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THE WAR IN WESTERN EUROPE

PART 1

(June to December, 1944)



DEPARTMENT OF MILITARY ART AND ENGINEERING
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FOREWORD

This short account of the Allied operations in western Europe has been prepared for use in the instruction of cadets at the United States Military Academy. It is based for the most part on material furnished by the Historical Division, Department of the Army. In acknowledging this indebtedness, however, it is not desired to place on the Historical Division the responsibility for any factual errors or for the conclusions drawn.

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Samuel E. Morison, *The Battle of the Atlantic* (Boston: Little, Brown & Co., 1947).

Dwight D. Eisenhower, *Crusade in Europe* (Garden City, N. Y.: Doubleday & Co., Inc., 1948).

Henry L. Stimson and McGeorge Bundy, *On Active Service in Peace and War* (New York: Harper & Bros., 1948).

Winston S. Churchill, *The Gathering Storm* (Boston: Houghton Mifflin Co., 1948).

The Viscount Montgomery of Alamein, *Normandy to the Baltic* (Boston: Houghton Mifflin Co., 1948).

Milton Shulman, *Defeat in the West* (New York: E. P. Dutton & Co., Inc., 1948).

George S. Patton, Jr., *War As I Knew It* (Boston: Houghton Mifflin Co., 1947).

Sir Francis de Guingand, *Operation Victory* (New York: Charles Scribner's Sons, 1947).

It is regretted that space limitations have not permitted a more detailed account of the important part played by the British, Canadian, and French troops in the operations.

February 1949

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PRELIMINARY DEVELOPMENTS

INTRODUCTION (Map 1)

The cross-Channel attack that struck the German-occupied coast of Normandy on 6 June 1944 was by far the largest of the series of amphibious operations by which the United States and Great Britain came to grips with the German-Italian-Japanese Axis in the course of World War II. But it was more than just another attack. It was the supreme effort of the Western Allies in Europe—the consummation of the grand design to defeat Germany by striking directly at the heart of Hitler's Reich. One of the last attacks, it was the fruition of some of the first strategic ideas.

Before such an amphibious operation could be undertaken, much had to be done by the Western Allies. Time was required to mobilize the vast military potential of the United States, to work out involved strategic and operational plans, to ferry men and materials across the Atlantic to England, to destroy the German submarines, to develop a strategic air offensive over Germany, and to manufacture and assemble the truly enormous mass of matériel which the invasion of western Europe demanded. From the beginning, operations in Europe had a decisive influence upon the development of the American war effort.

The day that General George C. Marshall assumed his duties as Chief of Staff of the United States Army Hitler's forces invaded Poland, and two days later England and France declared war on Germany. At that time the United States Army consisted of about three and one-half divisions (approximately 50 per cent mobilized, and scattered among a number of Army posts) and an Air Corps of 17,000 men. During the next ten months there was a slow awakening in the American people of the necessity of augmenting our armed forces, but there was still insufficient public interest to prevent reductions in requested military appropriations.

In the spring of 1940 the Germans launched their campaign in the West; and in a few weeks the Wehrmacht defeated the armies of the Netherlands, Belgium, France, and England. The coast of western Europe was then secure to the Axis from Spain to Narvik, and destructive air and submarine operations could be launched from numerous bases located throughout its entire length. In addition, bases could be developed for a direct attack on the British Isles. However, these startling Nazi successes across the Atlantic inaugurated a period of growing consciousness in the United States of the serious international situation. During the summer of 1940 Congress appropriated funds to more than double the strength of the Army, to organize an armored force, to increase the Air Corps to fifty-four combat groups, to build a "two-ocean" Navy, and to speed up the production of munitions. President Roosevelt completed his "War Cabinet" in July with the appointment of Henry L. Stimson as Secretary of War and Franklin Knox as Secretary of the Navy, two months after Winston Churchill became Prime Minister of Great Britain. During the summer measures were adopted (at a Pan-American conference and in special discussions with Canada) to strengthen the defenses of the Western Hemisphere. On 2 September 1940 a deal was concluded whereby Great Britain leased to the United States for ninety-nine years six bases in the Caribbean in exchange for fifty World War I destroyers. In September the National Guard was called into Federal service, and the Selective Service Act was signed by the President.* On 11 March 1941 Congress passed the Lend-Lease Act to bolster the sagging defenses of Great Britain.

After the collapse of France the strategic initiative everywhere rested with Germany. There were at least three possible lines of action, of which she might adopt one or more: First, she could undertake an assault on the British Isles; second, she could strike through the Balkans and North Africa to gain control of the Middle East; third, she could invade Russia. In a sense Germany undertook all three in an attempt to fulfill Hitler's concept of a greater German Empire on the Continent. The Battle of Britain aroused American sympathies still further, and the German invasion of Russia in June 1941 inaugurated a new phase of preparations in this country. At that time the Allied situation was extremely critical. Russia, the last strong power on the Continent that could

* This was the first time that we had adopted compulsory military training in time of peace. The act provided for the registration of all men between the ages of 21 and 35, with a proviso that not more than 900,000 were to be drafted in any one year.

oppose Hitler, was threatened with destruction; British control of the strategically important Middle East was seriously endangered; and the British Isles themselves, the last great Allied base in western Europe, were constantly threatened by German aircraft and submarines and by the hostile troop concentrations along the Channel. In the Pacific the menacing preparations of Japan were regarded as a possible preface to attacks upon British and Dutch possessions in the Far East and upon the Philippines.

By July 1941 the United States Army had grown to thirty-four partially equipped divisions and an air force of 209 incomplete squadrons. During the next six months more realistic field training and maneuvers were conducted by the new Army units, industry slowly began the quantity production of military matériel, the Navy began to participate actively with British and Canadian fleet units against the Nazi submarines in the Atlantic, and maximum effort commensurate with our military strength was taken to reinforce our oversea garrisons—the new bases in the Atlantic, the Panama Canal Zone, Alaska, Hawaii, and the Philippines.

On 7 December 1941 the Army, after fifteen months of peacetime mobilization, consisted of about 1,600,000 men. Twenty-nine infantry, five armored, and two cavalry divisions had been organized. The Air Corps numbered some 270,000 men. The January 1942 troop basis assumed that by the end of the year the total Army strength would be more than doubled and the Air Corps more than tripled. On 9 March 1942 a major reorganization of the War Department was effected when three major commands were established under the direct supervision of the Chief of Staff—the Army Ground Forces, the Army Air Forces, and the Army Service Forces.*

The Japanese victory at Pearl Harbor temporarily paralyzed United States naval strength in the Pacific, but it immediately unified the American people in a determination to defeat the Axis. Although belated, the entrance of an angry and unified United States into the struggle, coupled with Axis strategic mistakes and Russo-British success in defending vital strategic areas, forecast eventual victory for the Allies.

The German campaigns in Poland, Norway, France, and the Low Countries had developed serious differences of opinion between

* Commanding generals:

Army Ground Forces: Lesley J. McNair.

Army Air Forces: Henry H. Arnold.

Army Service Forces: Brehon B. Somervell.

Hitler and his general staff regarding the execution of strategic plans. For each campaign the general staff had favored the orthodox offensive, Hitler an unorthodox attack. In each case Hitler's views had prevailed, and the astounding success of the succeeding campaign had raised his military prestige to the point where his opinions were no longer challenged. His self-confidence became unassailable after the victory in France, and from then on he gave little weight to the advice of his generals. Thus no general staff objection was expressed when he made the fatal decision to invade Soviet Russia.

ALLIED STRATEGIC CONSIDERATIONS

During the Battle of Britain American observers in the United Kingdom had kept the top United States military and political leaders informed of the critical situation in Europe. By November 1940 these leaders had agreed on the basic American concept of World War II—to defeat Hitler first. This principle was expressed in the United States basic war plan, drafted in May 1941:

Since Germany is the predominant member of the Axis powers, the Atlantic and European war is considered to be the decisive theater. The principal United States military effort will be exerted in that theater, and operations of United States forces in other theaters will be conducted in such a manner as to facilitate that effort.*

During February and March 1941 a series of secret conversations were held in Washington between representatives of the Army Chief of Staff and the Chief of Naval Operations and representatives of the British Chiefs of Staff. The purposes of these conferences were to determine the best methods of defeating Germany should the United States be compelled to resort to war; to coordinate plans for the employment of American and British forces; and to reach agreements concerning major lines of strategy, areas of responsibility, and command arrangements. The conclusions reached, known as the ABC-1 Staff Agreement, constituted the basis for Anglo-American cooperation during the war. Two basic principles for the control of combined operations were enunciated: (1) unity of command in each theater and (2) integrity therein of the forces of each nation. Born of bitter experience in World War I, these principles were cherished by both Americans and British. In August 1941 President Roosevelt and Prime Minister Churchill conferred near the new American naval base of Argentia, Newfoundland, and promulgated the Atlantic Charter, an expres-

* Samuel E. Morison, *The Battle of the Atlantic* (Boston: Little Brown & Co., 1947).

sion of Allied war aims. Also in attendance at this meeting were the high military leaders, who confirmed what had been agreed upon at the earlier staff conferences.

Pearl Harbor abruptly ended the period of preliminary conversations. Prime Minister Churchill, accompanied by the Chiefs of Staff of the British Army, Navy, and Air Force, hurried to Washington to confer with the President and the American Chiefs of Staff. This meeting was the formal beginning of the most complete unification of military effort ever achieved by two Allied nations. The strategic direction of the forces of both nations, the allocation of man power and munitions, the coordination of communications, the control of military intelligence, and the administration of captured areas were all accepted as joint responsibilities.

The Combined and Joint Chiefs of Staff.—The Combined Chiefs of Staff was a committee of the following military leaders:*

United States—

Fleet Admiral William D. Leahy, Chief of Staff to the Commander in Chief of the United States Army and Navy.

General of the Army George C. Marshall, Chief of Staff of the United States Army.

Fleet Admiral Ernest J. King, Commander of the Fleet and Chief of Naval Operations.

General of the Army Henry H. Arnold, Commanding General, Army Air Forces.

Great Britain—

Field Marshal Sir Alan F. Brooke, Chief of the Imperial General Staff.

Admiral of the Fleet Sir Dudley Pound (Admiral of the Fleet Sir Andrew B. Cunningham, October 1943), Chief of the Naval Staff.

Air Chief Marshal Sir Charles F. A. Portal, Chief of the Air Staff.

The headquarters of this group, consisting of the United States Chiefs of Staff (usually called the Joint Chiefs of Staff) and representatives** of the British Chiefs of Staff, was established in

* In order to save space farther on, the composition of the Combined Chiefs of Staff for the entire period of the war is given here. The rank shown for each member or representative was the highest attained by him.

** The British representatives, called the British Joint Staff Mission (Washington), were:

Head of Mission—Field Marshal Sir John Dill (Field Marshal Sir Henry M. Wilson, November 1944).

Military—Lieutenant General G. N. Macready.

Naval—Admiral A. B. Cunningham (Admiral P. Noble, December 1942; Admiral J. Somerville, November 1944).

Air—Air Marshal D. C. S. Evill (Air Marshal W. Welsh, June 1943; Air Marshal D. Colyer, November 1944).

Washington; and there the day-to-day problems of the war were under continuous consideration. Representatives of other Allied nations and dominions attended the Washington meetings from time to time.

The Combined Chiefs of Staff assumed the responsibility of strategic direction of all theaters (except Russia), including the determination of specific operations, the allocation of resources to each theater, and their relative priorities. Responsibility for executive and operational direction of the conduct of the war in each theater was assigned by the Combined Chiefs to either the United States Chiefs or the British Chiefs. Thus, China and the Pacific were assigned to the United States Chiefs and the Mediterranean and Southeast Asia to the British Chiefs. The only exception was in the case of the European Theater, where General Eisenhower dealt on combined matters directly with the Combined Chiefs. A vital principle laid down by the Combined Chiefs of Staff was that of unity of command, which placed responsibility and authority for an operation under one commander who was responsible to the Joint or Combined Chiefs of Staff. The United States Chiefs were responsible directly to the President, the British Chiefs to the Prime Minister; and the Combined Chiefs were responsible to both, acting together.*

The Joint Chiefs of Staff was the President's agency to exercise strategic control of our armed forces, the result being that the Army and Navy operated as one national military force. The Joint Chiefs organized planning and advisory committees to assist it on such matters as strategy, operational and administrative planning, psychological warfare, intelligence, transportation, assignment of materials of war, communications, meteorology, weapons, and civil affairs. The Joint Chiefs' decisions were executed by the War and

* A decision of the Combined Chiefs could be implemented in three ways:

1. By a directive from the Combined Chiefs to the supreme commander of a combined theater; for example, a Combined Chiefs' directive to General Eisenhower, Supreme Commander in Europe.
2. By a directive from the United States Chiefs of Staff or the British Chiefs of Staff to the commander of a theater for which the United States or the British Chiefs were functioning as the executive agent of the Combined Chiefs; for example, a directive from the United States Chiefs of Staff based upon a Combined Chiefs' decision and sent to General MacArthur, Commander of the Southwest Pacific Area.
3. By a directive from one of the members of the Combined Chiefs to his own service; for example, a directive from General Marshall to the senior United States Army commander in a theater to turn over a certain number of tanks to the British forces in that theater.

Navy Departments, the more smoothly and promptly since members of their staffs had functioned on the joint committees whose studies had contributed to the decisions. Most of the joint committees worked with British counterparts, thus forming combined committees to advise the Combined Chiefs.

The pooling of the skills of these leaders and the authority that they exercised in applying the entire military, industrial, and technical resources of their two nations were responsible in large measure for the success of the Allies in the war. The Combined Chiefs of Staff and their advisors met periodically, often with their Chiefs of State, and at these conferences the major decisions of the war were made. Influencing most of these decisions were at least six general factors, essential to the main effort and basic in the implementation of early strategy, although in themselves they could not bring about a decision. These factors were:

1. The necessity of supporting the Russians, in order to keep them in the war.
2. Maintenance of the security and war-making capacity of the British Isles and the Western Hemisphere.
3. Maintenance of the stability of the Middle East and prevention of an Axis drive to join Japan and Germany.
4. Control of the sea lanes in the Atlantic, Pacific, and Indian Oceans.
5. The necessity of stopping the Japanese before they advanced so far or became so securely entrenched as to prolong the war unduly.
6. The need for keeping China in the war to contain Japanese forces and possibly provide bases for operations against Japan.

The factors did not change materially until very late in the conflict, when Axis power began to crumble. Although relative priorities between them could not be rigidly established, the minimum essential means were required for each, as failure in any one would have had global implications. For instance, a failure to halt the Japanese advance would have forced the United States to shift major resources to the Pacific, thereby seriously handicapping any major effort in Europe. The minimum demands of these vital undertakings were ever present and at times so urgent as to assume a priority higher than the main effort. In this situation, only the clearest judgment and the greatest determination on the part of Allied leadership kept plans and their implementation directed with maximum efficiency toward the main objective.

The Combined Chiefs' decisions governing operations in the Mediterranean and the Pacific have been discussed in other monographs of this series, but a review of the major decisions of the first two years of the war will show the development of the strategy behind the great Allied operations in western Europe in 1944 and 1945.*

Major Allied Decisions, 1942 and 1943.—In addition to establishing the organization to direct the Allied forces in the war, the Washington Conference of December 1941 (Arcadia Conference) confirmed the important basic decision that Germany must be defeated first. Initially the Allies must close the ring on Nazi aggression and wear down German resistance by air bombardment and blockade. The security of the main areas of Allied war industry, particularly the United Kingdom and the United States, must be secured; essential lines of communication must be maintained; and Japan must be held.

For the United States, stung by the attack on Pearl Harbor, the decision to defeat Germany first was difficult to make and still more difficult to implement. Once made, though, it was a lethal blow to the divide-and-conquer strategy of the Axis. It was an application of the most important principle of war, which requires the concentration of combat power against the major objective, in this instance, Hitler. As a corollary, the principle of economy of force had to be exercised elsewhere, especially in the Pacific, where the concept required active opposition to the Japanese, but with a minimum of resources.

The main reasons for the adoption of the Germany-first strategy may be summarized as follows:

1. There were serious doubts as to the staying power of Russia. She needed prompt and effective assistance.
2. Germany was much the stronger. Defeat her and Japan would be sure to fall; but defeat Japan and there would still be a long war ahead.
3. Germany was nearer to the centers of Allied power.
4. A longer time would be required to mount operations in the Pacific.
5. It would be easier to contain Japan.
6. There could be no unified effort in the Pacific prior to the defeat of Germany, since Britain and Russia could not participate.

* See Appendix 3.

Fortunately, unprecedented and unexpected Allied production eventually provided means to permit the assumption of a Pacific offensive before the final defeat of Germany.

In April 1942 the Combined Chiefs of Staff met in London. It was reaffirmed that, subject to necessary holding measures against Japan, all resources were to be concentrated upon the defeat of Germany. It was also accepted in principle that the Axis armies could be destroyed in Europe only by an Allied victory on the Continent, probably in Germany itself. Russia would play a vital role, but the Western Allies would have to open a second front to make victory possible. To the Americans the obvious solution was an invasion of western Europe at a suitable time and place to close with the Axis forces and destroy them. General Eisenhower, in his memoirs, discusses some of the advantages of an attack launched from England rather than from another area:

To use American forces for an attack on Germany through the Russian front was impossible. The only lines of approach were through Murmansk on the north and the Persian Gulf on the south, via the Cape of Good Hope. These lines could carry nothing additional to the equipment and supplies that were necessary to keep the Russian forces in the struggle. . . . Plans for attacking through Norway, through Spain and Portugal, and even for not attacking with ground forces at all but depending exclusively on the effect of sea and air superiority, were all studied in infinite detail.

For a number of reasons the Mediterranean route was rejected as the principal avenue of attack. The first disadvantage was the distance of the North African bases from the heart of Germany. While conceivably Italy might readily be eliminated as an enemy, the heart of the opposition was Germany—an Italian collapse would not be decisive. The difficulty of attacking Germany through the mountainous areas on her southern and southwestern flanks was obvious, while we always had to face the fact that the full might of Great Britain and the United States could not possibly be concentrated in the Mediterranean. This could be done only in an operation which used England as a base. The remaining strength of her land armies and, above all, the air and naval strength required for the defense of England could be employed offensively only if it were hurled across the Channel directly at the continent of Europe. Moreover, between the coast line of northwest Europe and the border of Germany there was no natural obstacle to compare in importance with the Alps.

Another very important reason for making Great Britain the principal base from which to launch the attack was that the transatlantic journey from New York was shortest when terminated in the United Kingdom. This would permit the most rapid turnaround of ships and would utilize the great British ports, already constructed and in good working order. Selection of this base would save shipping in another way. The U-boat packs then in-

festing the North Atlantic could best be combatted by means of heavy escorts. No matter what line of military operations might be selected, we still had to keep open Britain's life line.

By comparison with other possible avenues of approach, considering the need for concentration, quick access to the heart of the enemy country, avoidance of impassable terrain obstacles, and rapidity of build-up, the best choice was invasion of northwest Europe, using England as a base.*

However, there were many difficulties in the way of such an invasion. There were political considerations, such as the necessity for an early victory and for encouraging resistance movements in occupied areas. There were many conflicting factors to be resolved, such as the early liberation of France and the British interests in the Mediterranean. The great prestige of German arms did not tempt responsible Allied leaders to reckless or audacious schemes. Massive amphibious operations on an hitherto untried scale would be required, and military history provided no encouragement for the most difficult of all operations, an amphibious assault against a strong and vigorous enemy. In short, it was easy to prove that the task could not be done.

Nevertheless, a cross-Channel operation for the summer of 1943, known as Operation Roundup, was discussed by the Combined Chiefs of Staff in London. If a desperate situation on the Russian front demanded an early diversionary attack, a lighter and earlier assault, known as Sledgehammer, would be substituted for Roundup—perhaps in 1942.

