[332] Especially noteworthy were the successes achieved by the Italian MSs/MASs, which sank the light cruiser *Manchester* and three merchant ships and damaged one merchant ship.[333]

On the other side, Allied submarines heavily damaged one heavy and one light Italian cruiser (*Bolzano* and *Muzio Attendolo,* respectively); neither put to sea again. The Axis lost forty-two aircraft.[334] Allied destroyers sank two Italian submarines *(Cobalto* and *Dagabur),* and aircraft damaged another, *Giada*.[335]

Despite the heavy losses suffered, PEDESTAL was a clear operational success for the Allies. About thirty-two thousand tons of supplies arrived safely, allowing Malta to carry on for another ten weeks. By August 22 all cargo had been unloaded from the five surviving ships, as well as the fifteen thousand tons of fuel *Ohio* had carried. Perhaps surprisingly, Axis aircraft did not attempt to interfere with the unloading.[336] Moreover, while PEDESTAL was in progress three Allied submarines carried ammunition, torpedoes, and aviation fuel from the east to Malta. These supply trips continued in September and October 1942.[337]

Taken altogether, these supplies allowed Allied submarines and aircraft to intensify their attacks on the Axis supply lines to North Africa in the critical period of the campaign there. The Allies were able to obtain air superiority over Malta and thereby dramatically change in their favor the situation in the central Mediterranean.[338] During September 1942, the Allies sank more than a hundred thousand tons of enemy supplies destined for North Africa. By mid-October the Africa Corps had only three days' supply in reserve instead of the minimum fifteen days' worth prescribed for starting an offensive. In November 1942, Field Marshal Rommel lost the battle of El Alamein (October 23–November 11, 1942)—and the tide of war in North Africa turned in favor of the Allies.[339]

## CONCLUSION AND OPERATIONAL LESSONS LEARNED

Operation PEDESTAL took place at a time when Allied fortunes in the Mediterranean were at their nadir. The island of Malta was close to being unable to serve as the air and submarine base for Allied efforts against the Axis forces in North Africa. While the Axis forces on the ground had been forced to stop their advance after the inconclusive first battle of El Alamein, they were still within striking distance of the Nile valley. They were preparing to resume their advance and seize Egypt as soon as they had sufficient reserves of fuel, ammunition, and other supplies. For the Allies, it was vital that Malta remain in their hands; otherwise, they knew, the Axis would, by seizing Egypt, radically improve its position in the Middle East. The

operational decision to run a major resupply operation to Malta, accordingly, was made by the strategic leadership in London, not by the Admiralty or the fleet commanders in the theater.

*In making a decision, the operational commander always should carefully weigh the potential risks versus the benefits of a pending major operation in terms of its effect on the campaign as a whole. Potential losses might be prohibitive, yet in some situations taking such a high risk can be prudent if the outcome would gain valuable time for the campaign as a whole.*

*The strategic leadership normally should not make decisions that rightfully belong to the operational or tactical commanders. An exception is when the strategic situation is so serious that failure to take decisive action might have a major impact on the course, or even the outcome, of the war in a theater. Then, only the strategic leadership can ensure that adequate forces are or become available to accomplish the ultimate objective.*

In the summer of 1942, the Allied command organization in the Mediterranean was highly fragmented. No single commander had the authority and responsibility to conduct the planning and employment of all three services. The basic plan for the Malta resupply operation was prepared in London; plans in support of the operation were then prepared by the respective service component commanders in the Mediterranean. These headquarters were separated by long distances. The mission's success depended almost entirely on cooperation among the services, but strong parochialism made that very difficult to achieve. Even though Malta's survival was vital to its own campaign in North Africa, the British army was unwilling to support the operation with a diversionary attack.

The Axis command organization in the Mediterranean lacked unity not only of command but also of effort. The Germans and Italians had separate command structures and prepared plans separately. The German theater structure itself was also highly fragmented. Kesselring was nominally in command of the entire southern theater, but he did not control the Axis campaign in North Africa or, even de facto, the employment of German naval forces. The Italian command organization was made chaotic by overlaps of responsibility and authority. Also, the higher naval authorities constantly interfered with the decisions and actions of subordinate tactical commanders.

*In a sound theater organization, a single operational commander has full (at least operational) command over and control of the assigned multiservice and multinational forces. The chain of command should be simple and straightforward, with ideally no overlap of authority and responsibility among command echelons. Sound lines of authority and responsibilities are simple and clear at all levels of command, but especially at the operational and theater-strategic levels. Unity of effort is best ensured by appointing the same commander for both planning and execution. Service*

*parochialism is one of the major impediments to the necessary cooperation in the drafting of plans for major operations or campaigns and one of the major causes of duplication of effort, which wastes sorely needed resources and time.*

The Allies' single greatest advantage was their ability to intercept and decode German ENIGMA messages in a timely fashion. Allied commanders thereby obtained generally accurate and detailed knowledge of the enemy's plans, actions, and pending reactions. The Allies possessed excellent knowledge of the strength and the planned movements of Luftwaffe units in the Mediterranean. They also had reliable knowledge of the strength and movement of Italian submarines and surface forces. However, their assessment of German U-boat strength was faulty. For its part, the Axis had only limited capability to intercept and decode enemy radio messages. Its commanders relied mostly on air reconnaissance and submarine reports for the location, composition, and movements of an enemy force. Yet they also had a solid network of agents in the Gibraltar area and in Ceuta and some in the Suez Canal zone.

*The ability to obtain accurate, reliable, timely, and relevant information on the enemy order of battle, plans, intentions, and movements is of inestimable value in the planning and execution of a major operation or campaign. However, the importance of good intelligence should not be overestimated. Having what is today called "information dominance" is only one among many factors involved in making a sound decision, often not even the most important one. Much more important are commanders' experience and character and the soundness of their judgment. Also, an operational commander might make a sound decision but still suffer a setback or even defeat at the hands of a weaker opponent who acts faster, not having waited for perfect knowledge of the situation. In some situations, the weaker side can succeed without knowledge of the stronger side's plans and intentions by virtue of a much more favorable geographic position, qualitative superiority, or faster and more determined action.*

Planning for PEDESTAL was sound and thorough. A major problem that it faced was finding enough freighters given the simultaneous Allied commitments to supply the Soviet Union. Another problem was assembling a powerful force for distant cover and support and direct screen of the convoy; commitments in British home waters and the Indian Ocean stretched naval resources to the limit. The Allies had learned, however, the proper lessons from the failure of the dual convoy operation in June 1942, and they applied them to the PEDESTAL plan. Geographically, the configuration of the western and central Mediterranean was a major and negative planning factor in PEDESTAL. The long distance from Gibraltar to Malta vis-à-vis the proximity of the Axis airfields dictated the types and numbers of forces available for support and their employment in combat.

It probably would have been wiser not to conduct the ferrying operation simultaneously with the resupply effort. Air reinforcements to Malta could have been

sent instead either before or shortly after PEDESTAL. Also, destroyers for the carrier *Furious* would have greatly strengthened the air and antisubmarine defenses of the convoy, Force Z, or Force X.

*In planning a major operation, the commander should avoid adding tasks unrelated to the accomplishment of the ultimate operational objective. Additional tasks not only unnecessarily complicate the basic plan but also reduce the forces available to accomplish the main objective. Additional tasks also usually require more time and thereby may considerably complicate or even endanger the outcome of a major operation.*

The Allied feint in the eastern Mediterranean was poorly conceived: the real objectives of the pending operation were simply obvious to the enemy. In addition, the forces assigned to the feint were too small in themselves to compel the Germans and Italians to draw forces from the western and central Mediterranean. Only a viable threat of an Allied invasion of Crete or mainland Greece would have forced the enemy to react operationally, let alone strategically. It is quite possible, however, that a sizable diversionary attack by the British army in the Libyan Desert might have forced the Germans and Italians to divert land-based aircraft from the attack on Force F.

*A major operation is likely to be more successful if the planners also prepare a plausible operational deception plan. Feints, demonstrations, or ruses should be conducted not in isolation from but, without exception, integrally with such a plan. A feint or operational deception is unlikely to succeed if the objective is unmistakable. In any case, forces assigned to operational deception should pose in themselves such a threat as to lead the enemy to react operationally or even strategically, not merely tactically.*

Lacking good prior intelligence on the movements of enemy forces, the Axis leaders could not make their plans until mid-August, largely in response to enemy actions. Nevertheless, their plans for the employment were solidly based. The Axis partners commanded an extremely favorable geographic position. A large number of Italian airfields and naval bases flanked the route of enemy convoy in the western and central basins; Axis aircraft and surface forces based on Sardinia and Sicily operated from exterior positions but along short lines. The single major error on the German side was Kesselring's decision not to provide strong air cover for the Italian heavy surface forces.

Lack of adequate air strength on Malta greatly complicated the Allied challenges. The Allies did not have enough heavy bombers on Malta to inflict substantial damage on the air bases on Sicily and Sardinia. They also lacked fighters to assure the safety of the convoy once it came within range. The Germans and Italians, in contrast, had a large number of land-based aircraft available for attack as well as support. The Germans also were able to redeploy from Crete to Sicily. Yet despite the

large number of aircraft overall, the Axis lacked sufficient fighters to escort bombers and also cover surface ships. As for the Italians, lack of fuel essentially immobilized their battleships. They were, however, able to assemble a considerable number of submarines, while the Germans had only two U-boats.

Both the German and Italian pilots showed a great deal of determination, skill, and courage in their repeated attacks against the convoy and its supporting forces. The Italian submarines and the U-boats achieved great success against both surface ships and merchant vessels. Most striking was the effectiveness of the Italian and German torpedo boats against the scattered convoy on the night of August 12/13. Yet the Germans and Italians made a major mistake in deciding to focus on the enemy's undamaged ships. This most likely is why *Ohio* reached Malta. The Italian decision to cancel the planned heavy surface force attack on the remnants of the convoy also was a great mistake probably costing the Axis a tactical, even operational, success.

*Warfare in a typical narrow (enclosed or semienclosed) sea differs considerably from that on the open ocean or in littorals bordering the open ocean. Land-based aviation is a formidable threat to surface ships operating in a narrow sea. Success in a narrow sea cannot be ensured without an adequate degree of air superiority within the given area of operations. Also, in narrow seas a weaker side can inflict substantial losses on a stronger opponent by skillful use of favorable geographic position, submarines, small surface combatants, and mines.*

The Allies enjoyed an almost uninterrupted stream of decoded ENIGMA messages and from them unprecedented knowledge and understanding of the enemy situation, plans, and pending actions. The Allied commanders knew the German intentions and orders of the day. Further, and despite the great odds against them, Allied aviators and sailors displayed a superb fighting spirit—especially the merchant mariners. One of the major errors on the Allied side was the decision, based on false assumptions, to turn Force Z westward; heavy Allied losses resulted. Operation MG 3 failed to make any impression on the Axis commanders. This is no surprise, because Allied planners had based the entire effort on a faulty premise: the operation represented a waste of time and resources.

The Axis commanders had a reasonably accurate picture of the situation in the western Mediterranean once the enemy convoy transited the Strait of Gibraltar. Most of their intelligence came from reconnaissance aircraft. Nonetheless, the Germans and Italians formed an exaggerated impression of the true capabilities of the Allied force that entered the Mediterranean. The probable reason was the sheer size of the surface force assigned to support the convoy.

With their almost total destruction of the enemy convoy to Malta, the Germans and Italians achieved a major tactical victory; however, they failed to gain operational success, because they did not destroy the last five Allied merchant ships. Those ships alone brought enough supplies to Malta to enable it to survive for

another ten weeks. Hence, Operation PEDESTAL was a clear Allied operational victory.

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# III *The Allied Landing at Anzio-Nettuno*
## *January 22–March 4, 1944 (Operation SHINGLE)*

The Allied amphibious landing at Anzio-Nettuno on January 22, 1944, Operation SHINGLE, began a major offensive joint/combined operation. For the Germans, it necessitated a major anti-amphibious operation. Despite Allied superiority in the air and at sea, the Germans were able to bring up large forces quickly and seal the beachhead. The two sides suffered almost equal losses during some four months of fighting. The Allied forces on the beachhead were unable to break out or to capture the critically important Colli Laziali (Alban Hills), which dominated the two main supply routes to the German forces on the Gustav Line, until the main Fifth Army advanced close to the beachhead. Only the naval part of the operation was planned and executed excellently.

The decision to launch Operation SHINGLE primarily was made on the basis of political and strategic, not operational, considerations. Ironically, the Allied political leaders—Winston S. Churchill in particular but other high-ranking, operational commanders as well—grossly underestimated the Germans' will to fight and their war-fighting capabilities. Another major reason for the failure of Operation SHINGLE was very poor leadership by the Allied operational commanders. In retrospect, on the basis of the true situation at the time, SHINGLE should not have been planned, let alone executed. It never had a realistic chance of success. It was a vast gamble that ultimately failed.

### STRATEGIC SETTING

In the spring of 1943, the strategic situation in the Mediterranean was highly favorable to the Western Allies. The campaign in North Africa had ended with the surrender of the German-Italian forces in Tunisia on May 12. At a conference in Washington, DC, May 12–27 (TRIDENT), the highest Allied leaders had confirmed their decision to seize Sicily next (Operation HUSKY). The Combined Chiefs of Staff (CCS) directed Gen. Dwight D. Eisenhower, who had been Supreme Commander Allied Forces, Mediterranean Theater of Operations, to prepare options for continuing the war in southern Europe after capturing Sicily.[1]

Eisenhower's staff considered three such options. One envisaged the capture of Sardinia and Corsica, followed by a descent on southern France; the greatest

advantage of this option was that it would support the main, upcoming effort in Normandy. The second option, which the British favored, contemplated a thrust through Italy to support guerrillas in the Balkans and to bring Turkey into the war on the Allied side. The third was a landing in southern Italy, then an advance northward, using Italy as a logistical base and acquiring airfields for the long-range bombing of Germany and the Balkans. The general belief was that the latter option would force Italy out of the war, which would remove twenty-one Italian divisions from the Balkans and five from France. The Germans would be forced to take over the defense of the Italian Peninsula, weakening their forces in Western Europe.[2]

The Italian dictator, Benito Mussolini, fell from power on July 25, 1943, after the Fascist Grand Council passed a vote of no confidence. Shortly afterward, the Italian king, Vittorio Emanuele III, appointed Marshal Pietro Badoglio as the new prime minister. Hitler wasted no time in reacting to the new developments in Italy. On July 26, he directed Field Marshal Erwin Rommel to "assemble troops in the Alps and prepare for a possible entry into Italy."[3] On July 30, Rommel gave these troops orders to cross the Italo-German frontier and seize the Alpine passes, under the pretext of securing supply routes. The Italians protested, but they did not want an open clash with the Germans. The Germans then moved into northern Italy, explaining that this would permit the Italians to concentrate more of their forces to defend southern Italy.[4] By early September, eight German divisions had moved into northern Italy, where they eventually supported other German forces stationed in the south. The 2nd Parachute Division (ParaDiv) was moved from France to Ostia, near Rome—as, so the Germans informed the Italians, a reinforcement for the Axis forces in Sicily. After the successful evacuation of the German forces in Sicily across the Strait of Messina in mid-August, Field Marshal Albert Kesselring, CINC South, organized four severely depleted German divisions into a new Tenth Army.[5]

The relative ease of the victory on Sicily convinced the British that the Allies should now assume higher risks and invade Italy's mainland, to drive the country out of the war. The first step, the British argued, should be the capture of Naples, then Rome. American planners hesitated to embark on such a course of action. They were much concerned (correctly, as it turned out) that an invasion of the Italian mainland would lead to a long and indecisive peninsular campaign. It also probably would require additional resources and thereby impede the buildup of Allied forces for the planned Normandy invasion (Operation OVERLORD).[6]

On September 3, 1943, in Cassibile, Sicily, the Allies signed an armistice with the Italian government. It was kept secret until September 8, when Italy's surrender was formally announced.[7] However, the Germans had anticipated that the Italians would change sides and had prepared Case AXIS (ACHSE) (formerly ALARIC) for such an eventuality. Shortly after September 8, German forces moved rapidly to disarm their erstwhile allies in Italy, France, the Balkans, and the Aegean Islands. On the

12th, German paratroopers raided Gran Sasso (Operation EICHE/OAK) and liberated Mussolini from captivity. Afterward, Mussolini established the so-called Italian Social Republic—in effect a German puppet state—in the northern part of Italy.

On September 3, the British Eighth Army crossed the Strait of Messina and landed in Reggio di Calabria (Operation BAYTOWN). Six days later, the Allies carried out a large amphibious landing in the Bay of Salerno (Operation AVALANCHE). The invading force was composed of the U.S. Fifth Army, commanded by Mark W. Clark and comprising the U.S. VI Corps and the British 10 Corps. It was transported in some 450 ships.[8] The majority of the invading force had assembled at bases in North Africa and made a "shore-to-shore" assault. All the Allied landing craft and smaller escort vessels had to be refueled on their way from the North African ports and hence were staged through two ports on Sicily's north coast.[9]

The enemy landing did not surprise Field Marshal Kesselring.[10] He ordered an all-out effort to throw the enemy force back into the sea. When that attempt failed on September 15–16, Kesselring ordered a delaying defense and an orderly withdrawal. The battle for Salerno was costly for both sides: German casualties were estimated at 3,500 men; American losses were also about 3,500, the British some 5,500.[11]

After landing at Salerno, the U.S. Fifth Army advanced along the west coast to Naples, while the British Eighth Army moved up the east coast. By the end of September, the Fifth Army had reached the Volturno River. Naples was liberated on October 1, its port virtually destroyed.[12] The Allies had bombed the city, but German demolition teams had inflicted most of the damage, destroying all communications, transportation, water, and power-grid infrastructure.[13] The British Eighth Army seized the Foggia airfield complex intact on September 29; Allied heavy bombers later used these airfields.[14] The Eighth Army outflanked German positions by an amphibious landing at Termoli. Gen. Bernard L. Montgomery paused to reorganize and resupply his forces, after which his Eighth Army crossed the Biferno River on October 3.[15] By that time, and despite a considerable numerical superiority on the ground, at sea, and in the air, the Allies had suffered over twelve thousand casualties (two thousand killed, seven thousand wounded, 3,500 missing).[16]

The German Tenth Army's stubborn delaying defense of southern Italy convinced Adolf Hitler not to abandon Italy. On October 4, he decided that a stand would be made south of Rome. At that time, the Germans had only eight divisions of the Tenth Army in the southern part of Italy. In northern Italy, there were nine divisions of Army Group B. By the end of October three of these were to leave for the Eastern Front, two for southern Italy. Two other divisions would arrive from southern France.[17] Kesselring was directed to continue the delaying defense as far back as the Gaeta–Ortona line.[18]

The Germans hurriedly constructed several successive defense lines across the Italian Peninsula.[19] The first, the Victor Line, stretched from Termoli in the east to

the Biferno and along it through the Apennine Mountains to the Volturno River in the west. Behind that line was the Barbara Line, a series of fortified hilltops extending from Colli al Volturno along the Trigno River to the Adriatic coast.[20] On the 12th, Kesselring ordered the withdrawal of German forces to the Barbara Line. By mid-October, the German defensive line ran along the Volturno and Trigno Rivers.[21]

The U.S. Fifth Army breached the Barbara Line in early November. The Germans fell back to the Bernhardt (or Reinhard) Line, which had been established some seventy-five miles south of Rome. It was a ninety-mile-long salient running over the massif of Monte Camino, enclosing the peak of Monte Camino, Monte la Difensa, Monte la Remetanea, and Monte Maggiore. It consisted of gun pits, concrete bunkers, turreted machine-gun emplacements, barbed wire, and minefields.

By early November, Hitler and the Supreme Command of the Wehrmacht believed that it was unlikely that the enemy would use Italy as a springboard for invading the Balkans. The German strategy in Italy remained what Hitler had stated in his directive of October 4, 1943: a protracted defense of the barriers across the Italian Peninsula.[22] Kesselring was ready to do everything possible to defend the approaches to Rome. In mid-November, he had eleven German divisions in southern Italy versus twelve Allied.[23]

The Allies held an important conference in Cairo on November 22–26, 1943 (SEXTANT). Prime Minister Churchill wanted the Allies to make a more determined effort in Italy. He argued that the Allied forces needed to reach the Po River by the spring of 1944, even if that meant weakening or delaying the Normandy invasion. In contrast, the Americans insisted that no new operations in the Mediterranean should be allowed to affect adversely any planned redeployments of Allied forces for the Normandy invasion. The Allies decided at Cairo to cancel a planned landing on the Andaman Islands (Operation BUCCANEER), in the eastern Indian Ocean, and released its forces for other theaters. Adm. Louis Mountbatten, Supreme Commander, South East Asia Command, was directed to send about half of his amphibious craft to the Mediterranean and England.[24]

At the Allied conference in Tehran on November 28–December 1, 1943 (EUREKA), the main topic was whether to focus on the planned invasion of Normandy or intensify Anglo-American efforts in the Mediterranean. Both President Franklin D. Roosevelt and the Soviet dictator, Stalin, insisted on an attack across the English Channel, combined with a landing in southern France. Churchill agreed regarding southern France but insisted on a more determined effort in Italy. For him, it was of paramount importance that the Allies capture the Italian capital, Rome, by mounting a large amphibious landing in its vicinity. Churchill also advocated intensified efforts to entice Turkey to enter the war against Germany. However, Roosevelt and Stalin were adamant that the focus remain on Normandy. A second conference in

Cairo, held December 4–6, confirmed the decision of the Tehran Conference that OVERLORD would be the most important Allied effort in 1944, that nothing was to be done elsewhere to endanger its success.[25]

By December 1, 1943, the Allied armies had reached the Bernhardt Line, defended by Tenth Army's XIV Panzer Corps (PzCorps), commanded by Gen. Fridolin von Senger und Etterlin. The Bernhardt Line was a bulge in front of the more formidable Gustav Line (protecting the approaches to Rome through the Liri Valley). The latter, eighty-four miles long and ten miles deep, consisted of a series of interlocking positions extending across the peninsula from just north of the mouth of the Garigliano River on the Tyrrhenian Sea to the mouth of the Sangro River on the Adriatic. It centered on the town of Cassino, near which was a peak 1,700 feet high on top of which stood a sixth-century monastery. The Gustav Line's positions consisted of deep underground bunkers, labyrinthine tunnels, machine-gun emplacements, antitank ditches, minefields, and concertina wire.[26] The Todt Organization (Organisation Todt, or OT, a civil and military engineering organization named after its founder, Dr. Fritz Todt) pressed prisoners of war (POWs) and civilians into service to build it.[27] Kesselring promised Hitler that his forces would hold the Gustav Line for at least six months.[28] Behind the central part of the Gustav Line and about five miles north of it the Germans established the Hitler Line, based on strongpoints at Aquino and Piedimonte. This would be a fallback position (or "switch line") if the Gustav Line was penetrated. In May 1944, the Hitler Line would be renamed the Senger Line (after Gen. Fridolin von Senger und Etterlin). The Bernhardt, Gustav, and Hitler/Senger Lines together constituted the "Winter Line."

On November 20, the British Eighth Army opened an offensive with three divisions on the Adriatic front. However, torrential rains stopped its attack for about a week. By December 2, the Eighth Army had resumed its offensive, but German resistance was slowing its progress. On December 27 Montgomery stopped his advance without achieving his objectives. On the Fifth Army front, the British 10 Corps, deployed along the Garigliano River, carried out a demonstration aimed at drawing the German forces toward the coast. Afterward, it attacked in the direction of Monte Camino. On December 2–3, the U.S. II Corps attacked Monte Camino but took more than a week to secure this important position.[29]

By early December 1943, the Allies had fourteen divisions in southern Italy; two more were anticipated to arrive by the end of the month. The arrival of these units would make it possible to pull out VI Corps for the Anzio landing.[30]

**Allied Theater Command Organization**

The Allied command structure in the Mediterranean was highly fragmented. The various Allied headquarters in the theater were separated by long distances, making operational planning very difficult. The planning procedures of the British and the American staffs differed considerably. So too did the American and British views

on the degree of control the strategic leadership would grant to theater commanders and other high-level military leaders. In general, an American theater commander had more independence in exercising his responsibilities than his British counterpart. The Americans interpreted CCS directives as guidance, not orders. In contrast, British theater commanders were controlled tightly by the British chiefs of staff, who in turn were strictly subordinate to their prime minister.[31] This situation was made even more difficult by personal animosities between higher commanders, national differences, and the parochialism of services.

Gen. Dwight D. Eisenhower was CINC, Allied Forces, North Africa until December 10, 1943, when his title changed to Allied CINC, Mediterranean Theater. The same day, the CCS directed consolidation of Allied major commands in the theater. All British forces in the Middle East were placed under Allied Forces Headquarters (AFHQ), commanded by General Eisenhower. A major problem in the new structure was the absence of a component commander for ground forces. Eisenhower's deputy was a British general, Harold Alexander, who was also commander of the 15th Army Group, which was composed of the U.S. Fifth Army (General Clark) and the British Eighth Army (General Montgomery). Directly subordinate to Eisenhower were Gen. George S. Patton Jr., commander of the U.S. Seventh Army (in Sicily); Gen. Alphonse Juin, commander of the French Expeditionary Corps (FEC); and Gen. Władysław Anders, commander of the Polish 2nd Corps.

The decision made at the Tehran and Cairo Conferences in December 1943 to consider the Normandy landing the highest priority in 1944 led to several major command changes in the Mediterranean theater. The most important was the departure of Eisenhower to become Supreme Commander, Allied Expeditionary Forces for the invasion of northwestern Europe. The CCS did not expect Eisenhower to leave the theater until after the capture of Rome, but he transferred his staff to London right away, believing the immediate prospects for taking Rome to be poor.[32] On January 2, 1944, Eisenhower formally became Supreme Allied Commander for the pending Normandy invasion.[33] On the 8th he was replaced in the Mediterranean by a British general, Henry Maitland Wilson. (Wilson's title was later changed to Supreme Allied Commander, Mediterranean Theater.)[34] A U.S. general, Jacob L. Devers, Commanding General European Theater of Operations, was appointed Alexander's deputy. Devers also became Commander, North African Theater of Operations, heading all U.S. forces in the Mediterranean.[35] General Montgomery, of the Eighth Army, was chosen to lead an army group in the cross-Channel invasion; he was replaced by Lt. Gen. Oliver W. H. Leese on January 1, 1944. (These command changes had originally been planned to go into effect in late December 1943.)[36] On March 9, 1944, Alexander became Supreme Allied Commander, Mediterranean Theater. His 15th Army Group became on January 11 the Allied Forces in Italy, seven days later the Allied Central Mediterranean Force, and then, on March 9, 1944, the Allied Armies in Italy.[37]

The highest-ranking Allied air commander in the theater was British air chief marshal Arthur W. Tedder, Commander, Mediterranean Air Command (changed to the Mediterranean Allied Air Forces, or MAAF, on December 10, 1943). In December 1943 it was announced that Tedder would go to England and become Eisenhower's deputy. He was replaced by Lt. Gen. Ira C. Eaker of the U.S. Army Air Forces.[38]

The principal components of the theater's Allied air forces were the Middle East Air Command (renamed Headquarters, Royal Air Force, Middle East on December 10, 1943), the U.S. Ninth Air Force, and the Northwest African Air Forces. The latter consisted of the following (listed with designations before and after January 1, 1944): Northwest African Strategic Air Force (Mediterranean Allied Strategic Air Force); Northwest African Coastal Air Force (Mediterranean Allied Coastal Air Force); Northwest African Tactical Air Force (Mediterranean Allied Tactical Air Force); Northwest African Troop Carrier Command (disbanded); Northwest African Photographic Reconnaissance Wing (Mediterranean Allied Photographic Reconnaissance Wing); and Northwest African Air Service Command (disbanded).[39]

Admiral of the Fleet Sir Andrew B. Cunningham, Royal Navy, was Commander in Chief, Mediterranean Fleet. Directly subordinate to him were Commander in Chief, Levant and six flag officer commands (Gibraltar and Mediterranean Approaches, Western Mediterranean, Malta and Central Mediterranean, Levant and Eastern Mediterranean, Western Italy, and Tunisia), plus a number of type commands (e.g., Rear Admiral Aircraft Carriers and Commodore Destroyers, Eastern Mediterranean). When in October Admiral Cunningham was appointed First Sea Lord, he was relieved by another British admiral, John H. D. Cunningham (no relation).[40]

The most senior U.S. Navy officer in the Mediterranean was Vice Adm. H. Kent Hewitt, whose title had changed for each major amphibious landing operation, including AVALANCHE. On September 16, 1943, Rear Adm. Frank J. Lowry relieved Richard L. Conolly as Commander, Landing Craft and Base, North African Waters. Lowry also replaced Rear Adm. John L. Hall as Commander, VIII Amphibious Force, on November 8, 1943.

**German Theater Organization**

Prior to the end of September 1943, Field Marshal Kesselring, as CINC South, had full command over all three services of the German armed forces deployed in theater. However, just when the Germans most needed unified command in the Italian theater, Hitler ordered a drastic change that fragmented it severely.[41] So in November, Naval Command, Italy (Deutsches Marinekommando Italien) and 2nd Air Fleet were resubordinated to their respective services and directed thereafter merely to cooperate with Kesselring.[42] As CINC South, Kesselring directly commanded eight divisions, mostly mechanized or panzer units. Some of these forces were newly arrived from North Africa and had not been brought back to full strength. All German ground units had been weakened considerably during the long withdrawal from Salerno.[43]

On August 16, 1943, Field Marshal Rommel and his Army Group B were deployed to the northern part of Italy. Rommel's mission was to seize the threatened Genoa–Leghorn (Livorno)–Venice–Trento area and the Apennine crossing between Leghorn and Ancona. A larger mission was to pacify northern Italy, crush the insurgents in Istria and Slovenia, protect the lines of communication and coastal flanks of the theater, and organize the defense of northern Italy.[44] Rommel's headquarters (HQ) was established on the Lago di Garda, fifteen miles northwest of Verona. Army Group B's thirteen divisions were mostly reorganized or reactivated units from the Eastern Front—generally unsuitable, because of a lack of mobility, for combat in the southern part of Italy.[45] Normally, Kesselring, as theater commander, should have been in control of both Army Group B and Tenth Army; in fact, however, he and Rommel were coequal, both directly subordinate to Hitler.

On November 6, however, Kesselring was appointed CINC of a newly established theater command, Oberbefehlshaber Südwest (Southwest), as well as commander of Army Group C (formally established on the 21st). Army Group B was dissolved.[46] Rommel was sent to strengthen the Atlantikwall (Atlantic Wall) defenses in Western Europe against an anticipated large-scale invasion. Part of Rommel's staff was assigned to the headquarters of CINC Southwest, the rest to the newly created Army High Command (Armeeoberkommando) 14. Organizationally, this command was between an army group and an army corps, but it commonly was known as the "Fourteenth Army." On November 21, 1943, Kesselring formally took over the entire Italian theater. Yet he did not command the navy or air force. However, Kesselring did have under his control the Luftwaffe's paratroop units and administrative control over the Luftwaffe units deployed in his theater.[47] Those operating from Italy had been subordinated on June 10, 1940, to the Kommandierender General der Deutschen Luftwaffe in Italien, the Commanding General of the German Luftwaffe in Italy. (In 1941 this title was changed to General of the German Luftwaffe at the Supreme Command of the Royal Italian Air Force and in July 1944 to Commanding General of the German Luftwaffe, Central Italy, or Kommandierender General der Deutschen Luftwaffe in Mittelitalien.)