As the renewal of German drives on the Suez Canal and the Caucasus oil fields caused the Allied situation to deteriorate, Prime Minister Churchill and General Alan Brooke went to Washington, in June 1942, and reopened previous discussions of an operation in the Mediterranean. The emergency became critical as the Axis forces reached what later proved to be the high tide of their conquests (see phase line on map) ; so General Marshall and Admiral King went to London in July to continue the discussions begun in Washington. By that time it had become obvious that sufficient resources could not be massed in the United Kingdom for any substantial cross-Channel operation during the summer of 1942. The Combined Chiefs of Staff, with the American members agreeing reluctantly, therefore decided to abandon Sledgehammer, postpone Roundup, and undertake Torch—an invasion of North Africa in the fall of 1942.

* Dwight D. Eisenhower, *Crusade in Europe*. Copyright, 1948, by Doubleday & Co., Inc.

When the Combined Chiefs of Staff met at Casablanca in January 1943, the general strategic situation had improved, owing to limited Allied successes in North Africa, at Stalingrad, and in the South Pacific. Even though operations in the Mediterranean were proceeding with energy, it was accepted that the defeat of the German armies in western Europe could still occur only on the ancient battlefields of France and the Low Countries. Although some strategists continued to press for an Allied main effort through Italy or the Balkans, the general determination to undertake a cross-Channel invasion prevailed.

Decisions reached at Casablanca (the Anfa Conference) included the determination to intensify the antisubmarine war in the Atlantic, to intensify the strategic bombing of Germany, to continue the logistical build-up in the United Kingdom for Roundup, to attack Sicily in July 1943, and to continue to assist Russia. These decisions marked a resumption of definite preparations for cross-Channel operations to take advantage of any sudden enemy weakness, or for an assault in the spring of 1944 if no previous opportunity presented itself. A combined planning staff known as COSSAC (Chief of Staff to the Supreme Allied Commander) was organized in London as an agency to make the estimate of the situation and the preliminary plans for the invasion.

Thus we see that definite combined planning and large-scale preparations for the invasion of western Europe began about one and a half years before the assault was undertaken, and at a time when Allied defensive efforts around the globe were just beginning to achieve success.

As the Allies gained strength enough to assume the strategic offensive throughout the world, the Combined Chiefs met at Washington, in May 1943. General Marshall commented on this conference in his *Biennial Report*:

This meeting, designated the Trident Conference, may prove to be one of the most historic military conclaves of this war; for here the specific strategy to which the movements of the land, sea, and air forces of the American and British Allies conformed was translated into firm commitments. There were changes in detail and technique after the Trident Conference, but the Pacific strategy was sustained; and the first great objective, the defeat of the European Axis, Germany and Italy, and their satellites, was accomplished.

At this conference it was decided to take all possible measures against the U-boats in the Atlantic, to intensify the strategic bomber offensive against Germany, and to concentrate sufficient forces in the United Kingdom to launch Operation Overlord (the

new code name for the invasion of France), with a target date of 1 May 1944. In Europe's innumerable wars no vigorously opposed crossing of the Alps had ever been successful; so, although operations would be planned against Italy or Sardinia after the invasion of Sicily in July 1943, General Eisenhower was directed (beginning in November) to send to the United Kingdom for Overlord seven seasoned divisions from the Mediterranean area. In the Pacific limited operations would be undertaken in the Aleutians, the Marshalls, the Carolines, the Solomons, the Bismarcks, New Guinea, and Burma.

At the First Quebec Conference (Quadrant), in August 1943, the outline plan for Overlord was approved; and it became the basis for subsequent detailed plans. It was again agreed that operations against the U-boats must be intensified and that the bombing of Germany from the United Kingdom should be supplemented by strategic bombing from bases in the Mediterranean Theater, particularly Italy. The Combined Chiefs also recommended to the President and Prime Minister an additional landing in southern France (Operation Anvil) as a diversion for Overlord. Further offensives against the Japanese were also agreed upon at the Quadrant Conference.

At the Sextant Conference, held in Cairo in November 1943, the invasion of southern France was approved; and it was agreed that Overlord and Anvil should be given priority over all other operations throughout the world. At Teheran in December Marshal Stalin concurred in this program.

These decisions at the close of 1943 resolved a long-standing difference of opinion that had haunted most of the previous conferences. The British, championed by Prime Minister Churchill, had usually favored the Mediterranean approach to the Continent, while the Americans, under the leadership of General Marshall, favored the direct invasion of western Europe. The British had good grounds to fear a cross-Channel undertaking and possessed a natural concern for the Mediterranean Theater. "The Channel had been for centuries a barrier of special import; and if it had protected them so long, might it not now protect their enemies? Beyond the Channel lay France, where a generation before the British people had paid a ghastly price of youth and strength in years of massive stalemate. From World War II there were the further painful memories of Dunkirk and Dieppe. The British Prime Minister had himself been a farsighted and incisive opponent of the bloody futility of the western front in 1915 and afterward, and it was wholly natural that he should be fearful lest there be a repeti-

tion of that slaughter. He said: 'We must take care that the tides do not run red with the blood of American and British youth, or the beaches be choked with their bodies.'"*

On the other hand, the Americans in their freshness and their vast material strength argued for the bold and forceful course. They were convinced that decisive results could be obtained only on the battlefields of western Europe, and that only there could the Western Allies honestly meet the Russian demand for a second front.

Of much greater significance than the original British reluctance to accept the cross-Channel operation was the courage with which they finally supported it. "The real lesson of World War II, therefore, was not to be found in any revelations of disagreement. Franklin Roosevelt and Winston Churchill established and sustained a wartime collaboration which grew ever stronger in the settlement of successive differences. . . . The two nations fought a single war, and their quarrels were the quarrels of brothers."* Such an attitude is essential for any successful combined undertaking.

It will be noted that in all the early decisions of the Combined Chiefs of Staff considerable stress was placed on the elimination of the German submarine menace in the Atlantic and on the strategic air offensive against Germany. These operations will now be discussed.

THE BATTLE OF THE ATLANTIC

Of all the major military operations in World War II, perhaps the most monotonous for the participants, but at the same time one of the most vital to the success of the Allied cause, was the war in the Atlantic Ocean. This Battle of the Atlantic continued from 3 September 1939, when a British liner was sunk off the Scottish coast, without warning, by a German submarine, until 14 May 1945, when the last U-boats surrendered at American Atlantic ports. It was fought from the arctic ice fields to Capetown and from the Gulf of Mexico to Gibraltar; it was fought by combined naval and air forces of the United States, Great Britain, Canada, Brazil, the Netherlands, Russia, Poland, Norway, and France.

Obviously, before any major Allied offensive could be undertaken in western Europe, the lines of communication from the United

* Henry L. Stimson and McGeorge Bundy, *On Active Service in Peace and War* (New York: Harper & Bros., 1948).

States had to be secured to provide the logistical support. Thus the Battle of the Atlantic resolved itself essentially into a battle between Allied shipping and the German U-boats—a battle that became a war of wits and scientific devices in which new measures and countermeasures were constantly developed by the opposing navies. The following table outlines this struggle between shipping and the submarines and, with the map, shows the trend of the battle:

YEAR	ALLIED MERCHANT SHIPPING (In thousands of tons)				GERMAN SUBMARINES (Numbers) (a)		
	Sunk	New Construction U. S.	Br.	Total	Gains or Losses	Sunk	New Construction Gains or Losses
1939 (4 months) ..	810	101	231	332	— 478	9	15 + 6
1940	4,407	439	780	1,219	— 3,188	22	40 + 18
1941	4,398	1,169	815	1,984	— 2,414	35	196 +161
1942	8,245	5,339	1,843	7,182	— 1,063	85	244 +159
1943	3,611	12,384	2,201	14,585	+10,974	237	270 + 33
1944	1,422	11,639	1,710	13,349	+11,927	241	288 + 47
1945 (4 months) ..	458	3,551	283	3,834	+ 3,376	153	52 -101
Totals	23,351	34,622	7,863	42,485	+19,134	782	1,105 +323

(a) Includes all types except midgets.

Early Operations.—When war was declared, the German surface fleet was no match for the British, not to mention an Allied combination.* Because of the strategic importance of the Baltic Sea to Germany, the British believed that the bulk of the German fleet must be committed to the control of those waters; and Britain could adequately cover the exits from the Baltic and still have sizable forces for action elsewhere—in the Mediterranean, the Far East, or the Atlantic. Grand Admiral Eric Raeder was in command of the German Navy; but the Allies' most formidable naval opponent was Admiral Karl Doenitz, commander of submarines. German

* TABLE OF NAVAL STRENGTHS, 3 SEPTEMBER 1939 (d)

	Great Britain (a)	Germany	France	Italy	Japan	United States
Battleships	12	2 (b)	8	4	10	15
Battle cruisers	3	2	2			
Pocket battleships ..		3				
Aircraft carriers	7		1		6	5
Cruisers	64	8	50	22	38	36
Destroyers	184	22	28	59	113	181 (c)
Submarines	58	57	71	105	53	99 (c)

(a) Including dominions. (b) Completed in 1940. (c) Includes over-age vessels.

(d) The figures given in this table are taken from *The Gathering Storm*, by Churchill (Boston: Houghton Mifflin Co., 1948).

strategy aimed at cutting off Britain's supplies, primarily by the use of submarines but with the assistance of surface raiders and aircraft. On the other hand, British naval strategy had a threefold object: to ensure the safe transport of supplies of all kinds to the home country, to prevent the landing of an enemy expedition on its coasts, and to provide the force whereby a British expedition could be landed and maintained on enemy territory. Long experience had taught Britain that these missions could best be performed by seeking out and destroying any enemy force that showed itself at sea.

When the German submarines started operations, Great Britain retaliated by immediately arming her merchant vessels, instituting the convoy system so successful in World War I, and launching counterattacks against the U-boats insofar as her limited resources allowed. Germany countered by declaring her intention of sinking all British ships without warning. For the next year U-boat activity was concentrated in the waters around the British Isles and south to Gibraltar, since at that time Hitler could not afford to risk any incident with the United States in the Western Hemisphere. The U-boats succeeded in sinking the British aircraft carrier *Courageous* in the Bristol Channel in September 1940, and the next month a submarine made a daring raid into Scapa Flow to torpedo and sink the battleship *Royal Oak*. In December a British cruiser squadron intercepted the pocket battleship *Graf Spee*, on a raiding mission in the south Atlantic, and forced it into the neutral port of Montevideo, where it was scuttled by its crew. German submarine activity against merchant shipping during this period is indicated on the map.

The sea fighting off Norway was costly to both the British and German Navies; and although Hitler gained the long Norwegian coast line and many fine harbors, at the end of June 1940 the effective German fleet consisted of no more than three cruisers and four destroyers. Although many of its damaged ships could be repaired, the German Navy was not strong enough to insure success for an invasion of Britain during the summer of 1940. However, after overrunning France, the Germans promptly developed U-boat bases at Brest, Lorient, St. Nazaire, and Bordeaux. The possession of these Bay of Biscay ports eliminated the long journeys to and from the hunting grounds that had formerly taken up much of the cruising radius of the U-boats. The sea routes were at the front door of the submarine command, resulting in almost doubling the number of U-boats that could be maintained on patrol stations. The undersea craft now began extending their fields of operations as far south as Freetown and west of Iceland.

Since the evacuation of the British Expeditionary Force at Dunkirk had cost the Royal Navy eighty-five destroyers, it was in desperate need of more ships of this type; hence the destroyer deal with the United States in September.* As a further aid in the antisubmarine war the Royal Air Force's Coastal Command was placed under the operational control of the Navy and was used on an increasing scale for guarding shipping routes.

These measures made it more difficult for the U-boats to operate close to shore, and convoys were located less frequently. To counter these defenses the U-boat command instituted a method of group control that permitted wide dispersion of the submarines for search and heavy concentration for attacks. Once a convoy was located, headquarters would direct the assembly and mass attacks of the submarines. Coupled with these "wolf-pack" tactics, the Germans began their night surface attacks against British shipping.

One of the brightest acts of heroism in this early period of the war, which was illustrative of the great fortitude and resolution characteristic of the British Navy, occurred in the north Atlantic in November 1940. The British armed merchant cruiser *Jervis Bay* was escorting a convoy when the German pocket battleship *Admiral Scheer* was sighted closing for an attack. The captain of the *Jervis Bay* at once ordered his convoy to scatter and make smoke, while he steamed rapidly toward the raider and opened fire. It was evident from the first that the odds were hopeless; nevertheless he engaged the *Admiral Scheer* for nearly an hour and held the German vessel's fire. When at last the *Jervis Bay*, its guns awash, crippled, and in flames, sank beneath the waves, the merchantmen had had time to scatter, so that of thirty-eight ships in the convoy only four were sunk.

A new period of mounting tension began in 1941 when the passage of the Lend-Lease Act committed the United States to more positive action in the Atlantic to protect the shipment of its war materials. By the end of May three American battleships, one carrier, four light cruisers, and two destroyer squadrons had been transferred from the Pacific to the Atlantic.

* The six base sites leased by this agreement were Antigua, British West Indies; British Guiana (sites near Georgetown); Jamaica, British West Indies; St. Lucia, British West Indies; Great Exuma, Bahamas; and Trinidad. In addition, Great Britain without consideration made available two other bases—at Bermuda and at Argentia, Newfoundland. By April 1941 all fifty destroyers as well as ten Coast Guard cutters had been delivered to the British, and work was well along on the new American bases.

In April 1941 the Danish Minister signed an agreement by which the United States became the protector of Greenland. Although the Coast Guard had been operating special missions off Greenland since the previous spring, this agreement permitted the United States to build weather, radio, and radar stations as well as emergency landing fields.

In May 1941 the German battleship *Bismarck*, on a commerce-raiding mission, was overtaken by elements of the British Home Fleet in the Denmark Straits. The British battleship *Hood* received a hit in a magazine and blew up; and the *Bismarck*, only slightly damaged, broke off action and withdrew to the southeast. The British force followed, attacking several times with torpedo planes, and three days later overtook and sunk the great battleship. This lesson made Admiral Raeder very chary of sending out commerce raiders.

In May President Roosevelt declared an unlimited national emergency and announced that United States patrols in the Atlantic were being strengthened.

On 12 July 1941, 4,000 marines disembarked at Reykjavik to relieve British troops that had been in Iceland since May 1940. From that time to the end of the war the defense of Iceland was a primary responsibility of the United States Army and Navy. Regular Army troops (a regiment of the 5th Division) under Major General Charles H. Bonesteel arrived in October 1941. The following spring the marines returned to the United States.

In September 1941 a German submarine made the first attack on an American naval vessel, the old destroyer *Greer*, about 175 miles southwest of Iceland.* Although two torpedoes were fired at the *Greer* and it in turn attacked the submarine with depth charges, neither vessel was damaged. As a result of this incident the President issued a "shoot-on-sight" order, and the United States Navy was unofficially in the war. In October another destroyer (*Kearny*) was attacked but, although severely damaged, reached port. Two weeks later the destroyer *Reuben James* was sunk southwest of Iceland.

The Allied Defensive.—During the early part of the war the United States Navy underwent several major organizational changes. In February 1941 the Chief of Naval Operations (Admiral Harold R. Stark) in Washington exercised over-all operational control over three fleets: the Atlantic Fleet (Admiral Ernest

* Several United States merchant ships had been sunk prior to this time.

J. King), the Pacific Fleet (Admiral Husband E. Kimmel), and the Asiatic Fleet (Admiral Thomas C. Hart). Admiral Kimmel was also designated Commander in Chief, United States Fleet. After Pearl Harbor Admiral King succeeded Admiral Kimmel as Commander in Chief, United States Fleet, and Admiral Robert E. Ingersoll became Commander in Chief, Atlantic Fleet (until November 1944, when he was succeeded by Admiral Jonas H. Ingram). In March 1942 the duties of Chief of Naval Operations and Commander in Chief, United States Fleet, were combined under Admiral King; and Admiral Stark went to London as Commander of United States Naval Forces in Europe.

About the same time the naval coastal frontiers were reorganized into sea frontiers, as shown on the map, and the United States assumed strategic responsibility for the western half of the Atlantic and the British for the eastern half. The Panama Sea Frontier operated under the Army commander at Panama, while the other Atlantic sea frontiers were directly under Admiral King. Army defense commands and departments maintained the ground defenses in these sea frontier areas. The sea frontiers assumed responsibility for antisubmarine measures in their zones, while the Atlantic Fleet had that responsibility for transatlantic troop convoys. The Atlantic Fleet also maintained a general reserve of capital ships to cope with enemy surface units and to provide additional strength for special operations in the eastern Atlantic or Mediterranean. Another important mission of the Atlantic Fleet was to train and test for service elsewhere the large number of ships and landing craft built and manned on our east coast.

In March 1943 the Eighth Fleet (Admiral Hewitt) was established in the Mediterranean to support the Allied invasions in that theater. In the south Atlantic the Fourth Fleet (Vice Admiral Ingram), with headquarters at Recife, Brazil, operated under the Atlantic Fleet. On 20 May 1943 the Tenth Fleet was established in Washington under Admiral King's direct command. This was a highly specialized administrative headquarters formed to coordinate the antisubmarine efforts of the various other commands. It also exercised control of convoys and shipping. By correlating antisubmarine training and matériel development it contributed outstandingly to the success of our operations in the Battle of the Atlantic.

When the United States formally entered the war, after the Japanese attack at Pearl Harbor, the Germans began extensive U-boat attacks on shipping in the western Atlantic. These new attacks marked the beginning of the most critical seventeen months of the

Battle of the Atlantic—months during which the hopes, plans, and preparations for the invasion of western Europe hung in the balance. The following table shows that during the first months of American participation in the war, when the “battle of the communication lines” was the most critical Allied strategic consideration, the greatest activity was in the Atlantic, where German U-boats were sinking 55 per cent of the Allied ships lost from all causes throughout the world. It also indicates how pitifully ineffective our efforts were to counter this U-boat offensive at that time.

**LOSSES OF ALLIED AND NEUTRAL MERCHANT SHIPS
BY SUBMARINE**

	<i>Jan.-June 1942</i>	<i>July-Dec. 1942</i>	<i>Jan.-May 1943</i>	<i>Total</i>
All Atlantic and Arctic areas	506	521	259	1,286
Mediterranean and Red Sea	9	18	30	57
Indian Ocean	37	23	6	66
North, Central, and South Pacific	5	4	7	16
Southwest Pacific	16	5	10	31
Total by submarine	573	571	312	1,456
FROM OTHER CAUSES (ALL THEATERS)				
Aircraft	96	46	21	163
Surface ships	46	39	2	87
Enemy mines	37	8	18	63
Other unknown enemy action	137 ^(a)		2	139
Marine casualty	145	157	131	433
Total from other causes	461	250	174	885
Total losses from all causes	1,034	821	486	2,341

LOSSES OF AXIS SUBMARINES

German, including	21	64	55	140
U-boats sunk by U. S. forces ^(b) ..	(6)	(10)	(10)	(26)
Italian	7	14	8	29
Japanese	10	9	5	24

(a) This heavy loss occurred almost entirely in the Southwest Pacific; it includes Allied vessels scuttled or captured in the abandonment of Malaya and the Dutch East Indies.

(b) American kills were 12 by Navy aircraft, 8 by Navy surface craft, 5 by Army aircraft, and 1 by Coast Guard.

The map illustrates how the Germans shifted their effort to the North American coast during early 1942 and how effective they were in sinking thousands of tons of shipping practically within sight of our shores. By now the enemy had a larger number of U-boats, and by a system of resupply at sea (by large supply submarines called “milch cows”) he was able to keep them operating

for long periods. At this time Allied shipping along the Atlantic Coast had little protection. There were insufficient guns or gun crews to arm merchant ships, insufficient escort vessels of all types, insufficient radar and sound-detection devices to equip the ships, and insufficient airplanes to cover the shipping lanes. As production of escort vessels increased and emergency measures, such as converting private pleasure and fishing craft for convoy duty and utilizing all available Army planes, were put into effect, the submarine threat on our eastern seaboard was gradually overcome. The U-boats then moved farther south, where shipping was still relatively unprotected.

The seriousness of the Allied situation in June 1942 is indicated by an extract from a letter General Marshall wrote to Admiral King:

The losses by submarines off our Atlantic seaboard and in the Caribbean now threaten our entire war effort. . . . We are all aware of the limited number of escort craft available, but has every conceivable improvised means been brought to bear on this situation? I am fearful that another month or two of this will so cripple our means of transport that we will be unable to bring sufficient men and planes to bear against the enemy in critical theaters to exercise a determining influence on the war.*

In his reply Admiral King pointed out the Navy's problems and emphasized the importance of the convoy-escort program:

Though we are still suffering heavy losses outside the east-coast convoy zone, the situation is not hopeless. We know that a reasonable degree of security can be obtained by suitable escort and air coverage. The submarines can be stopped only by wiping out the German building yards and bases—a matter which I have been pressing with the British, so far with only moderate success. But if all shipping can be brought under escort and air cover, our losses will be reduced to an acceptable figure. I might say in this connection that escort is not just one way of handling the submarine menace; it is the only way that gives any promise of success. The so-called patrol and hunting operations have time and again proved futile. We have adopted the "killer" system, whereby contact with a submarine is followed up continuously and relentlessly—this requires suitable vessels and planes we do not have in sufficient numbers.

It is not easy to create an adequate and comprehensive escort system. Our coastal sea lanes, in which I include the Caribbean and Panama routes, total 7,000 miles in length. To this must be added the ocean convoy system to Great Britain and Iceland (which is already in effect) and extensions which should be made to protect traffic to the east coast of South America, not to mention our Pacific

* Morison, *The Battle of the Atlantic*.

Ocean commitments. An enormous number of seagoing vessels is required, as well as very large air forces. Aviation for ocean coverage must be taken along in auxiliary carriers. For convoys moving close to land the air should operate from shore bases. While observation planes can be used for certain limited missions, the bulk of the shore-based aviation should be of the patrol or medium bomber type. All planes must have radar. All must have crews specially trained in the technique of antisubmarine operations.*

In March 1942 Army aircraft, under what was later called the Army Air Forces Antisubmarine Command, began to assist in the campaign against the U-boats. Operating under the Eastern Sea Frontier, the Army command continued its activities until September 1943, when Navy planes took over.

During the second half of 1942 and the first half of 1943, the crucial phase of the Battle of the Atlantic, marked changes in Allied tactics were adopted. By September 1942 the United States Navy had instituted an interlocking convoy system that provided escort protection for important trunk routes. This economized on escorts and enabled the merchant ships to run on schedules almost like train schedules. The first trunk route was established between Guantamano and New York, the western terminus of the newly established New York-to-Londonderry transatlantic route. It proved its worth immediately, as evidenced by a record of no losses from U-boats in the Eastern, Gulf, or Panama Sea Frontiers during the last three months of 1942. The system was extended to Trinidad and on to Brazil in early 1943, and feeder lines to the main trunk routes were established. This system remained in effect for the rest of the war.

In the meantime, as a result of these new defensive measures, the U-boats moved out from the eastern seaboard to areas less strongly defended. They took a heavy toll of the shipping in the Trinidad area, then in the south Atlantic between Brazil and Africa, and finally back in the northwestern Atlantic. In this later area the U-boats could still operate against the vital transatlantic convoys in a region beyond the range of Allied air cover. But by spring of 1943 what proved to be the Allies' winning combination began to come out of the shipyards and make itself felt in the Atlantic. This combination consisted of small escort aircraft carriers and destroyer escorts that were used with the convoys operating out of range of land-based aircraft. Forming hunter-killer groups, the carriers' planes or long-range patrol bombers would hunt and seek out the U-boats and vector the destroyer escorts into position to administer the *coup de grace*. Their effectiveness was proved by

* Morison, *The Battle of the Atlantic*.

an increase in submarine killings from eighty-five in 1942 to 237 in 1943. A great contribution to these Allied successes was made by a group of leading civilian scientists, who not only developed many of the new antisubmarine technical devices but also analyzed the U-boat methods of operation and recommended counter-tactics.

In January 1943 Admiral Doenitz replaced Admiral Raeder as the head of the German Navy, but U-boat losses continued to increase. Doenitz warned Hitler, "The war on shipping will fail if we don't sink more ships than the enemy can build." Coupled with the losses at sea, the expansion program for the U-boat fleet slowed down as Allied bombing of construction yards and the U-boat pens restricted new construction. Although the Germans could still replace most of their submarine losses, they could not replace their experienced crews; and the effectiveness of the individual submarine decreased. But even so, the U-boats continued as a major threat to the Allies, for the Germans still had over 400 submarines in commission in mid-1943. As stated by Admiral King, the submarines had only been reduced "from a menace to a problem."

Although the major German naval effort was devoted to submarine warfare, Nazi shore-based aircraft were also a threat to shipping; and a small number of powerful surface ships had to be taken into account. In February 1942 the German battleships *Scharnhorst* and *Gneisenau* and the cruiser *Prinz Eugen* made a successful dash from Brest (through the English Channel) to German waters despite gallant attacks by British destroyers and aircraft. The new battleship *Tirpitz*,* based in Norway with cruisers, destroyers, submarines, and aircraft, constituted a continuing menace to Allied north Russian convoys, which had to run a gauntlet on every voyage. The protection of these convoys was the main task of the British Home Fleet, which was from time to time augmented by United States heavy ships. Particularly vicious attacks were made upon these convoys to Russia in July and September 1942, and during the last quarter of 1942 the convoys were suspended because of the requirements of shipping and escorts for the North African operations.

Of the three principal cargo routes from the United States to Russia in 1942 and 1943, the transpacific line from our west coast to Siberia (using Russian ships) handled roughly 50 per cent of the traffic, the Murmansk route about 25 per cent, and the Persian Gulf route about 25 per cent. The Murmansk route was the shortest but by far the most dangerous, not only because the arctic ice

* The *Tirpitz* was finally sunk by R.A.F. bombers on 12 November 1944.

fields forced the convoys within range of German land-based planes but also because Murmansk was within a short distance of German airfields in northern Norway and the ships were often under attack while in port. Out of the thirty-seven convoys (533 ships) that made the north Russian run in 1941 and 1942 sixty-nine ships were lost, about half of them being American vessels. As soon as the Mediterranean was made safe for Allied shipping, the Persian Gulf route was much preferred to the northern route.

The Allied Offensive.—There were three general types of convoys employed in the Atlantic. The fastest (speed in excess of seventeen knots) luxury liners operated individually without escort, since they could outrun the U-boats.* Troop convoys employed fast (twelve- to seventeen-knot) transports and were strongly escorted, often with heavy task forces from the Atlantic Fleet. The success of these convoys is attested by the fact that not a single loaded troop transport was lost on the United States–United Kingdom route. The third type of convoy, the slow merchant ships, was also escorted; but often the escort was woefully inadequate. These were the ships that took the beatings from the submarines until the production of escort carriers and escort destroyers was sufficient to provide adequate protection.

As has already been indicated, by mid-1943 the scales were turning against the U-boats. By the application of mounting pressure from surface craft and from the air, and by closer and more effective coordination, the Allies were gradually able to shift from a purely defensive to an offensive campaign. By late 1943 the Germans were forced to admit that the rate of submarine losses was too great for effective operations in most areas. They then began the development of an undersea craft that would have a relatively high submerged speed, that could reach great depths, and that would be able to operate beneath the surface most of the time. A few such submarines did appear in 1945, but they were too late and too few to cause much concern. More important were the alterations made to existing U-boats to increase their effectiveness. The major alteration was the "Schnorkel", or breather tube, which enabled the boats to stay under water indefinitely. The first Schnorkel-equipped submarines appeared in 1944.

Until all U-boats could be altered, the Germans hoped to minimize their losses by operating in weakly protected areas. So from late 1943 until May 1944 the U-boats were employed in the Caribbean,

* The *Queen Elizabeth* and *Queen Mary* were examples of this type. These two ships alone carried almost one quarter of all troops shipped to Europe.

off Brazil, in the South Atlantic, and off South Africa. But there the United States Fourth Fleet and the British West African Command, with material assistance from the small Brazilian Navy, brought the enemy submarines under control. Of prime importance to the Allies in these operations were air and naval bases in Brazil and an air base constructed by American troops on tiny Ascension Island (a British possession).*

In spite of the German desire to minimize losses, the Allies destroyed nearly 200 submarines at sea during the period from July 1943 to May 1944.

The loss of France by the Germans forced the submarines to fall back on bases in Norway and in the Baltic. The long passage from these bases to the Atlantic shipping lanes absorbed a large portion of the cruising radius; and in the end the U-boat operations resembled those of the early months of the war, when they hunted in the waters around the British Isles. At first the Schnorkel-equipped U-boats achieved considerable success, but eventually the weight of the Allied antisubmarine forces was too great; and the enemy submarines were forced from the British coastal areas.

During the war our Atlantic Fleet escorted 17,707 ships, sailed 3,732 escort trips to protect the convoys, and cruised more than 50,000 miles. Less than a score of ships in convoy were lost.

The contribution that our Navy made during the final year of the war is summarized in a report by Admiral King:

In the twelve months from 1 June 1944, 135 convoys arrived in United Kingdom ports from overseas with a total of 7,157 merchant ships totalling more than 50,000,000 gross tonnage. The escort of this shipping and the provision of trained naval armed guard crews aboard the merchant vessels were among the primary tasks performed by the United States Navy in the prosecution of the war in Europe. The Navy's antisubmarine campaign, with the British-United States integrated convoy system, was in great part responsible for the vital shipping necessary for the Allied land offensive which broke into the Fortress of Europe in 1944 and overwhelmed the Germans ashore in 1945.

The see-saw Battle of the Atlantic, in which the Allies won a final victory over the U-boats, did not come to an end until the German capitulation on V-E Day. It was won not only by the Allied armed forces, but also by American shipbuilding capacity and the skill of the topmost Allied scientists. A total of 782** U-boats had been sunk

* In October 1943 Portugal granted the British base rights in the Azores, rights that were shared by the United States.

** About 53 per cent of this total was sunk by air action.

with a loss of approximately 30,000 Germans.* But these men had sunk more than 23,000,000 tons of Allied shipping and two battleships, two aircraft carriers, and numerous destroyers and escort vessels. Admiral Doenitz stated that the Battle of the Atlantic was lost before it began. Germany, he said, was in no way prepared to fight a naval war against Great Britain (an obvious fact when we remember that Germany had only fifty-seven submarines on 3 September 1939). Had Germany adapted a realistic policy, she would have had 1,000 U-boats available at the beginning of the war, Doenitz concluded. Considering the depredations which their submarines committed on the Allies and how near to victory they were in the Atlantic, we can well imagine what the situation might have been had the Germans started with 1,000 undersea craft of the kind used during the greater part of the war, or with even a lesser number of the type that was developed near the end.

THE DEVELOPMENT OF STRATEGIC AIR POWER (1941-1943)

Early in the war, while the Axis powers were expanding and consolidating their control of the Continent and the Allies were desperately struggling for time to mobilize their strength and secure their lines of communication, a new concept began to emerge in Allied strategic calculations. This concept was strategic air bombardment. It was a new concept in that it had never been employed on a grand scale—in fact it was not given an adequate tryout by the Allies until the final eighteen months of World War II.

The theory and practice of strategic bombing began in World War I but did not advance beyond the rudimentary stage. Between the wars, when some strategists were giving great emphasis to the defense, airmen believed that the airplane could not only give greater mobility to the offense but could also break the deadlock of positional war by its capacity to maintain an internal blockade on the enemy's home front. Both American and British airmen shared these ideas, and the Royal Air Force staff college and the United States Air Corps tactical school focused attention on the necessity for a new means of offense to reach the vital centers of an enemy's war production. From these studies there was gradually evolved a new doctrine, based on the capacities of the airplane. By its ability to utilize increased fire power to enlarge rather than reduce the mobility of armed forces, air power would abolish the stalemate of positional war. By its independent strategic mission to force collapse of the national structure, it could shorten the term of hostilities.

* The total German U-boat forces numbered only about 38,000 men.

As developed by the British in 1940, this new concept of war was grounded in realistic appraisal of their current capabilities; and the prominence given to strategic bombardment in the ABC-1 Staff Agreement (which called for a sustained and decisive air attack) reflected the current weakness of British ground forces. In March 1941 it was realized that Germany would long remain too strong to be attacked frontally; the bomber offensive was viewed by most members of the Anglo-American staff committees as a means by which the German war machine could be trimmed down to size. Strategic bombardment, then, was a form of attrition to be used simultaneously with others — the blockade, economic pressure through neutrals, subversive activities, psychological warfare, and Commando raids. At the Atlantic Conference in August 1941 the British Chiefs of Staff went so far as to express hope that air war alone might bring about a German collapse and limit the role of ground forces to that of occupation troops. However, the major decisions of the Combined Chiefs of Staff never reflected such an optimistic opinion, although, as time went on, increasing support was given to the strategic bomber offensive. Before considering this major offensive in greater detail, let us examine the development of British and American strategic air power in the United Kingdom.

The Royal Air Force.—It will be recalled that the Battle of Britain was won largely by the skill and fortitude of the R.A.F. Fighter Command, which was concerned primarily with the air defense of the British Isles. We have also seen that the Coastal Command was committed to the support of the Royal Navy in the antisubmarine war and in the defense of British sea commerce, a function that it performed throughout the war. The third branch of the R.A.F., the Bomber Command, was therefore the only major British air component available for offensive operations over the Continent. Like the Battle of the Atlantic, the strategic air offensive was a see-saw struggle in the development of new offensive and defensive measures. This time, however, the Allies were developing the new bombing techniques and tactics while the enemy was countering these offensive improvements by strengthening his defenses.

Although public opinion demanded that air attacks be launched against Germany in 1940, results were disappointing because adequate types and numbers of aircraft were not available, crews were not properly trained, navigation and bombing devices and techniques were crude, tactics were improvised, and, above all, the success of air operations was completely dependent on the weather. During 1940 only 15,000 tons of bombs were dropped (less than a single month's

tonnage in 1943) ; and the bombs, ranging from forty to 250 pounds, had little appreciable effect on German targets. The first attempt at a concentrated attack occurred in December 1940 when all of the Bomber Command's available aircraft (100) attacked Mannheim. Its daylight raids in 1940 resulted in prohibitive losses; so the Bomber Command turned to night bombing, which it continued for the duration of the war. Night operations introduced many problems in navigation and target identification, and as a consequence the policy of attacking areas rather than precision targets was adopted. The British decision to follow a program of night area bombing was reached primarily because night bombing was believed to be more economical than day bombing. Night bombers were cheaper to construct, carried a greater bomb load, required a smaller crew, and suffered lower operational losses.

During 1941 the result of the air offensive was still ineffective on German industry, although the tonnage of bombs dropped was more than tripled.* For example, photographs taken during the summer showed that of those aircraft reported to have attacked their targets in the Ruhr industrial area, only one in ten got within five miles of the target.

In February 1942 Air Marshall Arthur T. Harris became the head of the Bomber Command (a position he retained throughout the remainder of the war). At that time this command had an average force of 250 medium and fifty heavy bombers. The priorities in equipment and personnel enjoyed by the Coastal Command, the Fighter Command, other theaters (particularly the Mediterranean), and training units all militated against the expansion of the Bomber Command into an effective strategic air force at that time. In addition, Harris was required to divert much of his strength from his strategic mission to assist the Royal Navy by mining German coastal waters and attacking submarine pens.

However, 1942 saw the development of radio and radar navigation aids, improved target location and identification techniques, larger and better bombs, and improved four-engine bombers (particularly the Lancaster**) that made the night operations of the Bomber Command much more effective.

During the summer it was decided to attempt a great mass air attack against a major industrial target in Germany. By utilizing

* Of the 46,000 tons of bombs dropped by the Royal Air Force in 1941 approximately 32 per cent was dropped on industrial areas, 24 per cent on land transportation, and 22 per cent on naval installations and transportation.

** This British heavy night bomber, which sacrificed defensive armament to bomb load, was the greatest load carrier of the war in Europe.

every available aircraft, including trainers, it was possible to concentrate 1,047 planes for a raid on Cologne on the night of 30-31 May 1942. The attack was a complete success. In an hour and a half over 1,400 tons of bombs were dropped, and this single attack caused almost as much damage in Germany as all the Bomber Command's previous attacks taken together. Losses were lighter than expected (3.3 per cent as compared to an average of 4.6 per cent for all operations in similar weather during the preceding twelve months), and the operation boosted Allied morale tremendously. After three years of defensive war a weapon had finally been developed that could carry the offensive into Germany. Air Marshall Harris remarked: "My own opinion is that we should never have had a real bomber offensive if it had not been for the 1,000-bomber attack on Cologne, an irrefutable demonstration of the power of what was to all intents and purposes a new and untried weapon." Similar raids were made two nights later on Essen and a month later on Bremen. These three raids were the only major mass attacks launched during 1942 because improved enemy defensive tactics and techniques again began to exact a prohibitive toll of British aircraft.

In spite of the fact that by the end of 1942 the total bombs dropped represented less than 5 per cent of the Allied tonnage dropped during the war, technical and tactical improvements in the use of heavy bombers had developed sufficiently to insure the future of strategic air power as a major weapon against Germany.*

The United States Air Forces in Europe.—Shortly after World War I United States air leaders began to formulate ideas for the use of air power. These ideas gradually assumed the status of air doctrine—the basis of the United States version of the strategic concept. The strategic plans of the United States Air Corps envisaged precision bombing from high altitudes in daylight. The prohibitive losses incurred by the German and British daylight missions were to be avoided by placing more and heavier guns on the bombers and by the use of tactical formations that would provide an intense concentration of protective fire power. As early as 1935, with the successful test of the B-17, the Air Corps had the matériel prerequisites for precision bombardment—a long-range plane of unusual stamina that was capable of flying above the effective range of flak, and bomb-sights of unrivaled accuracy. (The relatively small bomb load of the plane enhanced the need for accuracy.) During the next few years

* In 1942 the Royal Air Force dropped 74,500 tons of bombs. Of this total 59 per cent was on industrial areas, 13 per cent on military targets, and 9 per cent on land transportation.

tactical procedures were refined, with special emphasis on pattern bombing from tight formations.

At the time of Pearl Harbor our Air Corps faced war in Europe and the Pacific without the means of putting its concept into operation. Like the rest of the Army, its strength was meager. However, it did have the advantages of time to prepare while our Allies maintained the battle, of an enormous national industrial establishment for forging the weapon, and of a vast reservoir of youth capable of being trained in air techniques. During the first two years of the war the Army Air Forces, under the leadership of General Arnold, built a strong striking force. Their strength, which was about 43,000 men and 2,500 planes in 1940, was expanded to 2,300,000 men and 80,000 aircraft in early 1944. The increase in strength was accompanied by the production of new equipment—the B-17 and B-24 heavy bombers and the P-38, P-47, and P-51 escort fighters.

In March 1942 the Eighth Air Force was earmarked as the nucleus of the American strategic air force in Great Britain. Prior to this time Brigadier General Ira C. Eaker, commander of the Eighth Air Force Bomber Command, and a small staff had gone to England to prepare the way for the Americans. The British agreed to turn over airfields north of London, and in this area and adjacent parts of East Anglia the American heavy bombers remained throughout the war. Negotiations were begun to establish three great air depots that were eventually to serve as the heart of our air force supply and maintenance in the European Theater of Operations.* Airfields in North Ireland were set aside for training units. The British agreed to assume responsibility for the air defense of American fields, leaving our fighter forces free for the escort of bomber strikes against the Continent. It was also agreed that American fighter squadrons would be stationed with R.A.F. fighters in southern England. The British were extremely cooperative during those early and difficult days. They lent us personnel when we had none; furnished clerical and administrative staffs; furnished liaison officers for intelligence, operations, and supply; furnished transportation; housed and fed our people; answered promptly and willingly all our requisitions; and in addition they made available for our study their most secret devices and documents.

During May and June 1942 the first large water shipments of air-force personnel began to arrive in the United Kingdom, and on 1 July

* These depots were located at Burtonwood, fifteen miles east of Liverpool; Langford Lodge, in North Ireland; and Warton, twenty miles north of Liverpool.

the first American operated tactical aircraft to reach the British Isles by air landed at Prestwick. Although the British had been ferrying bombers across the Atlantic since 1940, and the Air Corps Ferrying Command (later the Air Transport Command) had begun the development of a North Atlantic Ferry Route,* no large tactical units had yet attempted such a flight. However, by the end of August 386 bombers and fighters had crossed to the United Kingdom by this route; and by the end of 1942 approximately 700 of the Eighth Air Force's aircraft had made the crossing. On 5 May 1942 Lieutenant General Carl Spaatz was appointed commander of the Eighth Air Force, and on 18 June he established his headquarters in London. In August 1942 General Spaatz was assigned additional responsibilities as theater air officer.