German Naval Command, Italy, with HQ at Levico Terme (after February 1944 at Montecatini Terme), controlled surface forces and all other elements of the Kriegsmarine that were present. The exception was that the chief of naval transport was directly subordinate to the Supreme Command of the Navy. In February 1943, a special staff was created within the Italian Naval Ministry for the convoying service. After the fall of Tunisia in May 1943, this staff was merged with the German Naval Command, Italy. In November 1941, the newly created staff of the Commander, U-Boats, Italy (F.d.U. Italien) was incorporated into the German Naval Command, Italy, in Rome. In August 1943, this command was renamed Commander, U-Boats, Mediterranean (F.d.U. Mittelmeer), with headquarters in Toulon, southern France. It was to be dissolved in September 1944.[48]

After the capitulation of Italy in September 1943, the Germans took over coastal defense in northern Italy. In late spring 1944, the major commands of the German Naval Command, Italy were the 7th Defense Division (HQ in Nervi); Sea Defense Commandant, Italian Riviera (La Spezia); and Sea Defense Commandant, Western Adriatic (Venice).[49]

In January 1944, the most important command on the western coast of Italy was Naval Commander, Italian Coast (established in September 1943) at La Spezia, subordinate to German Naval Command, Italy. It encompassed four naval district commands: Genoa, La Spezia, Leghorn–Viareggio, and Civitavecchia. Naval Command, Istria, however, reported to CINC Southeast, in Salonika, Greece. Set up in September 1943 at Duino, near Monfalcone, its responsibility encompassed the area from the mouth of the Tagliamento River up to the island of Sušak, Croatia, including the islands of Cres and Lošinj. Other commands subordinate to German Naval Command, Italy were High Commander, Coastal Artillery, Italy (established in August 1943); Chief, German Naval Transport, Italy (Deutscher Seetransport, Italien); the naval arsenals in La Spezia, Pola, and Venice; and the naval artillery arsenal in Florence/Sangunetto (near Verona).

**Allied Operational Intelligence**

The main sources of information of Allied intelligence were ULTRA intercepts, agents in German-occupied territory, German prisoners of war, air reconnaissance, and various modes of technical collection. Of these by far the most important for German orders of battle, locations and activities of forces, states of supply, and plans and intentions were the ULTRA decrypts from Bletchley Park. At this point, ULTRA analysts were reading two, sometimes three, messages from the Luftwaffe's liaison officers *(Flivo-Flug-Verbindungsoffiziere)* almost every day. For example, ULTRA revealed the timing of Kesselring's successive withdrawals all the way back to the Gustav Line. ULTRA also read the situation reports of the Tenth Army and Army Group B (and its successor the Fourteenth Army), as well as messages exchanged among Hitler, OKW, and Kesselring. Divisional reliefs and withdrawals rarely escaped the attention of the ULTRA analysts. The Allied decoders kept planners informed about the current state of and shortages in Axis fuel, ammunition, and rations.[50] ULTRA revealed Hitler's decision to appoint Kesselring CINC of all German forces in Italy (he became CINC South on November 21). It also intercepted on November 20 a message that OKW had sent to Kesselring on the 11th concerning how he intended to regroup his forces. The dissolution of Army Group B was confirmed when the newly created Fourteenth Army took control of all its divisions.[51] On November 18, ULTRA indicated that Luftwaffe aircraft were reconnoitering the Naples area, probably, analysts assessed, to determine the status of landing craft in the bay. Another ULTRA message made clear that Kesselring had replaced some of the German divisions along the Gustav Line opposite the Fifth Army.

In practice, the benefits of ULTRA could be mixed. For example, the Allies learned that Kesselring considered the 26th Panzer Division (PzDiv) and 29th Panzer-Grenadier Division (PzGrDiv, combining armor and mechanized infantry) ill-suited to positional combat in mountainous terrain (he probably also wanted a more mobile reserve in case the Allies landed on either of Italy's coasts).[52] But the Allies were unable to take advantage of the implied enemy weakness, because the message was only decoded on November 20, nine days after being intercepted; by then these two formations had been replaced by the 44th and 371st Infantry Divisions (IDs). Still, this decrypt had value in that it gave the Allies some inkling of the forces they might encounter in an Anzio landing. Another ULTRA message on November 20 revealed that four German parachute divisions were being reconstituted in the vicinity of Rome. However, ULTRA was unable to disclose where these divisions were later deployed. These two messages seem to indicate that the Anzio landing might be more risky than decision makers assumed.[53]

Taken together, however, these messages suggested that an Anzio landing might be more risky than Allied decision makers had assumed.[54] On three occasions in December ULTRA decrypts described in detail the defensive works (e.g., guns emplaced and mines laid) that would be faced, as well as estimated effectiveness of deliberate flooding. On December 27, Gen. Walter Warlimont, head of the OKW planning staff, declared to Kesselring that in view of the situation in both the East and West manpower had to be economized in Italy, so Kesselring's watchword must be "build, build, and keep on building."[55]

ULTRA messages generally (with some exceptions) were shared only within Allied headquarters at the army level or higher. This meant that none of the Allied corps and division commanders received them. Moreover, even at the army level ULTRA reports were not known to many American planners. For example, only four persons within Fifth Army headquarters were authorized to read ULTRA intercepts: General Clark; his chief of staff, Gen. Alfred Gruenther; the staff intelligence officer (G-2), Col. Edwin B. Howard; and the deputy G-2, a Major Riggs.[56] The Fifth Army's operations officer (G-3), Brig. Gen. Donald W. Brann, was not authorized to know about ULTRA, but the 15th Army Group's G-3, Brig. Gen. R. B. Mainwaring, was. That put General Clark's G-3 at a great disadvantage in discussions with General Alexander's G-3.[57]

The Allied MAAF intelligence section focused on collecting information and disseminating it to subordinate commands in the form of digests, appreciations, and special reports. The air planners emphasized targeting for interdiction. Throughout the MAAF chain of command, however, top priority was given to photoreconnaissance, for determining the effectiveness of air strikes. ULTRA supported photoreconnaissance by pinpointing areas where photographs should be taken. Otherwise, Allied air planners were especially concerned about German air-surveillance radars and flak

units. B-17 heavy bombers were fitted with directional antennas and receivers to monitor the frequencies of the radars.[58]

British intelligence estimates generally were excellent. However, sometimes they were overly optimistic—to enhance troop morale.[59] According to Clark, Brig. Terence Airey, the 15th Army Group's intelligence officer responsible for German forces in northern Italy beyond the immediate battle area, estimated that if the Allied landing at Anzio was successful the Germans would attempt to seal off the beachhead—and in so doing leave their strong position at Cassino. Airey's expectation was that the Germans would then fight a delaying action northward past Rome, to where several German divisions then idle in southern France could be sent.[60] Colonel Howard, Fifth Army G-2, was skeptical. He suggested that the enemy would concentrate all available forces to defeat the landing and prevent the Allies from reaching the Alban Hills. In other words, a landing at Anzio would not lead the Germans to abandon their southern front. Clark wrote that he was fully aware of the enemy divisions outside of Italy and that they might be dragged into the battle but hoped "that [they] would not be."[61]

In essence, the ULTRA decrypts showed how the Allied front line looked from the German side. They frequently revealed what the Germans knew about Allied forces and how they interpreted their own reconnaissance reports. For example, on January 10, 1944, ULTRA showed that Kesselring learned the previous day from a report sent on January 3 by the Abwehr (military intelligence) station chief in Paris that General Wilson was pushing preparations for landings on *both* coasts, with all forces available in the Mediterranean theater, to be expected around the 15th.[62] In the first three weeks of January 1944, ULTRA revealed that the Germans repeatedly had misinterpreted the movements of Allied naval vessels. For example, the Germans were apparently unconcerned by the disappearance of landing craft from Bizerte or by the presence of Allied carriers in the eastern Mediterranean—they thought the latter were carrying reinforcements of land-based aircraft.[63]

**German Operational Intelligence**

Kesselring and his major subordinate commanders apparently had fairly accurate knowledge of the Allied forces positioned along the Gustav Line and in southern Italy. The Germans knew the approximate size and composition of enemy air and naval forces in the eastern Mediterranean. Their main sources of intelligence were radio intercepts by B-Dienst, Luftwaffe reconnaissance, and enemy POWs. Their greatest problem was that they did not have information on enemy plans and intentions. Hence, they relied on patterns in past Allied actions to make assessments about the future.

Reliance on these sources—inadequate and limited in comparison to those of the Allies—meant that the Germans had only an approximate knowledge of the enemy's forces and the availability of amphibious shipping. They also lacked precise information on preparations for amphibious landings, including possible beaches.

Most of the German air-reconnaissance reports pertained to enemy naval movements in the western and central Mediterranean, with a focus on the sea area between Sicily and North Africa, and the port of Alexandria, Egypt. For example, during the night of January 8 a German reconnaissance aircraft reported an enemy battleship, two carriers, and five escorts north of Cape Bougarouni, near Skikda (Algeria). On January 11 at about 1520, a German aircraft sighted three enemy battleships, one carrier, two cruisers, and five destroyers some forty nautical miles north-northwest of Alexandria on a southeasterly course. About five nautical miles eastward were some twenty commercial ships. The Luftwaffe expressed caution about the reliability of that report: it had been sent by young and inexperienced airmen.[64] On the evening of January 11, a German aircraft reported a large number of commercial vessels and landing craft between Sicily and southern Italy, as well as destroyer escorts in the Bay of Salerno.[65] In its summary of the situation in the Mediterranean on December 31, 1943, Naval Group Command Southwest noted that the enemy had withdrawn about twelve tank landing ships (LSTs) from the Mediterranean but had moved in eighteen smaller tank landing craft (LCTs) from the Atlantic.[66]

In the ten days prior to the landing at Anzio, German aircraft observed intense shipping traffic in the Naples area. For example, on January 13 they reported the presence of forty commercial vessels or "landing boats," three probable cruisers, and five patrol boats twenty nautical miles west of Naples steaming northward.[67] At 2102 the same day, Luftwaffe aircraft sixty-five nautical miles northwest of Messina observed seven (probably commercial) ships and five patrol boats, also northbound. At 2135, near Palermo, aircraft sighted sixteen merchant ships and one escort on a northeasterly course.[68] At 1850 on January 13, some twenty nautical miles west of Naples, Luftwaffe aircraft sighted about forty ships (probably merchant ships but perhaps landing craft), three probable cruisers, and five patrol boats, all moving north. At 2100 the same day, the aircraft sighted seven probable merchant ships and one destroyer southwest of Naples on an east-northeasterly course (i.e., probably bound for Naples).[69] On January 18, about three nautical miles southwest of the mouth of the Garigliano River, in the Gulf of Gaeta, German aircraft reported four enemy destroyers firing at positions on land.[70] At about 1810, about three miles southwest of that point, four enemy destroyers, one probable heavy unit, one destroyer, and a few small ships were sighted.[71] At 1625 the next day, Luftwaffe aircraft reported four probable destroyers in the western part of the Gulf of Gaeta and two transports in the eastern part.[72]

## ALLIED PRELIMINARY PLANS

SHINGLE originated in concept as an amphibious landing in the German rear. The idea arose in October 1943, when it became obvious that the Germans would fight for the entire peninsula rather than quickly withdrawing to northern Italy. Their

stiffening resistance, combined with rough terrain, and poor weather had produced a stalemate, and Allied planners looked for a way to break it.[73] The British successfully carried out a landing at Termoli, on Italy's eastern coast, on October 2–3. This raised hopes that the Allies might replicate that success on the western coast, thereby outflanking the Gustav Line.[74]

At a meeting at La Marsa, Tunisia, on October 9 Eisenhower and his senior commanders considered how to increase the tempo of the lagging campaign in Italy. General Alexander strongly advocated a landing behind the German right flank, as a part of the general offensive to seize Rome.[75] He envisioned landing five divisions, an idea that never got traction, because it was clearly unrealistic: the Allies had neither the troops nor the amphibious lift for so large an operation.[76] But on October 26 Churchill wrote to Roosevelt, "I feel that Eisenhower and Alexander must have what they need to win the battle in Italy, no matter what effect is produced on subsequent operations." He thus was threatening Operation OVERLORD directly.[77]

Eisenhower approved Alexander's idea for a landing south of the Tiber River (which passes through Rome) after the Fifth Army reached a position from which it could link up with the landing force within forty-eight hours.[78] He also promised to press the CCS to retain enough LSTs in the Mediterranean for such a landing. At the Allied conference in Quebec on August 17–24, 1943 (QUADRANT), the decision had been made to redeploy immediately sixty-eight of the ninety LSTs in the Mediterranean to other theaters for operations scheduled for 1944.[79] However, now the British wanted to retain fifty-six British and twelve American LSTs in the theater until December 15 and were looking for more troops for a divisional amphibious assault.[80] The situation with LCTs was little better: out of 201 in the Mediterranean, some 120 were scheduled to leave for Britain and India. The remaining amphibious craft were all lighter-type ships, already operating continuously: ferrying, supplying the Eighth Army in the Adriatic, and working ports on both Italian coasts.[81] So, mainly because of the paucity of landing ships, the earliest possible date for a landing was December 20. Alexander projected that lift capacity was required for 23,000 men, 2,250 vehicles, and 1,200 tons of stores. This estimate included 1,300 men per assault wave in assault landing craft (LCAs) and landing craft, vehicle, personnel (LCVPs).[82]

On November 3, Eisenhower met with his principal subordinates at Carthage, Tunisia, to confirm plans already tentatively agreed to. The Fifth Army could advance quickly a dozen miles through the Cassino line (the Gustav Line), then northward an additional twenty-five miles. When it reached the Frosinone area, Eisenhower would authorize an amphibious assault somewhere in the Rome vicinity. Frosinone is about forty miles south of Rome, close enough that the main force of the Fifth Army could achieve a rapid linkup with the landing force.[83] Eisenhower

believed (wrongly, as it turned out) that the Germans held a line near Cassino to cover Rome and to support a retrograde movement. The German evacuations of Sardinia and Corsica seemed to indicate an intention to withdraw rapidly from southern and central Italy. In Eisenhower's view, the Germans might well pull back all the way to the Pisa–Rimini line.[84]

By November 17, the 15th Army Group had completed plans for a two-phase offensive in southern Italy. The Eighth Army would attack as soon as the 20th. After seven to ten days, the Fifth Army would follow up with another attack. If opportune, an amphibious landing would be launched when the Fifth Army reached the Capistrano–Priverno–Ferentino line.[85] Beaches near Anzio were chosen as the site.[86] Originally, the landing was tentatively scheduled for December 20, 1943.[87]

Fifth Army HQ established a planning staff at Caserta (twenty-three miles north of Naples), headed by its G-3.[88] The staff studied possible landings south of the Volturno River; south of the Garigliano River, in the Mondragone area; in the Gulf of Gaeta, in the Sperlonga and Terracina areas; at Anzio; and at Civitavecchia.[89] Clark proposed landing a single division, reinforced to 24,000 troops and 2,700 vehicles, some hundred miles behind the enemy rear, to "cling to a shingle" for about a week.[90] He planned to use one of his best divisions, the U.S. 3rd ID. However, Maj. Gen. Lucian K. Truscott Jr., its commander, protested, "You are going to destroy the best damned division in the United States Army. . . . [T]here will be no survivors."[91] The controlling factor was the weather. The planners considered that a minimum of seven days would be necessary for loading, rehearsal, and approach. Because of the shortness of good weather in January and February, sustaining forces that landed ashore would be very difficult.[92]

A possibility for a major amphibious operation appeared when the Fifth Army reached the Winter Line. Because of his limited number of troops, Clark did not think a landing was feasible; however, Alexander had just the opposite view.[93] At a conference that Alexander organized in Bari on November 8, Alexander proposed to keep the LSTs after December 15 for an amphibious landing in support of the main offensive on Rome. In his view, an Allied force landing at Anzio, south of Rome, might threaten the enemy's main supply lines to the Gustav Line; it might even, combined with a penetration of the Gustav Line, force the Germans to abandon their positions.[94]

On November 8, Alexander issued Operations Instruction Nr. 31, directing the Eighth Army to drive up the Adriatic coast to Chieti, then wheel west of Highway 5 toward Rome (Phase I). The Fifth Army would advance up to the Liri-Sacco valley and then to Frosinone (Phase II). The one-division amphibious landing south of Rome aimed at the Alban Hills would be carried out after the Fifth Army came within a supporting distance (Phase III).[95] That landing might be combined with an airborne drop of one regimental combat team (RCT). Planning for Phase III

would be the responsibility of the Fifth Army HQ, assisted by a naval planning staff under Rear Admiral Lowry.[96] At that time, only a single division could be detached from the main front; yet, because the Allies believed the Germans capable of a rapid buildup, a single-division landing clearly would fail unless the main front linked up with it within forty-eight hours of the landing.[97]

On November 24, Clark issued his Operations Instruction Nr. 11, in which he specified that the Fifth Army would resume its advance in several phases, with the main thrust toward the Liri Valley.[98] It was essential to attack as soon as possible so that the army could support the amphibious landing prior to the withdrawal of the LSTs.[99] Clark also believed that if the main Fifth Army could not reach a mutually supporting position within a week prior to the landing's D-day, the entire operation would have to be either postponed or abandoned.[100]

As noted, the landing at Anzio originally was scheduled for December 20, 1943.[101] However, December was the worst time of the year for an amphibious landing, because it was the peak month of the rainy season; January was little better. Rain and low clouds would hamper air operations and severely restrict the Allies' ability to supply the landing force over the beaches. Only an estimated two out of seven days in January would be good for an amphibious landing. This meant that the entire operation would have to be completed within forty-eight hours.[102]

Lack of sufficient amphibious lift was a major and continuous problem for the prospective Anzio landing (which had acquired the code name Operation SHINGLE). The original lift allocation by CINC, Mediterranean—forty-two LSTs, sixty infantry landing craft (LCIs), plus attendant support craft—was sufficient for only one reinforced division. Clark wanted to add the 1st Armored Division (ArmdDiv) to the landing force. However, he was unable to do that, because of the shortage of amphibious shipping.[103] The Fifth Army staff, especially its logistics officer (G-4), estimated the need as forty-two LSTs (including seventeen, vice the allocated ten, equipped with six davits apiece), thirty-five operating and fifteen supply LCTs, and 250 DUKW amphibious vehicles to carry artillery pieces.[104] This would provide lift for about 24,600 men and 2,700 vehicles. The additional seven six-davit LSTs would be necessary to provide more LCAs or LCVPs for the assault wave; the beaches were too shallow for larger landing ships. The Navy was able to assign the additional LSTs. Nevertheless, conflicting Army space requirements continued to be a major problem.[105]

At the SEXTANT conference in Cairo, Eisenhower suggested that the proposed landing at Anzio be carried out as planned. He still expected that the Fifth Army would capture Frosinone in mid-December. Although the conference as a whole did not actually endorse the operation, the general assumption was that it would be executed once the Eighth Army and the main Fifth Army broke through the Gustav Line and advanced northward as planned.[106]

**First Outline Plan**

An outline plan for the Anzio landing was issued on November 25. The Navy considered that fifteen days were required for preparation and that five days should be allowed for the possibility of bad weather. This meant that the decision on whether to launch Operation SHINGLE would have to be made by December 20.[107] The plan called for the amphibious landing east of Anzio to be executed after the main Fifth Army reached the Capistrano–Ferentino–Priverno line. The landing force would link up with it within seven days after landing and then attack the Alban Hills.[108] The assault plan assigned the assault to the U.S. 3rd ID, reinforced by a tank battalion and a tank-destroyer battalion, plus light antiaircraft battalions.[109]

To achieve surprise, there would be no preliminary shore bombardment. Instead, two Ranger battalions would land near Anzio before H-hour on December 20 and move to Anzio to take out coastal defenses. However, the distance was too great, and the plan was modified later to land the Rangers in Anzio itself. The 504th Parachute Regimental Combat Team (ParaRCT) would be dropped along the main road leading inland from Anzio to prevent enemy reinforcements from reaching the beaches. The Allied planners estimated that the Germans had 27,500 men in the Rome area and that these forces could be reinforced with one division from near Sezze (east-northeast of Anzio) and perhaps two more from northern Italy.[110] Before daylight on the 20th, 3rd ID would land with seven days' supplies but no follow-up forces. It would hold the beachhead until the main Fifth Army reached Frosinone, then join in the advance on Rome.[111]

The main Fifth Army offensive against the Gustav Line started on December 1. Monte Camino was captured, but progress into the Liri Valley was slow. To clear the way to Cassino it would be necessary to break through the Mignano Gap, a narrow pass.[112] Yet even after ten days of fighting, Fifth Army had failed to reach either Monte Cassino or Frosinone.[113] The British Eighth Army, on the Adriatic front, also bogged down.[114] In his memoirs, Truscott would write that "a worse plan would be difficult to conceive." The plan envisaged not a sector of main effort but instead "a simultaneous attack across the entire front with the same worn divisions. No overwhelming air support was provided."[115]

Because of the lack of success in breaking through the Gustav Line, Clark proposed on December 10 that the landing at Anzio not be tied to the advance of the main Fifth Army.[116] He suggested instead that the landing force dig in, consolidate the beachhead, and wait for it. But that would require a much larger landing force than previously and would place much greater demands on lift, support, and sustainment. The landing at Anzio would essentially become an independent major operation. In any case, meeting the original schedule of December 20 for the Anzio landing was impossible; he projected that the earliest Fifth Army could reach Frosinone was January 10, 1944.[117] This delay would complicate the matter of amphibious

shipping. When the LSTs needed for the buildup on Corsica in preparation for the invasion of southern France had detached, there would be only thirty-seven on hand, not the forty-two Fifth Army's staff considered necessary.[118] Hence, on December 18, Clark recommended that Alexander cancel the landing at Anzio; four days later, Alexander did so.[119] The Fifth Army planning staff was reduced, and 3rd ID, earmarked for the Anzio landing, recalled its planning personnel to prepare for its employment on the main front.[120]

**The Plan Is Revived**

But by the end of the month the operation had been unexpectedly brought back on the table, and in an equally unexpected way. The major command changes in the Mediterranean theater had an immediate and significant effect on Allied strategy. Until then, Gen. George C. Marshall, Chief of Staff of the U.S. Army, had essentially made the strategic decisions for that theater, through Eisenhower. However, when Eisenhower moved to England, Marshall's influence in the Mediterranean was weakened greatly. The British Chief of Staff, Gen. Sir Alan Brooke, de facto assumed the primary planning responsibility there. As a result, Churchill began to play a greater role in formulating strategy for the Mediterranean.[121]

Consequently, political-strategic, not operational, considerations were most important in the final decision to conduct a landing at Anzio.[122] Churchill was both physically and mentally exhausted after the Cairo Conference. Leaving Cairo by plane on December 11, he had planned to stop at Eisenhower's headquarters in Tunis, then visit Alexander and Montgomery in Italy. However, Churchill fell seriously ill for about a week and spent several weeks thereafter recuperating. This gave him ample time to review the results of the Cairo and Tehran Conferences and the reasons for his inability to persuade Roosevelt to focus Allied efforts on the eastern Mediterranean.[123]

Churchill was in particular very dissatisfied with the progress of the war in Italy. On December 19 he wrote to the British chiefs of staff that "the total neglect to provide amphibious action on the Adriatic side and the failure to strike any similar blow on the west have been disastrous. None of the landing craft in the Mediterranean have been put to the slightest use for three months. Neither coming home in preparation for OVERLORD nor in the Italian battle. There are few instances even in this war, of such valuable assets being so completely wasted."[124]

On December 22, Churchill received a positive response from the British chiefs of staff: they agreed that "the stagnation in Italy cannot be allowed to continue and that an amphibious landing should be used to strike around the enemy flank and open up the way for a rapid advance to Rome." They suggested that if more landing craft were made available for a landing at Anzio, a larger force could be put ashore, and long before the main Fifth Army reached Frosinone. Doing so would have a far-reaching effect on the progress of the campaign and likely open the way for a

rapid advance. This statement captured Churchill's imagination. It gave him what he believed to be an achievable objective. He was now convinced that SHINGLE was the answer to the stalemate on the Italian front.[125] Churchill greatly exaggerated the stakes, however, writing that "if Rome were not captured, the world would 'regard our campaign as a failure.' . . . [W]hoever holds Rome holds the title deeds of Italy." He wrote to Clark that without Rome the campaign would "peter out ingloriously."[126]

At the end of December, indeed, the operational situation in southern Italy was not very favorable for the Allies. The front line extended from the east banks of the Sangro River in the east to the Garigliano River and the Gulf of Gaeta in the west. Eighth Army had failed to reach the Pescara–Popoli road. The main Fifth Army was unable to advance northward and seize the Liri Valley, the main avenue to Rome. Churchill and his senior commander in the Mediterranean theater agreed that the only way to break the stalemate was an amphibious landing to threaten the German supply routes to the right (western) flank of the Gustav Line.[127]

Churchill, though ill, convened and presided over a special conference at Tunis on Christmas Day. There he argued—overoptimistically—that a landing at Anzio would cause the Germans to withdraw forces from central and southern Italy and thereby hasten the liberation of Rome. Eisenhower disagreed but was overruled.[128] Churchill's subordinates were unwilling to challenge his strongly held views—he had pneumonia, and he already had made up his mind.

Thus, it was Churchill who ultimately made the decision to land at Anzio. Opposing and skeptical views did not receive proper hearings. Clark would write in his memoirs that Brig. Kenneth W. D. Strong, the British G-2 at AFHQ and thus Eisenhower's intelligence officer, was dubious. Strong was well aware of the political importance of Rome to Hitler. He also knew that the German divisions in France and Yugoslavia were not busy during the winter months and so could be moved to Italy if needed. Churchill disregarded this view, believing the capture of Rome worth the risk.[129] Not surprisingly, General Alexander deferred to his prime minister. Another factor in the decision to go ahead was the doubling of the original size of the landing force by the addition of a British division.[130]

Even so, Churchill and his advisers were mistaken in believing that a two-division landing force plus some paratroopers could, by cutting off the German Tenth Army's lines of communication, force it to withdraw from the front or at least immediately retreat.[131] Underlying their error was their having allowed the size and composition of the landing force to be determined not by the objective to be accomplished but by the availability of troops and landing craft.[132] The planned landing force clearly was inadequate to accomplish its stated objective.