The first American air unit to engage in combat in Europe was a light bombardment squadron. Flying British planes, six American crews joined six R.A.F. crews in a daylight attack against four air-dromes in Holland on 4 July 1942. However, the operational life of the Eighth Air Force began on 17 August 1942 when twelve B-17's attacked the marshalling yards at Rouen, France. The B-17's, with General Eaker in one of the bombers, were accompanied by four squadrons of R.A.F. Spitfire fighters. Visibility was excellent; and all twelve planes attacked the target, dropping some eighteen tons of bombs from a height of 23,000 feet. The bombing was fairly accurate for a first effort. Approximately half of the bombs fell in the general target area, and one of the aiming points was hit. The bombers came through with no losses and only slight damage.

The significance of this small raid was far-reaching. Both strategic and logistical planning, insofar as they involved air power, depended to a great degree on the ability of the Allied air forces to prove that they could bomb Germany successfully. Moreover, precision daylight bombing was a basic prerequisite to the invasion of western Europe itself. General Eisenhower says in his memoirs:

A great factor in my own calculations was the degree of dependence I placed upon the operation of the precision bomber in preparing the way for a ground invasion of France. This was the keynote of the invasion plan. Unless accurate daylight bombing was feasible, I believed, large-scale invasion of the Continent would be exceedingly risky. Therefore, I maintained that even if we could carry on precision bombing only to the extreme range of our

* Presque Isle, Maine—Goose Bay, Labrador—Bluie West 1 (Narsarssuak, Greenland) or Bluie West 8 (Sandre Stromfjord, Greenland)—Reykjavik, Iceland—Prestwick, Scotland. Later the more direct route between Gander, Newfoundland, and Prestwick was used.

fighters, we must continue to develop the United States forces on that basis, so as to have available the great force that would be needed to carry out the preparatory work in the areas selected for invasion.*

Sound long-range planning by the Army Air Forces depended on the ability of the Eighth Air Force to show that it could do its job of daylight precision bombing and do it economically enough to make it a practicable operation of war. So far, the confidence of American and British airmen in the soundness of their strategic and tactical doctrines arose out of deep faith in the potentialities of air power rather than from an adequate store of experience. The German effort to cripple Britain in 1940-41 had demonstrated what ought not to be done rather than what might reasonably be expected from strategic bombardment. On the other hand, the bombing of Germany by the R.A.F. had as yet been conducted on a scale too limited and in a manner too specialized to answer conclusively the opponents of air power. As for the Americans, their doctrine of daylight bombardment remained entirely an article of faith so far as any experience in combat under European conditions was concerned.

The experiment begun on 17 August culminated during the following year in the Combined Bomber Offensive, a campaign which could have been attempted only after all major doubts regarding the use of heavy bombardment forces had been removed. From its humble beginning the Eighth Air Force became the most potent agent of destruction that our Air Forces produced in World War II, having a striking force of about 2,000 bombers and 1,000 fighters at the peak of its activity.

Even before the first heavy bomber mission of the Eighth could be flown, Operation Torch had cast its shadow over the hopes of the Army Air Forces for a major share in the strategic bombardment of Germany. With the decision to postpone Roundup and undertake operations in Africa instead, most of our available air strength in the United Kingdom had to be diverted to the new enterprise; and it became the chief task of the Eighth Air Force during the fall of 1942 to prepare the new Twelfth Air Force for the invasion of Africa. "Junior" was the name pinned on the new air force, but "Junior" outgrew its parent in less than three months. During the first eight months of Eighth Air Force operations only fifty missions were flown over the Continent, and only five of these were against targets in German territory.** The major effort was against U-boat bases in

* Eisenhower, *Crusade in Europe*.

** The United States Army Air Forces dropped a total of only 2,000 tons of bombs during the entire year of 1942.

the Bay of Biscay, which were attacked in order to protect convoys to North Africa.

Although this first period of air operations in Europe was one of experimentation, of trial and error, of testing theories, tactics, matériel, and men; and although these operations did little more than inconvenience the enemy, we learned many things that only experience could reveal:

1. Daylight precision bombing was tactically sound.
2. Air superiority was necessary if bombers were to penetrate to vital targets. This could be made possible only by the development of a long-range fighter.
3. Larger forces were needed in order to split the enemy's fighter defense.
4. With certain logical improvements in tactics, technique, and aircraft, the bombers and their crews could do the job.
5. Weather was a most serious factor; some means would have to be found which would permit all-weather operations.
6. There was a crying need for an all-out strategic plan, approved by the Combined Chiefs of Staff, which would permit concentration of effort where it would hurt the enemy most and which would provide the best possible integration of effort between the R.A.F. and the United States Army Air Forces.

The Combined Bomber Offensive.—On 21 January 1943 the Combined Chiefs of Staff issued the Casablanca Directive, which defined the mission of strategic air power as "the progressive destruction and dislocation of German military, industrial, and economic systems and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened."

To implement this directive there was drawn up the Combined Bomber Offensive Plan. This plan, approved by the Combined Chiefs on 10 June 1943, was issued to the commanders of the Bomber Command and the Eighth Air Force.* The order of target priorities first established was (1) submarine construction yards and bases; (2) aircraft industry; (3) ball-bearing industry; (4) oil industry; (5) synthetic rubber plants; (6) military transport vehicle industry. However, this order was changed as the Combined Bomber Offensive progressed. The R.A.F. was given the assignment of weakening the general economic system and civilian morale by area bombing of

* Major General Eaker assumed command of the Eighth Air Force on 1 December 1942, when General Spaatz went to North Africa with General Eisenhower.

cities. It would work the night shift of the relentless round-the-clock air assault on the Reich. The Americans were to concentrate first on the destruction of German air power by bombardment of the aircraft industry and by attacking the Luftwaffe on the ground and in the air. As soon as the air battle was won, the attack would turn to vital industries whose destruction would have an immediate effect on Germany's ability to wage war. There was to be a progressive build-up of forces and in turn an increase in both intensity of attacks and depth of penetration (Map 2). The map shows the increasing range of operation in the development of the American strategic bombing of Germany and some of the primary and secondary targets selected for the Combined Bomber Offensive. Though not mentioned in the plan, every effort was being made to take care of the remaining needs: modification and improvement of aircraft, design of all-weather bombing instruments, and production of a suitable long-range fighter.

In 1943 the Bomber Command increased the effectiveness of its heavy night raids by inaugurating the pathfinder technique, by which radar was used to enable a specially trained advance party to locate the target and mark it with distinctive ground or sky markers. This system permitted effective bombing on dark nights when German night-fighter opposition was least effective. During this period bigger and better bombs (8,000- and 12,000-pounders) were also introduced.

The Bomber Command began its main offensive during the spring with heavy attacks on the Ruhr that proved much more effective than the 1942 raids. In July the Lancasters launched long-range operations, using new radar navigational aids. In a series of three attacks on Hamburg over 70 per cent of the heavily built-up area of the city was destroyed. The use of "Window" (scattered strips of metallized paper) proved very effective in jamming the German radar so that enemy fighter control, antiaircraft artillery, and searchlights were hopelessly confused. The enemy reacted to these innovations by improvising a fighter defense system based on radio reports from an observer corps that enabled them to plot the approach of the main bomber streams. The R.A.F. countered by jamming the enemy's radio and dispatching their bomber streams on two or more routes. By fall heavy attacks were being directed on several large German cities, particularly those that were centers of aircraft production. As the year ended, the Bomber Command was engaged in the Battle of Berlin, a series of sixteen major attacks on the German capital that began in November 1943 and ended in March 1944.

Although Berlin itself was scarcely ever seen by the bomber crews, the new techniques and devices developed by the British made such long-range night attacks possible. During 1943 the Bomber Command used an average of 570 heavy bombers in each attack, a figure that was to be almost doubled in 1944.

A summary of the total Allied bombing effort in Europe for the year 1943 (including aircraft operating from the Mediterranean Theater as well as from the United Kingdom) is given in the following table, extracted from a report of the Strategic Bombing Survey:

	American	British	Total British and American
	1943	1943	1939-1945
Bomb tonnage distribution by target system:			
Land transportation	33,609	21,216	875,819
Industrial areas	12,036	150,069	698,415
Military	9,938	8,179	308,513
Oil, chemical, and rubber	3,956	2,448	264,232
Airfields and airdromes	26,855	9,207	189,415
Naval installations and transportation	18,819	10,833	111,821
Miscellaneous manufacturing	4,431	7,892	69,950
Aircraft factories	5,639	498	57,041
V-weapon launching sites	1,525	2,256	50,116
All other	16,281	479	145,218
Total	133,089	213,077	2,770,540
Total, American, 1939-45			1,463,423
Total, British, 1939-45			1,307,117
Bomb tonnage distribution by country:			
Germany	26,728	150,535	1,419,604
France	21,710	20,792	569,493
Italy and Sicily	59,642	27,354	378,891
Austria, Hungary, and Balkans	5,920	357	184,201
Other countries	19,089	14,039	218,351
Total	133,089	213,077	2,770,540

The rising scale of R.A.F. night bombing of industrial concentrations, augmented by American daylight attacks, led to German countermeasures. In 1942 they began to move their aircraft factories to the deep interior, and they planned a large increase in their monthly output of single-engine fighters. During 1943 the enemy became much more aggressive as he shifted his fighters from the eastern front and the Mediterranean to western Europe. The German day fighters continually harassed the American heavy bombers, sometimes following them far out to sea on their withdrawal. It became apparent that fighter escort must protect the bomber formations, but the limited range of the fighters restricted the depth to

which the bombers could penetrate. It was about 550 miles to Berlin; and the radius of the P-47, which was then the chief escort fighter, was only 375 miles. P-38's, with a radius of action of 520 miles, were available in small numbers in October 1943; and in January 1944 a few P-51's began to appear.

When the P-47's first joined the Spitfires in providing escort, they flew a tight top cover—the RAF “umbrella”. Before long, however, the P-47 pilots began to drop down and engage the enemy fighters. They then opened out somewhat to add flexibility and to increase the number of guns that could be brought to bear on the enemy. The process continued throughout the war; as the B-17 and B-24 formations were compressed into smaller and smaller air space to take advantage of the heavy defensive armament of the bombers, the escort opened out more and more until it became a huge net to envelop the enemy.

The Eighth Air Force began its offensive for control of the air by an attack on the Focke-Wulf plant at Bremen in April 1943, but the main attacks against the aircraft industry did not get under way until summer. On six successive days of late July it attacked the German aircraft industry so successfully that production, which had reached twice the output of 1942, started downward. But operations against Regensburg and Schweinfurt in August and October 1943 demonstrated more conclusively than ever that the protection of fighters was mandatory for sustained daylight heavy-bomber operations. The Schweinfurt raid, which had considerable significance at that time because the Americans were still trying to prove the feasibility of daylight precision bombing, was described as follows in a report of the Strategic Bombing Survey:

On 14 October 1943 there occurred the most shattering raid on Schweinfurt, the raid which caused the severest damage and the greatest disorganization of production in the German bearing industry. It shocked the Reich officials into immediate action and led directly to the appointment of a czar for the bearings industry. It precipitated, also, the dispersal of the industry from Schweinfurt, forced the expansion or construction of old and new plants, and accelerated the problem of substitution and redesign in order to reduce the excessive, and often luxurious, use of bearings in many types of equipment.

This crucial raid was made by a force of 228 heavy bombers, and there ensued one of the greatest battles in Eighth Air Force history. From the German frontier at Aachen, where the fighter escort had to leave the bombers, to Schweinfurt and return wave after wave of enemy fighters attacked the bombers. Flak over the target was intense, but good visibility enabled the Fortresses to make an accurate bomb run; and more than 450 tons of high explo-

sives and incendiaries were dropped in the target area. Heavy damage was inflicted on the major plants, particularly in the ball-manufacturing departments. Some 350,000 square feet of buildings were destroyed and more than 1,000,000 square feet damaged. Ten per cent of the machinery was destroyed or damaged and 20 per cent of the finished stocks rendered useless.

The cost to the attackers, however, in men and planes was also severe. Of the original 228 bombers engaged, 62 were lost and 138 damaged in varying degrees, some beyond repair. Personnel casualties were 599 killed and 40 wounded. Such losses could not be sustained. Deep penetrations without escort were suspended, and Schweinfurt was not attacked again for four months. Thus there was lost that continuity of attack which is necessary to destroy—and keep destroyed—any industry. The Germans were given time to take countermeasures, which they did with great energy and skill.

Other targets on the Combined Bomber Offensive priority list were bombed with some success by the Americans; however, by the end of 1943 only reductions in German surplus industrial capacity had been effected. Weather, distance, and the German defenses had prevented dropping on priority targets more than one-fourth of the total bombs expended. By January 1944 strategic daylight precision bombing was still a question mark. Although our forces had been built up in accordance with the schedule outlined in the Combined Bomber Offensive Plan, results were still far from heartening. The Luftwaffe had recovered from the attacks of the previous summer and was a serious threat to all operations; weather had been uniformly bad, and the early efforts at instrument bombing had left much to be desired. Fortunately, however, the start of 1944 was to reveal omens of better days to come.

EARLY DEVELOPMENTS IN THE UNITED KINGDOM

Organization of the European Theater.—While the Allies were developing the strategy that culminated in the invasion of western Europe, the Americans began their build-up of troops and supplies and the development of the organization in the United Kingdom that would control the proposed Continental operations. Headquarters, United States Armed Forces in the British Isles, was organized in London on 8 January 1942.* It replaced the Special Observer Group that had been organized in May 1941 as a part of the United States Embassy staff. The European Theater of Operations (ETOUSA) was established 8 June 1942, and on 24 June Major General Dwight D. Eisenhower arrived in London as its new commander. Eisenhower

* Major General James E. Chaney was then in command.

retained this command, in addition to his assignment as Allied commander of the North African operations, until January 1943, when the reorganization of the High Command in the Mediterranean relieved him of his responsibilities in the European Theater. Lieutenant General Frank M. Andrews then assumed command of ETOUSA, and upon his untimely death in an airplane accident in Iceland in May 1943 he was succeeded by Lieutenant General Jacob L. Devers. By the end of August 1943, when the Combined Chiefs of Staff at the Quadrant Conference definitely committed the Allies to the invasion of France the following spring, the major American organizations in the United Kingdom were the theater headquarters and three subordinate commands: the Eighth Air Force, the field forces, and the Services of Supply.

Initially the field forces were controlled by the V Corps, whose chief mission was the training and preparation for combat of the ground forces. In October 1943 this responsibility was assumed by the 1st Army Group (later redesignated 12th Army Group) and the First Army. Lieutenant General Omar N. Bradley, whom we last saw as commander of the II Corps in Sicily, acted in the dual capacity of commander of the First Army and the 1st Army Group. Like the air forces, the build-up of ground forces in the United Kingdom prior to 1944 was retarded by operations in the Mediterranean. But beginning in August 1943 new impetus was given to the build-up, and by the end of the year there were eleven American divisions in the United Kingdom, four of which had recently arrived from Sicily.

The Services of Supply, Major General John C. H. Lee commanding, had been activated in the United Kingdom on 24 May 1942.

When General Eisenhower returned to the United Kingdom in January 1944 (about which we shall learn more later), he resumed command of ETOUSA, in addition to his duties as Supreme Commander. Desiring to reduce the number of headquarters and the personnel performing theater administrative functions, he combined the theater headquarters with that of the Services of Supply; and General Lee was made deputy theater commander, in addition to his other duties. Even while he commanded three army groups in France, General Eisenhower continued to "wear two hats", one as Supreme Commander, Allied Expeditionary Force, and the other as commander of ETOUSA, a purely American administrative organization.

The Logistical Build-up.—Meanwhile the logistical build-up of United States forces and supplies in the British Isles had been progressing under an American-British logistical program called

Bolero, which had been adopted in 1942 by the Combined Chiefs of Staff. This program was greatly affected by the operations in the Mediterranean, the world-wide shortage of shipping and supplies, the priority given the air offensive from England, and the indecision as to whether the major effort against Europe should come from the south or west. The following extract from an official report outlines the development of Bolero:

During the spring of 1942 a Bolero Combined Committee was set up in London, comprising representatives of the British ministries and armed forces and the American Army, Air Force, and Navy. Major matters of policy requiring decision or arbitration were referred to this committee. A second Bolero Committee was set up in Washington in connection with the Combined Chiefs of Staff to settle matters requiring consideration on a governmental level. The decisions of the London Bolero Committee, as well as complete aspects of the over-all plan for accommodating United States personnel and supplies in the British Isles, were issued in a series of four Bolero Key Plans. These Key Plans were published by the British War Office with the concurrence of appropriate United States authorities and constituted directives to the various British agencies concerned with United States requirements. Headquarters, Services of Supply, published basic planning directives, which were the nearest American equivalents to the Bolero Key Plans.

The basis of the various Key Plans and a few of their important provisions are outlined below to indicate the fluctuating factors forming the foundation for logistical build-up in the British Isles:

The First Bolero Key Plan, 31 May 1942, was based on an over-all United States build-up of 1,049,000 men and an invasion date of spring, 1943. Among its more significant provisions was the decision to clear British troops out of the southern part of England, except for those engaged in air defense and certain other types of specialized work, and to use the area for the accommodation of the majority of the United States forces. These forces in turn were responsible for protecting the area against invasion and raids.

The Second Bolero Key Plan, 25 July 1942, was based on an over-all United States build-up of 1,147,000, with the invasion date remaining unchanged. It gave further details in line with the basic decisions of the first plan. Included in it were provisions for receiving 120 shiploads per month of supplies for United States forces, one-fourth of which was estimated to be vehicles and two-thirds of which were estimated to require covered storage. To handle this load at the ports the United States was to supplement British dock labor with port and service battalions. It was anticipated that the British rail system would have to provide 300 passenger and baggage trains per month and sixty freight trains per day.

The Third Bolero Key Plan, 11 November 1942, was an interim plan based on the unexpected diversion of United States personnel and supplies to Africa and the indecision on governmental levels as to the future role of the British Isles as an invasion base. While

emphasizing that the second Bolero plan was only temporarily set aside, it directed planning for only 427,000 United States troops through May 1943, provided for no further supply build-up, and indicated an uncertain future.

The Fourth Bolero Key Plan, 12 July 1943, changed the invasion date from the spring of 1943 to the spring of 1944 and called for a build-up of 1,340,000 men. It required handling a maximum of 150 shiploads of United States cargo per month. An amendment to the plan, published on 30 October 1943, changed the troop basis to 1,460,000.

General Marshall wrote as follows of the magnitude of these Bolero projects:

This build-up was to be one of the most tremendous logistical undertakings in military history. It required provision for the transportation, shelter, hospitalization, supply, training, and general welfare of 1,200,000 men, who had to be embarked in the United States and transported across the submarine-infested Atlantic to the United Kingdom. The hospital plan alone, for example, called for 94,000 beds in existing installations, conversions, and new construction. The program was later increased by tent accommodations for 30,000 more beds. Living quarters had to be furnished for the assault forces and their supply troops. There had to be provision for 20,000,000 square feet of covering, storage, and shop space, and 44,000,000 square feet of open storage and hard standings. Parks for 50,000 military vehicles were planned; 270 miles of railroad had to be constructed. More than 20,000 railroad cars and 1,000 locomotives were to be shipped to the United Kingdom. The Air Forces required 163 fields, seven centers for combat crews and replacements, accommodations for 450,000 men, and 8,500,000 square feet of storage and shop space.

Two-thirds of the vast program of air installation required new construction by British and United States engineers. At the same time the invasion operations required detailed planning for the installations we would have to build once ashore in France—hospitals, depots, shops, railroads, pipe lines, and bridging materials. There was stored in the United Kingdom, for example, all the construction materials necessary to rehabilitate completely the port of Cherbourg, the destruction of which was inevitable.

The transportation of the huge quantities of supplies from the United States was facilitated by the fact that cargoes were discharged through established ports and over established rail lines in the United Kingdom. In addition, large quantities of materials for the invasion were made directly available from British resources.* By July 1943 some 753,000 tons of supplies were pouring through English ports each month, and this amount reached 1,900,000 tons

* Of the total United States Army tonnage assembled in the British Isles by D-day, 39 per cent had been procured from the British.

in the month preceding the invasion. At the end of 1942 there were approximately 242,000 American troops in the United Kingdom, but by the end of February 1944 this total had grown to over 1,093,000.

The build-up in the United Kingdom was truly a combined enterprise, but this experience taught American logisticians that certain factors definitely limit the extent to which inter-Allied pooling of logistical support is feasible. For example, the following factors should be considered:

1. Pooling arrangements which result in the substantial lowering of the supply standards of one group will invariably result in serious repercussions when differences exist in quality and quantity of consumer-type goods such as rations.

2. Pooling which involves free exchange of supplies results in serious maintenance and spare-parts difficulties.

3. Pooling of personnel to the extent that troops of one nationality are integrated into organizations of the other tends to cause dissatisfaction among the minority and to lessen their ability to operate independently.

Nevertheless Bolero was the beginning of the great logistical undertaking that permitted the Western Allies in Europe to be better equipped and supplied than any other military force in the history of warfare.

British Amphibious Raids.—During the defensive period of the war, when the Allies were primarily concerned in preparing the United Kingdom as the base for future operations against the Continent and the Americans were just beginning their logistical build-up, the British conducted a few small Commando raids that provided valuable experience for future operations on a larger scale. The earlier raids had as their main target the fish-oil plants in Norway that were being used in the making of glycerine for explosives. The first raid was carried out by British Commandos, light naval forces, and Norwegian marines near Narvik on 7 March 1941. In 1942 Commando operations* were switched to the Atlantic shores of occupied France. The first was on the night of 27 February at Bruneval, near Le Havre, where the secrets of the radar station formed the main objective. Some parachute troops contributed to the success of this small operation. A more ambitious one was attempted at St. Nazaire on 28 March when a small naval and Com-

* These Commando operations were carried out under the British Director of Combined Operations, Captain the Lord Louis Mountbatten.

mando force did considerable damage to the harbor works, though at the high cost of 64 per cent of the attackers killed or missing.*

A much larger operation was attempted at Dieppe on 19 August 1942. Officially described as a "reconnaissance in force," it furnished useful lessons for the future in the problem of invading a well-defended coast. Although the cost was high, it showed the possibility of achieving a large-scale landing under modern conditions, while bringing out mistakes that were to be avoided. The main assault was carried out on the beaches of Dieppe by a force of about 7,000 men of the Canadian 2d Division. Tanks were employed for the first time in such an operation, though their efforts were seriously obstructed by a sea wall. Nearly half the assaulting force was lost, largely as prisoners; and losses in landing craft and aircraft were also heavy. The greatest success was scored in the air, where the R.A.F. Fighter Command maintained an umbrella of 1,000 fighters over the beach. The operation attracted most of the German aircraft along the Channel, and the Fighter Command inflicted heavy casualties upon the Luftwaffe.

Late in 1942 the Commandos were being used in the large-scale amphibious operations in the Mediterranean; and by the close of 1943 British and Canadian, as well as American, troops in the United Kingdom were training intensively for the great amphibious assault against "Fortress Europe."

This brief summary of preliminary developments brings us to the close of 1943. During this extended period of early preparations for the invasion of western Europe a number of long-term projects were initiated that played an important part in the success of the operations. The design and production of landing craft and artificial harbors, the evolution of the technique for assaulting defended beaches, and the collection and collation of an immense volume of geographical and geological data concerning the invasion coast and its hinterland were some of the tasks undertaken months and even years before D-day.

PLANS AND PREPARATIONS FOR THE INVASION

Late in 1943 President Roosevelt and Prime Minister Churchill agreed upon the appointment of General Eisenhower as Supreme

* In this action *H.M.S. Campbelltown*, an old American destroyer, boldly steamed into the locks at St. Nazaire, where it was scuttled by its British crew and blown up by delayed-action charges that destroyed the dry dock. This raid temporarily neutralized one of the best German naval bases on the Atlantic.

Commander, Allied Expeditionary Force.* A statement of his mission was included in a formal directive that was issued by the Combined Chiefs of Staff on 12 February:**

You will enter the continent of Europe and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces. The date for entering the Continent is the month of May 1944. After adequate Channel ports have been secured, exploitation will be directed towards securing an area that will facilitate both ground and air operations against the enemy.

With the announcement of this fateful decision, the die was cast. The years of uncertain preparation were over, and the authority to get on with the supreme task was at hand. The basic strategic tenet of the Western Allies—to defeat Germany first and to accomplish this task by an invasion of France and subsequent large-scale military operations on the historic battlefields of western Europe—was at last to be put to the test.

The months preceding D-day were busy ones. The command organizations to control the huge military machine were developed; plans were reviewed, revised, and expanded to include every detail of the complicated operations; the air forces launched their offensive to secure air supremacy and prepare the way for the invasion; intensive special training was given the assault forces; and the build-up of troops and stocks of supplies and equipment in the United Kingdom was completed.

THE ALLIED HIGH COMMAND

It will be recalled that a staff known as COSSAC had been formed in early 1943 to develop plans for operations in western Europe. This staff was later expanded; and, after the acceptance of its Overlord outline plan at Quebec in September, it began to assume executive authority in developing that plan.*** On 13 February 1944 the COSSAC headquarters was redesignated Supreme Headquarters, Allied Expeditionary Force (SHAEF).

The internal organization of SHAEF was patterned on the closely integrated Allied establishment that General Eisenhower had maintained at Allied Force Headquarters in the Mediterranean. The guiding principle in building up the various staff sections was that

* General Eisenhower was notified of his appointment on 10 December 1943. He returned briefly to Washington from North Africa and arrived in London on 15 January 1944.

** The full text of this directive is given in Appendix 1.

*** COSSAC was headed by Lieutenant General Sir Frederick E. Morgan.

there should be equal American and British representation. In general, the combined staff was fashioned along the lines of a high-echelon United States Army headquarters. The more important duties in SHAEF were originally distributed as follows: a British Deputy Supreme Commander (Air Chief Marshal Arthur W. Tedder); an American Chief of Staff (Lieutenant General Walter B. Smith); two British Deputy Chiefs of Staff, one for operations (Lieutenant General Frederick E. Morgan) and one for administration (Lieutenant General Humfrey M. Gale); American heads and British deputies for the G-1, G-3, and G-4 sections; and British heads and American deputies for the G-2 and G-5 sections. Tedder, Smith, and Gale constituted a highly qualified and experienced team that had functioned together under General Eisenhower in previous campaigns and whose presence insured that SHAEF would be a closely integrated Allied headquarters. The continuity of the work performed by COSSAC was maintained by retaining General Morgan as a Deputy Chief of Staff, together with other officers from COSSAC headquarters.

The Supreme Commander controlled and coordinated the planning and execution of Overlord as a whole while delegating to the ground, naval, and air commanders the responsibility for planning the operation in detail. Planning on a strategic level, issuance of operational directives or mission-type orders, coordination between units on the same level when such coordination between the units themselves was impracticable (as in adjustment of army group boundaries), allocation of equipment used by both Americans and British, and the transfer of armies or smaller units between army groups were the province of SHAEF. Subordinate unit commanders were given the widest possible latitude in carrying out assigned missions. The Supreme Commander did not have control of the administration and discipline of any but United States forces, since such matters could best be left to the commander of the troops of each nation.

The integration achieved in SHAEF was greater than any obtained in previous Allied undertakings and reflected the integration of the Combined Chiefs of Staff, from which SHAEF's authority stemmed. Such integration at the highest level and down through SHAEF materially aided in the elimination of misunderstandings, in the cohesion of effort, and in the reduction of internal friction within the headquarters. Had integration not been achieved, it would have been necessary to organize the staff along parallel lines and with "opposite numbers," with a resulting loss in efficiency and an increased probability of errors and misunderstandings. After

the structure of SHAEF had become firmly established and the integration of the staff completed, the nationality of the Supreme Commander or any of his principal subordinates had little effect on the operation of the staff. Because of the difficulties inherent in language, thought, customs, matériel, and operating methods, it would have been difficult for us to carry integration as far with any other nation.

The Allied forces under General Eisenhower's command included ground, naval, and air forces of the United States, Great Britain, France, Belgium, Holland, Poland, Czechoslovakia, and Norway. Control of this diverse command was exercised not only through SHAEF (predominantly a ground staff) but also through an Allied naval commander and an Allied air commander. General Eisenhower decided against a permanent Allied ground commander because he believed that he would be so intimately in touch with the army groups that an additional headquarters in the chain of command would be unnecessary. He makes this comment in his book on the war:

In a theater so vast as ours each army group commander would be the ground commander in chief for his particular area; instead of one there would be three so-called commanders in chief for the ground and each would be supported by his own tactical air force. Back of all would be the power of the supreme commander to concentrate the entire air forces, including the bomber commands, on any front as needed, while the strength of each army group would be varied from time to time, depending on the importance of enemy positions to the progress of the whole force.*

However, the initial assault was foreseen as a single battle requiring the supervision of a single battle-line commander; and the United States First and British Second Armies, which comprised the assault forces, were placed under the 21st Army Group for the invasion. General Bernard L. Montgomery was appointed commander of the 21st Army Group and was designated as commander of all the assault forces.** An American staff, composed of personnel from the 1st Army Group, was attached to the 21st Army Group during the planning and assault periods. Logistical support for the Americans during the assault was to be the responsibility of the First Army; but as soon as possible the Communications Zone, operating directly under SHAEF, would assume that responsibility.

* Eisenhower, *Crusade in Europe*.

** The 21st Army Group had been activated in England in the spring of 1943. On 1 January 1944 General Montgomery handed over command of the Eighth Army in Italy and returned to England to assume his new command.

In November 1943 the Allied Naval Expeditionary Force (ANXF) was formed with the appointment of Admiral Sir Bertram H. Ramsay as Commander in Chief and the establishment of a combined naval headquarters. Admiral Ramsay was the naval advisor to General Eisenhower as well as the naval planning authority.

Also in November 1943, the Allied Expeditionary Air Force (AEAF) was formed with the appointment of Air Chief Marshal Sir Tafford Leigh-Mallory as Commander in Chief and the establishment of a combined tactical air headquarters. This headquarters was to exercise operational control over the tactical air forces that were subordinate to SHAEF and would provide the close air support for the ground forces. The major components of this command were the United States Ninth Air Force* and the British Second Tactical Air Force. ~~The Ninth Air Force~~ was administered by the United States Strategic Air Forces in Europe and the British Second Tactical Air Force by the R.A.F. (In October 1944 Headquarters, Allied Expeditionary Air Force, was dissolved and an air staff was formed as an integral part of SHAEF.)

The system of integration of personnel followed in SHAEF was also applied in the headquarters of the Allied Expeditionary Air Force and the Allied Naval Expeditionary Force. Since the SHAEF staff was primarily concerned with ground operations, the coordination of ground, air, and naval operations was accomplished by a joint planning staff that reported to General Smith. It included representatives from the staff sections of SHAEF, the Allied Expeditionary Air Force, and the Allied Naval Expeditionary Force.

The strategic air forces were controlled by the Combined Chiefs of Staff and as a matter of principle were not made subordinate to General Eisenhower. He requested, however, that he be given control of these forces during the critical periods preceding and immediately succeeding the invasion. In April 1944 the Combined Chiefs of Staff acceded to this request, and the Eighth Air Force and the R.A.F. Bomber Command were placed under SHAEF. The control of the strategic air forces reverted to the Combined Chiefs in September 1944, with the understanding that the heavy bombers would be made available for ground support when considered necessary by the Supreme Commander.

ALLIED PLANS

While the enemy was preparing to thwart any attempt to invade the Continent, the High Command of the United States and the

* The Ninth Air Force was organized in Egypt in 1942 and was reconstituted in the United Kingdom on 16 October 1943.

British Commonwealth shaped its final plans and marshalled its resources to assure the success of the invasion. On the soundness of those plans depended the lives of many men and the fate of many issues.

The Overlord Plan.—*Object of the Plan.*—The object of the Overlord Plan was to mount and ~~carry out an operation with the forces and equipment established in the United Kingdom in order to secure a lodgement on the Continent from which further offensive operations could be developed.~~ It was essential that the lodgement area contain sufficient port facilities to maintain a force of twenty-six to thirty divisions and to accommodate follow-up shipments of three to five divisions per month. The Cherbourg-Brittany group of ports ~~(from Cherbourg to Nantes)~~ was selected for inclusion in the lodgement area, with the assault landing to be made over the Normandy beaches west of Caen.

Preliminary Phase.—All possible means, including air and sea action, propaganda, political and economic pressure, and sabotage, would be integrated into a combined offensive aimed at softening German resistance. Such action would be so designed as to avoid focusing attention on the Caen area. In particular, this program envisaged the reduction of the German air forces in the west, progressive destruction of the German economic system, and the undermining of the enemy's morale. (It will be recalled that this phase began in 1943.)

Preparatory Phase.—Just prior to D-day air action would be intensified against the German air forces, especially in northwestern France; and attacks would be made against lines of communication directly associated with the movement of enemy reserves that might reinforce the Caen area. The assault forces would be assembled with naval escorts and loaded at ports along the south coast of England.

Assault.—The Normandy beaches between the Orne River and the east coast of the Cotentin Peninsula* were to be the sites for the amphibious assaults. Landing craft were provided to transport two British, one Canadian, and two United States divisions (one of which was composite), with attached units. Landing craft and ships for two additional divisions were to be provided for follow-up on the second tide of D-day. Airborne landings would be undertaken by one British division near Caen and two American divisions

* The Cotentin Peninsula is the peninsula on which Cherbourg is situated.

in the Carentan area about six hours in advance of the amphibious assaults. Heavy air and naval bombardment of targets in rear areas and enemy installations on the beaches would precede the amphibious assault. A diversion would be launched in the Pas de Calais area to hold enemy forces in the north.

Expansion of the Beachhead.—The United States forces, on the right, would capture Cherbourg as quickly as possible and develop the beachhead to the south toward St. Lo in conformity with the advance of the British. The British, on the left, would develop the beachhead south of the line St. Lo–Caen and southeast of Caen to secure airfield sites and protect the Americans' left flank while the latter captured Cherbourg.

Securing the Lodgement Area.—Subsequent operations toward Germany would require the securing of additional ports and airfield sites. Accordingly the plan provided for an eastern expansion of the beachhead along the lower Seine to Rouen, thence up the Eure River to Dreux; the simultaneous seizure of Chartres, Orleans, and Tours; and a drive south by American troops to cut off the Brittany Peninsula so as to pave the way for the opening of the Brittany ports and the development of a harbor at Quiberon Bay. The lodgement area would be cleared of the enemy as far south as the Loire before an advance would be made beyond Paris and the Seine ports. It was anticipated that a period of about three months would be required to achieve these objectives. (The map shows the planned development of Overlord from D-day to D plus 90.)

This final plan followed closely the COSSAC plan developed in 1943, with the exception of the size and employment of the assault forces. Because of the historical significance of this great triphibious invasion, a more detailed examination of some of the most important factors influencing the adoption of the plan and its major changes is worth while. A more complete discussion of the actual assault plans will be given later.

Factors Influencing the Plan.—In developing Overlord the planners considered four major factors:

1. The capacity of beaches and ports in the lodgement area.
2. The possibility of attaining the air superiority necessary to provide effective air cover in the assault area with fighter aircraft based in England.
3. The number of offensive divisions which the enemy could make available for counterattack in the assault area.
4. The availability of landing craft and transport aircraft.

In any event it would be necessary to select a lodgement area which included a group of major ports if the large forces that would eventually be employed on the Continent were to be maintained. It had to be assumed that captured ports would be seriously damaged; therefore adequate beaches and artificial anchorages, in addition to the major ports, were also considered logistical prerequisites to a successful invasion. Since the planners had early judged the securing of lodgements on the Danish and German coasts as impracticable, in the Overlord plan they limited their considerations to the coasts of Holland and Belgium and the Channel and Atlantic coasts of France. In this area it was estimated that any one of six groups of ports would support an initial force of thirty divisions and allow further expansion, although additional ports would have to be captured later. These groups were the Dutch-Belgian group, from Dunkirk to Rotterdam; the Pas de Calais-Belgian group, from Boulogne to Antwerp; the Seine-Pas de Calais group from Rouen to Calais; the Cherbourg-Seine group, from Cherbourg to Dieppe; the Brittany-Cherbourg group, from Nantes to Caen; and the Biscay-Brittany group, from Bordeaux to Brest. The beach-head areas in these groups were then considered, and four were rejected for the following reasons:

The Coasts of Holland and Belgium.—Adequate air cover could not be provided so far from England; limited road exits made the beaches unsuitable for maintenance on a large scale; on the Dutch coast there is insufficient tidal range to dry out coasters; beaches in the Belgian sector, although having a high capacity, are backed by extensive sand dunes; the beaches are exposed to prevailing winds.

The Coastal Area Immediately Adjacent to the Mouth of the Seine River.—The Seine would necessitate the splitting of forces without prospect of an early junction; wide separation of beaches would disperse and weaken air cover; the good beaches south of the Seine were covered by guns on the Cape of Le Havre; the beaches north of the Seine, being small and scattered, would subject the assault forces to defeat in detail if they were immediately counterattacked by German reserves.

The Brittany Peninsula.—The beaches are too small and scattered for an assault by a large force; adequate air cover could not be provided so far from England.

The Biscay Coast.—Adequate air cover could not be provided so far from England; the naval commitment would be too large.

This left the Pas de Calais and Caen-Cotentin as the most acceptable beachhead areas. A more detailed examination of these two will indicate some of the major reasons that influenced the selection of the Caen area.

It was known that the Pas de Calais was the most strongly defended part of the French coast and the pivot of the German coastal defense system. Although its beaches have a high capacity, they are exposed to the prevailing winds, are backed by extensive sand dunes, and south of Boulogne are dominated by high ground. Exits from the beaches are generally limited to stream or river valleys; and all exits were blocked by numerous obstacles such as concrete walls, mine fields, and antitank ditches. Inland the terrain is flat to rolling limestone country, and there are no suitable natural defensive positions.

On the other hand, in the Caen area there are two large beaches within reasonable supporting distance that provide excellent landing facilities. These beaches are reasonably well sheltered from the prevailing wind, and their exits are more numerous than those in the Pas de Calais area. Inland there are favorable features for defending the initial beachhead; and, except for an area between Caen and Bayeux, the ground is unfavorable for counterattack by armored divisions. Large portions of the region are bocage—land divided by trees, hedges, banks, and ditches into many small fields and traversed by sunken roads lined by steep banks. The Normandy hills, some twenty-five miles from the coast and running southeast to northwest, would also provide some protection against enemy attacks.

The two most important logistical factors were the mounting of the expedition and its supply and reinforcement. Western England did not offer satisfactory shore embarkation facilities, and eastern England already was burdened by air-force installations and operations. On the other hand, southern England offered many ports, suitable shore conditions, ample space for supplies and troops, and good road and rail facilities. However, the use of southern England for mounting the operation meant that great difficulty would be encountered in any attempt to move the assault force to a point north of Calais.

Since it was anticipated that most of the supplies and equipment would have to pass over the beaches while ports were being restored, the capacity of beaches to accept and move vehicles and stores was a major factor; and two artificial harbors that were to be constructed as early as possible required maximum protection from prevailing Channel storms.

A landing in the Pas de Calais area would permit a rapid turn-around of shipping; but the main ports in the area, Boulogne and Calais, were believed capable of maintaining only nine to twelve divisions after three months. In order to obtain the requisite port facilities to maintain thirty divisions it would be necessary to expand the beachhead eastward to include the ports from Boulogne to Antwerp, or southwestward to secure those from Calais to Le Havre and Rouen. In the Caen area, since there are no sizable ports, it would be important to capture and develop Cherbourg as early as possible. After capturing Cherbourg it would be necessary to drive either eastward to the Seine ports or southwestward to the Brittany group, the latter course being considered the more likely alternative. Cherbourg and the major Brittany ports were expected to be able to support thirty-one divisions after three months' development; or, if all minor ports were included, this force could be supported after one month's development; and forty-five divisions could be supported after three months.