On December 26, Churchill wrote to Roosevelt that the Anzio landing would decide the battle for Rome and probably achieve the destruction of a substantial part of the German army. He asked Roosevelt to approve keeping the LSTs in place

for a few weeks. Two days later, Roosevelt replied favorably, agreeing to delay redeployment of fifty-eight LSTs scheduled for Operation OVERLORD.[133] However, Roosevelt imposed conditions: that OVERLORD remain the paramount operation and that proposed landings on Rhodes and in the Aegean be sidetracked.[134] He also stipulated that Anzio should not interfere with the air buildup on Corsica for the invasion of southern France (Operation ANVIL, later DRAGOON).[135]

Alexander assured Churchill by radio that "Clark and I are confident of great chance of pulling off something big if given the means." He also suggested the possibility of landing VI Corps (i.e., part of it) south of Anzio, near the front line, which would eliminate the need for an extended resupply. In his view, one division followed by other forces could land and cut off Highway 7 (which paralleled the coast about ten miles inland and led to Rome) and perhaps make it possible to bypass Frosinone.[136]

Churchill's idea of landing at Anzio was complicating the American plan to support the cross-Channel invasion with a landing in southern France. General Marshall later recalled the struggle over the size, composition, and timing of ANVIL as "a bitter and unremitting fight with the British right up to the launching."[137] On January 6 Churchill tried to persuade General Brooke to visit him in Marrakesh, where the prime minister was still recovering: "We must get this SHINGLE business settled, especially in view of the repercussions of the new proposals about ANVIL which will certainly make the U.S. Chiefs of Staff Committee stare."[138]

As it turned out, Brooke did not visit Marrakesh.[139] However, on January 7 Churchill presided at a conference there attended by Maitland Wilson, Alexander, Maj. Gen. (promoted to lieutenant general in January 1944) Walter Bedell Smith (Chief of Staff, Supreme Commander, Allied Expeditionary Force), and Adm. Andrew B. Cunningham. There a decision was made to move D-day for the Anzio landing ahead as much as possible, to gain time before the required redeployment of the LSTs to England. The aim was to give the LSTs time for at least two trips to Anzio, three if the weather was favorable, speeding up the transport of supplies and follow-up forces. On the second and final day of the conference, Alexander and Cunningham did most of the talking.[140] Alexander was able to secure twenty-four LSTs until the end of February.[141] Churchill was very happy with the results of the Marrakesh conference, wiring Roosevelt that "unanimous agreement for action as proposed was reached by the responsible officials of both countries and all services." Churchill left Marrakesh on January 14, having won his argument that the Anzio landing must be carried out.[142]

**The Amphibious Objective Area**

Anzio (Roman Antium) was selected as the amphibious objective because of its proximity both to Rome and to the German front line (see map 11). Anzio is some thirty-five miles southwest of Rome and was about sixty-two miles from the front, which

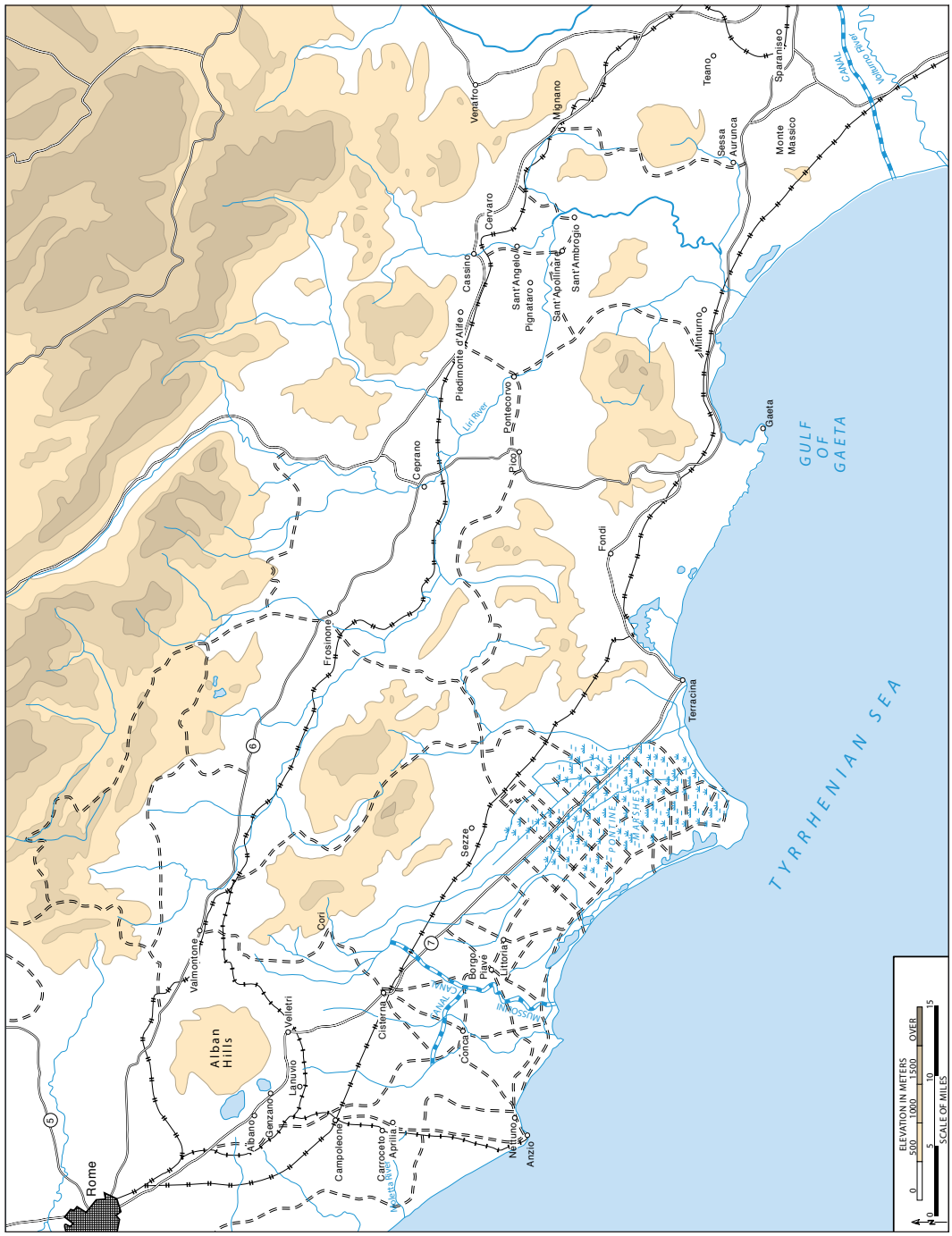
was then on the Garigliano River.[143] Anzio itself was a small port, its harbor enclosed within a six-hundred-yard-long breakwater. Yet the port was still subject to considerable swell. Anzio's harbor could provide anchorage for ships that drew no more than ten feet.[144] About a mile and a half east is the small port of Nettuno. The two were connected by a good road, and both were linked to Rome by rail.[145]

North and east of Anzio (i.e., the south-facing shore of the point near Anzio), the coast is one of sandy, gently shelving beaches with long dunes above the high-water mark. All these beaches are exposed.[146] Farther southeast, all the beaches, with the exception of the northwesternmost, were too rocky, too small, or of too shallow a gradient for a landing (i.e., craft would ground too far out).[147] No gradient was better than one foot in sixty: the average was 1 : 90, that on the west beach was 1 : 120.[148]

The coastal area extending from Fiumara Grande, northwest of Ostia, toward Anzio is low, almost flat, and sandy—full of dunes. The area immediately around Anzio is of moderate elevation, averaging two hundred feet in height, constituting a plateau that at the time was thickly wooded.[149] The area immediately north (i.e., inland) of Anzio and Nettuno consisted of scrub timberland, bog, and rolling grazing land.[150] There were also many ditches, up to fifty feet wide. The roads were generally good; however, tanks had difficulty moving during the rainy season. The terrain offered little cover from enemy fire except for some minor woods.[151]

The area between Point Torre Astura, not quite ten miles south of Anzio, and the Tiber, about fifty miles north, and extending inland to the round, volcanic mass of the Alban Hills is generally a low plateau. It drops off to the south toward the Pontine Marshes and in the north rises sharply to the Alban Hills. The Alban Hills are some twelve miles southeast of Rome and fifteen miles north of Anzio. The dominant (but second highest) peak of the Alban Hills is the 3,114-foot Mount Cavo. The area is cut by several streams and drainage canals. The coastal plain is very swampy in spots, especially during the rainy season.[152] The larger coastal plain, stretching from Terracina (about thirty miles south of Anzio) to the Tiber, is dry, gently rolling countryside, wooded in many spots. It rises slowly to a railway embankment some thirteen miles north of Anzio. It was then cultivated ground, characterized by vineyards and small farms.[153] The area west of the Alban road is cut by a series of gullies (waterworn ravines), of which the largest two, Moletta and Incastro, run southwest from the Alban Hills toward the sea. Often fifty feet deep, these gullies would prove difficult obstacles for armor.[154]

Southeast of Anzio were the Pontine Marshes, originally a low, swampy, malarial area, wet and spongy, growing chiefly sphagnum moss. They extend from the Alban Hills to Mount Circeo, 1,775 feet high. As part of a large reclamation and resettlement project undertaken by Mussolini's Fascist government, the Pontine Marshes had been carefully drained, irrigated, and converted into cultivated




*Map 11*
*Amphibious objective area*

fields. An extensive system of ditches, canals, and pumping stations made movement difficult in general; during the rainy season the area was impassable to most heavy equipment. Being largely treeless, it offered scant cover for the troops. Cover was available in the Padiglione Woods, which extended three to five miles north of Nettuno. There a force might be prepared for an attack. However, after leaving the forest such a force would be vulnerable, its movements easily observable—there was no cover between the woods and the coastal railway.[155]

East of the Padiglione Woods the entire right flank of the planned beachhead line was protected by the 170-foot-wide Mussolini Canal, which drained the northern Pontine Marshes.[156] The main canal was built like an antitank ditch, with steep sides sloping to a shallow, sixteen-foot-wide streambed. The combination of canals and marshes made the right flank of the beachhead a poor avenue for attack.[157]

The 3,100-foot mountain mass of the Alban Hills, about twenty miles inland by good roads from the beaches of Anzio, controls the southern approaches to Rome, fifteen miles north. East of the Alban Hills is the Velletri Gap. The 5,040-foot Monti Lepini (the Lepini Mountains) stretch along the inner edge of the Pontine Marshes southeastward toward Terracina.[158] Both the Alban Hills and the Lepini Mountains protected the German Tenth Army's vital supply lines. In operational terms, the Alban Hills were a "decisive point," because they dominated Highway 6 (the Via Casilina) and Highway 7 (the Via Appia). They also formed the last barrier the Germans could defend to prevent Allied entry into Rome.[159]

The road network on the Anzio plain was well developed, but the roads themselves were of poor quality. The most important road used for supplying German troops on the front line was Highway 7, which was narrow and easily defensible. It ran along the coast, around the Aurunci Mountains, then through the Pontine Marshes. Highway 6 runs from Rome through the Liri Valley. A defender could easily block it in the narrow Mignano Gap, ten miles southeast of the Liri Valley.[160] The main west coast railway paralleled these highways. Along the network of paved and gravel roads crisscrossing the farmlands were numerous two-story *podere* (farmhouses) for recent settlers. The provincial town of Aprilia (whose community center the Allied troops would call "the Factory") was modern.[161]

In the Anzio-Nettuno area, the mean wind velocity is 9.3 knots. The winds blow from the northern quadrant 42 percent of the time, from the western quadrant 26 percent. Only 2–3 percent of the time are there gale-force winds, thunderstorms perhaps 1 percent. In January and February, the wind comes largely from the north and east. The offshore/inshore wind cycle is extremely irregular.[162] Along the coast between Elba and Civitavecchia, southerly winds prevail. Gales lasting two or three days and their accompanying depressions move eastward across the northwestern Mediterranean. Southerly and southwesterly gales bring low clouds, drizzle or continuous rain, and sometimes snow, until the wind veers to the westward. Southwesterly winds generate heavy seas on the Italian coast.[163]

## THE FINAL PLAN

Operation SHINGLE was now essentially an independent operation, to be executed whether the main Fifth Army was within striking distance or not.[164] (The modified operation is sometimes referred to as SHINGLE II.) The landing at Anzio would be a two-division instead of a single-division assault.[165] The CCS also approved the request that the 504th ParaRCT, which was due to leave the Mediterranean in early January 1944, remain long enough to conduct a parachute drop.[166]

On January 2, General Alexander issued his Operational Instruction Nr. 32. Fifth Army's mission would be to carry out an assault landing in the vicinity of Rome, with the "object of cutting the enemy lines of communication and threatening the rear of the German 14 [Panzer] Corps." The operation would take place in the period of January 20–31, 1944, as early as the weather made possible. The initial landing force would be composed of the U.S. 3rd Infantry Division, two armored elements (one U.S., one British), U.S. Army Ranger battalions, one RCT, the U.S. 82nd Airborne Division, the British 1st Division, and two British commandos (units of about four hundred men).[167]

Alexander's operational instruction stated that if Eighth Army, despite its reduction in strength, could reach the Pescara line and pose a threat to Rome through Popoli (in the province of Pescara) by January 20, it would "have a great bearing on the success of the whole situation." Canadian Corps HQ and the 4th Indian Division "will be moved forward to make a show of strength on Eighth Army front." Cover plans would be coordinated by 15th Army Group HQ. Fifth Army "will make as strong a threat as possible" toward Cassino and Frosinone shortly prior to the assault landing at Anzio to draw the enemy reserves that might be employed against the landing forces, then breach the enemy front and take all opportunities to "link up rapidly with the seaborne operation."[168]

Clark was of two minds about the prospects for success of the Anzio landing. On the one hand, he realized fully the disadvantages of weakening the main Fifth Army forces on the front line, the long distance separating the landing force from the main Fifth Army, German strength, and the problems of retaining enough LSTs to sustain VI Corps after the landing. On the other hand, however, Clark saw a great opportunity for speeding up his drive to Rome—if the gamble at Anzio paid off. In the end, his ambition got the better of him, and he became an enthusiastic supporter of Operation SHINGLE.[169] Clark predicted to Alexander on January 2 that the Anzio landing would "exercise a decisive influence on the operation to capture Rome."[170] After he received the final decision on the Anzio landing, Clark asked Alexander to be relieved of responsibility for planning the invasion of southern France so he could remain in Italy as commander of Fifth Army.[171]

Yet in his memoirs Truscott wrote that no one below the army level believed that the landing of two divisions at Anzio would cause the Germans to withdraw

from the southern front. Neither, he recalled, did any see even a remote chance that the main Fifth Army would be able to cross the Rapido River and fight its way up the Liri and Sacco valleys to join the Anzio forces within a month.[172] Be that as it may, shortly after the Christmas conference in Tunis, Clark appointed Maj. Gen. John P. Lucas, commander of the U.S. VI Corps, to command the ground forces at Anzio. Lucas had commanded a division and a corps prior to being assigned to the Mediterranean theater.[173]

**Composition of VI Corps**

During the planning for the Anzio landing, a major problem was that VI Corps, as constituted for the operation (it also possessed an armored division and another of infantry, both remaining on the mainland), would consist of both U.S. and British units. Eisenhower shared some misgivings about that in a personal letter on December 29 to Alexander, especially concerning the great difficulties of supporting such a landing force logistically.[174] Different equipment and spare parts requirements would exacerbate supply problems. Also, the British division was at only two-thirds of its prescribed strength. Eisenhower asked Alexander whether he might not prefer a corps composed of two U.S. divisions, "when you as a British officer had the deciding responsibility and when the Prime Minister has been such a staunch advocate of the project." Or perhaps Alexander may have thought it "undesirable from a political point of view for a corps of two British divisions to be given the opportunity for the direct capture of Rome." Eisenhower concluded, "Neither of these two factors should be allowed to outweigh the military advantages of launching the assault by any troops you believe best fitted and most available."[175] Neither Lucas nor Truscott wanted a British division to be part of VI Corps. They believed that a mixed corps would complicate not only supply but command and control, as well—though neither explained exactly what command problem he anticipated.[176]

On January 8, General Wilson, in a response to Eisenhower's letter to Alexander, explained that the reason for the mixed corps was the lack of time to organize a corps composed of only British or only U.S. forces. In his view, should a British corps now be assigned, the reshuffle would be difficult to conceal from the Germans. An all-U.S. corps would require the withdrawal of a second American division from the front. This would weaken the main Fifth Army's pending offensive against the Gustav Line, which could not be allowed to happen.[177]

**The Problem of Amphibious Lift**

As has been seen, one of the major problems facing the Allied high commanders was how long the LSTs could remain to support the Anzio landing. The doubling of the original landing force meant much more amphibious lift and a larger logistical effort. Fifty-six LSTs were now scheduled to sail for Britain on January 15, 1944, leaving only thirty LSTs in the Mediterranean—less than half the number needed.[178]

So few LSTs would have been sufficient only for a regimental-size landing.[179] The lift required for SHINGLE could be secured by delaying until February 5 the redeployment of fifty-six LSTs to Britain and by temporarily withdrawing sixteen from the buildup on Corsica. That would make a total of eighty-eight LSTs, ninety LCIs, sixty LCTs, and eight infantry landing ships (LSIs) available for Anzio.[180] Because fifty-eight LSTs had to be redeployed immediately after the landing at Anzio to the United Kingdom, the initial landing force would not have the benefit of continued maintenance over the beaches or subsequent buildup of the initial force.[181]

Alexander asked Churchill to resolve the situation with LSTs, because only six would be available after D+2 to land vehicles for two divisions. The planners estimated that fourteen LSTs were required to maintain the landing force until it was joined with the main Fifth Army.[182]

Shortly after the Tunis conference, the CCS decided to delay the scheduled departure of the LSTs for Britain for three weeks. Ten LSTs were taken off the Corsica run for the moment, and eight were diverted from an operation formerly planned for the Indian Ocean in 1944. Thus, some ninety LSTs were available to launch the Anzio operation, more than sufficient. Because of the need to redeploy LSTs to Britain it would not have been possible to run resupply or follow-up convoys. In addition, some sixteen LSTs had to be returned to the Corsica run not later than February 5, to compensate for time lost in their diversion to the Anzio landing. Other LSTs had to be withdrawn immediately after the landing at Anzio for overhaul and refit. In fact, only six serviceable LSTs would be available for the operation after D+2—and even that number might be reduced by operational losses.[183] An additional ten LSTs were needed for fifteen days after D-day to build up supplies.[184]

Both Alexander and Clark considered follow-up convoys essential to the ultimate success of an Anzio landing, so they made every effort to secure them. Admiral Lowry too argued that the combination of too few LSTs and bad weather would jeopardize the supply for a two-division force. Because of the anticipated heavy German resistance on the Gustav Line, it was not possible to anticipate precisely where the main Fifth Army front line would be on the landing's D-day; neither could it be predicted when the main Fifth Army would link up with the landing force. However, an enemy counterattack on the beachhead could certainly be expected. Hence, it was critically important that the Anzio landing be self-supportable indefinitely.[185]

On January 2, Clark warned Alexander that the release of all but six LSTs by February 3 would make the entire operation extremely hazardous. He requested that Alexander make "every effort to hold adequate number of craft for SHINGLE until such time as success of operation is assured." Clark had also seen that the small number of assault craft would allow landing only one Ranger battalion and five infantry battalions fully combat loaded. Clark had been willing nevertheless to

land VI Corps at reduced strength, but on the assumption that "we would be able to retain a reasonable number of LSTs for resupply purposes and to transport the necessary vehicles needed by the assault force." He considered twenty LSTs the minimum: ten for two weeks to transport vehicles and ten indefinitely for supply purposes. The figure of twenty postulated that the Navy would remove its load limit of four hundred tons per LST; if not, twenty-four would be required. In Clark's view, supply by sea would be necessary for at least fifteen days after the landing.[186] In all of this he was presuming a main Fifth Army "attack in greatest possible strength in Liri Valley several days in advance of Shingle with the object of drawing maximum number of enemy reserves to that front and fixing them there." That was the only way that "the Shingle force exercises a decisive influence in the operation to capture Rome." That raised the point that his estimate of twenty (or twenty-four) LSTs did not allow for the possibility of a buildup after the initial invasion, although it was "quite conceivable that the enemy situation may make that action necessary."[187]

At a CINCs' meeting in Tunis on January 3, concern was expressed that with the LSTs promised elsewhere, the Operation SHINGLE landing force would have only eight days' sustainment. That meant that if the main Fifth Army did not link up with VI Corps within eight days, the Anzio force would have to choose between remaining on the beachhead and withdrawing. Yet it was agreed that despite these risks the possible gains justified the calculated risk. Because the situation on the front was unfavorable, Alexander believed that a linkup between the main Fifth Army and VI Corps within the eight days was highly improbable, and accordingly he made every effort to keep enough LSTs on hand for SHINGLE's separate needs.[188]

**Timing**

The timing of the landing at Anzio-Nettuno depended on many factors. For one thing, D-day was contingent on the advance of Fifth Army; the release of an Army division for the landing was being withheld pending developments on that front. Also, the Navy asked for a minimum of twenty days to complete its own plans and that all craft arrive in the Naples area ten days in advance for briefing, rehearsals, and loading.[189]

The impending removal from the Mediterranean of many of SHINGLE's LSTs required the main Fifth Army to conduct an all-out offensive, as Clark had envisioned. The purpose was to obtain a new position in sufficient time to allow the landing at Anzio to be completed prior to the withdrawal of these craft. No reliance could be placed on maintaining the landing force over the beaches, because of unfavorable weather conditions; any extensive follow-up was also precluded. The weather forecast was unreliable beyond forty-eight hours. Having no assurance of more than two days of operational weather in seven demanded that the operation start during clear or clearing weather and be completed within forty-eight hours. Hence, no ship or craft could be bulk loaded; all equipment and supplies had to be

either packed or carried on wheels. Enough supplies for seven days had to be carried in the ships and craft of the assault convoy.[190]

A conference in Marrakesh on January 7 decided that the Anzio D-day had to be moved as far forward as possible to maximize the availability of landing ships and craft. If D-day were January 22, for instance, the enemy would have little time to prepare; some eighty-two LSTs could be used; and all, or at least more, of these LSTs would be available for the possible landing of a third, small division after D+5 (which in that case would be January 27) if the weather were favorable. The current plan was that all the LSTs would remain in the theater until February 3. By February 23 their number would be reduced to twenty-five, to twelve by the end of the month.[191]

The landing at Anzio was provisionally scheduled to take place between January 20 and 31, 1944. Eisenhower, and the Royal Navy in particular, wanted to assemble landing craft in England as soon as possible for Operation OVERLORD. Hence, and as outlined above, a D-day as close to January 20 as possible was highly desirable.[192] Also, ULTRA decrypts had revealed that the Germans planned to demolish harbor facilities in the Anzio-Nettuno area. For example, an ULTRA intercept on the 11th reported that demolition charges at Nettuno required renewal, owing to deterioration by the weather; preparations were to commence shortly. Five days later, ULTRA decrypted a January 14 request by the German regional commander at Civitavecchia to discuss with I Parachute Corps (ParaCorps) whether, and if so to what extent, partial demolition of Nettuno and Civitavecchia harbors could be carried out without making them useless for German supply traffic. On the 21st, as the invasion force was in the final hours of preparation, an ULTRA analysis of another intercept reported that "on nineteenth [January], task of preparing demolitions in above harbors [Nettuno and Civitavecchia] [was] allotted to two technical detachments."[193] Here was one of the reasons Clark decided to adhere to the previously agreed "invasion schedule and, if anything, establish D-Day as close to 20 January as possible. Otherwise, [the] limited numbers of landing craft [assigned] might encounter severe obstacles resulting from German demolitions in the harbors preventing [Clark] from landing troops and equipment ashore in a timely manner." Any delay in landing would give the Germans more time to destroy the Anzio-Nettuno port facilities, which would be critical for unloading the material necessary to sustain the beachhead.[194]

Indeed, General Lucas asked for a delay, to January 25 to allow proper rehearsal. As a compromise, the 22nd was selected as D-day.[195] H-hour was set for 0200, to give the landing forces four hours of darkness. Morning twilight would begin a few minutes before 0600, and the sun would rise at 0731.[196] Sunset would occur at 1711.

**Fifth Army Planning**

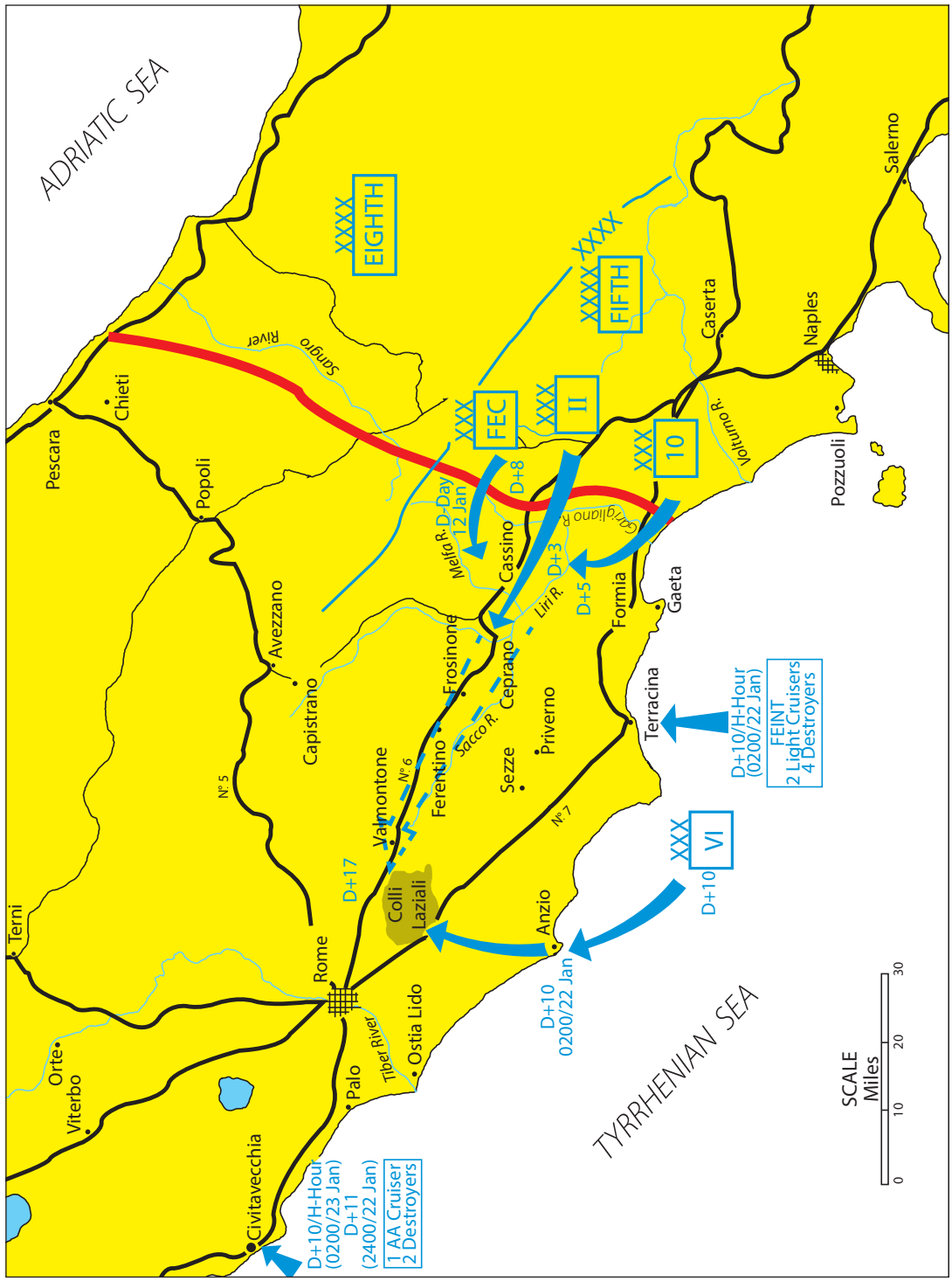
Fifth Army headquarters started detailed planning on December 31. The Navy's planning staff was headed by Admiral Lowry, commander of the VIII Amphibious

Force and of Task Force 81, already formed for the operation. The air plan was prepared by Maj. Gen. J. K. Cannon, Commander, XII Air Support Command, and his staff.[197] It was decided that the British contingent would be transported by a separate but subordinate task force under Rear Adm. Thomas H. Troubridge, RN. Troubridge and his staff worked at the planning section of the 15th Army Group headquarters in Caserta.[198] However, some key commanders were not involved in planning, specifically General Lucas, who was with his staff at Maddaloni (southeast of Caserta), and Capt. E. C. L. Turner, in charge of the Rangers, who spent most of the time at Pozzuoli, on the Gulf of Naples.[199] Plans for Operation SHINGLE were approved on January 12, only ten days before D-day.[200]

Clark's plan to breach the Gustav Line concurrently with the Anzio landing was promulgated by Operations Instruction Nr. 12, issued on December 16, 1943, and amended by Operations Instruction Nr. 13 of January 10, 1944. Clark's intent was that the main Fifth Army, reinforced with two divisions from Eighth Army, would attack the German Tenth Army across the Garigliano and Rapido Rivers, break through the Gustav Line, and drive up the Liri Valley. This offensive should have sufficient strength, he projected, to draw the German reserves. While the enemy was preoccupied defending the Gustav Line, the Allies would land at Anzio-Nettuno.[201]

Clark's Operations Instruction Nr. 13 specified that the French Expeditionary Corps (2nd Moroccan and 3rd Algerian Divisions, reinforced, and the 3rd and 4th Groups of Tabors—irregular Moroccan troops) would start the general offensive of Fifth Army at H-hour on D-day, set for January 12 (see map 12). It would attack east "along the general axes Cardito–Atina and Aquafondale–S. Elia and seize the high ground north and northwest of Cassino." On D+3 (January 15), II Corps (34th and 36th IDs, reinforced, and 1st ArmdDiv) would attack and secure Mount Trocchio. On order (estimated on D+8, i.e., January 20), II Corps would force the Rapido River, establish a bridgehead in the vicinity of Sant'Angelo, and then, with maximum use of armor, advance west and northwest. On the left flank, the British 10 Corps (5th, 46th, and 56th Divisions and 23rd Armoured Brigade) would on order (estimated D+5) cross the Liri River and seize a bridgehead in the vicinity of Sant'Ambrogio. It would then attack northward in the direction of San Giorgio. The main Fifth Army's reserve (45th ID) would be prepared to reinforce Allied forces in the Liri Valley between the Rapido and Melfa Rivers.[202] On D+10 (January 22), VI Corps would land at Anzio-Nettuno.[203]

Clark's Field Order Nr. 5, issued on January 12, pertained specifically to the Anzio landing force, which was meant to "launch attacks in the Anzio area on H-Hour, D-Day," its mission "(a) to seize and secure a beachhead in the vicinity of Anzio," and "(b) *advance on Colli Laziali*."[204] The word *advance* implied a significant change in the mission.[205] In fact, the second part of Clark's order generally was vague: it seemed to contradict the first part, by directing Lucas not just to hold the beachhead but to advance out of it, toward the Alban Hills (for the linkup with the main




*Map 12*
*Fifth Army's operational idea, January 12, 1944*

Fifth Army seven days after the landing). In any case, since the first outline plan (above) it had been understood that the attack on the Alban Hills would be made *after* the linkup, not by VI Corps alone. This change in mission caused much controversy, in the immediate aftermath and continuing to the present.[206]

Alexander did not help matters by failing to warn Clark *not* to change his mission statement for VI Corps. In a personal meeting with Clark, Alexander was cautious. Alexander knew from ULTRA that the Germans had a sizable force in the Rome area (I ParaCorps, of two divisions), but he was not sure whether it would be in the vicinity of Anzio on D-day. Hence, he emphasized to Clark the importance of securing the beachhead as the first order of business. Afterward, Clark could focus on the mission assigned to VI Corps.[207]

On January 12, Brigadier General Brann visited Lucas to brief him about the final main Fifth Army order for the Anzio operation, specifically the vaguely worded mission statement. Brann made it clear that Lucas's primary task was to seize and secure a beachhead; Clark expected no more. At the same time, it was understood that Lucas was free to take advantage of an opportunity to capture the Alban Hills; however, in Brann's view the chance of one arising was slim. Clark too did not think it would be possible for Lucas to reach the hill mass while at the same time holding the beachhead to protect the port and the landing beaches. Loss of the port and beaches would completely isolate VI Corps, leaving it at the mercy of the Germans. Clark did not want Lucas to push on to the Alban Hills at the risk of sacrificing VI Corps.[208]

Brann's visit to Lucas was highly unusual. It probably shows how uncomfortable Clark was at that time with the entire operation. After the war, Clark confirmed this unease: "There was no possibility of going ahead and capturing the Alban Hills in the face of the concentrated troops that were ordered to meet us and did meet us."[209]

**Allied Assumptions**

The Fifth Army plan for the Anzio landing was based on several assumptions. The planners expected the Germans to react very strongly to the Allied landing in the rear of XIV PzCorps.[210] Alexander and his G-2 were convinced that the Anzio force, by cutting off the enemy forces at the Alban Hills, would threaten the German rear. The landing would compel the Germans to weaken their forces deployed along the Gustav Line. This, in turn, would enable the main Fifth Army to break through the German defenses and quickly make contact with Allied forces at the beachhead.[211] Clearly, Alexander relied on presumed enemy intentions rather than on enemy capabilities—thereby making one of the most fundamental errors that can arise in estimating a situation and making a decision.

Colonel Howard, G-2 of the main Fifth Army, was much less optimistic. He estimated that the Germans had one corps headquarters and two divisions, plus contingents of paratroopers and panzer forces, in the vicinity of Rome. Like Alexander,

he believed that the landing at Anzio would constitute such a serious threat that the Germans would have to react very strongly: "an emergency to be met by all the resources and strength available to the German high command in Italy." The Germans would concentrate forces against the beachhead to prevent the invaders from advancing to the Alban Hills; otherwise German withdrawal from southern Italy would become necessary. But to do that, the G-2 estimated, the Germans need not weaken the Gustav Line; they could move in additional divisions from the Adriatic front; also, they could count on two more divisions arriving from northern Italy over the ensuing two weeks.[212]

Specifically, Colonel Howard assessed that VI Corps could expect initial D-day resistance from one division assigned to watch the coast, four parachute battalions from Rome, a tank and an antitank battalion, and coast-defense personnel—altogether 14,300 men by D+1. Another division and an SS (Schutzstaffel) infantry regiment (InfRgt) were north of Rome. Also, an RCT and perhaps elements of the Hermann Göring Panzer Division could arrive by D+2 or D+3. The Germans might bring the 26th PzDiv from the Eighth Army front. That would give them some thirty-one thousand men. If the main Fifth Army attack was sufficiently strong, however, it should pin down all the enemy reserves in the beachhead area. Ironically, in light of later events, the G-2 did not believe the Germans could bring reinforcements down quickly from northern Italy, especially in the face of overwhelming Allied air superiority. The estimate was that the German buildup north of Florence would probably amount to not more than two divisions by D+16. The final summary by the main Fifth Army on January 16 also pointed out the increasing attrition of enemy troops.[213]

The Luftwaffe was not considered a major threat. By early January almost the entire 2nd Air Fleet, under Gen. Wolfram von Richthofen, had left Italy for Germany. There, Allied planners assumed, air attacks on German air bases would reduce Luftwaffe strength by 60 percent.[214] They considered it unlikely therefore that the Luftwaffe would reinforce its units in Italy to counter the Anzio landing, so the "enemy air effort, never strong, should gradually diminish."[215]

Clark would later say that another consideration in his plans was the presumption that Eighth Army would attack with sufficient force during this period to prevent any movement of German troops from its front to either the Gustav Line or the Anzio sector. He also believed (erroneously) that Allied air forces could isolate the beachhead area by heavy and coordinated attacks to destroy enemy communications and that accordingly the Germans would be unable to shift their reserves rapidly enough to counter the Allied landing and the planned thrust inland. However, in this instance and throughout the Italian campaign Clark would see this "isolation" theory invoked repeatedly, only to see the enemy, again and again, move his forces by railroad and highway, with some difficulty but with great effectiveness, even when the weather was bad.[216]

**The VI Corps Plan**

The mission of VI Corps in Phase I of the landing, as stated in Clark's outline plan of January 12, was "by first light D-Day to capture and/or reduce enemy gun batteries capable of seriously interfering with the assault on the beaches and to launch assaults on the beaches north and northeast of Anzio and establish a beachhead." In Phase II, the mission was simply to "attack in the direction of Colli Laziali."[217] Confusingly, D-day in the VI Corps plan was January 22, while the Fifth Army's plan referred to the landing at Anzio-Nettuno as occurring ten days after the D-day of its own offensive. Clearly, the VI Corps planners should have referred to the landing date as Fifth Army's D+10, not their own D-day.