The two main air factors governing the selection of a lodgement area were the provision of air cover during the assault phase and the rapid construction of airfields in the initial beachhead and later in the lodgement area as a whole. The necessity for air cover by land-based aircraft during the assault phase limited possible assault areas to that section of the coast between Flushing and Cherbourg. The best coastal area was that of the Pas de Calais. Eastward, the ease of providing air cover decreased rapidly toward Flushing. Westward, it decreased steadily as far as the Seine, reached its weakest point in the Caen area, and then increased slightly over the Cotentin Peninsula. Provision for Continental air bases was governed by the number of existing airfields and the general suitability of the terrain for the construction of new airfields. It was noted that the greatest concentration of existing airfields within a short distance of the coast was south and southeast of Calais. In the Seine area there were a few airfields near the coast, whereas in the Caen area there was only one airfield; but the terrain southeast of Caen is most favorable for rapid airfield construction. There were two airfields in the Cotentin area, but the terrain in that region does not lend itself to rapid construction of new ones. So it was concluded that, from the airman's point of view, the Pas de Calais sector was pre-eminently the most suitable for the initial beachhead. However, if the combat value of the German fighter and fighter-bomber force that might be brought to bear in the assault area could be reduced sufficiently, the Caen area was acceptable. Our squadrons would be based originally at 190 airfields in

the United Kingdom. Of these fields sixty-three were within a radius of 150 miles of the lodgement area and the remaining 127 were at an average distance of 185 miles. During the follow-up and build-up phases it would be necessary to establish airfields on the Continent from which our fighters, fighter-bombers, and reconnaissance squadrons could operate. Light bombers would continue to operate from England as long as they could reach their assigned targets, and heavy bombers would operate from England throughout the campaign.

Naval considerations gave great weight to the fixed seacoast defenses. The many long-range guns in the Pas de Calais threatened all shipping in the Strait of Dover and offset the advantages which that area offered in short turn-around periods and better air protection of naval craft. The Caen sector and the eastern Cotentin beaches were the only stretches of the northwestern French coast where defenses were considered weak, although the east Cotentin sector was protected by some coast artillery.

From the analysis of ground, logistical, air, and naval considerations it was concluded that the assault should be made on the Caen beaches, utilizing the Pas de Calais for diversionary operations. The governing factors that led to this decision may be summarized as follows:

1. The enemy's seacoast defenses and his numerical strength in the Caen area were weaker than in the Pas de Calais area.
2. His capability of reinforcing his coastal defenses in the Caen area was less than that in the Pas de Calais area.
3. The beaches and beach exits in the Caen area were more favorable for the operations of the assault and build-up forces than those in the Pas de Calais area.

The Caen area was chosen in spite of the fact that air cover could not be as effective as in the Pas de Calais and that the turn-around time of landing craft and ships would be greater.

Major Changes in Overlord.—The original COSSAC plan had provided for a three-division assault on the Caen beaches, followed the same day by approximately two more preloaded follow-up divisions; the seizure of Caen by airborne forces of about one division; and a D-day objective of the general line Bayeux-Caen. As forces became available, a thrust would be made to the south to gain depth for a turning movement into the Cotentin Peninsula; and when that drive was launched to seize Cherbourg, other forces would attack to the southeast.

General Eisenhower and his commanders had examined this Overlord plan on their arrival in England, and at their first meeting in January all were in agreement that the assaulting force of three divisions (all that landing craft estimated to be available allowed) was insufficient. Eisenhower therefore modified the plan so as to increase the strength of the assaulting forces to five divisions, to widen the assault area to include the eastern Cotentin beaches, and to expand the D-day objective to include Carentan, Bayeux, and Caen. Two additional airborne divisions would be employed to support the troops assaulting the beaches north of Carentan.

The drive into the Cotentin Peninsula from the beachhead area, as contemplated in the original plan, would be difficult if the enemy should make use of the marshes and rivers at the neck of the peninsula as a defensive barrier; but the COSSAC planners had considered that an assault on both sides of the Carentan Estuary would be unsound in that it would expose our forces to defeat in detail. Nevertheless, the apparent key to any plan to capture Cherbourg quickly was a landing on the north side of this barrier; and since the early capture of the Cotentin Peninsula and Cherbourg was vital, General Eisenhower considered it advisable to extend the assault area.

The main problem created by this change in the Overlord plan was that of making additional landing craft available without a prolonged postponement of D-day. The new plan called for a total of seven preloaded divisions (five assault and two follow-up), and in order to transport the two additional divisions it was estimated that a total of 231 additional ships and craft would be required. By delaying the operation for one month it was hoped that a substantial number of these landing craft could be produced in the United Kingdom. Others could be made available by reducing the number of vehicles allotted for administrative and technical purposes, but the remainder would have to be drawn from the Mediterranean area or from other sources. This postponement of the target date from 1 May to early June was also desirable from an air point of view because it would give an additional month of good weather for preparatory air operations and for training the necessary additional troop-carrier crews.

The Combined Chiefs of Staff approved General Eisenhower's recommendation for changes in the plan. Measures to obtain the landing craft for the additional assault divisions were then initiated but continued to be a most serious problem. Finally (in March) the date of the landing in southern France was postponed, and the

greater portion of the extra craft for Overlord was provided from the Mediterranean Theater.

One other major modification was made in Overlord. In lieu of opening the ports of Nantes and St. Nazaire to support the logistical build-up in the lodgement area, it was decided to develop Quiberon Bay as a major port of entry for United States forces. However, since this plan, called Chastity, was never put into effect, we need not examine it further.

Another matter that received careful consideration was that of security. Since it was impossible to keep secret so vast an undertaking, General Eisenhower did not attempt to conceal the fact that there was to be an invasion. On the contrary, he broadcast it and thus engaged in a bit of psychological warfare that increased the strain on the waiting enemy armies and the German people. But tactical surprise had to be gained to insure the success of the assault; and if the world knew that there were to be landings in western Europe, the secret of where and when they were to be made was carefully guarded. From the Brittany Peninsula to the Zuider Zee is a stretch of 700 miles of coast line, and on the day of the invasion the Germans were still speculating as to where and when the blow would fall. They were also to be surprised by the great combat power thrown against them and the means used by the Allies in supplying and maintaining that power. Rigid security restrictions were enforced, various deceptive measures were employed, and frequent "dry-run" mounting exercises had even our own troops guessing as to when the real assault would begin. The success of the invasion attests to the effectiveness of these measures.

THE ALLIED AIR OFFENSIVE

It will be recalled that the Overlord plan outlined definite missions for the air forces in the preliminary and preparatory phases of the invasion. In addition to Pointblank, the Combined Bomber Offensive against German industry that was growing in intensity every day, air superiority over the invasion area had to be secured; and air power had to isolate the lodgement area so that the enemy would be unable to bring up major reserves before the Allies had secured their beachhead.

The Opposing Air Forces.—*Allied Air Forces.*—During the fall and winter of 1943–44 the air forces in the United Kingdom were reorganized and greatly expanded. The following extracts from

official reports describe the major components of the Allied air forces that participated in Overlord:*

Strategic Air Forces:

United States Eighth Air Force—a composite heavy bomber and long-range fighter force, commanded by Lieutenant General James H. Doolittle. It comprised three air divisions (the 1st and 3d Divisions were equipped with B-17's, the 2d Division with B-24's) and operated primarily as a daylight precision-bombing force. This force was based in the United Kingdom, but later in the war two groups of its fighters used advanced fields on the Continent from which, when not engaged in escorting bomber forces, they operated as tactical fighters with the Ninth Air Force.

R.A.F. Bomber Command—a force of heavy and medium bombers under command of Air Chief Marshal Sir Arthur T. Harris. This force, primarily a heavy night-bomber force, also operated on many daylight missions in the final phases of the war. It was based throughout on airfields in the United Kingdom.

Mediterranean Allied Strategic Air Force—a composite of United States and British forces. It consisted of the United States Fifteenth Air Force, under command of Lieutenant General Nathan F. Twining, and a R.A.F. unit (No. 205 Group), primarily a heavy night-bomber group. This force was based in Italy and was commanded by Lieutenant General Ira C. Eaker.

Tactical Air Forces:

United States Ninth Air Force—commanded initially by Lieutenant General Lewis H. Brereton and later by Lieutenant General Hoyt S. Vandenberg. It comprised a strong medium bomber force, the 9th Bombardment Division, commanded by Major General Samuel E. Anderson; the IX Tactical Air Command under Major General Elwood R. Quesada, a force of fighters and fighter-bombers designated to cooperate with the United States First Army; the XIX Tactical Air Command under Major General Otto P. Weyland, a force of fighters and fighter-bombers designated to cooperate with the United States Third Army; and appropriate air service, aviation engineer, and air defense commands. All of these forces were based initially in the United Kingdom and rapidly moved to the Continent as soon as adequate facilities became available.

* The designations of various air units in World War II differed somewhat from present-day terminology, the principal difference being in the use of the term *command*. The following table shows the present and World War II terminology and the comparable command levels as established by Air Force and Army directives:

<i>Current</i>		
<i>Army Units</i>	<i>Air Force Units</i>	<i>World War II Examples</i>
Army Group	Air Command	United States Strategic Air Forces, Allied Expeditionary Air Force
Army	Air Force	Eighth Air Force
Corps	Air Corps	IX Tactical Air Command
Division	Air Division	9th Bombardment Division

R.A.F. Second Tactical Air Force—commanded by Air Marshal Sir Arthur Coningham. It comprised a day- and night-bomber force, No. 2 Group; No. 83 Group, a force of fighters and fighter-bombers assigned to cooperate with the British Second Army; No. 84 Group, a force of fighters and fighter-bombers assigned to cooperate with the Canadian First Army; No. 85 Group, a base-defense group operating fighters and night fighters; and appropriate maintenance and ancillary forces. All these forces were based initially in the United Kingdom and moved to the Continent as soon as adequate facilities were available.

Other Air Forces:

R.A.F. Coastal Command—a force of long-range patrol aircraft and torpedo- and rocket-firing aircraft. It was based principally in the United Kingdom, with some coastal reconnaissance units on Continental airfields. Air Chief Marshal Sir Sholto Douglas commanded this force, which operated with the Admiralty in the anti-submarine war.

R.A.F. Fighter Command—a day- and night-fighter force based in the United Kingdom and commanded by Air Marshal Sir Roderic M. Hill. Its chief function was the aerial defense of the Allied United Kingdom base; it also provided strike aircraft and fighter escort for the daylight missions of Bomber Command and Coastal Command.

Troop Carrier Forces—the IX Troop Carrier Command, commanded by Major General Paul L. Williams; R.A.F. No. 38 and No. 46 Groups; and appropriate air service, maintenance, and ancillary units. . . . Shortly after D-day the IX Troops Carrier Command was assigned to the First Allied Airborne Army, commanded by Lieutenant General Lewis H. Brereton. No. 38 and No. 46 Groups were never assigned to this army, but they were made available for the airborne operations. Besides troop-carrying operations, these units carried emergency supplies for both air and ground units to forward airfields under the auspices of a Combined Air Transport Operations Room set up in the G-3 section of SHAEF.

The control of these units, the strategic air forces by the Combined Chiefs of Staff and the tactical air forces (Allied Expeditionary Air Force) by General Eisenhower through his air commander, has already been described. One other higher air headquarters was formed that played a very important part in the air operations over Europe. This was known as the United States Strategic Air Forces in Europe (USSAF) and was commanded by Lieutenant General Carl Spaatz. This headquarters was established in January 1944 to coordinate the activities of all American heavy bombers that operated over Europe. General Spaatz exercised operational control over both the Eighth and Fifteenth Air Forces, and in addition he exercised administrative control over all United States air forces based in western Europe. Spaatz' and Doolittle's

experience with Eisenhower and Tedder in the Mediterranean insured continued close coordination between the American heavy bombers and SHAEF. The Royal Canadian Air Force was integrated with the Royal Air Force and, although seldom mentioned separately in this account, contributed materially to the Allied air effort.*

The rapid expansion of the Allied air forces that operated over Europe during the nine months preceding D-day is indicated in the following table:

	SEPTEMBER 1943			MAY 1944		
	American	British	Total	American	British	Total
Average aircraft employed....	5,236	11,897	17,133	12,025	13,391	25,416
Personnel	233,365	655,108	938,473	592,204	702,094	1,294,298
Bomb tonnage dropped	22,686	23,518	46,204	96,464	51,302	147,766

It will be noted that during this period the American air forces grew from a junior partner of the R.A.F. to the hardest hitting component of the great Allied air team.

Not only were the air forces reorganized and expanded, but the many technical and tactical improvements that had been initiated in 1941 and 1942 had greatly increased the over-all efficiency. For example, improvements in weather forecasting, instrument bombing technique and equipment, and operating procedures had advanced so much that whereas in 1942 our bombers could operate on an average of only six days per month, in the last year of the war they averaged twenty-two days per month. Perhaps the greatest asset to the strategic bomber offensive was the increased range of fighter escort for the daylight bombers of the Eighth Air Force. Although even in late 1943 the effectiveness of the Luftwaffe and our lack of fighter escort still threatened to halt the American daylight precision bombing program over Germany, by early 1944 long-range fighters equipped with wing tanks were able to provide fighter escort for the B-17's and B-24's as far as Berlin.**

Thus by January 1944, although three big obstacles—the weather, the German Air Force, and distance—were still present, the solutions to the problems were at hand. The Allied heavy bombers

* The Royal Canadian Air Force oversea contingent comprised forty-eight squadrons, including fifteen heavy bomber squadrons in the Bomber Command, seventeen squadrons of day fighters with the Second Tactical Air Force, six squadrons in the Coastal Command, four squadrons of night fighters and intruders, and six other miscellaneous squadrons. In addition, many thousands of Royal Canadian Air Force personnel served in other R.A.F. units.

** Later the fighters operated at even greater distances, the P-51 having the longest range. The P-38 and P-47 were also used, although they never attained the range of the P-51.

would soon be able to range over the length and breadth of Germany, day and night, with adequate escort over the entire route; and they had the ability to bomb with reasonable accuracy without visual reference to the ground.

German Air Force.—By early 1944 the air defenses of the Reich had been strengthened in three principal ways: increased production of aircraft, transfer of aircraft from other theaters to western Europe, and increased effectiveness in the employment of the German fighters. According to German reports, 15,556 aircraft were produced in 1942; but in 1944 the total was 39,807, about 65 per cent of which were single-engine fighters. In the fall of 1942 only 14 per cent of the enemy's single-engine fighters were employed on the western front, but during the last ten months of the war this figure increased to 67 per cent. The efficiency of the German fighters was improved through increased armament; and the highest losses suffered by the Eighth Air Force to enemy aircraft occurred in March and April of 1944, when our bombers were lost at the rate of 17.7 per 100 sorties.*

Another peril the Allied air forces had to face was German anti-aircraft artillery fire. As the air war progressed, the Germans grouped a large number of their heavy anti-aircraft guns around important targets to achieve a dense concentration of flak against our bombers for the maximum length of time. This massing of fire proved very effective, as borne out by the fact that in 1943 flak accounted for one-third of the bombers lost by the Eighth Air Force and two-thirds of those that were damaged. From then on there was a steady increase in the damage caused by flak until June, July, and August of 1944, when it accounted for about two-thirds of the 700 bombers lost and 98 per cent of the 13,000 damaged.

On the other hand, we now know that the German Air Force had failed to keep up with the Allies in size and in efficiency. Initially the German High Command designed the Luftwaffe as purely an offensive weapon, to be used in attacking hostile countries and supporting the Army; and they pinned their faith on flak to defend the homeland. Through the early years of the war, until 1942, the Air Force underwent very little expansion. Apparently the easy victories in 1939 and 1940 fostered the belief that the Luftwaffe was adequate for any task. Production priorities for aircraft fell behind tanks and U-boats. Because of the low priority initially given air-defense activities, the development of new technical equip-

* In the fall of 1942 the rate had been 5.8 bombers lost per 100 sorties.

ment suffered a time lag of about two years.* As the Allied offensives developed in the east, in the south, and in the west, the German Air Force found itself overextended and unable even to give adequate support to the Army.

For operational purposes the German Air Force was divided into five luftflotten (air fleets or air forces). One of these, Luftflotte Reich (General Stumpff), was charged with the air defense of Germany and controlled both antiaircraft artillery and fighter aircraft.** However, coordination between the artillery and the air units was never perfected, and the whole air-defense system lacked integrated staffs and competent air-defense commanders familiar with the problems and operations of both arms. In addition, the air defense of the Reich was handicapped by a deterioration in the quality of personnel. At the beginning of the war those manning the flak guns were carefully selected; but as the war progressed, flak troops were transferred to infantry and armored divisions and were replaced by women, old men, prisoners of war, and members of the Hitler youth organization. Even more serious was the quality of the German pilots, which steadily declined as a shortage of aircraft and aviation fuels restricted training. Thus by 1944, although the Luftwaffe was still offering a formidable defense of the fatherland, basically it had decayed and was very vulnerable to the tremendous air power that was being concentrated against it.

Air Superiority.—The primary job of the Allied air forces—as it had been all along—was to win the air war with the Luftwaffe. The combined efforts of the strategic and tactical air forces were applied to this end; and the victory was won by a combination of three measures: an attack unprecedented in scale and inclusiveness on the enemy's aircraft production industry; the harrying, disruption, and destruction of his operational bases, including aircraft on the ground and forward repair facilities; and overwhelming pressure of combat in the skies. New target priorities were assigned the strategic air forces: fighter aircraft factories, fighters on the ground and in the air, and ball-bearing factories. The Ninth Air Force supported these operations by striking German airfields in attacks so timed as to reduce the concentration of enemy fighters that might oppose the heavy bomber formations, while diversionary fighter sweeps further dislocated the air opposition.

* Captured German documents show that a great many new technical and matériel developments for air defense (such as improved radar, ground-controlled flak rockets, proximity fuses, and new types of jet-propelled fighters and bombers) were due to reach the production stage in 1945.

** Luftflotte 3 was the operational air force in western Europe.

The decisive battle came sooner than expected. On 20 February 1944 there began six days of perfect weather that were utilized for a continuous assault on the widely dispersed German aircraft-frame factories and assembly plants. This sustained attack, called the "Big Week," seriously reduced the capabilities of the Luftwaffe. General Spaatz said: "In the minds of our air leaders the Big Week was the turning point in the war. That is, the success of the Big Week confirmed belief in the strategic air bombardment concept. We knew then that we could destroy the German capacity to make war."

General Arnold described this great air battle as follows:

On Sunday, 20 February, in the first good weather in weeks, we struck. Nearly 1,000 American bombers escorted by fighters attacked fighter-plane factories at Brunswick and Leipzig in our heaviest assault of the war up to that time. A large part of the force was directed at the Messerschmitt 109 assembly factory and aircraft component plants at Leipzig. Defenses there had been alerted by an R.A.F. attack the night before, and the Nazis rose in force. One gunner reported, "The Luftwaffe had all their planes up but their trainers." Another said: "We caught flak, rockets, and trailing attacks. Twenty-millimeter shells came zinging past with our names and rank on them, everything but our serial numbers." Enemy fighters attacked some bomber formations for three hours, making head-on attacks in groups of ten or more.

Bombing results were good.

Production was stopped at the Leipzig factories which had been making 30 per cent of all single- and twin-engined fighters. Output at Brunswick fighter assembly plants had been interrupted by previous attacks, and Sunday's bombardment put them out of business for four more months.

The Royal Air Force bombed that night.

On Monday Lieutenant General Doolittle's Eighth Air Force heavies were over in force again. Tuesday they were joined by bombers of the Fifteenth Air Force, based in Italy, in the first co-ordinated attack of the United States Strategic Air Forces in Europe. On Thursday the Eighth and Fifteenth struck another coordinated blow at German aircraft production. On Friday, for the fifth time in the week, we struck at aircraft factories. More than 2,000 planes from the Eighth and Fifteenth Air Forces set out for Regensburg, Augsburg, Furth, and Stuttgart. The operation set a new record for size; it climaxed five days of assault against one of Germany's most vital and well-protected industries; yet, significantly, official reports said, "Enemy fighter resistance was on a reduced scale."