The VI Corps scheme of maneuver (or "operational idea") envisaged a simultaneous landing on the Anzio and Nettuno beaches. The U.S. 3rd ID (under Major General Truscott) would land three regiments over the X-RAY beaches, two miles south of Nettuno. In the center, the 6615th Ranger Force (Provisional), with the 83rd Chemical Battalion and the 509th Parachute Infantry Battalion, would land over YELLOW Beach adjacent to Anzio harbor, with the mission of seizing the port and clearing out any coastal-defense batteries there. On the PETER beaches, six miles northwest of Anzio, the 2nd Brigade Group of the British 1st Division (Maj. Gen. W. R. C. Penney) would land. The 2nd Special Service Brigade of the 9th and 43rd Commando would advance eastward to establish a roadblock on the main road leading from Anzio to Campoleone and Albano. The various forces landing would link up to consolidate a beachhead seven miles deep that centered on the port of Anzio.[218]

The original discussion called for landing the Rangers over the PETER beaches. The Rangers would then drive to the south and take out heavy gun emplacements at Anzio before daylight. However, because of the distance between PETER and Anzio, the Rangers' landing was moved to the beaches just southeast of Anzio harbor. Also, it had been planned to have the 52nd Troop Carrier Wing drop the 504th RCT behind the beaches shortly prior to H-hour, to cut the Anzio–Albano road. It was realized, however, that an airdrop most likely would give warning to the enemy defenders; in any case, the 504th RCT's mission would be similar to that of the British 1st Division.[219] Moreover, if enemy planes attacked at the same time, the 504th might be fired on by friendly antiaircraft artillery.[220] Hence, the paratroop drop was canceled on D–2.[221]

The planners assumed initial heavy German resistance, so they provided a strong floating reserve: the bulk of the British 1st Division, with the 46th Royal Tank Regiment. In addition, the 24th Field Regiment, the 80th Medium Regiment, and the 504th Parachute Infantry would land behind the 3rd ID and assemble in a VI Corps reserve.[222] Lucas tentatively planned to use the corps reserve in two ways. If the enemy reacted in strength, the reserve would be assembled and would

counterattack; or, if the situation permitted, it could advance toward the Colli Laziali to cut the enemy communication routes. This attack could be conducted either up the Albano road and then toward Rome or via Cisterna and Velletri to cut Highway 6 near Valmontone.[223]

The 15th Army Group headquarters prepared a "cover plan" (or operational deception plan) aimed at misleading the enemy with regard to the timing and direction of the Anzio landing. Because it was hardly possible to conceal that an amphibious landing was being prepared at Naples, the Germans had to be convinced that the Allied intent was to land farther north on Italy's western coast, near Civitavecchia or even Leghorn, toward the end of January.[224]

Originally, a naval feint was planned at Ostia Lido, at the mouth of the Tiber River, on D-day. This site was changed first to Palo, about fifteen miles north of the Tiber's mouth, and then, at General Clark's insistence, to Civitavecchia, some forty miles north. The reason was that most of the German troops already were north of the Tiber River; a feint at Ostia Lido, if successful, would tend to draw the enemy closer to, not farther from, the landing area.[225] Instead, a British antiaircraft cruiser and two destroyers would shell Civitavecchia at H-hour. At the same time, six cruisers and destroyers would appear off Terracina, again to distract German attention from Anzio.[226] Civitavecchia would be bombarded once more at midnight on D+1 by cruisers and destroyers.[227] In addition, fishing craft were assembled in Corsican harbors, where army engineers made a great show of "secret" activity, assembling dummy supply dumps and constructing imitation landing craft. Information was "leaked" from Caserta that Fifth Army would not advance in January but that the British Eighth Army, with fresh troops, would move up the Italian Adriatic coast.[228]

A radio deception plan included the establishment on Corsica of a radio station purporting to be the advance headquarters of VI Army Corps. This station would transmit messages, plausibly building up in volume until H-hour at Anzio.[229] There were also to be wireless broadcasts to resistance forces and agents in Italy, using a cipher it was known the Germans could read. The messages notified the recipients that an invasion was imminent at Civitavecchia.[230]

**Logistical Support and Sustainment**

Logistics for Operation SHINGLE required a great deal of planning. Innovative ways to sustain the landing force ashore had to be found. The likelihood of clear weather no more than two days out of seven dictated that the assault convoy be completely unloaded within forty-eight hours; everything would be "combat loaded," ready for quick removal in the sequence in which it would be needed.[231] The available LSTs could carry only seven days of supplies for the troops.[232] Admirals John Cunningham and Lowry wanted to warn Lucas not to rely on support over the beach, because of the probability of bad weather and the urgent need for the LSTs in other operations, but rather disembark the whole force immediately after the landing.[233]

At a conference in Marrakesh on January 7, an American colonel, Edward J. O'Neill, Clark's assistant chief of logistics, suggested driving loaded trucks onto DUKWs, and driving the DUKWs into LSTs, through their bow doors. At Anzio-Nettuno the DUKWs would disembark and proceed to the beach, where the trucks would drive ashore and then directly to supply dumps on the beachhead. Meanwhile, the LSTs would embark empty trucks of the previous echelon and take them back to Naples. The U.S. Seventh Fleet had used a similar procedure successfully in the Southwest Pacific Area. However, this idea was rejected by Churchill, Adm. Andrew Cunningham, and Gen. Bedell Smith, who objected that unpredictable winter weather could make it difficult to land the DUKWs carrying loaded trucks. Also, sandbars might block them. In addition, the Royal Navy was concerned that the Germans might destroy the port facilities at Anzio-Nettuno. As it turned out, the DUKWs were able to reach the shore (though ultimately for other purposes), and the Germans failed to demolish the port facilities.[234]

Clark himself, however, eventually accepted the idea of carrying preloaded trucks on LSTs, albeit without DUKWs.[235] The trucks would load up to their five-ton capacities at Naples dumps and drive directly into the LSTs. Arriving at Anzio-Nettuno the LSTs would beach themselves (as they were designed to do), open their bow doors, and drop the bow ramps, down which the trucks would drive and continue to the VI Corps dumps. Some 1,500 trucks were assembled expressly for this purpose.[236] This method reduced the unloading time from a full day to a single hour. Without it, maintaining the Allied forces at Anzio would have been impossible.[237]

The assault and follow-up shipping would be mounted from Naples and its satellite ports. Organization of the convoys for the British contingent was the responsibility of the AFHQ Advanced Administrative Echelon, while the Peninsular Base Section had the same responsibility for the U.S. contingent. Because, as noted, all unloading had to be completed within forty-eight hours and the beaches were poor, the port had to be put into operation quickly. Some thirty LCTs, all available DUKWs, and both U.S. and British assault landing craft (LCVPs and LCAs, respectively) would be used to unload larger ships. Heavy stores and equipment would be loaded in Algiers, instead of the heavily congested port of Naples, on eight Liberty ships. Four of the Liberty ships would sail with the assault convoy, and the other four would follow.[238]

For logisticians, it was difficult to project sustainment requirements, because of uncertainty about when the landing force would join up with the main Fifth Army. They settled on supplies for thirty-five days to be delivered by sea. The weather forecast dictated that a convoy be scheduled every three days, with the expectation that at least one convoy would get through and arrive between periods of bad weather.[239] The assault units would carry supplies for two days, and the convoy would bring seven hundred trucks and a hundred DUKWs loaded with three days' supplies of

all types. An additional ten days' worth would be carried by the second group of Liberty ships. The follow-up convoys would each consist of four Liberty ships and fourteen LSTs carrying five hundred trucks, plus landing craft as needed.[240]

Another problem to be resolved to ensure a continuous flow of supplies, given the inadequate port facilities, was the shallow water of the approaches to the beaches. The Fifth Army's G-4 intended to maintain the flow of supplies over the beaches as long as necessary, but it would be impossible if the weather was unfavorable. It would then be necessary to rely on the port of Anzio, which, while small, could handle LSTs. The plan provided for the assault force to be followed on the first day by port reconstruction engineers to deal with any German demolition. If the port was unavailable, the LSTs and LCTs would be unloaded exclusively over the beaches, over pontoon causeways (prefabricated sectional floating bridges) across the shallow water. Tonnage restrictions were placed on landing ships and craft to ensure the shallowest possible beaching draft.[241]

**Naval Plans**

Naval planning for the original Operation SHINGLE started on November 18, 1943. It was a joint effort of Task Force 81's planning staff and Fifth Army headquarters at Caserta.[242] The work on the final plan (i.e., for SHINGLE II) started on December 31, 1943, and ended on January 12. The chief planner was Admiral Lowry. Adm. John Cunningham, CINC, Mediterranean, set up an advance headquarters at Naples.[243] TF 81's area of responsibility was bounded on the east by Italy's west coast, to the west by longitude 11° 20′ east, and to the south by latitude 40° 50′ north.[244]

During the planning process a thorough study of the proposed beaches and their gradients was made, from aerial photographs and reconnaissance on the ground. The photographic reconnaissance was exceedingly accurate and highly satisfactory.[245] Beach reconnaissance by divers, however, accomplished little other than to establish the depth of water over the outlying bars.[246] Loading restrictions were put on LSTs and LCTs because of an unfavorable (i.e., too flat) beach gradient.[247] Scouts and raiders brought back descriptions and images that were used to familiarize the amphibious force personnel with silhouettes of the selected beaches, for recognition at night.[248]

The beach study assessed that the port of Anzio—if not demolished—could handle six LSTs at one time and thereby relieve traffic over the X-RAY beaches.[249] Because the beach east of Anzio could not accommodate two divisions, it was decided, after consultation with the AFHQ Joint Beach Committee, to land the British division over the west beach. Naval reconnaissance parties sent ashore there reported that light assault craft could land, despite the shallowness of the beach.[250]

The planners selected two main landing sites. One was a 5,600-yard stretch about five miles west of Anzio. The approach was very shallow (a gradient of 1 : 110), and the sand was too soft for vehicles, especially in the exits through the dunes.[251] This sector was selected for the PETER force and was in turn divided into

three beaches, designated GREEN, AMBER, and RED, each thirty to sixty yards wide. Not only the soft sand but in some places five-foot banks impeded entrance to the dunes in the rear. The dunes were backed by a tree belt that varied in depth from fifty to four hundred yards. Behind the trees were fields and orchards. A "metaled road" (paved with stone chips mixed with tar) ran roughly parallel to, and five hundred to eight hundred yards behind, the beach.[252]

From the sea, the beaches would be difficult to locate at night, and any heavy winds would seriously impede reaching them. A sandbar (only one was known of at this point) approximately 150 yards offshore extended almost the entire length of these beaches; it was for this reason that, as mentioned, LSTs had to unload over causeways, four hundred feet long. LCVPs, LCAs, DUKWs, and possibly LCTs, however, could reach the beaches directly.[253] The Navy recommended to the Army that at the PETER beaches neither troops nor equipment be landed from LSTs, LCTs, or infantry landing craft. The troops would be required to wade through several hundred feet of water to the beaches.[254]

Another landing site was at Nettuno, four miles northeast of Anzio. The approach to the Nettuno beaches also was shallow (with gradients of 1 : 80 to 1 : 85).[255] Designated as the X-RAY sector, the Nettuno site was divided into three beaches, RED, GREEN, and YELLOW; they were 2,860 yards long in all and each ten to twenty-five yards wide. Here two sandbars lay 150 yards offshore, extending the entire length of the beach; a minimum of six feet of water over the bar could be expected. These beaches were suitable for LCVPs and LCAs, and in some places LCTs and LCIs. Pontoon causeways would be required for LSTs.[256] YELLOW Beach, 820 yards long and forty yards wide, was composed of rough sand. There were no offshore rocks or bars, but the gradient was so shallow (gradient 1 : 130 to 1 : 150) that YELLOW was suitable only for LCVPs, LCIs, LCAs, DUKWs, and some LCT variants. Craft drawing three feet or more would ground 150 yards offshore.[257]

Allocation of craft to the beach groups depended primarily on the beach gradients. None of the LCIs or the LCTs Mark 3 or 4 were assigned to the PETER beaches. All the LCIs were assigned to X-RAY, most of the LCT Mark 5s to PETER.[258]

TF 81's Operation Plan Nr. 147-43, issued on January 12, 1944, stated that the task force's mission was to "establish 3rd ID (reinforced) Major Gen. Lucian Truscott in positions ashore near Cape D'Anzio in order to attack the rear of the enemy's right flank." Clearly, TF 81's mission was not consonant with what Clark had laid out to Lucas; it more resembled the mission General Alexander had issued to Clark's Fifth Army. In Plan 147-43 the mission of the PETER force was simply "the landing of the First British division (reinforced)."[259] It did not elaborate on what the British contingent's mission would be ashore. Otherwise, the TF 81 plan postulated that the enemy would offer strong resistance and that "strong enemy submarine, E[nemy]-boat and air attacks are to be expected." The planners also assumed that mines would be encountered but that the weather would allow landing through surf on the designated beaches.[260]

For gunfire support of the X-RAY force, TF 81 planners organized four fire-support groups plus a rocket and AA support group to deliver "prearranged fires" prior to H-hour. The British Bombarding Squadron would do the same in support of the PETER force.[261] To achieve surprise, no preliminary bombardment would be conducted except for a short, intense rocket barrage at H–10 and H+5 by three specially modified craft known as LCT (R)s.[262] Shore fire-control parties would be provided by the 3rd ID for RED and GREEN Beaches. The Rangers would be supported by a British forward observation officer (FOO) party during their advance from YELLOW Beach, the British 1st Division by a British bombardment troop (four FOO parties). The 504th Paratroop Regiment would be accompanied by one shore fire-control party.[263]

Finally, TF 81's plan envisaged that the Allied air forces would provide comprehensive support of the landing force during the sea transit and the landing on the Anzio and Nettuno beaches.

**Air Plans**

One of the most controversial aspects of Operation SHINGLE was air support for the troops on the ground. Eisenhower planned to isolate the area of operations by employing strategic bombing to divert and slow the German units that he believed would inevitably be sent toward the Anzio beachhead. British and American army and air force planners in London believed the best way to accomplish that was to attack marshaling yards, rail centers, and large repair facilities. Intelligence analysts and air force planners in the Mediterranean commands disagreed; they wanted rail bridges, road bridges, and viaducts destroyed.[264] Finally, it was agreed that bridges and the railway system would be targeted. Yet General Clark did not have much faith in strategic bombing or air interdiction. The disagreement over targets with the Army Air Forces (which had subsumed Army Air Corps) did little to convince Clark that airpower would help his command.[265]

Planning by air commands for Operation SHINGLE was completed on December 30, 1943. The effort was divided into three related phases. Phase I (January 1–14) aimed to disrupt enemy communications in northern Italy and deceive the enemy about Allied intentions by supporting the deception plan. Phase II (January 15–21) was to isolate the landing area by attacks on road and rail communications north of Rome (as discussed above) and in front of the Fifth and Eighth Armies.[266] In Phase III (from January 22 to the end of the operation), Allied aircraft would provide cover to convoys and the beachhead and close air support to the landing forces.[267]

Specifically, the XII Tactical Air Command, the Desert Air Force, the Coastal Air Force, and the Tactical Bomber Command would obtain air superiority over the beaches, provide close air support, destroy enemy airfields, and hinder enemy communications. The 64th Fighter Wing would protect the battle area during the landing.[268] The XII Air Support Command, reinforced by two groups from

the Desert Air Force, would provide direct air support, while the Tactical Bomber Force would conduct heavier bombing.

The primary air mission was the interdiction of rail communications in west and central Italy from south of latitude 44° north to the Rome area. The 42nd Bombardment Wing would interdict the Florence–Rome, Arezzo–Orte, and Pisa–Rome lines; two alternative routes, Empoli–Siena and Pisa–Pistoia–Florence; the bypass lines through Viterbo–Rome; and the Nice–Genoa–La Spezia–Pisa line. This plan was modified on January 15, with highest priority awarded to attacking rail traffic on the Arezzo–Rome and Arezzo–Orte lines; the Leghorn–Civitavecchia–Rome line if it was reopened; the Terni–Sulmona line; and the Viterbo–Rome bypass. The secondary missions were interdiction of communications on the southern coast of France (from Nice to Pisa via Genoa) and on the Italian east coast (the Pescara–Falconara line) and neutralization of Piombino's harbor and marshaling yards.[269]

The Coastal Air Force would provide both day- and night-fighter cover over the Naples and Salerno loading areas and the Ischia swept channel to the Pontine Islands, as well as A/S protection for the latter. By night, radar patrol aircraft would fly A/S patrols from the Ischia swept channel up to the landing beaches. In addition, the Coastal Air Force would ensure both night- and day-fighter cover for rehearsal areas and convoy routes near Salerno. The XII Air Support Command would provide fighter cover over the convoy routes from the Pontine Islands to the assault areas, over the assault beaches themselves, and over the transport area off the beaches.[270]

## ALLIED PREPARATIONS

Orders for the naval part of the operation were issued on January 16. All commanders taking part were briefed that day at Naples.[271] Admiral Lowry directed that all landing craft were to arrive at Naples prior to the 15th; their commanders too were briefed on the 16th. Five (later ten) LSTs and a group of LCIs and LCTs had already assembled in the Naples vicinity for training with the British 1st Division and the U.S. 3rd ID.[272]

The Anzio-Nettuno landing had by then required significant redeployment of forces on the Allied front. The 3rd ID was assembled at Pozzuoli on New Year's Day. VI Corps turned over its sector of the Fifth Army front to the French Expeditionary Corps on January 3 and moved its headquarters to Maddaloni (three miles southeast of Caserta). The most difficult redeployment involved Eighth Army, which shifted no fewer than three divisions and attached units to the main Fifth Army front. Between January 1 and 5, the British 1st Division was moved from Foggia on the Adriatic front to Salerno; it was followed by the 2nd Special Service Brigade. The British 5th Division was shifted to reinforce the British 10 Corps in an attack across the Garigliano River.[273] The New Zealand 2nd ID was moved from Orsogna to Venafro to join the 15th Army Group reserve.[274] To minimize the possibility of enemy detection of these movements, the affected units were ordered to maintain

radio silence; however, because of the absence of enemy aircraft, they were allowed to move during daylight.[275] To support the demonstration that Eighth Army was to make to fix the German forces on its front, the headquarters of the Canadian Corps and the 4th Indian Division had to be brought forward from reserve.[276]

In the short time between January 4 and 19, VI Corps ran large-scale landing exercises. Their focus was on the movement to the beach, initially small units, then battalions and regiments. Infantry battalions rehearsed tactical landings under simulated fire, removing minefields and barbed wire and knocking out pillboxes. Artillery units rehearsed loading and unloading their guns, and so forth, into and out of DUKWs. Assault landings were practiced, first using landing craft mock-ups on dry land and then, in the battalion and regimental exercises, with craft provided by the Navy.[277]

Preparations for the Anzio landing culminated in a corps landing exercise (WEBFOOT) six miles south of Salerno on January 17–19.[278] It was not really a full-scale rehearsal, although all the assault units, DUKWs with their organic weapons, and token support weapons and vehicles took part.[279] The rehearsal went reasonably well for the British; however, the U.S. contingent encountered heavy weather on the night of the 17/18th.[280] Few of its landing craft arrived at the proper beaches.[281] Some disembarked so far out from shore that the forces arrived at the beach late.[282] About twenty DUKWs sank.[283] With them were lost several men and a number of 105 mm howitzers.[284] In general, the situation on the U.S. beaches was chaotic. Generals Lucas and Truscott both insisted on another rehearsal, but Clark refused, for lack of time.[285]

In the meantime, the Allied air forces were interdicting road and rail communications in northern Italy. These massive "operational fires" were designed, by preventing the movement of enemy troops or supplies, to have a major impact on the course and outcome of Operation SHINGLE. German troops in Italy moved mostly by rail, using three main routes: on the western coast, the eastern coast, and in the middle, from Florence to Rome. All of them ran through very mountainous terrain. Allied tactical bombers attacked key marshaling yards and bridges almost constantly; their main targets were the rail yards at Florence, Pisa, Arezzo, and Terni and the bridges at Orte, Orvieto, and Cecina, on the central and west coast routes.[286]

In addition, between January 1 and 13 Allied bombers systematically struck rail communications in central Italy with the aim of preventing resupply of German units on the front in southern Italy.[287] They also conducted massive attacks on German airfields, specifically four fighter airfields near Rome and three at Perugia for reconnaissance aircraft.[288] On January 21, bombers also attacked German airfields at Montpellier, Salon-de-Provence, and Istres (used by torpedo bombers and glide bombers) in southern France.[289]

By the 19th, the Allied airmen claimed, "all communications from northern Italy to Rome [had been] cut." In the event, however, this bombing did not do much good for the forces that landed at Anzio-Nettuno. The Germans filled runway craters overnight, and their engineers always kept at least one rail track open—that was all they needed for troop and supply trains, and the needs of the civilian population could wait. Nevertheless, the attacks grounded the Luftwaffe's reconnaissance aircraft at Perugia just before the assault convoy sailed.[290]

Complicating all these preparations for the Anzio landing were very unsatisfactory Anglo-American military relations in the Mediterranean. The problem was especially apparent in the combined headquarters, where American and British officers were "clannish" and did not mix freely with their counterparts. The Americans, for instance, viewed the British as selfish and obstinate. The exception was Fifth Army headquarters, which did not seem to suffer from such British-American friction. Clark, the first U.S. Army commander to command large combined formations, had by January 7, 1944, six British divisions and one Moroccan, one New Zealand, one Indian, and one Canadian division to support his four American divisions.[291]

Even for Fifth Army, however, the chain of command above Clark was a breeding ground for Anglo-American difficulties. Formally, there was a single chain of command running from the CCS through the British or American theater commanders, then to the American, British, and other Allied forces, all the way to the division level. However, there was also an informal but very important personal chain of command, which ran along national lines. For example, General Alexander regularly communicated with General Brooke without going through Eisenhower. But then, Clark often communicated with Eisenhower without notifying Alexander. Eisenhower attempted to ensure that Clark kept Alexander fully informed about these direct discussions but did not try to stop them.[292]

Both the Americans and the British accepted this informal approach to the chain of command. It did not become a problem in itself until Alexander and Gen. Ronald Penney, commander of the British 1st Division, began to criticize between themselves the performance of General Lucas, Penney's direct superior, during the Anzio landing. Penney complained that Lucas did not inspire confidence in his subordinates and did not know what to do about the situation after the Allies went ashore. (Penney had been Alexander's signal officer prior to assuming his command within VI Corps.)[293]

Also, Alexander believed that Clark did not like the British. If Clark in fact did not, Alexander had given him a reason, by often giving instructions to division-level commanders, Clark's Fifth Army subordinates, directly and visiting them for discussions. Whatever his prior opinion of the British, Clark certainly did not like that, and a certain degree of animosity did develop on Clark's side. For their

part, the British generally regarded Clark as excessively ambitious, as well as vain, temperamental, and sensitive.[294] Clark argues in his memoirs that he encouraged cooperation and understanding to strengthen Americans' ties with their British comrades.[295] Truscott would write in his own memoirs of a lack of understanding among British and American commanders and staffs. This he recalled as being especially true in the case of VI Corps and its British divisions. Reportedly, Lucas had little trust in his British subordinate commanders or their troops, and the British commanders returned the favor. The VI Corps staff worked with British units a great deal but was not familiar with their organization, staff procedures, or tactical methods. Some American staff members failed to appreciate the difference in national characteristics generally and tended to be critical of all things British and impatient with methods that were unfamiliar to them.[296]

## GERMAN PLANS AND PREPARATIONS

There were barely enough German troops in Italy to hold the southern front and protect rear areas. In case of a large enemy landing, Army Group C would be threatened with collapse, and reinforcements would have to come from adjacent theaters and Germany proper. Foreseeing this contingency, the OKW issued orders at the end of December 1943 to the CINCs of the West (France and the Low Countries) and the Southeast (the Balkans) and to the commander of the Replacement Army (Ersatzheer) specifying the units that would be transferred to Italy in that event. Kesselring thus was assured that reinforcements would be on the way shortly; until they arrived, however, he was to employ all immediately available forces to repulse the landing.[297] The Germans believed that while they could not prevent an enemy landing, they could contain and destroy the forces that got ashore.[298]

By December 20, 1943, the OKW's Joint Operations Staff (Wehrmachtführungsstab) had prepared contingency plans in case of a major enemy landing on the Ligurian coast (MARDER 1) and on the Adriatic coast (MARDER 2). Each detailed the movements of specific units then in southern France, southern Germany, or the Balkans to the Italian theater. In addition, Kesselring had prepared five contingency plans of his own for, respectively, the following scenarios: a landing in the Rome area (Case RICHARD), near Leghorn (Case LUDWIG), in the vicinity of Genoa (Case GUSTAV), in the Rimini–Venice area (Case VIKTOR), and on the Istrian Peninsula (Case IDA) (see map 13).[299] By the end of 1943 it was clear to Kesselring that the coast opposite Rome from Civitavecchia to Gaeta, especially Campagna, was particularly vulnerable. His chief preoccupation was to create a reserve to counter any large-scale landings. Prearranged code words would bring forces from all parts of the Italian Peninsula to mass at the invasion point.[300]

Case RICHARD called for moving forces subordinate to the Tenth and Fourteenth Armies, as well as the SS & Police Command, Italy; the XI Air Corps; and the 2nd Air Fleet. Specifically, Tenth Army would make available one of the panzer divisions

or panzer-grenadier (i.e., mechanized infantry) divisions in its reserve, one panzer reconnaissance detachment, and other smaller units. Fourteenth Army headquarters would be relocated from northern Italy to the Rome area. It would move combat-ready forces of the 362nd ID, 114th Light (Jäger) ID, and two reinforced regimental groups, one from the 356th ID, and another from the 65th ID. The SS & Police Command would make available the 16th PzGrDiv Reichsführer-SS (less one regiment) and the 35th Panzer-Grenadier Regiment (PzGrRgt). XI Air Corps (redesignated as I Parachute Corps on January 1, 1944) would move 4th ParaDiv and some corps troops; 2nd Air Fleet would make available four heavy AA detachments.[301]

More broadly, the defense of Italy's coast had a very high priority for the Germans. They considered all of it to be threatened by an enemy landing, ranging in size from the tactical—in support of enemy forces on the front line—to the "strategic" (actually, operational)—meant to cut off an entire army group. Kesselring's own contingency plans for defense against landings on Italy's western and eastern coasts involved reaction forces created from rear-echelon troops, such as AA units along the coast, replacement units, engineers, and other support units. They would fight as infantry until maneuver units could reach the beachhead.[302] For the Germans, the main lesson of Salerno had been that a landing force had to be thrown back into the sea within twenty-four hours—that is, before the enemy could deploy its artillery and so consolidate the beachhead. Hence, the German reaction units had to be deployed close enough to the coast to reach the scene in one night's march—being unable to move during daylight hours because of Allied air superiority.[303]

The Germans had organized five coastal-defense sectors, centered on Genoa, Leghorn, Rome, Rimini–Ravenna, and Istria (in the southeast theater). Each was fortified and guarded by small units. In October 1943, Fourteenth Army consolidated the defenses on the Gothic Line (Pisa–Rimini) and between La Spezia on the west coast and Pesaro on the east coast. The Germans also paid attention to the defense of the Voralpen (Alpine foothills) Line, stretching from the Italo-Swiss border to Istria. In the case of a successful enemy landing, these lines would offer prepared defensive positions in the rear of the central Italian front.[304]

For defense against a large enemy landing, Army Group C prepared orders detailing which armies and independent corps would move to the threatened coastal-defense sector. These orders pertained only to combat units and essential service troops; the remaining forces would stay in their respective sectors. For security, the various defense sectors had code designations. Army Group C issued a timetable for alerting and redeploying specific units. It assigned to all units their march and convoy routes; gave the locations of dumps for fuel, munitions, and food rations; assigned troops to road and bridge repair; and provided for communications during the march. All rear-area forces were to be prepared to repulse airborne landings. All affected units were to be ready to start moving between eight and twelve hours after the alert was received.[305]


*Map 13*
*German contingency plans,*
*December 20, 1943*

Army Group C was well aware of the inadequacy of the fortifications and forces close to the coast. Neither OKW nor Army Group C believed it possible to defend Italy's coast successfully against a large amphibious landing with the forces on hand. Nevertheless, the Germans made constant efforts to strengthen what they considered threatened sectors. They emplaced additional coastal guns, constructed obstacles, mined offshore waters, and inundated certain coastal areas. But the situation on Tenth Army's front limited the extent to which forces could be spared for coastal defense. Whenever an enemy offensive caused a crisis on its front, reinforcements were sent from northern Italy, weakening those potentially available to coastal defenses.[306]

Prior to the Allied landing at Anzio-Nettuno, only three divisions of Fourteenth Army were combat ready—the 44th ID, the 90th PzGrDiv, and the 334th ID—and all of them had been transferred to Tenth Army. At the same time, the battle-weary 65th ID was moved from Ortona, south of Pescara on the Adriatic coast, to northern Italy. The Germans had activated the 278th ID and the 16th SS PzGrDiv. Also, the OKW had directed Fourteenth Army to release the 371st ID for redeployment to the Eastern Front. All this left Fourteenth Army with only eight divisions—none of them fully combat ready.[307]

The situation west of Rome was especially acute. The Germans had long considered it possible that the Allies might land in Tenth Army's rear to support Allied forces on that front. However, Fourteenth Army was unable to accept the additional responsibility of defense south of Rome; for its part, OKW was unwilling to weaken defenses any further in northern Italy, because of uncertainty about whether the enemy intended to land west or south of Rome, in the Gulf of Genoa, or on the Istrian Peninsula. For this reason, Tenth Army was left to secure on its own the coastal sector in the vicinity of Rome; Tenth Army, in turn, gave I ParaCorps this responsibility.[308]

After World War II, some of Kesselring's staff officers, in interviews with representatives of the U.S. Army's Information Office, would state that OKW had believed the most probable areas for an enemy landing to be Genoa, Leghorn, Rome, Venice, and Istria. Of these, they would recall, the most critical had been that around Rome, because an enemy landing there would cut off Tenth Army communications, probably causing a rapid collapse of the southern front.[309] When, therefore, OKW received in early January more information pointing to a landing in the Rome area, it decided to replace the 3rd PzGrDiv with the much stronger 90th PzGrDiv, then on the Adriatic coast. A lull in the first two weeks of January allowed the Germans to do so.[310] The regrouping started on January 10.[311] The 29th and 90th PzDivs of I ParaCorps were assigned to the coastal sector, and the Hermann Göring PzDiv was held as a mobile reserve, between Rome and the southern front.[312]

## OPPOSING COMMANDERS AND FORCES, JANUARY 22, 1944

The Allies initially enjoyed a large superiority in forces on the ground, and their strength at sea and in the air was overwhelming for the duration of the Anzio-Nettuno operation.

### The Allies

General Alexander's 15th Army Group was the highest command echelon of ground forces on the Italian mainland. Alexander personally had intelligence, good looks, and charm—everything came easily to him. An imperturbable coolness made him appear unconcerned even in moments of the gravest crisis; Alexander always gave the impression that he had something in reserve. For him, no situation was so hopeless that it did not allow of some remedy.[313] General Brooke would say that Alexander never had "the slightest doubt that all would come out right in the end."[314] Alexander was charming, gallant, and professional, more persuasive than forceful. In planning, he always sought the advice of his subordinates. He listened to their arguments and thought aloud. Alexander would never impose a decision on an unwilling subordinate commander. In his view, if he did so a subordinate would have misgivings, and if the operation failed, would lose confidence in Alexander. Less appealingly, however, Alexander's operations were neither daring nor creative.[315]

Fifth Army, led by General Clark, was the command most directly involved in Operation SHINGLE. Clark had graduated 110th in a class of 139 from the U.S. Military Academy, at West Point, in 1917; had been wounded in World War I; and passed through the Army War College, class of 1937. He had earned a reputation as one of the U.S. Army's most talented (and ambitious) officers. Yet he had never commanded a large formation in combat before he took over Fifth Army.[316] For most of his career, Clark had served in various training establishments and staffs. He had been Gen. Lesley McNair's staff operations officer. In June 1942, Clark took command of U.S. ground forces in the European theater; that November he became Eisenhower's deputy. Clark made a secret and dangerous submarine trip to North Africa just prior to the Allied invasion of North Africa (Operation TORCH). Now forty-eight, he was much younger than most lieutenant generals—he had been promoted to that grade from lieutenant colonel in just three years. Clark was aggressive, hardworking, and efficient; Eisenhower thought that Clark was "the best organizer, planner, and trainer of troops that I have met." Before Clark's Fifth Army had made the landing at Salerno he had (because of his youth and inexperience) shown great deference to his superiors. However, after Salerno he had become more self-assured and less deferential. Clark was cordial with the British, although he grew disenchanted with them. In general, he tried to hide his sensibilities behind a mask of coldness.[317]

The main Fifth Army was deployed along a thirty-five-mile-long front line stretching from the Tyrrhenian Sea to the Abruzzi National Park. On the left flank

was the British 10 Corps (Lt. Gen. Richard L. McCreery); the U.S. II Corps (Maj. Gen. Geoffrey Keyes) held the central part of the front. On the right was the FEC (General Juin). The Allied positions were a short distance from a line between the Garigliano and Rapido Rivers.[318]

General Lucas, at the head of VI Corps, had been characterized by General Marshall as having "military stature, prestige, and experience." He had assumed command of VI Corps at Salerno on September 20, 1943, when Clark relieved Maj. Gen. Ernest J. Dawley, who appeared to be a victim of battle fatigue and stress. General Clark wanted an experienced corps commander who could reestablish leadership of the corps's operations at Salerno.[319]

As finalized, the "first wave" consisted of the U.S. 3rd ID, the British 1st Division, the 46th Royal Tank Regiment, the U.S. 751st Tank Battalion, the U.S. 504th Parachute Infantry Battalion, three U.S. Ranger battalions, and two British commando battalions (see sidebar "VI Corps Composition, January 22, 1944"). The 45th ID (Combat Command A, a task-organized combined-arms unit of about brigade size) would be in reserve as reinforcement once the lodgment had been established.[320]

Enough LSTs being available, it was proposed to send as the first follow-up force the U.S. 1st Armored Division (Combat Command B) and one RCT of the 45th ID, plus three more battalions of the corps artillery. The timing of the follow-on force would depend on how quickly the assault convoy could turn around. That, in turn, was contingent on the weather and enemy resistance. It also was decided provisionally to send the remainder of the 45th ID and the 1st Armored Division.[321]

**VI Corps Composition, January 22,1944**
(Maj. Gen. J. P. Lucas; HQ / HQ Co.)

Antiaircraft Artillery
35th AAA Bde
68th Coast Artillery Rgt (AA) (minus 3rd Bn)

Armor

*1st Armored Division (Combat Command B)*
(Maj. Gen. Ernest N. Harmon)

6th Armd InfRgt
1st Armd Rgt
27th/91st Armored Field ArtyBns (105 mm howitzers)

*Attached to 1st Armored Division:*
191st TankBn
751st TankBn
81st Armd Recce Bn
18th Field ArtyBde
35th Field ArtyGrp
15th Field Arty Observation Bn
1st Battalion, 36th Field ArtyRgt (155 mm guns)
1st Battalion, 77th Field ArtyRgt (155 mm howitzers)
141st/938th Field ArtyRgt (155 mm howitzers)
69th Armored Field ArtyRgt (105 mm howitzers)
456th Parachute Field ArtyBn (minus Batteries C and D) (75 mm pack howitzers)

976th/977th Field ArtyBns (155 mm guns)
434th AAA Automatic Weapons Bn

Infantry

*3rd Infantry Division*
(Maj. Gen. Lucian K. Truscott)

3rd CavRecce Troops (Mechanized)
9th Field ArtyBn (155 mm howitzers)
7th RCT
- 7th InfRgt
- 10th Field ArtyBn (105 mm howitzers)

15th RCT
- 15th InfRgt
- 39th Field ArtyBn (105 mm howitzers)

30th RCT
- 30th InfRgt
- 41st Field ArtyBn

*Attached to 3rd Infantry Division:*
441st AAA Automatic Weapons Bn
601st Tank Destroyer Bn

*45th Infantry Division* (*Combat Command A)*
(Maj. Gen. William W. Eagles)

45th CavRecce Troop (Mechanized)
189th Field ArtyBn (155 mm howitzers)
- 157th RCT
- 157th InfRgt

158th Field ArtyBn (105 mm howitzers)
179th RCT
- 179th InfRgt
- 160th Field ArtyBn (105 mm howitzers)

180th RCT
- 180th InfRgt
- 171st Field ArtyBn (105 mm howitzers)

*Attached to 45th Infantry Division:*
- 504th RCT
- 504th ParaInfRgt
- 509th ParaInfBn
- 645th Tank Destroyer Bn

*British 1st Division*
(Maj. Gen. W. R. C. Penney)

1st Division Royal Artillery
2nd, 19th, and 67th Field Rgts RA
1st Recce Rgt
2nd InfBde
3rd InfBde
24th Guards InfBde
46th Royal Tank Rgt

*56th (London) Infantry Division*
(Maj. Gen. G. W. R. Templer)

64, 65, and 113 Field Rgts RA
100 Light AA Rgt RA
44 Recce Rgt
167 InfBde
168 InfBde

*Tank Destroyers*
701st Tank Destroyer Bn
894th Tank Destroyer Bn

*1st Special Service Force ("Devil's Brigade")*
(Brig. Gen. Robert T. Frederick)
1st Rgt
2nd Rgt
3rd Rgt

*6615th Ranger Force*
(Col. William O. Darby)
1st Ranger Bn
3rd Ranger Bn
4th Ranger Bn

Allied Air Forces
2,700 aircraft (more than half based at Brindisi, Foggia, and Termoli)

**Sources:** Forsythe et al., *Cassino and Anzio,* pp. 254–60; Clark, *Anzio,* pp. 274–77; Molony, *Campaign in Sicily 1943 and the Campaign in Italy,* pp. 648–49, 653; Wilhelmsmeyer, *Der Krieg In Italien,* pp. 240–41.

Admiral Lowry was responsible for mounting, embarking, and landing the ground force and supporting it until the beachhead was established.[322] The assault convoy consisted of two command ships, four Liberty cargo ships, eight LSIs, eighty-four LSTs, ninety-six LCIs, and fifty LCTs, escorted by cruisers, destroyers, and a large number of smaller naval vessels (see sidebar "Task Force 81 Composition, January 22, 1944").[323] TF 81 consisted of the X-RAY and PETER forces, respectively. Lowry commanded seventy-four ships of the X-RAY force carrying American troops, Admiral Troubridge ninety-four ships of the PETER force with the British part of VI Corps.[324]

The X-RAY force was divided into several functional groups: a control group of two flagships, a minesweeper group (to establish a mine-free channel), and an escort group (for antiair and antisubmarine defense). A beach identification group would precede the assault craft to locate the beaches accurately and mark them with colored lights. Then three landing-craft groups would land the assault waves. The 1st Naval Beach Battalion would follow the first wave to improve the marking of beach approaches and control boat traffic. After daylight a salvage group

**Task Force 81 Composition, January 22, 1944**

81 Control Force

*VI Corps (Maj. Gen. J. P. Lucas)*
U.S. 3rd ID (Maj. Gen. Lucian K. Truscott)
British 1st Armoured Division (Maj. Gen. W. R. C. Penney)

*81.1 Force Flagship (Rear Adm. Frank J. Lowry)*
USS *Biscayne* (AVP 11)
USS *Frederick C. Davis* (DE 136)

*81.10 Beach Company Group*
1st Navy Beach Bn

*81.11 Salvage Group*
1 ARS *(Prosperous)*

*81.12 Air Navigation Group*
2 PTs

*81.13 Loading Control Group*

*81.14 Return Convoy Group*
1 LCI (L)

*81.2 Ranger Group* (Capt. E. C. L. Turner, RN)
2 LSI (M)s *(Royal Ulsterman, Princess Beatrix)*
1 transport *(Winchester Castle)*
1 LST, 3 LCTs, 3 SCs, 1 LCI (H)

*X-RAY Force (Rear Adm. Frank J. Lowry)*

*81.3 RED Beach Group* (Cdr. William O. Floyd, USN)
12 LSTs, 31 LCI (L)s, 22 LCTs; British: 1 LCG, 1 LCF, 1 LCT (R), 4 PCs, SCs

*81.4 GREEN Beach Group* (Cdr. O. F. Gregor, USN)
1 LCI (L) (flagship)
2 British LSI (L)s *(Circasia, Ascania)*
16 LCI (L)s, 11 LCTs, 1 LCG, 1 LCF, 1 LCT (R), 2 PCs, 2 SCs

*81.5 First Follow-Up Group* (Capt. J. P. Clay, USN)
39 British LSTs, 20 LCI (L)s, 7 LCTs

*81.6 Escort Group* (Capt. J. P. Clay, USN)
1 DD *(Plunkett)* (flagship)
4 DDs *(Gleaves, Niblack,* HMS *Croome,* HHMS *Themistocles)*
2 DEs *(Herbert C. Jones, Frederick C. Davis)*
2 AMs *(Ready, Sustain)*

*81.7 Sweeper Group* (Cdr. A. H. Richards, USN)
1 AM *(Pilot)* (flagship)
7 AMs *(Strive, Pioneer, Portent, Symbol, Dextrous, Sway, Prevail)*
14 YMSs
1 SC

*X-RAY Fire Support Group*

*81.8 Gunfire Support Group* (Capt. Robert W. Cary)

*81.8.2 Fire Support Group One*
1 DD *(Mayo)*
1 LCG

*81.8.2 Fire Support Group Two*
2 DDs *(Woolsey, Ludlow)*
1 LCG

*81.8.3 Fire Support Group Three*
1 CL (HMS *Penelope*)
1 DD *(Edison)*

*81.8.4 Fire Support Group Four*
1 CL *(Brooklyn)*
1 DD *(Trippe)*

*81.8.5 Rocket and AA Support Group*
3 LCT (R)s, 1 LCF

*81.9 Beach Identification Group*
1 SS (HMS *Uproar,* P31)
1 DD *(Crete)*
3 PCs, 2 SCs

*PETER Force (Rear Adm. Thomas H. Troubridge, RN)*
British 1st ArmdDiv
4 transports (HMS *Bulolo, Glengyle, Derbyshire, Sobieski* [Polish])
2 AA and fighter-direction ships (HMS *Ulster Queen, Palomares*)
8 DDs (HMS *Beaufort, Brecon, Englefield, Kempenfelt, Tenacious, Tetcott, Urchin, Wilton*)
2 gunboats (HNLMS *Flores, Soemba*)
6 minesweepers (HMS *Bude, Rothsay, Rinaldo, Fly, Cadmus, Waterwitch*)
4 PCs (trawlers) (HMT *Two Step, Sheppey, Hornpipe, St. Kilda*)
14 British LSTs, 5 U.S. LSTs, 2 LCG (L)s, 31 LCIs, 1 LCI (H), 1 LCT (R)
2 PCs (U.S.)

1 oiler *(British Chancellor)*
1 net tender (HMS *Barndale*)
2 tugs (U.S.) *(Evea, Edenshaw)*
4 hospital ships (HMS *St. Julien, St. Andrew, Leinster, St. David*)
1 beacon submarine (HMS *Ultor,* P53)

*Peter Force Fire Support Group (Rear Adm. J. M. Mansfield, RN)*
*81.8.6 British Bombarding Squadron*
2 CLs (HMS *Spartan, Orion* [flagship])
4 DDs *(Laforey, Loyal, Jervis, Janus)*

**Sources:** Operation Plan Nr. 147-43, pp. 1–2; Annex F: Gunfire Support Plan Nr. 153-43, p. 1; Morison, *Sicily-Salerno-Anzio,* app. 3, "Naval Forces Engaged in the Assault on Anzio, 22 January 1944," pp. 395–97.

would lay pontoon causeways for unloading heavier craft. A loading control group at Naples would handle berthing and loading of craft there.[325]

MAAF had about 2,600 aircraft, organized in nearly fifty-nine squadrons (twenty-two fighter, six fighter-bomber, four light-bomber, twenty-four medium-bomber, and two and a half reconnaissance).[326] About 75 percent of the Allied aircraft were operational. In late 1943 they had been moved from North Africa to new bases on Sardinia, Corsica, and the mainland of Italy. The MAAF's B-17 and B-24 heavy bombers were used for strategic bombing. Its B-25 Mitchell, B-26 Marauder, and Wellington medium bombers were to attack targets fifty to a hundred miles behind the enemy front. The MAAF's A-20 Havoc and Martin 187 Baltimore medium bombers would destroy installations and facilities closer to the front. De Havilland Mosquitoes and A-36 Apaches (also known as Invaders) provided direct support to ground troops. Spitfire, Hurricane, P-38 Lightning, P-40 Hawk, P-47 Thunderbolt, and P-51 Mustang fighters escorted Allied bombers and intercepted and destroyed enemy fighters.[327]

**The Germans**

On the German side, all ground forces in the Italian theater were subordinate to Army Group C, led by Field Marshal Kesselring, who was, as noted, also CINC Southwest. Kesselring was one of the best German commanders in World War II.[328] He was a born leader, highly intelligent and always open to new ideas.[329] Kesselring was by nature genial, optimistic, and cheerful. He had a great and rare ability to distinguish between what was essential and what could be disregarded. He had a strong sense of what it was possible to accomplish.[330] A Luftwaffe officer, he had no experience as an army field commander, but he had a cool head, reacted quickly to unforeseen events, and made sound decisions. Kesselring was extremely effective in conducting a delaying defense in Italy. He applied the principle of mobility and always had a reserve available.[331]

The German ground forces under Kesselring comprised Tenth and Fourteenth Armies, totaling twenty-four divisions. Fourteenth Army, under Gen. Eberhard von Mackensen, was deployed north of the Grosseto–Ancona line. It consisted of eleven and a half divisions, of which four were in the process of forming and four were in defensive positions. Tenth Army, under Gen. Heinrich von Vietinghoff *genannt* (known as) Scheel, consisted on January 20, 1944, of two army corps plus one panzer and one infantry division. Opposed to the British Eighth Army was LXXVI PzCorps, with four divisions; Fifth Army faced four divisions of XIV PzCorps.[332] (For details see sidebar "German Order of Battle, January 1944.")

In the late fall of 1943, the Axis powers had about two thousand aircraft in the Mediterranean. However, no more than 50 percent of them were operational. Some five hundred Italian aircraft were considered obsolete and of little combat value. By the end of 1943 the Luftwaffe had about 550 aircraft in service in Italy, southern France, and the Balkans. However, almost all the heavy bombers were withdrawn from Italy, leaving only about fifty Ju-88s in Greece and Crete and some sixty Ju-88s, He-111s, and Dornier Do-217s in southern France. Most of the fighters, some 230 Messerschmitt Me-109s and Focke-Wulf Fw-190s, were in Italy, about a third of them at fields around Rome.[333] On December 31, 1943, 2nd Air Fleet had in service 288 aircraft (147 of them operational). The overall number included 184 fighters (seventy-eight operational) and thirty-one reconnaissance aircraft (twenty-five

**German Order of Battle, January 1944**

Supreme Commander, Southwest / Army Group C
(Oberbefehlshaber, Südwest / Heeresgruppe C)
(Field Marshal Albert Kesselring)

*Tenth Army (January 20, 1944)*
(Gen. Heinrich Gottfried von Vietinghoff *genannt* Scheel)
*XIV Panzer Corps*
(Gen. of Panzer Troops Fridolin von Senger und Etterlin)
15th PzGrDiv (Lt. Gen. Eberhard Rodt)
16th SS PzGrDiv (SS-Gruppenführer Max Simon)
71st ID (Lt. Gen. Wilhelm Raapke)
94th ID (Lt. Gen. Bernhard Steinmetz)

*LI Mountain Corps*
(Gen. of Mountain Troops Valentin Feuerstein)
1st ParaDiv (Lt. Gen. Richard Heidrich)
44th GrDiv "Hoch und Deutschmeister" (Maj. Gen. Hans-Günther von Rost)
5th Mountain Div (Maj. Gen. Max-Günther Schrank)
*Group Hauck*
(Gen. of Artillery Friedrich-Wilhelm Hauck)
305th ID (Gen. of Artillery Friedrich-Wilhelm Hauck)
334th ID (Maj. Gen. Helmuth Böhlke)

*Fourteenth Army (February 9, 1944)*
(Gen. Eberhard von Mackensen)

*I Parachute Corps*
(Gen. Alfred Schlemm)

4th ParaDiv (Maj. Gen. Heinrich Trettner)
65th ID (Maj. Gen. Helmuth Pfeiffer)
29th PzGrDiv (Lt. Gen. Walther Fries)
715th ID (Motorized) (Maj. Gen. Hans-Georg Hildebrandt)
114th Light (Jäger) Div (formerly 714th ID) (Lt. Gen. Karl Eglseer)

*LXXVI Army Corps*
(Gen. Traugott Herr)

Hermann Göring PzDiv (Maj. Gen. Paul Conrath)
3rd PzGrDiv (Lt. Gen. Fritz-Hubert Gräser)
26th PzDiv (Lt. Gen. Smilo Freiherr von Lüttwitz)
362nd ID (Lt. Gen. Heinz Greiner)

*Independent Regiments*
Inf Training (Lehr) Rgt
1027th Reinforced PzGrRgt (2 Bns)
1028th Reinforced PzGrRgt (2 Bns)

*Directly Subordinate to the Fourteenth Army*
"Nembo" Bn / ParaRgt "Folgore" (Capt. Corradino Alvino) (Italian Social Republic)
"Barbarigo" Bn / Decima Flottiglia MAS (Capt. Umberto Bardelli) (Italian Social Republic)

*German Forces Defending the Bridgehead, January 28, 1944:*
ParaPzDiv Hermann Göring (1 PzRgt; 2 PzGrRgts)
29th PzGrDiv (1 PzGrRgt; 1 RecceDet)
3rd PzGrDiv (2 PzRgts)
15th PzGrDiv (2 PzRgts)
90th PzGrDiv (1 PzRgt)
16th SS PzGrDiv (2 PzGrRgts)
1st Para Light Div (1 Para Light Rgt; 1 Para Machine Gun Bn)
4th Para Light Div (3 Para Light Rgts)
65th ID (3 GrRgts)
71st ID (3 GrRgts)
356th ID (1 RecceDet)
114th Light Div (1 Light Rgt)
Inf Training (Lehr) Rgt
Para Light Training (Lehr) Rgt
2nd Luftwaffe Light Bn

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**Sources:** Clark, *Anzio,* pp. 277–78; D'Este, *Fatal Decision,* pp. 444–48; Wilhelmsmeyer, *Der Krieg in Italien,* p. 247; Molony, *Campaign in Sicily 1943 and the Campaign in Italy,* pp. 653, 663–65.

operational).[334] Specifically, the Germans had operational eighteen short-range Me-109s and seven Ju-88/Me-410 long-range reconnaissance aircraft.[335] By January 20, 1944, 2nd Air Fleet had 337 aircraft, among them two hundred fighters (136 operational) and twenty-five short-range (twenty operational) and six long-range (two operational) reconnaissance aircraft.[336]

The Kriegsmarine had in Italy only three S-boats and two U-boats.[337] On January 1 thirteen U-boats were deployed in the Mediterranean, but only three were at sea during that month.[338]

## FIFTH ARMY'S JANUARY OFFENSIVE

On January 12, Fifth Army resumed its offensive against the Gustav Line (see map 14). The FEC attacked in the direction of Monte Cassino, and the British 10 Corps advanced across the lower Garigliano River toward Minturno–Ausonia (Operation

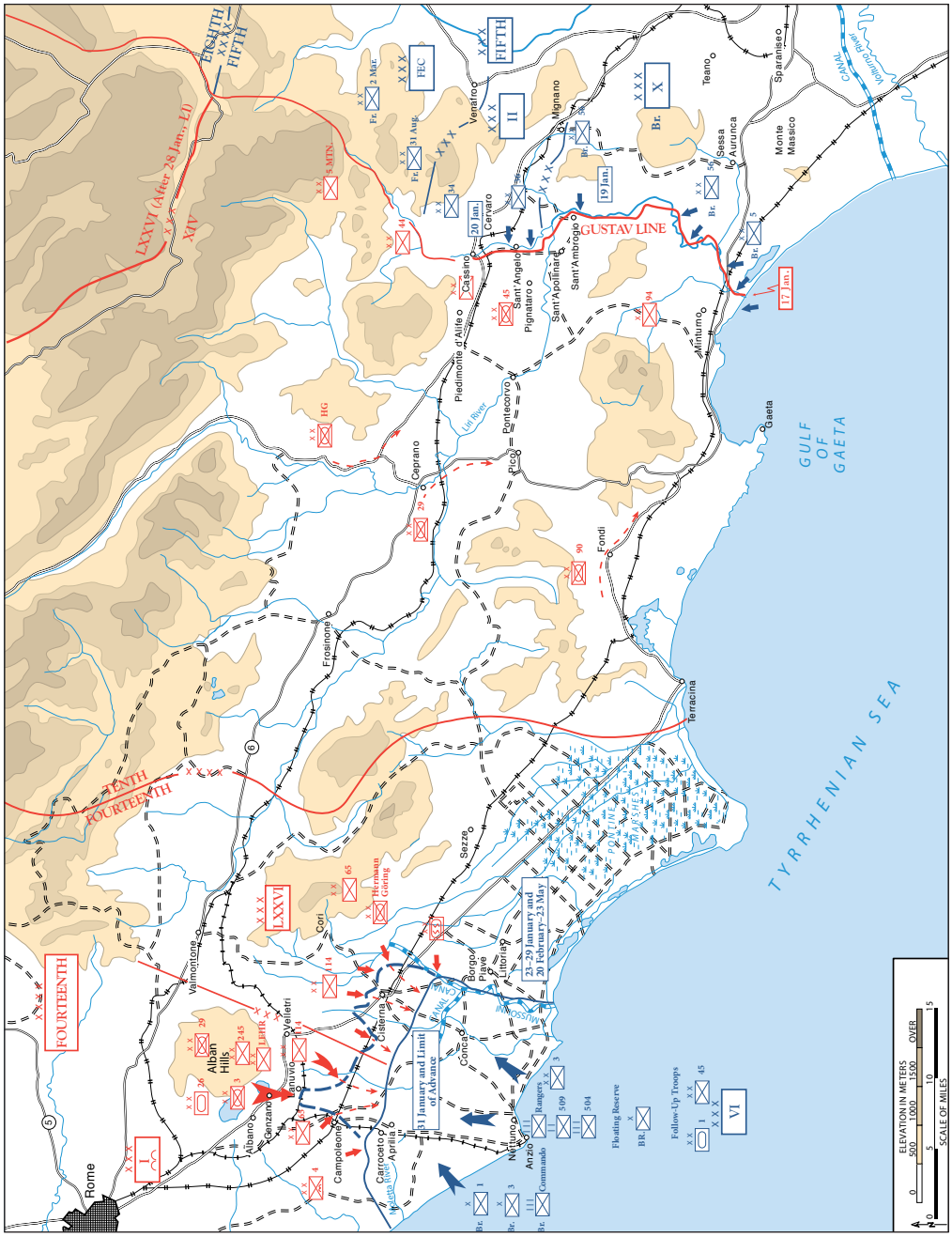
PANTHER).[339] The attackers gained initial successes with the assistance of a surprise landing of strong forces west of the mouth of the Garigliano.[340]

Alexander issued Operational Instruction Nr. 34, "The Battle for Rome," on January 12. The forces of the Fifth Army, it stated, "have now started a series of operations on their present front designed to break through the enemy's main defensive positions in the area south of Cassino, and to draw in his reserves. These operations will culminate with an attack by two corps across the Rapido River on or about 20 January."[341] In paragraph 3 of the same document, Alexander stated that Fifth Army would also prepare an amphibious operation

> to land a corps of two divisions and the necessary corps troops, followed by a strong and fully mobile striking force based on elements of a third division in the Nettuno area. The "object[ive] of this operation will be *to cut the enemy's main communications in the Colli Laziali* area southeast of Rome and to threaten the rear of the 14 Army [actually Panzer] Corps." Weather permitting this amphibious operation will be launched on 22 January which will be D-Day. The decision whether the weather is suitable or not will be made by the CINC 15th Army Group in consultation with the CINC of the Mediterranean [Fleet]. If the weather prohibits its being launched on 22 January it will be postponed from day to day until the weather is suitable. It will not be postponed for any other reason than because of weather.[342]

Alexander stressed the importance of not allowing the enemy "any respite in which to reorganize or take up new positions."[343] The mission of the main Fifth Army was to force the enemy to withdraw to the north of Rome, in the process inflicting maximum enemy losses south of Rome. At the same time, the neighboring Eighth Army would "maintain sufficient pressure on the enemy forces to prevent movement of the 76 German Corps [LXXVI PzCorps] to the Fifth Army front."[344] The enemy, Alexander predicted, would be compelled to react to the threat posed by the landing to his communications and rear, giving the Allied forces an opportunity to break through the German main defenses; the main Fifth Army and VI Corps would "join hands at the earliest possible moment." Afterward, Fifth Army would advance past Rome as quickly as possible and reach the general line of Terni–Viterbo–Civitavecchia. The objective for Eighth Army was more distant, the Ravenna–Rimini–Faenza (some thirty miles southeast of Bologna) line; Fifth Army would meanwhile carry on to the Pistoia–Florence–Pisa line.[345]

Further, Alexander laid out, a naval task force under the command of Rear Admiral Lowry "will be supporting the amphibious operation."[346] As for aviation, the missions of the Tactical Air Force (assisted by the Strategic Air Force) prior to D-day were, in order of priority, destroying enemy air forces and attacking rail communications north of Rome. After D-day, the Tactical and Strategic Air Forces would concentrate on the following, again in order of priority: maintenance of air superiority over the battle area, interruption (interdiction) of enemy road communications leading to the area of the amphibious operation, and attacks on enemy




*Map 14*
*Offensive by main Fifth Army, January 17–20, and Anzio-Nettuno landing, January 22, 1944*

columns approaching the area of the amphibious operation and also troop concentrations within striking distance of the beaches.[347]

On January 16, the main Fifth Army G-2 issued what proved to be a false and highly optimistic assessment of the enemy's situation and intentions. Among other things, it estimated that "within the last few days there have been increasing indications that enemy strength on the Fifth Army front is ebbing, due to casualties, exhaustion, and possibly lowering of morale. One of the causes of this condition, no doubt, has been the recent, continuous Allied attacks."[348] Moreover, it appeared doubtful, in view of that weakening, that "the enemy [could] hold [an] organized defensive line through Cassino against a co-ordinated army attack. Since this attack is to be launched before SHINGLE, it is considered likely that this additional thrust will cause him to withdraw from his defensive position once he has appreciated the magnitude of that operation."[349]

In heavy fighting on January 18 and 19, British forces crossed the lower Garigliano River on a wide front. It appeared that the German front in the south would indeed collapse. The bulk of the Hermann Göring PzDiv and all local reserves already had been committed, and the 3rd PzGrDiv and 71st ID could not arrive before the 22nd.[350] ULTRA disclosed that the Fifth Army offensive was in fact against German reserves from the Rome area: General Senger und Etterlin, commander of the XIV PzCorps, had asked for reinforcements, and Kesselring, confident that there would be no seaborne landing in his rear, had agreed to send the 29th and 90th PzGrDivs to the front line on January 18—exactly what Alexander had hoped to accomplish.[351] It is not known whether the G-2s privately revised their views on receiving reports about the movement of the two German divisions to the Gustav Line. In any case, they were not authorized to disseminate changes to their estimates that would compromise ULTRA sources.[352]

Nevertheless, and despite successive attacks, neither the French nor the British were able to break through the German mountain defenses. On January 20, the U.S. II Corps tried to cross the Rapido River; after two days of bitter fighting and heavy losses, that attack too proved unsuccessful. By the 22nd the attack on the Gustav Line had bogged down amid strong German counterattacks. It would prove fortunate for the Allies at Anzio, however, that the German Tenth Army had been forced to commit most of its operational reserves.[353]

On January 18, ULTRA disclosed that Hitler had ordered Kesselring to commit a major part of his forces on the Foro position (also called the Hitler Line).[354] ULTRA also intercepted Kesselring's situation assessment the same day—that only two battalions and two engineer companies were left in the Rome area, too weak to repulse even a strong commando raid. In other words, for several hours the roads to Rome were wide open. However, that message was not decrypted in time to change Alexander's or Clark's plans.[355]