Those five days changed the history of the air war.

From that time on the Luftwaffe, converted to a defensive air force, was no longer an effective defensive air force. It was still potent, but it could no longer challenge our aircraft anywhere and

everywhere we flew over German-held territory. From that day the Luftwaffe rose to battle only when it believed it had local superiority or when high-priority targets were under attack.

We paid a price for the air. We lost 244 heavy bombers and 33 fighter planes during the five days. The Germans lost 692 aircraft in the air and many more on the ground. Beyond that, they lost to a great extent the capacity to replace their losses.

The heavy bomber attacks seriously damaged the German aircraft assembly plant system, and subsequent attacks affected the entire aircraft industry. Production actually continued to increase slightly as a result of prodigious efforts of German industry, but these attacks frustrated plans for expansion of the German Air Force; and the aircraft industry never fully recovered. Continuous attacks on factories, airfields, and aircraft in the air and on the ground maintained Allied control of the skies over Europe to the end of the war. General Keller, last chief of staff of the German Air Force, noted in his diary an airman's reasons for Germany's defeat:

There are many reasons which caused Germany to lose the war, reasons brought about by our own mistakes in political, economic, and military matters. None of these reasons were singularly decisive; nor were they collectively decisive. However, the loss of air superiority was alone decisive.

A report of the Strategic Bombing Survey lists some salient facts with respect to German aircraft production and the defeat of the German Air Force:

First: The German Air Force was originally designed for direct support of ground operations, and lack of a long-range bomber force proved a grave strategic error.

Second: Due to overconfidence, no attempt was made to utilize the full capacity of the German aircraft industry until after the initiation of the Combined Bomber Offensive in June 1943.

Third: The attacks on German airframe production in the year 1943 and February 1944 contributed significantly to the winning of air supremacy in the critical air battles of the early months of 1944.

Fourth: An over-all shortage of aviation gasoline resulted in the curtailment of flying training as early as 1942; and this decision was reflected in a deterioration of quality of personnel, which was the principal cause of the defeat of the German Air Force.

Fifth: The German Air Force lost control of the air in the early months of 1944 and never regained it thereafter.

Sixth: Air attack on the German petroleum industry in the summer of 1944 prevented the possibility of revival of a German Air Force utilizing conventional-type aircraft; hence the increase in production of such aircraft which took place after D-day was of little military significance.

Seventh: Thereafter, the creation of a small force composed of high-performance jet-type aircraft manned by qualified personnel and operating on low-grade fuels was the only method left to combat the Allied air offensive. The development of this type of force was not achieved in time to be a serious threat.

Some of the blunders committed by the German High Command that led to the collapse of the air defenses of the Reich are summarized in another report:

1. The original tenet of the German High Command in designing the Luftwaffe as an offensive striking force resulted in air defense having a very low priority.
2. Because of this low priority given to air-defense activities, a time lag of two years resulted in the development of flak, radar, jamming, and fighters.
3. The principle of dispersal, both of airfields and industry, was not practiced by the High Command.
4. Aircraft warning and control systems were handicapped by a lack of essential radar equipment and by its vulnerability to jamming.
5. No standardized methods of control or concept of mutual support was established between air-defense sectors.
6. The Germans made the tactical blunder of not repeatedly attacking our fighter escort on making landfall on the Continent, which would have caused us to drop our reserve fuel tanks.
7. The German High Command ordered German fighters to attack only the Allied bombers, leaving our escort fighters free to take the initiative in the air.
8. The German fighter defense was not organized in depth; they did not attack our bomber streams repeatedly and in strength.
9. Internal dissension slowed down considerably the production of the jet fighter, the Me-262, potentially the Germans' most dangerous airplane.
10. Germany sacrificed pilot quality for quantity.

By April 1944 air superiority, the indispensable prerequisite for full-scale air attacks on Germany, and indeed for invasion itself, had been achieved. The strategic air forces could then intensify the Combined Bomber Offensive against the German economic system with comparative freedom. It will be recalled that in 1943 it had been determined that of the many targets Germany offered to the strategic bomber six were the most important: submarines, aircraft, ball bearings, oil, rubber, and communications. Of these six targets, aircraft, oil, and communications became the three that were to occupy the continuing attention of the strategic air forces throughout the last fourteen months of the war.

The Pre-Invasion Air Assault.—With air superiority established, the Allies were able to carry on their program of preparing for the invasion. During April the bombers of the Eighth Air Force alone flew over 16,000 sorties and the fighters over 17,000; in May more than 1,000 German aircraft were destroyed. The strategic air forces were placed under General Eisenhower's operational control on 14 April 1944 so that, although they would continue their strategic program, they would be available upon call for direct support of land and naval operations. Synthetic fuel plants and crude oil refineries became prime targets, the effectiveness of the attacks on them being admitted by Albert Speer, the German industrial czar, in a letter to Hitler on 30 June 1944:

Our aviation gasoline production was badly hit during May and June. The enemy has succeeded in increasing our losses of aviation gasoline up to 90 per cent by 22 June. Only through speedy recovery of damaged plants has it been possible to regain partly some of the terrible losses. In spite of this, however, aviation gasoline production is completely insufficient at this time. . . .

I regret having to inform my Führer of these tragic developments, and I beg you to issue all the necessary orders for additional protection of these plants.

The attacks on the German fuel industry were to exert a mounting influence, not only on the operations of the Luftwaffe but also on the mobility of the German Army.

The next immediate task of the air forces was to isolate the battlefield—to seal off the invasion coast from arsenals and troop centers in the interior of the Reich. Accordingly from April until after the invasion the operations of both the strategic and tactical air forces were merged in an all-out attack on the enemy's communications system.

In April and May the heavy bombers made a series of attacks on marshalling yards and airfields in France, the Low Countries, and western Germany, over an area large enough to preclude any indication of the precise invasion area. These attacks by the heavy bombers were coordinated with a violent tactical air campaign that was waged by the Ninth Air Force and the R.A.F. during the five weeks prior to D-day. The plan was to isolate the lodgement area by attacking key bridges and sections of railroads. This plan was devised to stop rail movement within the area bounded by the Seine, the Orleans-Paris gap, and the Loire; but the operations were carried on so as not to indicate the selected landing beaches. Marshalling yards also became the targets of the medium bombers. In May the Ninth Air Force dispatched a daily average of more than 1,000

aircraft against enemy lines of communication supporting the Atlantic Wall defenses, both in the Calais and the Caen area, and against all types of enemy transport on rails, roads, and rivers. Late in the month railroad bridges on the Seine and the Meuse Rivers were given first priority. By 4 June all the rail bridges on the Seine between Rouen and Paris were knocked out, and all but one of the fourteen highway bridges were destroyed. On 6 June Normandy and Brittany were effectively isolated from the Pas de Calais, and rail traffic in France had declined 60 per cent.

By June the Allied air forces had so successfully performed their mission of disrupting enemy communications that there was a chronic shortage of locomotives and cars,* repair facilities were inadequate, coal stocks were reduced to a six-day supply, and seventy-four bridges and tunnels leading to the battle area were impassable. General Marshall said, "The effects of this phase of the air assault were enormous, for transportation and communications are the life arteries of a modern industrial state engaged in total war." General Eisenhower concurred when he said, "The communications chaos thus produced had fatal effects upon the enemy's attempts at reinforcement after our landings."

In addition to the attacks on communications, our aircraft maintained operations against V-bomb launching sites in the Pas de Calais, launched precision attacks against large coast-defense guns in the Atlantic Wall, and flew reconnaissance missions over western Europe to keep our commanders informed of the latest developments in the enemy situation. All of these attacks were so planned that only one-third of the effort expended would be devoted to targets near the assault area, thus focusing the enemy's attention elsewhere. During these pre-invasion bombing operations attacks were also continued on air bases and landing fields in France. These attacks forced the Luftwaffe to base its bombers so far back that they would have to use advance landing fields to reach the Channel coast. The sixty enemy airfields within a 130-mile radius of the assault beaches were so neutralized that by D-day the Luftwaffe was operating from bases as far from Normandy as were our own aircraft in England.

The Allied bombing effort on the Continent for the first five months of 1944 is compared to the total effort of the war in the following Strategic Bombing Survey statistics:

* During May more than 900 locomotives and 16,000 freight cars were destroyed in western Europe.

	JAN.-MAY 1944		1939-1945
	<i>American</i>	<i>British</i>	<i>American and British</i>
BOMB TONNAGE DISTRIBUTION BY TARGET SYSTEM			
Land transportation	86,980	62,072	875,819
Industrial areas	27,520	74,309	698,415
Military	18,359	19,378	308,513
Oil, chemical, and rubber	7,732	967	264,232
Airfields and airdromes	41,761	3,841	189,415
Naval installations and transportation ..	12,005	413	111,821
Miscellaneous manufacturing	6,440	1,710	69,950
Aircraft factories	22,320	3,339	57,041
V-weapon launching sites	14,234	6,491	50,116
All others	23,370	532	145,218
Total	260,721	173,052	2,770,540

BOMB TONNAGE DISTRIBUTION BY COUNTRY			
Germany	66,940	78,048	1,419,604
France	69,247	64,812	569,493
Italy and Sicily	71,124	15,319	378,891
Austria, Hungary, and Balkans	31,316	3,389	184,201
Other countries	22,094	11,484	218,351
Total	260,721	173,052	2,770,540 ^(a)

^(a) British, 1,307,117; American, 1,463,423.

By D-day the Allied air preparation had been so successful that the excellent European communications system was incapable of fulfilling the demands soon to be placed upon it. Thus the air preparation became a decisive factor in the success of Overlord—an accomplishment whose failure might have had frightening consequences, since the success of an amphibious operation hinges on the relative ability of the opposing forces to build up strength in the critical area. Even with favorable weather it would have required at least fifteen weeks for the Allies to land as many divisions as the Germans had available in Belgium and northern France in June 1944.

ENEMY FORCES AND PLAN OF DEFENSE

Four years after Dunkirk the Germans still peered across the Strait of Dover. Time, however, had wrought a marked change in their situation. Whereas in 1940 their eyes had measured the short distance to a goal of further conquest, they now measured the frightful nearness of the mounting threat of Allied arms, poised for an invasion that, together with Russia's mighty offensive, would bring a final decision. After 1943, when Germany lost the initiative on the sea, in the air, and on all land fronts, the policy adopted

by Hitler was one of determined defense, whatever the cost. General Jodl described this as a plan "to live upon the capital sum of space, which had been built up for Germany, by fighting along the periphery." We shall see later that Hitler's insistence upon this inelastic defense of all territory held by German forces resulted in huge losses that bled the Wehrmacht white.

The High Command.—The German High Command had steadily deteriorated since early in the war. The underlying cause was Hitler's mistrust of the general staff and, as the war turned steadily against Germany, his assumption of more and more direct control of all operations.

In 1944 the major headquarters and commanders were:

OKW (Oberkommando der Wehrmacht), Supreme Command of the Armed Forces, Führer Adolf Hitler.

OKH (Oberkommando des Heeres), Supreme Command of the Army, Führer Adolf Hitler.

OKL (Oberkommando der Luftwaffe), Supreme Command of the Air Force, Reich Marshal Hermann Göring.

OKM (Oberkommando der Kriegsmarine), Supreme Command of the Navy, Grand Admiral Karl Doenitz.

The Supreme Command of the Armed Forces continued to function under its chief of staff, Field Marshal Keitel, although apparently he did not greatly influence the conduct of the war. A small group of OKW officers, known as the Armed Forces Operations Staff and headed by General Alfred Jodl, served as Hitler's closest military advisors. With them he held frequent conferences in which day-to-day operations as well as over-all plans and allocations of materials were decided upon. Since Hitler's assumption of personal command of the Army during the abortive Moscow campaign in late 1941, that headquarters (Supreme Command of the Army—OKH) had become more and more involved in Russia. By 1944 Hitler had made OKH directly responsible for operations on the eastern front, while OKW remained responsible for operation in all other theaters,* although he reserved all major decisions for himself.

After 1942 another major change in the German High Command occurred when the new Reich Minister for Armaments, Albert Speer, took over several important staff sections from OKW and began to function directly under Hitler. Gradually this new ministry assumed complete charge of all war production and, through

* German theater commands, excluding Russia: Southeast (Balkans), Southwest (Italy), West (France and the Low Countries), Denmark, and Norway.

more efficient methods and a greater mobilization of industry, managed to increase the production of some armaments in spite of the growing Allied air attacks.

By June 1944 the Wehrmacht was deployed approximately as follows:

	<i>Army Divisions</i>	<i>Operational Aircraft</i>
Russian front	140	1,040
France and the Low Countries	58	1,100
Italy	23	260
Balkans	26	210
Denmark	5	50
Germany	13	1,440 ^(a)
Total	265	4,100

^(a) Most of the aircraft in Germany were employed in the west.

Although the Germans realized that a major invasion was imminent, nothing was done to develop an over-all strategy or a real unified command for the land, sea, and air defenses of western Europe; and this proved a fatal detriment to operations in the west because the field forces could never obtain a quick decision from the Supreme Commander (Hitler).

The Commander in Chief West, who was responsible for the defense of France, Belgium, and Holland, was Field Marshal Gerd von Rundstedt.* The senior German field commander, he had been recalled from retirement in the spring of 1942 to assume this post. At that time he had some thirty divisions in western Europe; but as the invasion threat became more serious, his force was almost doubled. It appears that the operations sections of OKW and OB West maintained close liaison and were in agreement on many major questions, but more often than not they were unsuccessful in persuading Hitler to accept their common views; and Rundstedt personally did little to make his opinions known to the Führer.

Although Rundstedt was theoretically the supreme commander in the west, he did not in fact have full control. The SS** units were assigned to OB West for operations and supply only; for discipline and administration they remained under the control of Reichs-

* Rundstedt's headquarters, known as OB West (Oberbefehlshaber West), was located near Paris.

** Within the German armed forces a sharp distinction was made between the ordinary Army units and the Schutzstaffel (SS) units. The latter originally enrolled only specially selected members of the Nazi party, constituting a political and military elite that enjoyed special favors and privileges. The SS units were considerably stronger in both personnel and fire power than comparable Army units, and they contained the most fanatical German fighters.

führer SS Heinrich Himmler. The Luftwaffe in western Europe (the Third Air Force, commanded by Field Marshal Hugo Sperrle) was subordinate both operationally and administratively to OKL. The Navy (Navy Group West, commanded by Admiral Krancke) also operated independently. To heighten the difficulties of coordinating the defenses of western Europe, these various commands did not achieve even close cooperation with each other or with Rundstedt's staff of Army officers. A staff officer of Army Group B characterized the situation in these words: "The organization and the chain of command of the major commands in the west was somewhere between confusion and chaos; it corresponded to neither the timeless laws of warfare nor the demands of the hour."

In 1944 the command structure in the west was further complicated by the arrival of Field Marshal Erwin Rommel. In January Hitler had directed him to inspect the defensive capabilities of the coasts of northwestern Europe. Rommel brought his staff with him and soon succeeded in having two-thirds of the German operational troops in the west placed under his command.* His headquarters, Army Group B, was not completely subordinate to OB West because on some matters Rommel corresponded directly with Hitler. Army Group B included the Fifteenth Army, along the Channel coast, and the Seventh Army, in Normandy and Brittany. More or less to balance the new army group in northwestern France, Army Group G became operational in May under the command of General Johannes Blaskowitz. It included the First and Nineteenth Armies, on the Biscay and Mediterranean coasts of France.

Field Forces.—The following table shows the distribution of the divisions in the west on 6 June 1944:**

	TYPES OF DIVISIONS			Total
	Panzer	Infantry	Coast-Defense or Training	
Commander in Chief West (Rundstedt)	2		2	4
Army Group B (Rommel)	3			3
Fifteenth Army (Salmuth)		6	11	17
Seventh Army (Dollmann)		7	7	14
Army Group G (Blaskowitz)				
First Army (Chevallerie)	1	1	3	5
Nineteenth Army (Sodenstern)		3	4	7
OKW reserve and Holland	4		4	8
Total	10	17	31	58

* This was Rommel's first operational command since his departure from Tunisia, nearly a year before.

** See Appendix 5 for an abbreviated German order of battle in the west for the period June–December 1944.

In 1944 the panzer divisions normally consisted of two panzer grenadier regiments, a tank regiment, a panzer artillery regiment, and five battalions of supporting and service troops—a personnel total of 14,000. Actually the strength of the panzer divisions in the west varied from 12,000 to 21,000 men, but they contained fewer tanks than our armored divisions. The panzer grenadier division was similar to a motorized infantry division, having more motor transport than the normal German infantry division and an authorized strength of 14,000. The infantry divisions consisted of three regiments of two battalions each, with an authorized strength of approximately 12,500 officers and men. Three-fourths of these divisions used horse-drawn transportation. The strongest of the various types of infantry divisions were the parachute divisions. Their men were carefully selected, trained, and equipped, though only a small percentage of them were trained as parachutists. They had an authorized strength of 16,000 officers and men and a larger allotment of machine guns than the normal infantry division. A whole series of the infantry units were designated as “static” or coast-defense divisions and were assigned little transportation. It will be noted that these and the training divisions made up more than half of Rundstedt’s strength.

The quality of most of the German divisions left much to be desired. Although they were close to their authorized strength, most of the soldiers belonged to older age classes and were not physically fit. On three different occasions the units and staffs in the west had been combed out for the sake of the eastern front. In return the west received Volksdeutsche,* men with second- and third-degree frostbite, and in some cases men suffering from malaria and stomach ailments (a whole division of the latter was formed). Soldiers with heart trouble and officers with artificial limbs were not infrequent. Furthermore, Rundstedt had been forced to exchange twenty good German battalions for sixty battalions made up of non-German “volunteers” and prisoners of war of dubious military value.** In addition, many of the divisions were not in good condition, having come from Russia for rest, refitting, and reorganization. In contrast to the low quality of personnel in most of the infantry and static divisions, the men of the SS, parachute, and panzer divisions were young and in strikingly good physical condition.

There was grave anxiety over the lack of self-propelled assault guns, the inadequate supply of antitank guns, and the condition of

* Racial Germans but citizens of a country other than Germany.

** Many of these were Russians, of whom there are reported to have been 75,000 stationed in France in June 1944.

the artillery. Together with German artillery of all types, there were along the coast French, Danish, Belgian, Polish, Dutch, Russian, Yugoslavian, and Italian guns of miscellaneous calibers, for some of which there was little ammunition and no prospect of more. A number of divisions had only horse-drawn artillery, and in some cases the fourth (150-mm. howitzer) battalion was entirely lacking.

One of the greatest weaknesses of the forces in the west was their lack of mobility, a situation greatly aggravated by the Allied air forces as the date for the invasion approached. Most of the vehicles were not of a modern, standard type. For example, in July 1944 the Germans were trying to use about 2,000 different types of German and foreign motor vehicles in France, Belgium, and Holland. Obviously the problem of spare parts was insurmountable. The fuel supply was so critical that even regimental commanders were forced to use horses or bicycles for transportation.

However, Rundstedt's cardinal weakness was the lack of a fully mobile strategic reserve. Of the ten panzer-type divisions available on D-day the 2d SS, 9th, and 11th were stationed in the south and were not available for immediate use elsewhere; the 2d, 21st, and 116th were under Rommel's control to back up his coast-defense units; and the 1st SS was under OKW control on the northern flank. (Six of these seven divisions were still in the process of reorganization.) This left only the 12th SS Panzer, Panzer Lehr, and 17th SS Panzer Grenadier Divisions as a real strategic reserve. Before examining the plan for the employment of these units let us investigate the fixed defenses along the English Channel.