On January 20, ULTRA learned that the I ParaCorps headquarters would take over operational command on the main front, relocating from near Rome at 0900 on January 21. Its eastern boundary would coincide with what had been the western boundary of the 15th PzGrDiv on the Gustav Line, and its mission was to regain that line. The movement left the Anzio-Rome area essentially without effective combat assets to respond to the Anzio-Nettuno landing.[356] Only two weak battalions of 29th PzGrDiv remained south of the Tiber River in a position to oppose VI Corps.[357]

After the Anzio landing on January 22, the Allies would learn from ULTRA that the headquarters of I ParaCorps had assumed control over the 24th, 90th, and 29th Divisions. That meant initial German resistance at the beachhead in the first few hours would be light, because the nearest reserves were committed elsewhere. However, that intelligence was unknown to Lucas, because security regulations prohibited Fifth Army HQ from sharing ULTRA with him, a corps commander. Also, neither the 29th nor the 90th PzGrDiv was identified by contact in combat until January 22.[358] During the first three weeks of January ULTRA revealed that the Germans had repeatedly misinterpreted the movements of Allied naval vessels in the Mediterranean. For example, the Germans apparently were unconcerned by the disappearance of landing craft from Bizerte. Also, they assessed that Allied carriers were in the eastern Mediterranean for the purpose of reinforcing land-based aircraft.[359]

Notwithstanding, the Germans were very interested in Allied amphibious ships and craft in the Mediterranean theater, and ULTRA read the reports of German reconnaissance aircraft collecting information on them. For example, on January 12 the Kriegsmarine reported that enemy naval vessels had left Gibraltar on the night of January 5/6 bound for the Gulf of Taranto, calling at Algiers and Malta. On arrival, they would await, the German analysts assessed, four smaller units that had left Gibraltar on January 8 or 9. An aircraft carrier was in Sicilian waters. A large convoy would leave Gibraltar between the 12th and 15th bound for Barletta (on the southern Adriatic coast of Italy), carrying English troops whose equipment suggested they were destined for landing operations. On January 14, ULTRA intercepts disclosed reporting from German agents that "an Anglo-American landing intended on the night of 23 or 24 January" was being planned, possibly in Italy or Greece.[360] It also revealed that Kesselring had directed one of three battalions of the Hermann Göring PzDiv to watch the coast in the rear of the 94th ID. This meant that Kesselring was strengthening coastal defenses somewhere around Gaeta with thirty or forty tanks.[361] An ULTRA intercept on January 15 made clear the level of German concern over an imminent amphibious landing: Kesselring had the previous day directed X Air Corps to conduct high-altitude photoreconnaissance of Port Said, with special attention to carriers and landing craft.[362] ULTRA revealed

that Kesselring knew the identification and location of each of the fifteen Allied divisions, even the American units in Sicily as of January 7 just prior to the Anzio operation.[363]

**THE AMPHIBIOUS ASSAULT**

On January 19–20, activity in the port of Naples and its satellite harbors greatly intensified as troops, weapons, equipment, and supplies were embarked. The schedule had been prepared and coordinated by the joint loading board of the Peninsular Base Section, Fifth Army, and by VI Corps. Each division was responsible for its own loading areas, movement to the docks, and embarkation. Vehicles were waterproofed in division areas and loaded on January 19.[364] The troops of X-RAY force were loaded at four locations in the Gulf of Naples. The PETER force was assembled in the afternoon of January 21 north of Capri.[365] The initial assault force of fifty thousand men, 5,200 vehicles, and some 375 ships and craft was comparable in size to that which had landed at Salerno in September 1943.[366]

General Lucas established his command post on board the small seaplane tender *Biscayne* on the afternoon of the 20th. The weather forecast predicted negligible swell and a thick morning haze to cover the landing beaches. That same day, TF 81 received confirmation that D-day would be January 22 and H-hour, 0200.[367] At 0500 on January 21, the ships of TF 81 put to sea.[368]

The distance from Naples to the Anzio-Nettuno beaches is some 110 miles. The convoys sortied, rendezvoused, and approached the beaches exactly as planned.[369] TF 81's track from the Gulf of Naples to Anzio was roundabout, to keep the ships clear of minefields and conceal their destination as long as possible.[370] Proceeding at about five knots, the assault convoy passed four to twelve miles seaward of Ischia and the Pontine Islands.[371] The LCTs and other landing craft of X-RAY force, however, took a shorter course, closer to shore. Minesweepers were ahead of the convoy; cruisers and destroyers protected the flanks against U-boats and torpedo boats; fighters provided air cover.[372] The sea was calm, the temperature about fifty-five degrees Fahrenheit, and the ceiling about six thousand feet—good for air reconnaissance and attacks.[373] However, TF 81 was not detected during its transit.[374] Reportedly, the last German air reconnaissance of the port of Naples had been on December 11, 1943.[375] When the convoy came within five miles of reference vessel CHARLIE (about three and a half miles from the center point of the landing beaches) it reduced speed by half a knot to allow stragglers to catch up.[376]

Also on January 22, just before the landing force moved to the beach, the British bombardment group composed of two light cruisers (HMS *Orion, Spartan*) and four destroyers (HMS *Janus, Jervis, Laforey,* and *Loyal*) attacked the coastal batteries at Terracina. The 12th Minesweeping Flotilla cleared mines for the transit of the bombardment force through the Gulf of Gaeta.[377]

**The Landing**

At 0005 on January 22, in the darkness of a moonless night, the Allied assault force dropped anchor off Anzio-Nettuno.[378] Lucas would later remark that it had "achieved what is certainly one of the most complete surprises in history." However, Clark and others who possessed ULTRA information recognized that the surprise was only limited and tactical. In any case, the factors that had contributed to it included the wireless silence TF 81 maintained during its transit; inadequate German air and sea reconnaissance; the absence of German radar posts on the western coast south of Piombino; and, more broadly, a failure of German military intelligence.[379]

As discussed earlier, Allied troops and landing craft had been assembled at Corsica and Sardinia for a deception effort.[380] During the night of January 21/22, the British cruiser *Dido,* the French destroyer *Le Fantasque,* and the British destroyer *Inglefield* conducted a diversionary bombardment of Civitavecchia. At daybreak this force moved south to bombard the coast between Formia and Terracina to check any enemy reinforcements toward Anzio.[381] Allied coastal craft also made dummy landings. The Germans, preoccupied by heavy fighting along the Gustav Line, paid little attention to the diversionary landing.[382] In general, ULTRA did not reveal whether the Germans believed the deception story the various diversions had been designed to convey. It seems, however, that they did not: they conducted no troop movements in apparent response, as if discounting the credibility of these distractions and preferring to rely on their aerial reconnaissance to warn them of actual, imminent amphibious attack.[383]

The landing at Anzio-Nettuno was carried out as planned (see map 15). All the waves except the DUKWs (which did not roll out of their LSTs until 0400) landed within two minutes of their scheduled times. Some LCIs grounded on the inner bar and unloaded via LCVPs. The CHARLIE reference vessel proved effective.[384] In the PETER sector, a British submarine, HMS *Ultor* (P53), had helped minesweepers clear mines at 2030 on D–1. However, because of inadequate rehearsal, gear was fouled, and there were near collisions and narrow escapes from floating mines.[385]

The PETER force arrived at its landing sector at about midnight.[386] At H–10 (earlier than planned), two British LCT (R)s launched a powerful five-minute barrage of five-inch rockets;[387] they fired some eight hundred rockets.[388] Two cruisers (USS *Brooklyn* and HMS *Penelope*) and five U.S. destroyers also provided fire support. In X-RAY force's sector, fire support was provided by *Orion* and *Spartan*. In reserve were two Dutch gunboats, *Flores* and *Soemba.*[389] Enemy movements detected on the coast road in the Formia area brought shelling by *Dido* and a destroyer.[390] The Tactical Air Force flew about 810 sorties in support of the landing on D-day, while the Strategic Air Force conducted operational fires, attacking the enemy airfields in southern France.[391]

In the PETER sector, both the LSTs and LCTs unloaded over pontoon causeways. Ten LSTs assigned to PETER were sent to X-RAY for unloading.[392] Unloading

on PETER beaches was complicated by sandy cliffs that extended some four miles northward from the lighthouse. The LCTs did not beach until 0645 and, owing to the absence of exits from the beach and delays in rigging causeways, did not unload until 1045.[393] Because of the unfavorable beach gradient, troops disembarking from LSTs had to wade over three hundred feet to shore. Everything except infantry had to roll ashore over a causeway, and only a single ship could unload at a time. Also, the movement of vehicles off the beach was impeded by soft and boggy ground.[394]

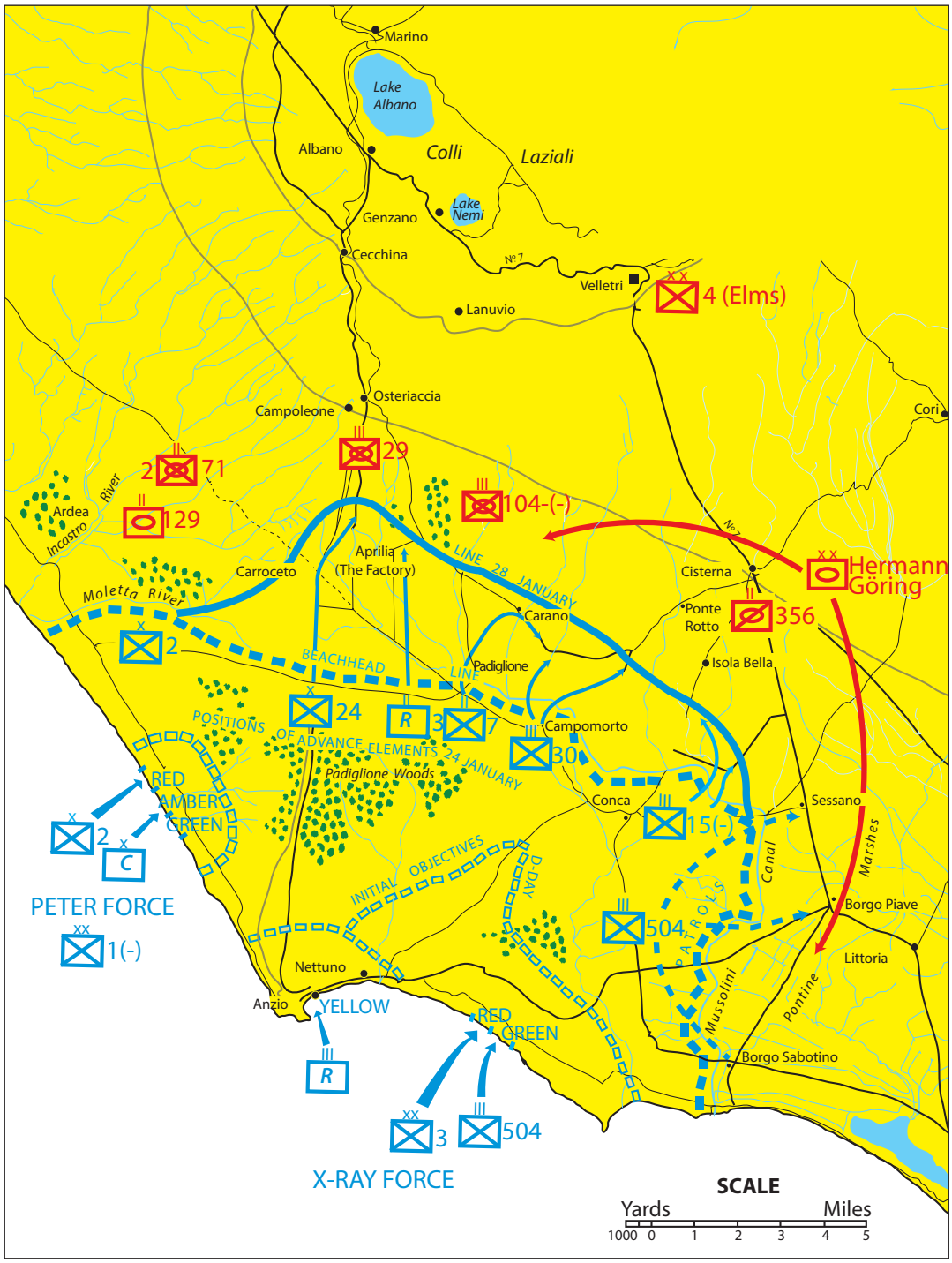
By 1600 on D+1 all SHINGLE assault craft had been unloaded except on the PETER beaches, and those were completed during the night of D+1. On D+3, the PETER beaches closed out; the craft and three pontoon sections there were sent to the X-RAY beaches, the latter under tow.[395]

In the X-RAY sector, two miles east of Nettuno, the 3rd ID landed on RED and GREEN Beaches. A British submarine, HMS *Uproar* (P31), had guided through the approach lanes a force of twenty-three minesweepers, which found only a few mines there.[396] The larger ships were discharged quickly over pontoons laid in threes. By 1500 on D-day, supplies were being trucked directly to the VI Corps dumps. Meanwhile, the 36th Engineer Combat Regiment cleared the port of Nettuno, which was by early afternoon able to receive four LSTs and three LCTs simultaneously.[397]

TF 81 did not have precise information on the enemy minefields. The only mines found were in the fire-support area, within the twenty-five-fathom curve. One minesweeper, USS *Portent,* was sunk by a mine;[398] the AA ship HMS *Palomares* and the destroyer USS *Mayo* were damaged.[399]

The Luftwaffe's initial missions were to hinder the enemy buildup and attack supply shipping, mainly with torpedo and glide bombers.[400] But the Luftwaffe flew only 140 sorties on D-day, January 22.[401] At about 0850, eighteen to twenty-eight fighter-bombers made three attacks on the unloading areas but sank only a single 160-foot LCI.[402] That same day, Allied aircraft flew 1,200 sorties.[403] Their main targets were the roads leading to the landing beaches. However, the Germans quickly repaired them.[404]

TF 81's after-action report identified a number of lessons learned from the landing at Anzio-Nettuno. One was that in assaults on beaches defended by minefields, beach obstacles, coastal batteries, and radar installations, prior air bombardment is necessary to soften them. Also required was heavy strafing of beaches just prior to H-hour. The approach to the shore should be made during the night hours to obtain tactical surprise, but H-hour should be at dawn. The increased risks of a daylight landing, particularly the likelihood of more-accurate and heavier enemy gunfire, had to be accepted over those of landing in pitch darkness through minefields and over beach obstacles. To deal with the latter, the TF 81 report recommended prior insertion of Beach Jumper (BJ) units and raids by parties of five hundred to a thousand men. The landing plan, TF 81 indicated, had to be flexible; should one targeted




*Map 15*
*Anzio landing and planned lodgment area*

beach—or even all of them—prove impossible to cross, any opening or soft spot in defenses the BJs had identified had to be exploited with the least possible delay.[405]

The report emphasized the need for the maximum use of vehicle-loaded LSTs to reduce unloading times to the minimum. It took much longer and required many more personnel to unload Liberty ships into LCTs and then LCTs onto the beaches. Good organization, not only for managing the assault waves but also during preloading, was essential. It also was necessary to delineate clearly the responsibilities of the Army logistical and Navy beachmaster parties, both shipboard and ashore.[406] TF 81's after-action report also emphasized both strict enforcement of fire discipline and the value of using LCT (R)s on all landing beaches.[407]

Finally, TF 81 recommended that several dress rehearsals with loaded craft be held. The timing and execution of an assault depend on many factors, any of which may spell disaster. The landing at Anzio-Nettuno was successful because of the favorable weather and the relative lack of enemy opposition. However, this success hid some serious mistakes, which could be corrected only by training. During the dress rehearsal for Operation SHINGLE in the Gulf of Salerno, Admiral Lowry nearly called the landing off. If that decision had been made, the landing delayed, and the assault attempted in weather similar to that encountered during the rehearsal, the result would have been catastrophic. It is simply not acceptable to run the "risk of lack of proper training against a well-defended shore."[408]

**Establishing the Lodgment, January 22–24**

VI Corps captured all its initial objectives by noon on January 22.[409] The only resistance came from elements of two depleted battalions of the 29th PzGrDiv.[410] These units had just been withdrawn from hard fighting along the Gustav Line and assigned to what had been expected to be a long rest, coast watching between the Tiber River and Nettuno. A few scattered minefields, mostly in the port and on the PETER beaches, were at first the greatest hazard to VI Corps.[411] After sunrise on D-day, however, 88 mm batteries far inland began sporadically shelling the port and the PETER beaches. Despite the attempts of Allied cruisers and destroyers, these guns were not silenced all day.[412]

After the landing, the Allied forces advanced and expanded the beachhead. The British 1st Division began to move up the Anzio–Alban Hills road toward Campoleone, supported by the 179th Rgt. of the U.S. 45th ID, and captured Aprilia.[413] By the evening of D-day, advance elements of the 30th Infantry and the 3rd Reconnaissance Regiments had seized all the bridges across the Mussolini Canal. However, the Hermann Göring PzDiv recaptured most of them that night.[414] By midnight on D-day, about 36,000 men and 3,070 vehicles, plus large quantities of supplies—90

percent of the assault convoy load—had been brought ashore.[415] VI Corps losses were minor: thirteen killed, forty-four missing, and ninety-seven wounded.[416]

Despite later claims to the contrary, some ULTRA messages were shared with the "uncleared" commanders taking part in SHINGLE. On January 20 the British Admiralty informed Commander, Task Force 81 that "service of Ultra will open for Admiral Lowry and Major General Lucas immediately."[417] Three days later the British Operational Intelligence Centre in the Mediterranean reported that "naval information for Admiral Lowry being passed as Admiralty Ultra but no service to General Lucas until the recently requested special party [i.e., to handle and protect the material] has been formed."[418]

Alexander and Clark visited the beachhead on January 22. Both seemed satisfied with the VI Corps progress. Alexander was very optimistic, but Clark was somewhat subdued, warning Lucas, "Don't stick your neck out, Johnny. I did it at Salerno and got into trouble."[419] Alexander and Clark visited Lucas again on the 24th to be briefed on the situation and the measures VI Corps had taken. In neither of these meetings did Alexander or Clark urge Lucas to be more aggressive or expand the lodgment; in fact, Lucas later claimed that Alexander told him the "operation was a shining piece of work."[420]

By January 24, VI Corps had moved about a mile and a half north of Aprilia, creating a large salient in the German lines. Probing attacks by the 3rd ID toward Cisterna and by the 504th Parachute Infantry Regiment (ParaInfRgt) toward Littoria made some progress but were halted by stiff resistance.[421] By that day it had become clear that the main Fifth Army could not link up with VI Corps as originally planned. Accordingly, VI Corps was directed to consolidate its gains on the ground before starting an advance toward the Alban Hills, in the process of which Lucas's intermediate objectives would be the capture of Cisterna and Campoleone.[422]

Allied fighters and light bombers strafed and bombed rail transport and highway networks. A few days prior to the landing, heavy bombers had flown missions against key airfields in Italy and southern France to forestall interference by the Luftwaffe. Attacks were conducted on the Italian railways and highways the Germans used for moving supplies and reinforcements toward their southern front, as well as on key bridges and railroad yards from Rome north to the Brenner Pass.[423]

The Luftwaffe's medium bombers, armed with radio-guided glide bombs, and torpedo aircraft made frequent raids on the Anzio-Nettuno area. They skimmed at low altitude at dusk through the mist and hails of AA fire, releasing bombs on and torpedoes at the shipping in the crowded harbor.[424] They carried out twenty attacks on shipping, with 150 sorties, on the nights of January 23/24 and 24/25.[425] At dark on the 23rd, a radio-guided glide bomb sank HMS *Janus* and heavily damaged *Jervis*.[426] The next day, the anchorage was attacked in daylight by fifteen Luftwaffe heavy fighters, followed by another forty-three at dusk. After dark, fifty-two

aircraft repeatedly attacked the transport area.[427] The aircraft attacked the British hospital ships *St. David, Leinster,* and *St. Andrew,* sinking *St. David* and damaging *Leinster.*[428] The U.S. destroyer *Plunkett* (DD 431) was hit by a single bomb; fifty-three men were killed, but *Plunkett* reached Palermo under its own power. The light cruiser *Brooklyn* (CL 40) was nearly struck several times.[429]

The unloading of the Liberty ships proceeded slowly, by DUKWs—all the LCTs were unloading LSTs. During the evening of D+2 the wind increased to Force 7. By morning, seven LCTs and all the pontoons were broached on the beach, the victims of high surf and shallow beach gradients. These craft were high and dry—in some cases, a hundred feet from the water. The unloading of Liberty ships stopped. LSTs just arriving were diverted to the port area of Anzio, but unloading remained slow owing to poor control of the incoming craft, restrictions in the harbor, and insufficient turning room in the basin. By the end of D+9, 201 LSTs and seven Liberty ships had been unloaded in all, including 137 LSTs in the port of Anzio.[430]

The unloaded amphibious ships and craft were returned to Naples in small groups rather than being held for assembly into larger convoys. They were in some cases inadequately escorted, but the risk had to be taken, and no losses from submarine torpedoes were suffered.[431]

**Lucas's Decision**

After the landing, General Lucas had two courses of action open to him: the first was to move quickly to attempt to capture the Alban Hills, twenty miles distant; the second was to consolidate the beachhead and prepare for a counterattack. Lucas rejected the first course of action, partly because at Salerno the Germans had reacted quickly and almost defeated the Allied landing force. He was completely unaware of the ULTRA report that the two German divisions in the Rome area had been sent to the Gustav Line. Lucas also did not know that the Germans had only two maneuver battalions in the Anzio-Nettuno area. As it was, he thought his two-division force inadequate for a move so far inland, which would leave its flanks vulnerable.

By adopting the second course of action Lucas could consolidate a small beachhead; expand it to encompass Campoleone and Cisterna, along with their roads and railroad intersections; or send an RCT to occupy the Alban Hills to screen the beachhead and disrupt any approaching German forces. In the end, Lucas combined the first two, seeking to consolidate a small beachhead, then gradually enlarge it.[432] By January 24, Lucas had made that decision, and VI Corps conducted only limited operations. Lucas showed more interest in capturing the port of Anzio intact and putting it to work handling troops and matériel.[433]

Lucas's decision not to advance toward and attempt to capture the Alban Hills was to become highly controversial. Predictably, Churchill blamed Lucas for failing not only to capture the Alban Hills but also to take Rome immediately.[434] Clark

would write in his memoirs that he had been disappointed by the "lack of aggressiveness of VI Corps [at Anzio], although it would have been wrong in my opinion to attack to capture our final objective [Alban Hills] on this front. [But] reconnaissance in force with tanks should have been more aggressive to capture Cisterna and Campoleone."[435] Clark also after the war remarked that when Lucas landed,

> he established himself ashore securely on that little beachhead as far as he could. You can't go way out because you'd get cut off. You just can't spread it that thin with no reserves, you see. So, he did right. I was up there, frequently and I checked him. We began immediately to get the [ULTRA] intercepts, you see, as to what counteractions the Germans were taking[,] and to have ordered Lucas to go with his two divisions and to start forward march was asinine.[436]

Clark believed at the time that while Lucas could have captured the Alban Hills, he could not have held them—the Germans would have cut his extended force to pieces. This was why he had rephrased Lucas's mission orders. Clark also felt it would not have been wise before the operation to order Lucas to seize the Alban Hills, because doing so would have jeopardized Lucas's efforts to secure the initial beachhead line.[437] Alexander too supported Lucas's decision. In his memoirs he was to conclude that, in hindsight, Lucas had been right to consolidate before striking out. Alexander also remarked that the enemy "is quicker than we are, quicker at regrouping his forces, quicker at thinning out on a defensive front to provide troops to close gaps at decisive points, quicker in effecting reliefs, quicker at mounting attacks and counterattacks, and above all quicker at reaching decisions on the battlefield. By comparison our methods are often slow and cumbersome, and this applies to all our troops, both British and American."[438]

Eisenhower also approved Lucas's actions. He stated,

> The situation was almost a model for the classical picture for initiating battle of destruction. . . . The Nettuno landing was really not much heavier in scale than an airborne landing would have been during those critical days when time was all-important. The force was immobile and could not carry out the promise that was implicit in the situation then existing. . . . [T]here will be no great destruction of German divisions as a result thereof.

General Marshall essentially endorsed the decision made by General Lucas not to move to the Alban Hills, at least immediately or until the beachhead was fully secured.[439]

The Fifth Army's two main efforts at Anzio and Monte Cassino were incapable of mutual support, and neither was powerful enough to do the job (capture Rome) alone. The Allies simply did not have sufficient forces to secure a beachhead, capture the Alban Hills, then seize Rome, while simultaneously protecting the lines of communication required to consolidate these objectives.[440]

On the German side, Kesselring and his chief of staff, Gen. Siegfried Westphal, apparently were convinced that Lucas had missed a great opportunity by not capturing the Alban Hills shortly after the landing. Kesselring would write in his memoirs that Lucas could have cut the German lines of communication, placing Axis

forces along the Gustav Line in jeopardy.[441] Westphal would point out that the road to Rome was practically open to the enemy until January 25.[442]

**The German Reaction**

Kesselring and the OKW had long anticipated a major landing in the rear of their forces in Italy. Kesselring and his staff had noted the concentrations of troops and ships between Naples and Sicily after January 13. However, they believed a landing improbable prior to the resolution of the enemy attack on the Garigliano River, because the German Tenth Army was counterattacking from its right flank against that advance. Kesselring interpreted the heavy air raids on railways and roads in central and northern Italy as attempts to cut off the Tenth Army's supply lines, not as preparations for a landing.[443]

Nevertheless, from that point Kesselring took specific and prudent steps to guard against a landing. On the basis of reconnaissance reports, Kesselring believed that the enemy had sufficient forces to start a new offensive on the land front and to conduct an amphibious landing simultaneously. Having observed increased naval activity in the Naples region, he decided not to move reserves from the Rome area to the Garigliano River but to weaken defenses on the southern front in places not threatened immediately, especially in the Adriatic sector. He ordered the immediate transfer of the 3rd PzGrDiv to the south.[444]

On January 18, Kesselring ordered alerts for German forces throughout Italy (with the exception of the German Naval Command, Italy, which did not alert its forces against the enemy landing, supposedly because of its shortage of personnel). The Allied commanders learned about Kesselring's orders on the 19th, through ULTRA. (Ironically, Kesselring's staff would try to dissuade him from alerting forces on the night of January 21/22, because constant alerts were wearing down the troops.)[445]

Because of the threat of a breach of the Gustav Line on the Garigliano, Kesselring moved combat forces in the Rome area southward for a possible counterattack; west of Rome, the remaining forces were so weak that they could be employed only for coastal observation in the Tarquinia–Terracina sector.[446] The only headquarters in the Rome area was that of Army Group C; no other staff was available to organize an emergency defense.[447]

At 0235 on January 22, the first report of four or five enemy cruisers in the Anzio-Nettuno area was sent by the 8th Company of the 71st PzGrRgt to its battalion command.[448] Westphal was awakened at 0300 and informed that enemy forces had landed at Anzio-Nettuno at about 0200. At 0600 Kesselring reported to the OKW that a landing had taken place.[449] Westphal immediately alerted the subordinate forces affected.[450] Soon afterward, the first alerted German units began to move.[451] RICHARD, as previously noted, called for forces in the Rome area to contain the beachhead and for uncommitted forces on the Gustav Line to move to the

scene. Battalion and regimental forces on the line but in minimal contact with the enemy would also be moved to the Anzio area.[452]

ULTRA disclosed that Army Group C had informed OKW that a

> strong Allied formation landed area Anzio Nettuno 0100 hours according to [Luftwaffe's] intelligence 1100 hours [on January 22]. In whole sea area west of Anzio about 250–300 units. Close inshore about 100 units unloading, including fifteen large transports. Twenty five kilometers [15.5 miles] west of Anzio further units including destroyers and cruisers. Impression thus gained of large scale landing as at Salerno. Second large landing formation sighted between Anzio and Tiber estuary.[453]

The German Navy High Command overestimated the size of the enemy forces supporting the landing as comprising a carrier, four cruisers, and twenty destroyers.[454]

The situation on the German Tenth Army's southern flank was now critical and required redeployment of all reserves in the Italian theater. Failure to take immediate countermeasures could lead to the cutting off of Tenth Army and the collapse of the entire southern Italian front. Therefore, Kesselring intended to establish a defensive line against the beachhead as quickly as possible. At that point, he had to assume that the enemy might seize the Alban Hills before sufficient German troops could be brought up. These considerations made a counterattack necessary; to conduct it, reinforcements would have to be transferred from other theaters.[455]

By using the advantages offered by central position and good railroads and roads, the Germans were able to mass quickly much larger forces in the Anzio-Nettuno area than the main Fifth Army's G-2 had anticipated.[456] By the end of January 22 the Germans had about ten thousand men sealing the enemy beachhead. The next day, the Germans had in the Anzio area some sixteen thousand combat troops. By the 24th the Germans had encircled the beachhead, and the Allied reconnaissance patrols were met with German resistance.[457] Kesselring also had immediately alerted the 4th ParaDiv and replacement units of the Hermann Göring PzDiv in the Rome area and directed them to block all roads leading to Rome from the Alban Hills.[458] ULTRA detected all the related movements, except those of two battalions that used telephone instead of radio.[459] At 0600 Kesselring requested that the forces from other theaters earmarked for Case RICHARD be sent to Italy.[460] He decided to divert temporarily some of the reinforcements for Tenth Army arriving from northern Italy, southern France, and Yugoslavia.[461] Gen. Alfred Schlemm's I ParaCorps was ordered to stop its attack on the Garigliano River, withdraw the 29th PzGrDiv, and send it to the Anzio area. Tenth Army was directed to release from the Adriatic front various units, especially motorized reconnaissance detachments and infantry divisions, and send them to Anzio.[462]

At 0710 on January 22, Kesselring directed General Mackensen to transfer all forces earmarked for Case RICHARD.[463] Mackensen accordingly ordered the following units to proceed immediately to the Anzio area: the 65th ID (less one regiment) at Genoa, the 362nd ID (less one regiment) at Rimini, and two regiments of the

newly formed 16th SS PzGrDiv at Leghorn. Their movements started that evening and continued through January 23.[464]

At 0830 on the 22nd, Kesselring directed General Vietinghoff to transfer I ParaCorps headquarters and all its combat troops that could be spared to the Anzio area as quickly as possible. The forces most suitable for release by the Tenth Army were the 71st ID and the parts of the 3rd Panzer-Grenadier Division and of the Hermann Göring Panzer Division that were then on the Tenth Army front (the remainder of each was still on the march from the north).[465] In addition, local reserves were withdrawn from the southern front. Since the enemy had landed tanks, antitank forces and artillery had to be released for Anzio. From the Adriatic front, the Tenth Army sent elements of the 26th Panzer Division and the 1st Parachute Division.[466]

Tenth Army sent to the Anzio front the following forces on January 22 and that night: from the area of Cassino, the 3rd PzGrDiv (less one regiment, one artillery battalion, and one engineer company), elements of the Hermann Göring PzDiv (the staff, reconnaissance battalion, one artillery battalion), the 26th PzDiv (2nd Artillery Detachment, one panzer artillery detachment), and four artillery battalions of troops controlled by the Army High Command (known as general headquarters, or GHQ, troops)—the 525th Heavy Anti-Tank (A/T) Battalion, the 450th and 451st Light and 764th Heavy Artillery Battalions—that were now directly subordinate to divisional or corps headquarters. Also directed to move to the Anzio area were 2nd Parachute Brigade of the 2nd Light Parachute (Jäger) Division; two "employment groups" *(Einsatzgruppen)* of 4th Light Parachute (Jäger) Division; one fortress-construction and one pioneer battalion; and two Russian "volunteer" (actually conscript) battalions (Ost battalions) from the Senger Line.[467]

From the Adriatic defenses the 33rd Battalion (Bn) of the 1st Regiment (Rgt), the Machine Gun Bn of the 1st ParaDiv, and the 500th Heavy A/T Bn (GHQ troops) were directed to move to the Anzio area. HQ 71st ID and all of its elements then en route from the north to join Tenth Army were also thrown into Anzio positions.[468] The 26th PzDiv was ordered to leave the front in the Avezzano area and become a reserve in the Anzio area. These movements were conducted under conditions of intense enemy air activity, fog, and icy railroad tracks in the Apennines.[469]

After the withdrawal of units from the Gustav Line, the defense of the Garigliano sector became questionable. Kesselring believed that during the night of January 22/23 the enemy would attack with strong forces from west of the Alban Hills toward Rome. He planned to counter by joining forces south of Rome. I ParaCorps could be expected in the Anzio area in the afternoon of the 23rd or early the next day. This corps received orders to defend between the Tiber River and the Alban Hills and Sezze and under no circumstance allow the enemy to close with Rome or control the Frosinone–Rome road. Kesselring also established defenses on the west and south edges of Rome.[470]

Late in the morning of January 22, the Joint Operations Staff of the OKW issued by telephone the code word "Marder 1." That triggered a series of preplanned movements: CINC West (Field Marshal Gerd von Rundstedt) transferred by rail to CINC Southwest (Field Marshal Maximilian Reichsfreiherr von Weichs) the partially mechanized 715th ID, the 998th Artillery Battalion (GHQ troops), the 1st Battalion of the 4th Panzer Regiment (PzRgt, with Panther tanks), the 301st Panzer Battalion (PzBn), and the 216th Assault Howitzer Detachment. CINC Southeast deployed the 114th Light (Jäger) Division and two artillery battalions of GHQ troops.[471] The Replacement Army in Germany sent to Italy the headquarters of LXXV Corps, the Infantry Demonstration (Lehr) Regiment, the 1026th Infantry Grenadier Regiment, the 1027th PzGrRgt, the Artillery Demonstration Regiment, the Rocket Launcher Demonstration Battalion, three battalions of security troops, two battalions of Russian "volunteers," six construction battalions, and the 508th PzBn (with Tiger tanks). Neither CINC West nor CINC Southeast could provide a second division as planned in Case RICHARD, because of the previous transfer of troops to the Russian front. Immediate activation of the 92nd ID in Viterbo was ordered.[472]

On the eve of the landing at Anzio, the Luftwaffe's strength in the Mediterranean had been reduced to about two hundred aircraft. However, the Luftwaffe reacted quickly and energetically to the new threat.[473] After a phone conversation with Hitler, Göring ordered all available aircraft to Italy. During the night of January 22/23, the OKW directed CINC Southeast to send the 1st and 2nd Air Groups *(Gruppen)* of the 26th Battle Wing *(Kampfgeschwader),* the 2nd Air Group of the 100th Battle Wing (flying Do-17s), and the 2nd Air Group of the 50th Battle Wing (with He-177s).[474] Luftwaffe Command / CINC Southeast would transfer to the 2nd Air Fleet the 3rd Squadron, 1st Group of the 1st Battle Wing (Ju-88s); the 1st Squadron, 2nd and 3rd Groups of the 100th Bomber Wing (Do-217s); and the 2nd Group of the 40th Battle Wing (He-177s).[475]

Between January 23 and February 3, some 140 long-range bombers were brought in from northwestern Germany, southern France, and Greece. Antishipping aircraft in southern France were reinforced by between fifty and sixty Do-217s and He-177s armed with radio-controlled glide bombs. By February 23, about fifty single-engine fighters had been moved down from northern Italy to the Anzio area. By the end of the month about forty more single-engine fighters had been sent (though the Germans never had more than thirty-five fighters available within effective range of the enemy lodgment at Anzio). Despite all difficulties, Luftwaffe strength in the Mediterranean by March 1944 had grown to 750–75 aircraft, including around six hundred in the central Mediterranean, of which about 475 were available for operations in the Anzio area.[476]

Tenth Army units moved to the beachhead rapidly, despite enemy air raids. This was made possible by employing staff officers from Headquarters Army Group

C, Tenth Army, and I ParaCorps to direct the traffic. These officers had to divert troops that were arriving from northern Italy for Tenth Army's southern front toward the beachhead. Units with no organic transportation (i.e., of their own) were brought up quickly via supply columns already at hand. Rear-area troops were employed to clear mountain passes of ice and snow.[477]

At 1700 on January 22, I ParaCorps established a defensive line at the Anzio beachhead and took command of all arriving troops.[478] That evening it became clear to Kesselring that the landing was a major enemy effort. Vietinghoff back at Tenth Army recommended withdrawing immediately from the Gustav Line and shortening the Garigliano–Rapido front to free two combat-hardened divisions for Anzio. But Kesselring, perceiving a lack of aggressiveness by the enemy VI Corps, instructed Vietinghoff to stand fast. This was a bold decision, because the first strong contingents from Tenth Army could not be expected earlier than the 24th and if the enemy tried a breakout before then, Kesselring estimated, his forces on hand would not be strong enough to resist.[479]

Kesselring, however, decided to stop a counterattack then in progress on the Garigliano River, thereby freeing up yet more forces. During the evening of January 22, Kesselring directed Tenth Army to send to the beachhead three grenadier battalions and one artillery battalion from the Hermann Göring PzDiv, one PzGrRgt and two artillery battalions from the 15th PzGrDiv, one battalion from the Brandenburg Regiment, the 60th Engineer Bn (GHQ troops), and one AA artillery battalion (GHQ troops). In addition, the 26th PzDiv, which was employed on Tenth Army's left flank, was relieved and transferred to Avezzano so as to participate in the intended counterattack at Anzio.[480]

Regiments from Fourteenth Army, CINC West, CINC Southeast, and the Replacement Army had all been planned for and now proceeded without special orders. At 1900 on January 22, the troops of Fourteenth Army began to leave their areas in northern Italy. On January 23–24 the transportation of troops from France, Germany, and the Balkans began. Those forces had all arrived in Italy by the 31st, despite constant air attacks on roads and railroads. By this time, their advance elements were already deployed at the beachhead.[481]

The bulk of the Hermann Göring PzDiv remained available as a reserve in the Rome area. The original plan of OKW was to transfer that division to France on January 20. Its replacement was the 71st ID, on the way from Istria. OKW believed that Tenth Army would be able to contain local reserve units until the arrival of the new reinforcements.[482]

Kesselring moved his headquarters about twenty-eight miles north to underground bunkers at Monte Sorrate, a secure and bombproof place.[483] He directed General Mackensen to take over the defense in the Anzio area; I ParaCorps and LXXVI PzCorps became subordinate to him. Mackensen's mission was to strengthen the defensive ring and reduce the enemy bridgehead.[484]

The Germans anticipated that the landing force would limit itself to reconnaissance, patrols toward the north, and artillery fire on German positions. By the 24th Kesselring was convinced that there was no danger of an enemy breakout. By then the German defenders had seventy artillery batteries in place, including AA. Kesselring assessed that the enemy did not have sufficient troops on the beachhead for a large-scale attack, only for local attacks. The Germans did learn that the U.S. 2nd ArmdDiv and a British tank brigade were newly on the beachhead, but that would give the enemy at most three infantry divisions, one armored division, and two or three armored battalions or brigades. That strength he considered insufficient for an attack on the Alban Hills, which would require effective flank protection. Therefore Kesselring expected (correctly, as it turned out) that for the next few days the enemy would attempt only to expand and consolidate his beachhead in preparation for a full-scale attack later and that even local attacks or raids would not begin before January 26.[485]

Relying on these assumptions, Kesselring decided to counterattack, with the objective of destroying the landing force or driving it back into the sea. Every effort would be made to deliver this blow before the enemy had completed his initial consolidation. Kesselring directed Mackensen to speed up the concentration of forces of Fourteenth Army, for use in the counterattacks; the 26th PzDiv and 56th Rocket Regiment (at Monte Cassino) were directed to the beachhead.[486] However, a concerted attack could not start before the 28th, because forces could not be assembled earlier. If the enemy attacked after all, the counterattack would start immediately, regardless.[487]

On January 24, ULTRA disclosed to the Allies that the 3rd PzGrDiv, then serving as a Tenth Army reserve, had arrived on January 23, with lead elements of the 71st ID, in the Anzio beachhead area. A German report that the 3rd PzGrDiv was in Tenth Army's reserve was intercepted on January 21 but was not deciphered and disseminated to Fifth Army until 0533 on the 23rd. Yet it was clear from ULTRA that Kesselring intended to defend, not withdraw from, the Gustav Line, and at the same time bring in a large number of troops to contain the Allies in the Anzio area. ULTRA correctly reported which German units were pulled out from the Gustav Line and revealed that elements of the 15th PzGrDiv, the Hermann Göring PzDiv, and 1st ParaDiv had been ordered to the beachhead.[488]

By the end of January 25, the Germans had almost twenty-six thousand combat troops on the line. Instead of weakening the Gustav Line, the Germans had brought in some thirty-four thousand troops to the area.[489] By January 25, elements of eight German divisions were facing Anzio, and five more, with many supporting units, were on the way.[490] This number was much larger than Allied intelligence had believed possible. The Allies had estimated that German commitments in northern Italy and elsewhere would limit reinforcements to only two divisions from north of Rome, and those not for sixteen days.[491]

## THE BATTLE ASHORE, JANUARY 24–29

By D+3 (January 25), VI Corps had seized a solid beachhead ashore.[492] The initial beachhead was an area roughly seven miles deep and fifteen miles wide centered on the port of Anzio. Its twenty-six-mile perimeter was considered the maximum VI Corps could hold.[493] Yet the beachhead was too small: enemy artillery could reach any part of it, and the Allied forces within it had little space for maneuver.[494] German artillery observers in the Alban Hills possessed an unobstructed, even spectacular, view of the congested beachhead by which to direct fire.[495]

Clark paid another visit to Lucas and the beachhead on January 25. He was then very concerned with the progress of the main Fifth Army, fighting bloody battles with the Germans.[496] That day ULTRA indicated that the 26th PzDiv on the Gustav Line was being sent to Avezzano for refitting and eventual deployment to the beachhead, to be replaced by the 305th ID. The ULTRA intercept collectors were virtually flooded with orders going to various German units.[497]

Also on January 25, the Germans conducted aggressive, tank-supported patrols to probe Allied dispositions and strength. At the same time they concealed the massing of the newly arrived forces and tried to delay any attempt to expand the beachhead. The first major unit after the Hermann Göring PzDiv to arrive in the Anzio-Nettuno area was the 29th PzGrDiv from Pescara. The 104th PzGrRgt was disengaged in the Liri Valley and sent to a position in the central beachhead sector near Padiglione. The German main force was concentrating farther inland, near Velletri. Some five thousand paratroopers of the newly formed 4th ParaDiv were moved from the Rome area to the beachhead.[498]

On January 26, American troops were within three miles of Cisterna and two miles beyond the west branch of the Mussolini Canal. Lucas directed 3rd ID to stop attacking.[499] Rain, hail, and sleet at Anzio hindered logistics; that day only seven LSTs were unloaded. Two heavy raids by Luftwaffe bombers during the night destroyed numerous trucks and caused ammunition explosions.[500]

On January 27, Alexander expressed dissatisfaction to Clark that VI Corps was not pushing rapidly enough. The next day, Clark visited Lucas again and got the impression that the outcome depended on which side could increase its forces more quickly, the Allies or the Germans. Clark urged Lucas to take bold offensive action. As Clark remembered later, he wanted Lucas to secure Cisterna as a strongpoint in a defensive line; however, either Clark did not remember correctly later or Lucas misinterpreted his remarks at the time.[501]

On January 29, the British light cruiser *Spartan* and destroyers *Loyal* and *Laforey* bombarded the enemy positions along VI Corps's flanks; the destroyers would continue their support for the next two days.[502] The Luftwaffe carried out its two heaviest air raids to date that day, at dusk and at midnight; the 110 Do-217s, Ju-88s, and Me-210s sank a Liberty ship and *Spartan*.[503] They also destroyed a large part of the supplies on the beaches.[504] The arrival of the German reinforcements to the Anzio

area generally was misinterpreted by Lucas and his staff. As each new German division or one of its units was identified by reports of POW interrogations, listening posts, or other routine intelligence sources, Lucas and his G-2 assumed that an entire German division was present, nearby, or en route. Therefore, VI Corps estimates of the enemy's forces often were exaggerated.[505] For example, Lucas assumed on January 28 that the entire 65th ID had arrived at the beachhead when in fact one of its regiments never moved from northern Italy. Lucas made these errors because the pertinent ULTRA intercepts were never sent to him from General Clark. ULTRA laid out a pretty accurate picture of all the movements of all the German forces toward the beachhead, down to the regimental, even battalion, level, with the exception of information on the movements of the 362nd ID and the 16th SS PzGrDiv.[506]

**THE BATTLE ASHORE, JANUARY 30–MARCH 4**

By January 30, the Germans had built a strong defensive line in front of Cisterna and Campoleone (see map 16). The terrain—riven with gullies and made soggy by rain—worked in their favor. They concentrated about thirty battalions, supported by panzers and artillery, for a February 1 counterattack; they kept six battalions in reserve.[507] For his part, Lucas, also on January 30, planned a two-pronged attack: one force would cut Highway 7 at Cisterna before moving east into the Alban Hills; the second would advance northeast up to the Albano road and break through the Campoleone salient. Lucas still believed that a quick linkup with the main Fifth Army in the south was possible; yet German resistance all along the perimeter was growing stronger, not weaker.[508]

It was the 3rd ID and two Ranger battalions that were to attack Cisterna. Rangers would spearhead the attack, infiltrate the German lines, and hold Cisterna until other forces arrived. In the meantime, two infantry regiments (the 7th and 15th) would cut Highway 7 in the vicinity of Cisterna. The 504th Parachute Regiment would attack along the Mussolini Canal to divert enemy attention.[509] The British 1st Division and 1st Armoured Division would advance toward the Alban Hills.[510] No preliminary artillery preparation was considered necessary, but extensive air supporting fires, plus a smoke screen laid by aircraft, and naval gunfire support were scheduled. The air force prepared an elaborate air support plan.[511] But unknown to Lucas, his attack would be aimed directly at the center of a concentration of thirty-six German battalions massing for their counterattack, planned for February 1.[512]

On January 28–30, in a preliminary move prior to the VI Corps attack, the 45th ID, then in reserve, relieved the British 1st Division and U.S. 3rd Infantry Division on the beachhead flanks so these two divisions could use their full strengths in the assault. Elements of the 45th ID and VI Corps engineers took over the positions of an infantry brigade along the Moletta River and a paratroop regiment on the opposite flank along the Mussolini Canal. At the same time, the Ranger force and an infantry battalion were relieved by a British reconnaissance regiment in the quiet central beachhead sector.[513]

The attack on Cisterna was launched on January 30, spearheaded by the two U.S. Ranger battalions. Both were ambushed and trapped by the Germans. Most of the Rangers were captured; out of 767, only six escaped.[514] The 3rd ID, attacking Cisterna on January 30–31, fought stubbornly but was unable to break through—in part because the division attacked along a seven-mile front toward an objective three or four miles away. At the same time, the British 1st Division tried to breach the enemy's defense line along a railroad by seizing a crossing at Campoleone.[515] After three days of heavy fighting, growing enemy strength forced Lucas to abandon his assault. The Allied attack had failed to reach its stated objectives. Allied troops did, however, drive sixteen miles inland to Campoleone and seventeen miles toward Cisterna before the swift enemy reaction sealed in the beachhead.[516] It also forced the German Fourteenth Army to commit most of its forces, which in turn forced postponement of the counterattack intended to wipe out the beachhead.[517] By February 2, VI Corps had taken about 1,500 prisoners and had inflicted heavy casualties. Its own casualties ran to about 6,500.[518]

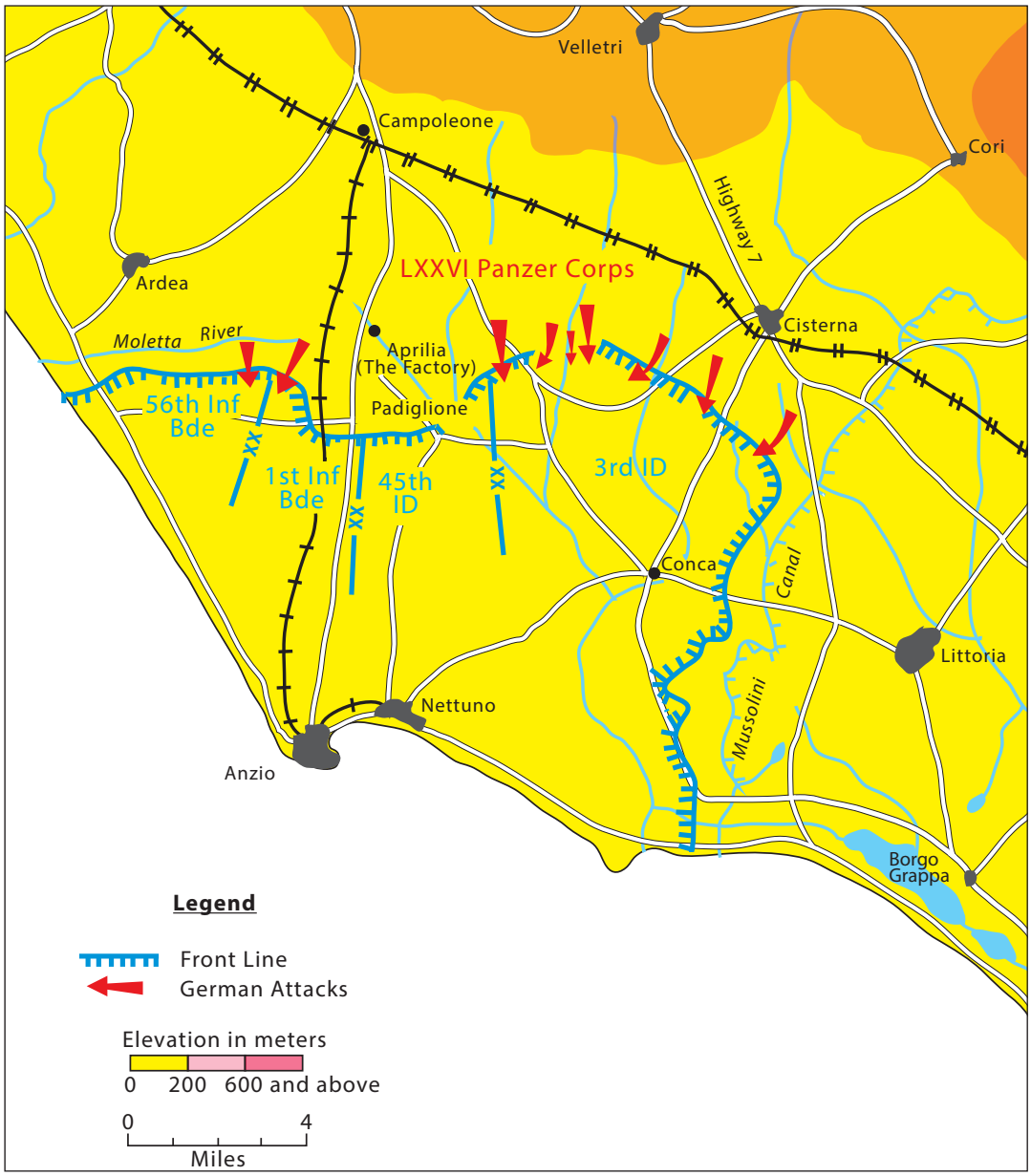
The failure of the Allied breakout convinced Clark, Alexander, and Lucas that the Germans were preparing to counterattack. Hence, a decision was made to send about 1,800 men of the American-Canadian 1st Special Service Force and artillery units to the beaches, quickly. This reinforcement raised the total number of Allied troops on the beachhead to about one hundred thousand men. The German Fourteenth Army still outnumbered the Allies in the Anzio area; however, many of its units were short of ammunition, inadequately trained, and lacking in experienced leaders.[519]

On February 2, Alexander issued Operations Instruction Nr. 37, "Development of the Operations from the Anzio Bridgehead." The enemy, the instruction stated, would be driven out of Cisterna. The left flank of the "bridgehead" (Alexander's soldierly term) would advance to the general line defined at each end by the Campoleone railway station and the south bank of the Incastro River. Afterward, the new defensive line would be held by a minimal number of troops. At the same time, the right flank of the beachhead would advance generally from the Cisterna area to the canal junction and thence along the Mussolini Canal to the sea. That line too would be held with a small force.[520]

On February 2, Admiral Cunningham directed Admiral Lowry to turn over command of the naval forces supporting the Anzio-Nettuno operation to Rear Adm. J. A. V. Morse, RN, who was Flag Officer, Western Italy. Morse established standing A/S patrols to cover the new inshore route from Naples to Anzio so Allied ships could transit that route unescorted, thereby releasing escorts for other commitments.

**First German Counterattack, February 3–5**

The Germans had planned to attack from north to south along the Albano–Anzio road, with the main concentration on either side of the Factory at Aprilia. The




*Map 16*
*Holding the beachhead*
*February 28–March 3, 1944*

original date for the attack was January 28. But on the 26th Kesselring and Mackensen postponed it to February 1 to await the arrival of reinforcements (the 1027th and 1028th InfRgts, the Special Artillery Demonstration Regiment, the Special Rocket Projector Demonstration Battalion, and the 1st Battalion of the 4th PzRgt).[521] These reinforcements had left Germany by train and were expected to arrive in Italy around January 26–27.[522] Allied bombing of roads and railways delayed them.[523] By January 28, Fourteenth Army had deployed the Hermann Göring PzDiv to the eastern sector, around Cisterna; the 3rd PzGrDiv to the central sector, at Campoleone; and the 65th ID to the western sector, in the vicinity of the Moletta River. In the rear of this perimeter, other units also were grouped for counterattacks. Four to five miles separated the Germans' main defense line from the front line occupied by VI Corps.[524]

The German plan called for three main phases: Phase I (February 3–10), preparatory attacks to cut off the British salient at the Albano road and capture the Factory; Phase II (February 16–20), penetration of the enemy perimeter along the Albano road; and Phase III (February 28–March 2), an attack on Cisterna combined with penetration of the beachhead defenses along the Mussolini Canal.[525] Although doubtful of the plan's prospect for success, Mackensen prepared a forceful counterattack. The 4th ParaDiv and 65th ID of the I ParaCorps would pinch off the Campoleone salient, recapture the Factory, and then break out to the sea along the Albano road. LXXVI PzCorps (3rd PzGrDiv, 715th Motorized ID, 71st ID, Hermann Göring PzDiv, and 26th PzDiv) would attack south of Cisterna along the Mussolini Canal and try to reach the enemy perimeter at Nettuno and Anzio.[526]

On February 3, Clark learned via ULTRA about the pending German counteroffensive.[527] The relevant decrypt disclosed Mackensen's estimate of the situation to Kesselring: that two Allied infantry divisions had appeared in the forward lines; that to the west, opposite the northern flank of the 65th ID and opposite Combat Group Gräser, was the British 1st Division; in the east, opposite the eastern flank of the 71st ID and the western flank and center of the Hermann Göring PzDiv, was the U.S. 3rd ID. Each Allied division was supported by one tank brigade. On the eastern flank the enemy had two or three Ranger battalions and one parachute regiment of the 82nd Airborne Division. The enemy units facing the flank of the 65th ID and the 4th ParaDiv were not identified. Mackensen assumed that the U.S. 1st ArmdDiv and 45th ID were deployed in the rear of the beachhead. He was unsure, however, about the whereabouts of the 2nd ArmdDiv (U.S.), one British corps headquarters, and another British division. Intense shipping traffic indicated the imminent arrival of reinforcements. Mackensen assessed that the Allies had suffered heavy losses in men and tanks, which prisoners confirmed, but that neither their will to attack nor their endurance to resist had been broken. The enemy's advantages lay in his strong, accurate artillery abundantly supplied with ammunition, his naval gunfire support, and his air forces.[528]

Mackensen intended to launch limited attacks and then, after the enemy was sufficiently weakened, an all-out counteroffensive. The first attack would be launched during the night of February 3/4 by one reinforced regiment, with tanks, in the bulge north of Aprilia. I ParaCorps would exploit its progress by advancing south past the line running from a point 0.9 miles northwest of Colle Vallelata to Colle della Mandria. If successful, the attack would continue during the night of February 4/5, led now by the 65th ID and Combat Group Gräser. The objective would be to recover ground on both sides of Aprilia. No further attacks were specifically planned, but in general, similar attacks would be launched in rapid succession to prevent effective countermeasures by the enemy. Anticipating strong Allied artillery, air support, and stubborn, determined resistance, the Germans expected substantial losses. It appeared doubtful to Fourteenth Army that it would be able to eliminate the beachhead with the forces then available; to do that, it requested additional troops from Army Group C. While coastal defenses in other areas might be depleted, Fourteenth Army considered this calculated risk worthwhile.[529]

On February 4, the Germans reorganized their forces. I ParaCorps (4th ParaDiv and 65th ID) came under the command of Fourteenth Army and was assigned the western sector, from a point west of the Albano road to behind the Moletta River. LXXVI PzCorps (71st ID, 715th Motorized ID, 26th PzDiv, 3rd PzGrDiv, and the Hermann Göring PzDiv) was transferred from Tenth Army to Fourteenth Army and deployed in the central and eastern sectors of the beachhead perimeter.[530] The Germans resumed their attack against the weakened British 1st Division on February 7. In two days of bitter fighting, they pushed the British out of the Factory and Carroceto. On the 11th, American troops tried to retake Aprilia; they failed but inflicted heavy casualties on the German defenders.[531]

The Germans had now launched their counterattack as planned; the first and second phases had been successful, but the third had failed.[532] On February 11, Alexander issued Operations Instruction Nr. 42 for the conduct of future operations. He considered it essential to ultimately driving the enemy north of Rome that VI Corps resume its own offensive as soon as the tactical situation permitted. In his view, the enemy forces facing VI Corps must surely be exhausted for the moment by their counterattacks.[533] VI Corps had to be able to resume the offensive on short notice: it was possible that, perhaps prompted by the success of an advance against the Gustav Line by the New Zealand Corps, the enemy would move troops from the beachhead to the main front, and should that happen, it was critical that VI Corps immediately take advantage of it. Alexander's new instruction laid down that VI Corps must drive the enemy out of Cisterna and secure that place as the pivot for a further advance on Velletri; there would be some hard fighting. Alexander

directed VI Corps to plan an all-out offensive. The advantage gained would be even greater if it coincided with operations in the Liri Valley.[534]

Between February 3 and 15, the Luftwaffe carried out only seven attacks against Allied shipping in the Anzio-Nettuno area. The highest number of sorties on a single night was no more than fifty. There were about twenty sorties by Do-217s and He-177s armed with Hs-293 radio-controlled glide bombs. The Ju-88s in northern Italy were capable of no more than harassing raids, mainly on ground targets, and daylight raids on shipping by fighter-bombers were even less effective.[535]

**Second German Counterattack, February 16–22 (Operation Fischfang)**

On February 9, Mackensen issued an order for a major attack aimed to capture the Factory, Carroceto, and Buonriposo Ridge. These positions would allow the Germans to launch an all-out attack on the Anzio beachhead.[536] His order noted that

> during the last days the enemy has brought to and employed on the beachhead fresh reinforcements. The 56th Infantry Division (Br) has just been identified. More reinforcements can be counted on. After the seizure of Aprilia, heavy enemy attacks against that sector are expected.
>
> The Fourteenth Army will attack the enemy beachhead on X day, 15 February, 1944 at Y hour, with its main effort between 1.5 km west of Aprilia–Nettuno highway and the Fosso di Spaccasassi. . . . The front will be pierced and the attacking forces will push through to Nettuno and destroy enemy forces of the beachhead.[537]

Mackensen's main effort would be made along a four-mile front astride the Anzio–Albano road and anchored on Buonriposo Ridge in the west and on Spaccasassi Creek to the east. After breaking through the main enemy defensive line, the Germans planned to drive through to Anzio and Nettuno, splitting VI Corps in two and defeating it in detail. Forces for the counterattack would be under the command of I ParaCorps to the west of Anzio and LXXVI PzCorps to the east.[538]

The Germans launched their new counterattack on February 16. As planned, they moved down the Anzio–Albano road on a four-mile front, but the initial attacks by the 3rd PzGrDiv and 715th Motorized ID were beaten back with heavy losses; the Germans achieved only minor penetrations. They had better success in a more intensive assault against the 45th ID at dawn on February 18, destroying a battalion of the 179th Infantry Regiment and pushing the remainder back half a mile to the VI Corps's final defensive line by midmorning.[539] By noon on February 19, however, Allied air and artillery superiority had turned the tide. A final assault against the 180th and 179th InfRgts was stopped by air strikes and massed mortar, machine-gun, artillery, and tank fire. Renewed attacks on the 19th and 20th were much weaker, and Allied defenders readily broke them up.[540]

Nevertheless, the Germans did not abandon their objective—to destroy the Allied forces on the beachhead—but simply changed their tactics. Instead of the frontal assaults in the center, they would now attack the Allied flanks. The Germans initially massed their forces on the eastern flank and struck along the Spaccasassi Creek on the Carano–Aprilia road near Padiglione; on February 20 they shifted to

the western flank and attacked at Buonriposo Ridge.[541] On the 20th Kesselring told his commanders that the number of enemy troops had been overestimated and that undue cautiousness among both officers and the rank and file had resulted. He urged his subordinates to regain their old self-confidence and aggressiveness and to be, as they had been in the past, "inspired by an impetuous urge to attack." It was necessary to advance even if adjacent friendly troops had been stopped. The enemy strongpoint had to be bypassed. The objective would be to establish bridgeheads across the Mussolini Canal and Astura Creek.[542]

Although the Germans continued harassing attacks until February 22, for the Allies the crisis had passed; VI Corps went on the offensive locally and retook some lost ground.[543] The German Fourteenth Army truly was now close to the point of exhaustion. It had either to bring up additional troops or to pause for rest.[544] In the meantime, and unknown to the Germans, the Allies in the Anzio lodgment were in great difficulties themselves. Their troops were exhausted too. VI Corps was defending a perimeter almost thirty-five miles long with fewer than five divisions; many of its soldiers had been in combat almost continuously for more than a month. Also, the Germans were able to concentrate their artillery fire on the salient and did so, bombarding the Allied troops mercilessly.[545]

The VI Corps's inability to break out had become a matter of great and increasing concern to Churchill and Gen. Maitland Wilson, the Mediterranean commander. On February 11 Churchill wrote to Alexander, "I am sure you realize how great disappointment was caused at home and in the United States by the stand-still at Anzio." While he did not know what orders Lucas had received, Churchill acknowledged, "it is a root principle to push out and form contact with the enemy."[546] Wilson had informed Churchill that as of February 10 the Allies had in the Anzio bridgehead some eighteen thousand vehicles, including four hundred tanks and more than 1,200 carriers and half-tracks.[547] This prompted Churchill to remark that for him it was a "spectacle" to see eighteen thousand vehicles "accumulated by the 14th day [after D-day] for only 70,000 men or less than four men to a vehicle including drivers and attendants, though they did not move more than 12 or 14 miles"—it was "most astonishing." He also wondered why seventy thousand American and British troops were being blocked by at most sixty thousand Germans. Churchill clearly was impressed by "the ease with which the enemy moved their pieces about on the board and the rapidity with which they adjusted the perilous gaps they had to make on their southern front is most impressive." He saw in all that "very awkward data in regard to OVERLORD."[548] General Wilson noted how rapidly the Germans had built up their forces to seal the beachhead. Their troop strength had increased from ten infantry battalions and two reconnaissance units on January 24 to twenty-nine infantry battalions and seven reconnaissance units on the 30th, to forty infantry battalions and seven reconnaissance units on February

5. In his view, bad weather was the main factor that had prevented Allied air forces from cutting off railway traffic from northern Italy to Rome.[549]

**Lucas Is Relieved, February 22**

Neither Alexander nor Clark was entirely happy with Lucas's performance. They believed Lucas was tired, physically and mentally. Clark intended first to make General Truscott Lucas's deputy commander and soon thereafter to transfer Lucas and appoint Truscott as VI Corps commander. This and other command changes within VI Corps became effective on February 17.[550] On the 22nd Clark formally relieved Lucas and appointed Truscott. (Lucas served for three weeks as Clark's deputy at Fifth Army HQ before returning to the United States to be first deputy and then commander of Fourth Army at Fort Sam Houston, Texas.)

Clark later explained that he had been unable to resist pressure from Alexander and Alexander's deputy Devers to relieve Lucas. Yet he thought that Lucas had done all he could at Anzio.[551] For his part, Lucas had reportedly been frustrated as VI Corps commander because, he strongly suspected, Fifth Army was not giving him all the available intelligence on the enemy.[552] However, as discussed elsewhere, this was only true until January 20. Afterward, Lucas was put on the list of recipients of ULTRA intercepts.

Truscott, Clark thought, was the most outstanding of all the Fifth Army division commanders. A quiet, competent, and courageous officer with extensive battle experience in North Africa, Sicily, and mainland Italy, Truscott inspired confidence.[553] He had been on the General Staff in 1941. In April 1942, General Marshall had sent him to the Combined Operations HQ under Adm. Lord Louis Mountbatten. Truscott was directly responsible for the organization of the U.S. Army's Ranger battalions. He was sent to North Africa to coordinate British, French, and American efforts to cut Rommel's lines of communication to Tunisia. Afterward, he became commander of the 3rd ID under General Clark. He worked well with the British, who had the highest regard for his judgment.[554]

Apparently, Truscott found conditions in VI Corps headquarters highly unsatisfactory. He later recalled that the VI Corps staff had never been positive or confident in planning or execution. Although it had many able staff officers, proposals often were put forward without proper analysis, orders were based on cursory study of maps and intelligence, and few staff officers bothered much about reconnaissance. Conferences often became debates, usually making for decisions that were accepted only with reluctance and rarely supported in a way that inspired confidence.[555]

**Third German Counterattack, February 28–29**

The third and last major German effort to throw the Allied forces back into the sea started at midnight on February 28/29. VI Corps and 3rd ID responded strongly; for each German shell, they fired twenty—sixty-six thousand rounds on February 29 alone. The Germans' biggest success, albeit at heavy cost, was an

eight-hundred-yard penetration north of Carano.[556] The German main effort was against the U.S. 3rd ID, holding the Cisterna sector. LXXVI PzCorps (the 114th Light Division, 362nd ID, 26th PzDiv, and Hermann Göring PzDiv) aimed at penetrating the Allied defenses from Carano to Isola Bella. Success would open the road for the 29th PzGrDiv all the way to Nettuno and Anzio.[557]

On February 22, Allied signals intelligence disclosed that the enemy attack would come along the axis of the Cisterna–Nettuno road. On February 24, Clark issued Operations Instruction Nr. 16, directing VI Corps to restore its forward positions and prepare those positions for defense.[558] By the time the attack started on February 29, General Truscott knew which German forces would take part in it and had regrouped accordingly.[559] The German attack failed, but when on March 1 Mackensen reported the fact to Kesselring he gave as the main reason the insufficient training and lack of experience of replacement troops. That meant, in his view, he would be unable to eliminate the beachhead. Mackensen suggested instead that new methods be applied to counter eventual large-scale enemy attacks from it. He thought that any such attack would probably be made in connection with an offensive against Tenth Army and, possibly, simultaneously with the expected invasion of Western Europe. German troops should try to reduce gradually the size of the beachhead, thereby improving the likelihood of repulsing such an attack when it occurred.[560]

In a message sent to Mackensen at 1840 on March 1, Kesselring stated that the weather had made the ground so muddy—contrary to predictions, it had been raining continuously for eighteen hours—that neither tanks nor horse-drawn vehicles could move. Therefore, all concentrated attacks had to be halted. Divisions with carefully prepared local raids already in train would carry on with them, but all units not involved were to be withdrawn for rest and for reception and integration of replacements.[561]

Afterward, Mackensen explained in an order to his subordinate commanders Fourteenth Army would now launch only minor (but well-prepared) attacks to reduce the enemy beachhead. The 26th PzDiv and the 29th PzGrDiv would be withdrawn from the front and used as tactical (actually part of operational) reserves. The enemy was to be engaged along the entire front by the remaining forces. Each division on the front was to launch at least two raids every night. Starting immediately, attacks in company to battalion strength would be made, to improve German positions and inflict losses on the enemy. Newly seized lines would be fortified and mined immediately, to prevent effective enemy counteraction.[562]

Mackensen's order added instructions specific to various sectors and combat arms. For I ParaCorps it was most important to gain ground on the western flank of the 4th ParaDiv, and thereby reduce further the beachhead there. It also would be necessary to push forward to the Buonriposo and Botaccia gorges. I ParaCorps would carry out its company-to-battalion-strength attacks on March 2, 4, and 6.[563]

In the LXXVI PzCorps sector, the front was to be pushed to Colle Biadaretto, Colle Carano, Colle del Pozzo, Rubbia Woods and Rubbia Hill, Isola Bella, and a small forest northeast of Isola Bella. The 29th PzGrDiv and 26th PzDiv were to be withdrawn to form the operational reserve already mentioned: the former as soon as possible, to the vicinity of the Cisterna–Velletri area, the latter in the near future, to the area defined by Cecchina–Genzano–Albano. The mission of the artillery, including the antiaircraft variety, would be to support the offensive operations of the corps; systematically shell enemy artillery; annihilate all observed enemy points of resistance; fire on all profitable moving targets; and shell enemy ships, harbor installations, and disembarkation points.[564]

## STALEMATE, MARCH 5–MAY 22

Five days of fighting ensued, during which the Germans lost 3,500 men killed, wounded, and missing.[565] On March 4, Mackensen decided that further attacks were useless and went over to the defensive.[566] The best German divisions were withdrawn to the area south of Rome as Army Group C's operational reserves.[567] Others, including elements of the 16th SS PzGrDiv, were sent to northern Italy. In early March, the Hermann Göring PzDiv left for Leghorn for rest and refitting, preparatory to an expected redeployment to France. The 114th Light (Jäger) Division withdrew in early March for a rest period; it was to reappear on the Eighth Army front. As of the 14th, Fourteenth Army's strength was about 135,700 men, 65,800 of them combat troops.[568]

In the course of these changes, battle-hardened troops generally were replaced with second-rate units; an exception was the 8th PzGrRgt (the 8th) of the 3rd PzGrDiv, which was withdrawn from the Gustav Line.[569] A major part of the reinforcements were Italian troops who had remained loyal to Mussolini when Italy changed sides in October 1943 and now fought with the Germans. In mid-March the Barbarigo Battalion of the San Marco Marine Regiment and one battalion of the 1st Regiment, Milizia Armata, appeared in the Littoria sector. Not trusting their Italian allies, the Germans mixed Italian units with German ones down to the platoon level.[570] In spite of these precautions, some fifty men of the San Marco Marines deserted during their first ten days on the front line.[571]

After six days of continuous bombing, shelling, and fighting, the men of VI Corps were as exhausted as their German counterparts and were replaced with fresh forces.[572] The British 56th Division was relieved by the British 5th Division in early March and left the beachhead. The British commando units also were withdrawn. The British 1st Division remained at Anzio except for the 24th Guards Brigade, which was sent to Naples, replaced by the 18th Brigade. The 504th ParaInfRgt rejoined the 82nd Airborne Division and left for Britain in late March. On April 1, the 4th ParaDiv also departed. The withdrawal of these forces was more than offset by the arrival of the 34th ID on March 21. This division relieved the 3rd ID in the Cisterna sector on

March 28. The arrival of fourteen thousand fresh reinforcements in March brought the Allied strength up to ninety thousand troops by the end of March.[573]

After March 4, there was a lull in the fighting for almost ten weeks. Both sides limited themselves to defending, though actively, the positions they held.[574] In many ways, the Anzio-Nettuno front now resembled the western front of World War I. Most Allied casualties were caused by artillery and air attacks. The Germans used to devastating effect their 280 mm K5(E) Leopold railway guns (called "Anzio Annies") mounted on the Alban Hills.[575] VI Corps built up a huge logistical reserve in preparation for a May offensive, to be followed by a drive to Rome. Allied aircraft and artillery constantly pounded enemy positions.[576]

The Germans, despite their reduced strength around the beachhead, still considered a new offensive. Tentative plans drafted on March 13 envisaged a large-scale attack on March 29, either in the Alban road sector or from Cisterna. But the planned counteroffensive was postponed on March 23, then abandoned entirely on April 10.[577]

The Allies too planned a large-scale attack, in the Cisterna sector. Field Order Nr. 18, issued on March 18, directed a frontal assault by the British 1st and 5th Divisions astride the Albano road against the German salient, while the U.S. 45th Division attacked from the southeast toward the Factory.[578]

But no large-scale actions actually occurred after March 4. Allied and German troops both carried out aggressive patrolling and frequent raids to improve their positions, feel out the enemy, and keep him under constant pressure. The nightly raids and patrol clashes, the constant exchange of harassing fire, and continual air attacks kept the front at the beachhead very much alive.[579]

**BREAKOUT, MAY 23–JUNE 1**

On May 5, Clark gave orders to Truscott to start Operation BUFFALO. VI Corps would break out of the beachhead on the Cisterna front—at Cori, at the base of the Lepini Mountains, and at Velletri, near the base of the Alban Hills (see map 17). It would then drive east through the Velletri Gap to cut Highway 6 and trap the major part of the enemy forces trying to withdraw north through the Liri Valley. The ultimate objective was to destroy the entire Tenth Army south of Rome at Valmontone.[580]

Alexander had dictated these plans, and Clark had little faith in their feasibility.[581] Clark informed Truscott that VI Corps should be prepared at any moment during the breakout to swing north for a quick advance to Rome, especially if it encountered stiff resistance on the route to Valmontone or if the British advance up to the Liri Valley was slower than anticipated. The plan was that the U.S. 1st ID would make the initial assault, supported by the 3rd ID and the 2nd Special Service Force. The 45th ID would move beyond Carano on the left as far as the Campoleone–Cisterna railroad, while the 36th ID would exploit the breakthrough.[582]

On the night of May 11/12, Fifth and Eighth Armies launched the long-awaited offensive against the Gustav Line. The main Fifth Army attack was staged from a bridgehead north of the Garigliano River, between the Liri Valley and the sea. Eighth Army launched its attack on the Cassino front, which it had taken over after the failure of an offensive in February.[583] After a week of fighting, the Germans abandoned Monte Cassino. By May 15, the FEC and the U.S. II Corps had broken the Gustav Line.[584] Clark had a plan to shift two divisions of II Corps (the 85th and 88th IDs) to Anzio after they completed the initial breakthrough in the south. They would have combined with VI Corps to start a powerful drive out of the beachhead.[585]

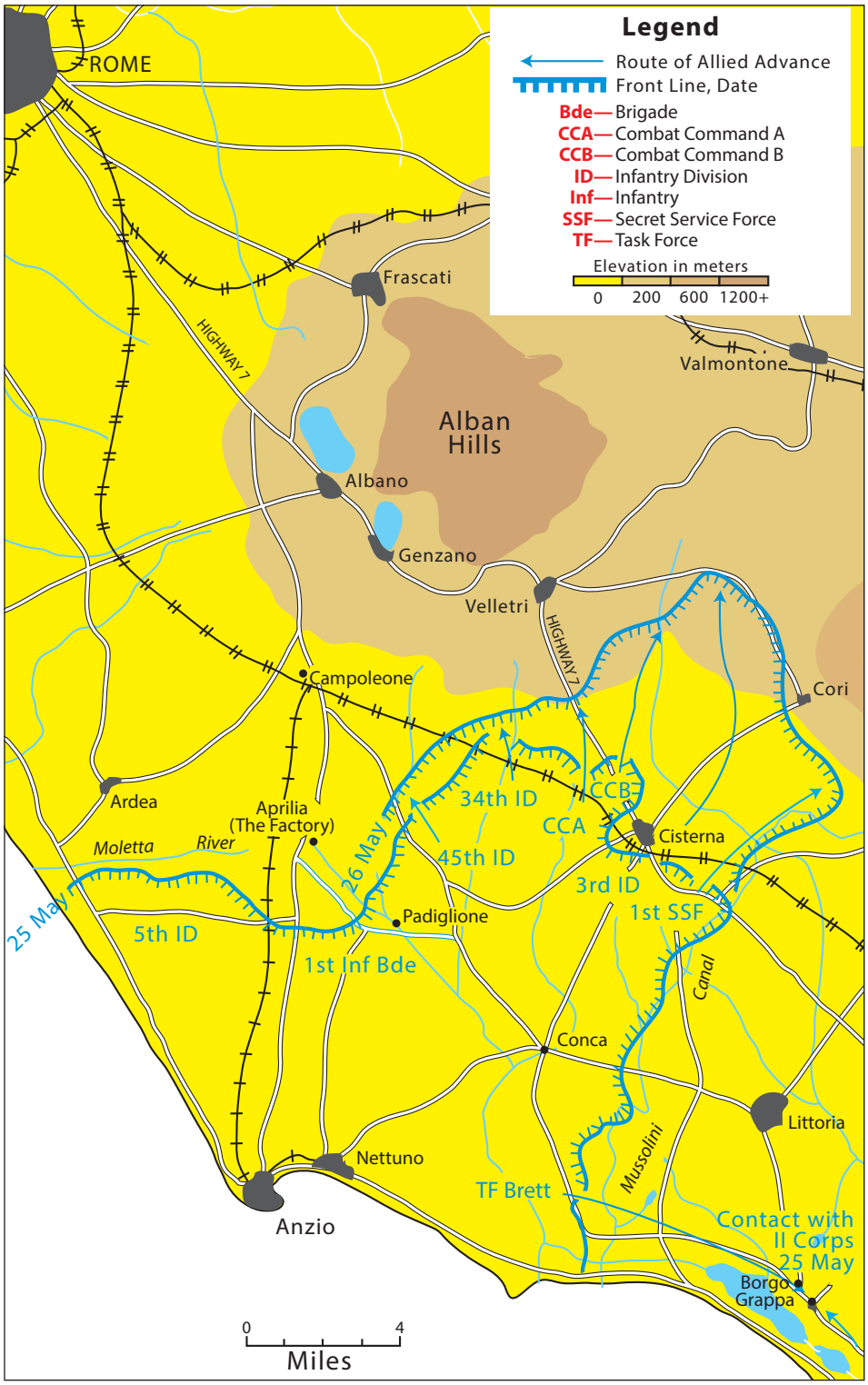
On May 20, Clark directed the main Fifth Army to advance toward Terracina, which fell into Allied hands on the night of May 23/24. American troops then advanced northward over the flat terrain toward the Pontine Marshes to meet elements of VI Corps.[586] In the meantime, at 0545 on May 23, the VI Corps artillery opened a barrage on the Cisterna front, followed by armor and infantry advancing along the entire line from Carano to the Mussolini Canal. The German resistance was very stiff, but the British 1st Armoured Division penetrated the enemy lines. The XII Tactical Air Command completed the last of its 722 sorties on May 24. VI Corps cut Highway 7 above Cisterna and encircled the town, which fell into Allied hands on May 25, at the cost of 475 Americans killed, 2,320 wounded, and 785 missing.[587] The main Fifth Army and VI Corps finally joined up in the early morning of May 25.[588]

The breakout was costly to VI Corps, which took about four thousand casualties in the five-day offensive. The 1st Cavalry Division alone lost a hundred armored vehicles. But Allied troops took 4,840 German prisoners, including about a thousand in Cisterna, and destroyed or damaged some 2,700 vehicles.[589]

On May 26, Clark directed VI Corps to shift the weight of its main effort from Valmontone to the west of the Colli Laziali and then to capture the Factory. This order was carried out, but the enemy resistance was stiffening.[590] By dusk on the 30th, Fifth Army's drive appeared to have stalled; from May 31 to June 2 Fourteenth Army fought hard to check its advance. The Germans offered especially stiff resistance to VI Corps, which had been on the offensive since the 23rd. But finally, on the night of June 2/3, the main German forces withdrew northward from the Alban Hills, leaving only scattered rear-guard elements. At 0800 on the 4th, the first American troops entered Rome. With that, the ultimate operational objective of the Anzio-Nettuno landing had been accomplished—but by other forces.[591]

**RESULTS**

During the Anzio-Nettuno landing and battle ashore, VI Corps suffered 29,200 combat casualties: 4,400 killed, 18,000 wounded, and 6,800 missing or made prisoner. About two-thirds of these casualties occurred in the heavy fighting that ended on March 4. In addition, the Allies suffered some 37,000 noncombat casualties (26,000 Americans). Out of the total combat losses, 16,200 were American (2,800




*Map 17*
*The breakthrough, May 25–26, 1944*

killed, 11,000 wounded, and 2,400 missing or made prisoner). During the first thirty days, the overall combat-casualty rate in VI Corps was 17 percent, for the British units 27 percent. During the entire operation, about thirty-three thousand casualties (twenty-four thousand Americans) were evacuated by sea. Fourteenth Army suffered 27,500 casualties (5,500 killed, 17,500 wounded, 4,500 missing or made prisoner).[592]

The Allies made a tremendous and highly successful effort to sustain their forces ashore. Supplies were brought in on preloaded trucks in LSTs, by LCTs, and on Liberty ships. Starting on January 28, a convoy of six LSTs was sent each day from Naples, each vessel carrying fifty loaded trucks. Each convoy brought 1,500 tons of cargo (60 percent ammunition, 20 percent fuel, 20 percent rations).[593] Some fifteen LCTs also made a weekly turnaround from Naples with supplies. Every ten days four Liberty ships loaded with supplies at Naples and North African ports arrived at Anzio. The LSTs and LCTs could dock at Anzio; Liberty ships had to be unloaded offshore and their cargo brought ashore by LCTs or, in calm weather, by DUKWs. Fifth Army managed the port and dump areas. On February 6, the 504th Engineers took over operation of the port and beaches.[594]

The beachhead was within range of the German artillery, and it was subjected to constant air raids. That vulnerability made the supply situation at Anzio more difficult. The air raids and artillery bombardments reduced the efficiency of beach personnel by some 10 percent. Some of the ammunition and gasoline dumps were concentrated in a small and especially vulnerable area. Between January 22 and March 10 bombing destroyed about a thousand tons of ammunition, artillery 228 tons more. Yet such losses were never (with the possible exception noted below) critical. Supplies were dispersed in many separate dumps and protected by earthen bunkers.[595]

The bunkers were erected by bulldozers and, critically, Italian laborers. By the end of January the security of the beachhead was threatened by ammunition and labor shortages. The beachhead needed many civilian laborers to clean up debris and to dig in the dumps. However, after the landing some twenty-two thousand civilians had been evacuated; only about 730 able-bodied men were left. It was to alleviate these shortages that Italian laborers were hired in Naples and brought to Anzio.

Initially, a port battalion was stationed at the beachhead to unload Liberty ships. But unloading needed to be quicker, because of the constant danger of Luftwaffe raids. So on about March 1, a new procedure was adopted: one port company was embarked in each Liberty ship.[596]

At the beginning of February there was a shortage of LCTs to unload the Liberty ships. Most of those on hand had been in service more than a year without overhaul: on February 6, only fifteen were serviceable, a number that increased only to twenty-two by February 12. As stopgaps, between ten and twenty LCIs were

employed and the Liberty ships anchored closer to shore so DUKWs could help in unloading; between 450 and 490 DUKWs were so used at Anzio. The situation improved greatly in late February when more LCTs became available. By March, supply problems at the beachhead had been largely solved. With the seasonal improvement in the weather, it became possible to unload five or six Liberty ships at a time.[597] The greatest volume of supplies arrived in March, when some 157,275 tons were discharged; the peak was on March 28, when 7,830 tons were unloaded. Large reserves of supplies, as noted above, were built up in anticipation of the Fifth Army offensive in May. By May 23, the beachhead had, in addition to its normal ten-day reserve, an additional thirty days' worth. Overall, between January 22 and June 1, some 513,500 tons of supplies were discharged, about 3,920 tons per day.[598]

## CONCLUSIONS AND OPERATIONAL LESSONS LEARNED

The Allied amphibious landing at Anzio-Nettuno on January 22 did not itself accomplish its stated ultimate operational objective, despite the enormous superiority of the forces the Allies committed to it, on land, in the air, and at sea. The main reasons for this failure were, first, unsound decisions by Allied political and military leaders, and second, deficient performance by operational commanders in planning and execution. The Germans proved much tougher and more resourceful than the Allies anticipated, and the German operational commanders performed much more effectively than their counterparts.

The Allied command organization in the Mediterranean was fragmented and complex. Some high commanders held two positions or even more. The names of service components and major tactical commands changed frequently, sometimes for no apparent reason. Perhaps the most fragmented command structure was that of the air forces—there were simply too many tactical commands in the Mediterranean theater, and their responsibilities overlapped. The German command organization in the Mediterranean, after the capitulation of Italy, underwent major changes as well, after which it too lacked badly needed unity of command.

*Command organization is one of the key prerequisites of sound command and control. It should be simple and straightforward. It should avoid overlapping responsibilities. Changes in the command structure should not be made often, especially in the course of a campaign or major operation. Optimally, a single operational commander should be entrusted with command responsibilities for all forces taking part in a campaign or major operation.*

One of the Allies' greatest advantages was their ability to intercept and read high-level German radio messages. ULTRA intercepts provided a steady stream of information about orders of battle and the state of fuel, ammunition, and food. The cryptologists at Bletchley Park were able to read the estimates and plans of Kesselring and his subordinate commanders and the exchanges between Hitler, the OKW, and Kesselring. Allied high commanders were informed in this way about German

assessments of Allied forces. However, Allied commanders could not "sanitize" the information sufficiently—that is, package it in a way that would not compromise the source—to relay it to their major subordinates. In addition, British intelligence officers in the theater did not share all ULTRA information with their American counterparts, not trusting them to protect it properly. Here was a source of not only distrust but difficulty in reaching agreement.

*An ability to intercept and read in a timely way coded enemy messages provides an enormous advantage. Such a capability must be highly classified, yet subordinate commanders directly involved in combat must possess information that will allow them to make sound decisions. At a minimum, higher commanders should have the authority to sanitize received information and transmit the result to subordinate tactical commanders. In any case, one's operational intelligence should not rely overly on technical means but should use other sources as well—in particular, human intelligence.*

The idea of an Anzio-Nettuno landing, set aside in mid-December, was revived by Churchill late that month. His insistence, strongly supported by other Allied leaders, on capturing Rome as soon as possible led to the adoption of Operation SHINGLE. This decision was based primarily on political, not military, considerations—it was an operational decision made by strategic leadership. It also was based on highly suspect assumptions about the timing and scope of the enemy's likely reaction to a landing in its rear. Allied commanders and their staffs paid more attention to the enemy's supposed intentions than to his capabilities—a common, but often fatal, mistake.

*Political and other nonmilitary considerations always should be taken fully into account. In some exceptional cases, the operational commander should consult the higher political-military leadership about the advisability of a proposed major operation and the availability of the resources necessary for it. But otherwise, the operational commander—not high political leaders—should be primarily responsible for and have the principal role in determination of the need for and in the planning, preparation, and execution of a major operation.*

Clark's proposal on December 10 to disconnect the landing at Anzio-Nettuno from Fifth Army's progress from south to north constituted a radical change. It made the landing an independent major joint operation instead of an integral part of a renewed Fifth Army offensive. It also largely doomed the landing.

*An amphibious landing whose aim is to envelop an enemy flank on the coast should be planned and executed not as an independent major operation but as an integral part of a major offensive joint/combined operation by the main forces on the land front. Hence, the landing's timing and the amphibious objective area should be selected to ensure a rapid linkup between the landing force and the main force on the land front; otherwise, an amphibious landing, notwithstanding its accomplishment of*

*a major tactical objective, will likely fail to impact the course of the larger operation. In such a case, the operational commander risks too much for too little. Against a strong and skillful enemy such an error can be fatal.*

The lack of sufficient reserves and the situation on the main Italian front required that the Anzio-Nettuno landing force be a mix of American and British units. This created problems in both planning and execution. American and British units used different staff and tactical procedures, and relationships among the Allied commanders and their staffs were generally poor. Relatedly, the timing and duration of Operation SHINGLE were affected heavily by the need to redeploy a large number of LSTs from the Mediterranean in time to support the Normandy invasion. Another complicating factor was the necessity of a sizable number of LSTs to build up forces on Corsica for the planned invasion of southern France.

In the planning and execution of SHINGLE itself, a major problem was a divergence of views on the main mission of VI Corps. Capture of the Alban Hills, as envisioned in Alexander's operations instruction, clearly would have constituted what the Germans would have considered a serious threat to supplies vital to the Tenth Army on the main front and so might have forced a general German retreat toward Rome—that is, served an operational objective. In contrast, capturing a lodgment in the Anzio-Nettuno area and essentially staying within it, as laid down in Clark's operations instruction, achieved only a tactical objective, if a major one.

*Operational commanders must formulate missions for subordinate commanders that are in consonance with the mission set by their higher commanders. Even if they have reservations about the missions laid out, they are not authorized to change higher operational commanders' mission unilaterally and drastically. Missions laid out for and issued to subordinate commanders should be short, clear, and above all militarily achievable. There is in this context perhaps nothing worse than vague or open-ended missions.*

VI Corps was simply too small to accomplish the mission Alexander had stipulated. It could capture the Alban Hills, but it could not hold them if the enemy reacted in force. Yet without seizing and holding the Alban Hills it was not possible to endanger seriously the supply routes to the Gustav Line, which is what would have forced the Germans to react operationally—that is, to start withdrawing toward Rome.

*One of the most important and fundamental requirements in determining a military objective is to balance the factors of space, time, and force. Any serious imbalance has to be resolved, whether by scaling down the objective, reducing distances, increasing the time available, assigning larger forces, or some other action. This process is more an art than a science.*

The prospects of a landing at Anzio-Nettuno were highly dependent on the main Fifth Army's ability to break through on the Gustav Line and advance quickly up the Liri Valley in the direction of the Alban Hills and ultimately Rome. However, its offensive should have been renewed much earlier than January 12, when plans were issued for the Anzio-Nettuno attack. Still, before the landing a decision could have

been made on whether to go ahead with or cancel SHINGLE. As it was, the main Fifth Army's attack on the Gustav Line, although sequenced, lacked a clear main effort. Instead of the majority of forces being staged in one sector—on the right or left flank or in the center—each corps attacked within its own sector toward one of two widely separated objectives, Monte Cassino and the Liri Valley. The 15th Army Group should not have been expected to carry out, almost simultaneously, both attacks.

Lucas's decision to consolidate the beachhead, once established, instead of moving quickly to capture the Alban Hills has been criticized heavily by commanders and historians. Yet it should be evaluated on the basis of the information Lucas had at that time. He apparently did not know that only weak forces defended the approaches to Rome. But the most important reason for his decision not to advance to the Alban Hills was that two divisions were inadequate to defend a greatly enlarged beachhead. He might have sent either the Rangers or one regimental combat team to the hills in the hope that the Germans would be induced to withdraw from the Gustav Line, but it is unlikely that they would have done so.

Lucas was apparently quite content to dig in on the beachhead—perhaps too content. A more energetic and aggressive commander, such as Gen. George S. Patton Jr., almost certainly would have tried to capture the Alban Hills, only twenty miles away. Yet one cannot say, even with the benefit of hindsight, whether such a commander ultimately would have been more successful than Lucas.

But perhaps the biggest mistake the Allied high command made was allocating an inadequate force to the Anzio-Nettuno landing and then failing to ensure that it could join up with Fifth Army within forty-eight hours.

*Major amphibious landings are perhaps the most complex and risky of all military undertakings. They require detailed planning and must be executed energetically yet flexibly. The commander of the landing force must make quick but sound decisions. Freedom of action can be achieved only by acting quickly, aggressively, and without waiting for orders from a higher commander. Hence, the operational commander must pay great attention to professional abilities, command style, and personality traits in selecting a landing force commander.*

It is hard to understand how Churchill and many higher Allied commanders at this point in the war so badly and repeatedly underestimated the German will to resist stubbornly any large-scale threat to the Gustav Line. The Germans rarely, when faced with serious situations in their rear, simply folded their tents and silently stole away.

VI Corps eventually tied up large enemy forces that otherwise would have been available on the southern Italian front or possibly in France. Yet one wonders whether a better solution to the stalemate in southern Italy in the winter of 1943 might not have been an advance through the Liri Valley toward Rome instead of

almost simultaneous attacks toward Rome and Monte Cassino. If VI Corps had been deployed in such a sector of main effort, it might have been possible to breach the German defenses on the Gustav Line much earlier than mid-May 1944. With four army corps at his disposal instead of three, General Clark might have captured Rome much earlier than he did.

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104 Davits are shipboard devices for carrying and quickly launching boats, including landing craft. DUKW: *D* indicating the model year, 1942; *U,* the body style, here utility (amphibious); *K,* all-wheel drive; *W,* dual rear axles. A DUKW was able to carry twenty-five soldiers, an artillery piece, or five thousand pounds of general cargo; its speed at sea was five knots, on land fifty miles per hour.

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