The Atlantic Wall (Map 3).—As early as 1941 the Germans had begun developing the coastal defenses that were known collectively as the Atlantic Wall. They assumed that an invader would have to secure a port, either in the initial assault or soon afterwards, in order to land the heaviest types of equipment and maintain their forces on the Continent. Important harbors were therefore given first priority for defense and in 1943 were designated "fortresses". They were assigned specially tried and tested commanders, each of whom took a solemn oath to defend his fortress to the death, and were stocked with food to withstand at least a three-month siege. (The fortresses are circled on the map.) The intervening coastal areas were defended by a system of strong points, made up of field fortifications and concrete artillery and machine-gun emplacements. All possible landing areas were prepared for defense to some extent.

After the successful Allied invasions of North Africa, Sicily, and Italy the Nazi press tried to reassure an anxious German population

and to frighten the Allies by publicizing the "impregnability" of the Atlantic Wall in an extensive propaganda campaign. Hitler stated that he had decided to let the Allies attack so that he could beat them off "again and again, until the enemy should bleed to death." However, the German military leaders knew better.* The fortifications between the estuaries of the Scheldt and the Seine were as strong as Nazi resources permitted, but even the supercasemates that Organization Todt had built there were not impregnable. In Normandy and Brittany the construction program was lagging behind schedule because labor and materials had been diverted to Germany to repair the damage caused by the Allied strategic bombing.

However, in the spring of 1944, after Rommel took command of Army Group B, there was a general intensification of work on the beach defenses, particularly in the Fifteenth and Seventh Army areas. In the sector from the Seine to Cherbourg numerous strong points were constructed, and the heavy gun positions were protected by concrete and armor. Remembering the lessons learned in North Africa, Rommel made extensive use of mine fields,** wire entanglements, and obstacles to strengthen the positions. Low-lying areas in the coastal belt, particularly in the marshy country around the Carentan Estuary, were inundated to restrict landing sites and conserve forces; existing sea walls were strengthened and extended to form antitank obstacles behind the beaches; below the high-tide mark on the beaches were placed belts of under-water obstacles designed to halt landing craft and to destroy or cripple them by means of explosive charges attached to the obstacles. Antiglider obstacles, consisting of vertical poles, were erected in the fields that were considered most suitable for landing gliders.

In Normandy the German artillery defense consisted of long-range coast and field artillery. The former was sited well forward, covering in particular the entrances to Cherbourg, the Carentan Estuary, and the Seine. Heavy gun batteries located in the Cherbourg area and around Le Havre almost overlapped in range and presented the gravest danger to vessels approaching the Normandy beaches. Behind the coast artillery, some two or three miles inland, light and medium field artillery pieces of the divisions occupying the coastal sectors were sited.*** The task of these guns was to bring

* Able German officers have stated that an Atlantic Wall as strong as depicted by their propaganda could not have been built in less than ten years.

** From 1941 to 1944 over 2,000,000 land mines were laid along the coast. Rommel trebled this number.

*** Some field artillery pieces were located in concrete emplacements on the beaches.

fire to bear on craft approaching the beaches and on the beaches themselves. In all, the Allies had located prior to D-day some thirty-two battery positions capable of firing on the assault beach areas.

At the same time that the fixed defenses and field fortifications of the Atlantic Wall were being constructed, strenuous efforts were made to prepare the troops for the impending invasion. Map exercises, training maneuvers, and frequent alerts were held; traffic control plans were worked out to shift the panzer reserves to critical areas; special emphasis was placed upon a warning system and rapid countermeasures against an airborne attack; a zone along the coast was established in which the combat troops had full command authority; important towns behind the coastal zone received combat commanders; and detailed inspections were conducted by Rundstedt, Rommel, and Jodl.

However, the demands for fortifications and trained troops were incompatible because the troops were required to perform the labor to build the fortifications; and when they were so engaged, they could not undergo the training necessary to prepare them to meet an invasion. As a result, much was left undone, and the Germans considered only the Fifteenth Army sector to be in a condition of even limited defensive readiness; and that sector's strength was chiefly along the narrowest part of the Channel. The scarcity of troops for the extensive front (2,500 miles, including the French Mediterranean coast) not only hindered the development of the coastal fortifications but their lack of mobility resulted in the available forces being deployed in a cordon defense that, almost without exception, lacked tactical—not to mention strategic—dispositions in depth. This situation and various plans to overcome it were the source of much argument among the various high commanders.

Defensive Plans and Considerations.—The following extract from a report of interrogation of Major General Buttler* gives what is probably as accurate and unbiased a discussion of German strategy as is now available. The basic German decision, to develop a defensive Atlantic Wall while continuing active operations against Russia, was made by Hitler in 1942. General Buttler discussed the factors that influenced this decision:

When, at the beginning of 1942, the Supreme Command realized that it was going to be impossible to overrun or rapidly conquer Russia, Hitler — presumably influenced by suggestions from the

* General Buttler was chief of the Army operations section of OKW's operations staff.

Chief of Staff of the German Army and the commanders on the eastern front—began to consider whether a permanent line of fortifications in the form of an "East Wall" should be built. This would have to be undertaken either in addition to or at the expense of the newly begun fortifications along the French coast (Atlantic Wall). For the following reasons Hitler rejected the idea of an "East Wall," in favor of the ever expanding and more accelerated construction of the Atlantic Wall:

a. Germany's resources of man power and material were sufficient for the fortification of only one front at a time. The same limitations compelled the Germans to avoid prolonged major battles on several fronts simultaneously. This would, however, only be possible in the west if, supported by a strongly fortified coast, they could destroy the enemy at the time of his landing. The battle for the coast had to bring about a decision within a limited time.

b. The great depth of the operational area in the east allowed of mobile warfare, if necessary, even over a long period of time. Even in the event of serious reverses in the east, there was no fear that any vital centers of German resistance would soon become endangered. On the other hand, if an enemy landing in the west should succeed, the way to the centers of Germany's resistance potential were so short that these were bound very soon to be injured by enemy action. The protection afforded by strong fortifications was therefore of greater importance in the west.

c. The road and rail net in the east was so undeveloped in comparison with that in the west that it would be possible to bring up the necessary equipment and building materials into the construction zone only after spending much time and using considerable forces to expand the net. In the west, however, this problem presented no special difficulties, apart from the development of the situation in the air, which could not be foreseen at the time.

d. From the point of view of terrain, the western coast, which was in our undisputed possession, offered more favorable conditions for defense than were to be found in the east, particularly since any fortifications on land have a natural advantage against attacks from the sea. This applied even in view of the very much greater freedom of action of the enemy in the west, who was completely unrestricted and could hardly be affected by us at all in the launching of his operations.

The result of these deliberations and of the Führer's decision in favor of the Atlantic Wall was, on the one hand, the ever increasing speed and scope of the construction of fortifications along the western coast, in which all our possibilities were fully exploited. On the other hand, it was decided to exploit these fortifications . . . to the fullest by conducting a static defense in them, with the coast as the main line of resistance. Existing ideas to the effect that the coast should only be lightly guarded and the main body of the forces kept back inland, ready for mobile warfare in France, had to be abandoned as a logical consequence of the decision to fortify the coast so strongly. Another factor which was also decisive was the agree-

ment of all the experts that the German armament industry was not capable of producing the matériel which the forces in the west would need for mobile warfare if it was going to supply, even incompletely, the requirements of the eastern theater.

In making this decision Hitler realized that even with the utmost effort of the forces available it would not be possible to bring the entire coast up to its maximum defensive capacity for years, with respect to construction, and the strength of the defending forces would probably never be completely satisfactory.

Once the decision had been made to construct an Atlantic Wall, the major argument, aside from controversies over the type and location of the defensive works, revolved around the employment of the field forces in the west. The mission Hitler assigned to Rundstedt was the unyielding defense of the coast. He was to prevent the enemy from making any landing or to annihilate immediately any forces that might land. Consequently, freedom of action was prohibited from the beginning; and no serious effort was ever exerted to prepare successive defensive lines in the rear. As the Allies gained strength and as their air offensive became more decisive, the plans to accomplish this mission were revised; and there gradually emerged two plans of defense, Rundstedt's and Rommel's. General Jodl and the OKW operations staff, generally speaking, agreed with Rundstedt, while Hitler leaned more and more toward Rommel's views.

In the autumn of 1943 Hitler informed Rundstedt that he expected an invasion of western Europe by 1944 at the very latest. Furthermore, since he expected the invasion to be launched on the Channel coast (Pas de Calais), the main German defensive effort must be located there. Rundstedt agreed that the Channel coast was the most likely spot for the invasion, his main reasons being its proximity to England and its strategic position as the beginning of the shortest route to the Rhine and Ruhr. He was convinced that the Western Allies would attack with tremendous technical and material superiority, that their preparations for the attack would be made meticulously, and that their training would be thorough. Therefore, the Allies' first attempt to get ashore would be successful; and everything would depend upon attacking and destroying them during the critical period when they had one foot on land and one on water. This could be done only if OB West had an adequate and mobile strategic reserve available for rapid commitment in the sectors under attack.

In January 1944 General Jodl made an inspection of the defenses in the west for OKW. He approved of Rundstedt's plan for meet-

ing an invasion by shifting all available forces to the threatened sector. Jodl said:

Moreover, I agree with the OB West intention to schedule the displacement, if possible, of all the elements committed for coastal defenses—apart from the fortress infantry battalions—to the sectors under attack. There, being as mobile as possible expedients will allow, they can at least be used away from the defensive centers of gravity, and for relief purposes.

In the event of an enemy landing everything must be immediately thrown in at the one spot—at any risk—in order to retrieve the situation definitely. Should the enemy land elsewhere later, then all forces must be shifted there in the greatest concentration possible.

It is a prerequisite of this plan that the Luftwaffe be in a position to cover the necessary troop movements. [This had been guaranteed by the Luftwaffe and was at the time believed possible by Jodl.] A further prerequisite is that we succeed, by May, in considerably increasing the number of forces really capable of operational employment away from the fortifications.

General Jodl submitted the report of his inspection to Hitler, who approved Rundstedt's plan. However, during the spring of 1944 a change appeared in the attitude that Hitler had taken after hearing Jodl's report, a change caused by the influence of Field Marshal Rommel. The latter was convinced that the enemy would invade with his main effort in the Fifteenth Army sector and with markedly superior ground, air, and naval forces. To fulfill his mission of fighting at the Atlantic Wall in the face of the Allied air supremacy, he believed all his available reserves had to be positioned on the coast; and since the landings could not be prevented without armor, even his panzer reserves must be placed close to the beaches. He expressed the keynote of his defensive plan when he said, "We must stop the assaulting forces in the water, not only delaying but destroying all enemy equipment while still afloat."

Thus the basic difference in the views of Rundstedt and Rommel was developed: Rommel would prematurely tie up the bulk of the forces in the coastal defenses—in a linear tactical disposition; Rundstedt, viewing the matter from the strategic angle, wanted to do everything possible to preserve freedom of action. In spite of counterproposals by the Commander in Chief West and corresponding representations by Jodl, Rommel's influence with Hitler gradually produced a disposition of forces in the west that was based almost entirely on Rommel's views. The bulk of the available German field forces were concentrated between the Seine and the Scheldt, and they were located close to the coast.

General Buttlar also gave Hitler's estimate of Allied intentions during the three months preceding the invasion:

Beginning in March 1944 there was a considerable increase in the reports of the enemy invasion preparations. These were very carefully analyzed and evaluated . . . but they still did not yield a clear picture of the details of the enemy intentions. There was not a sector from Holland to the French Riviera which, if at all suitable, was not referred to in numerous reports as a possible invasion front. At the beginning of April 1944, however, from the frequency of the various reports and evaluation of their sources the following over-all picture of the enemy situation emerged:

a. Preparations in England and in North Africa had advanced so far that the beginning of the invasion could be expected at any time, given suitable weather conditions.

b. Judging from the frequency and estimated reliability of the reports, the most probable areas for invasion in force were:

(1) If launched from England, the Channel Coast and Normandy and Brittany.

(2) If launched from Africa, the mouth of the Rhone.

c. It was to be expected that the invasion would include a large-scale air-landing operation, as well as feints and secondary operations.

This picture of the enemy underwent no essential change up to the beginning of the invasion. Even the surprisingly complete view obtained of the assembly of the invasion forces and resources in England did not give any further clue as to the probable location of the landing.

The Führer himself evidently had information going still further, the tenor and origin of which I do not know. It is certain, however, that beginning about the end of April Hitler devoted special attention to Normandy and the fortification of the coast there; he believed it necessary, and ordered, that the forces located there be doubled, although the special preparations in the Fifteenth Army sector were not to be weakened. At 1900 on 6 May 1944 the chief of the WFSt [Armed Forces Operations Staff], in a telephone call concerning the reinforcement of the Normandy and Brittany forces, pointed out to the OB West chief of staff that Hitler regarded the Cotentin Peninsula as the first objective of the enemy attack, although the Führer was not convinced that the main weight of the invasion would necessarily fall there.

The fact that Hitler did guess the approximate landing areas was to increase the difficulties of the Americans, because one German infantry division was sent into the area northwest of Carentan and one into the area west of Bayeux during the latter part of May.

In summary, immediately prior to the invasion Rundstedt, Rommel, and Jodl all expected that the main landing would occur in the Pas de Calais area; they recognized the danger of secondary attacks in Normandy (an event Hitler viewed with increasing alarm); they expected diversionary or secondary landings to precede the

main landings; and they all realized that the invasion must be repulsed by a decisive battle on the coast. However, none of these commanders were in agreement as to how the invasion would be repulsed, nor had they made any plan or any preparations for action in case the invasion succeeded. The available German field forces had been so committed that only three panzer divisions* remained as a strategic reserve, and they were held southwest of Paris under Hitler's control. Even at the very last the west was still being bled in favor of the eastern front.** As June approached, the mounting air attacks on communications in France, a marked growth in the French resistance movement, and reports of Allied troops moving to the southern coast of England all pointed to the fact that the invasion was near.

The display of Allied air strength before D-day filled Rundstedt with apprehension. Although he had the assurance of General Sperrle that his Third Air Force would make an all-out effort to aid in repelling the invasion, Rundstedt knew that he could not expect much. This force, which was the operational air fleet in western Europe, together with Luftflotte Reich (which, it will be recalled, was responsible for the air defense of Germany) totalled only some 2,000 to 2,500 operational aircraft; of these the Third Air Force had only 200 to 300 in May and June 1944.***

The Germans failed to capitalize on their most potential threat in the air, the V-weapons. For some months prior to the invasion they had created a diversion by constructing launching sites for flying-bombs (V-1) and rockets (V-2) near the Channel coast, particularly in the Pas de Calais area. However, heavy bombing by the Allied air forces delayed until 12 June the initial launching of these missiles which, unimpeded, might have caused much more damage than they did.

Many of the weaknesses of the Germans have been revealed since the war; in June of 1944 they were not so obvious to the Allies across the English Channel. They had to assume that the Wehrmacht was ready for the invasion. One thing that the Allies did know—and which later events confirmed—was that seldom had the Germans had to apologize for the professional performance of their Army. Even in retreat, their troops had always fought fiercely and had been resourceful and self-possessed.

* The 12th SS Panzer, Panzer Lehr, and 17th SS Panzer Grenadier Division.

** Two panzer divisions were transferred to Russia in May.

*** Effective strength, according to statements made by German officers after the war.

FINAL ALLIED PREPARATIONS

The Invasion Force.—The land, sea, and air strength of the Allied Expeditionary Force on 6 June 1944 was 2,876,000 officers and men. The ground forces included thirty-nine divisions available in the United Kingdom:

	<i>Infantry</i>	<i>Armored</i>	<i>Airborne</i>	<i>Total</i>
United States	13	5	2	20
British	9	4	1	14
Canadian	2	1		3
French		1		1
Polish		1		1
Total	24	12	3	39

With attached antiaircraft, tank destroyer, and tank units, these divisions approximated 17,000 men each. In addition, there were hundreds of corps and army units, such as field artillery, engineers, signal, quartermaster, and ordnance, that were to be employed primarily to support these divisions. There were also heavy contingents of base troops, transport units, ground crews, hospitals, and every type of repair and maintenance organization. Furthermore, about forty divisions would be ready to sail from the United States as rapidly as ports in Britain or on the Continent could receive them; and ten divisions, some of them French, were scheduled to join in the attack from the Mediterranean area.

In addition to the divisions tabulated above, the following higher ground-force headquarters were also in the United Kingdom: the United States 1st Army Group, First and Third Armies, and V, VII, VIII, XII, XV, XIX, and XX Corps; the British 21st Army Group, Second Army, and I, VIII, XII, and XXX Corps; and the Canadian First Army and II Corps. There were also contingents of about a brigade each of Dutch, Czech, and Belgian forces.

These troops, with their weapons, vehicles, equipment, and supplies, comprised the world's most massive concentration of military power. The stock pile of matériel and supplies for the American troops alone, over and above basic loads and organic equipment, was 2,500,000 tons. All of this was superimposed on a densely populated and highly cultivated countryside about the size of the State of Colorado. General Eisenhower says in his book:

By the time the cross-Channel assault was launched, the United Kingdom was one gigantic air base, workshop, storage depot, and mobilization camp. It was claimed facetiously at the time that only the great number of barrage balloons floating constantly in British skies kept the islands from sinking under the seas.*

* Eisenhower, *Crusade in Europe*.

The assembling of this huge force in the United Kingdom, mostly accomplished during the nine months preceding D-day, comprised the final phase of the Anglo-American Bolero logistical operation. This was too complicated and gigantic a project to permit description here; but the efficiency of the pre-invasion build-up is exemplified by the speed with which units, landing in Britain at the rate of about 150,000 men per month, were provided with their essential arms and equipment. Eventually, by means of preshipping and storing, the supply agencies were able to have equipment distributed and waiting for units upon their arrival. Within thirty days after debarking most divisions were fully equipped and ready for action.

The units arriving in the United Kingdom from America were well trained, especially in fast-moving corps and army operations over large areas; those coming from the Mediterranean were battle-tested. Nonetheless, everything possible was done during their staging period in the United Kingdom to increase their combat efficiency despite the limited terrain available. The troops which were to make the assault landings maneuvered realistically on beaches and ground that approximated the target areas. Beginning in April joint exercises of the ground, sea, and air forces that were to make the assault were held along the southern coast of England. These were the full-dress rehearsals.

The basic problem facing the Allies in the spring of 1944 was to organize these forces and develop detailed plans so that the full weight of the available strength—ground, air, and sea—could be concentrated and coordinated in getting the assault troops ashore and in assisting them in their task of breaking through the Atlantic Wall. The modified plan for the landing was issued on 1 February 1944. This directive formed the basis for the detailed joint planning by the subordinate commanders.

As the final loading schedules were drawn up, it was found that there were sufficient landing craft for only six reinforced divisions and enough additional shipping for five other divisions. The landing zones were divided into five beaches, as indicated on the map. On the right the American First Army's VII Corps would land on Utah Beach and its V Corps on Omaha; on the left the British Second Army's XXX Corps would land on Gold and the British I Corps on Juno and Sword Beaches.*

* The Americans were placed on the right (Atlantic) flank since they would ultimately be supplied directly from the United States through Cherbourg and the Brittany ports. The British were on the left (Channel) flank since they would ultimately be supplied from the United Kingdom through the Channel ports.

The Allied navies were responsible for transporting and landing these forces. To accomplish this mission the Allied Naval Expeditionary Force was organized into two task forces, the Western (United States) Task Force and the Eastern (British) Task Force. These were in turn broken down into assault forces, three American and four British, which contained the necessary transports, bombardment ships, landing craft, escort craft, gunfire-support craft, mine sweepers, and control craft. The heavy naval gunfire support was to be provided by six battleships, two monitors, twenty-two cruisers, and ninety-three destroyers.* Altogether over 5,000 Allied ships and 4,000 additional ship-to-shore craft were to be engaged in the Channel operations during the assault and build-up periods. The United States naval forces alone comprised about 124,000 officers and men who were to participate directly or indirectly in the invasion.

The troops that were to make the invasion were classified into four types according to the order in which they were to be moved. The *assault force*, as the name implies, was the spearhead. A meticulous loading plan and a definite preallocation of landing craft and ships had to be made well in advance for the operation of this force. The *assault follow-up force* was that part of the force that was to land immediately after the initial assault. A definite preallocation of ships and landing craft and a loading plan for this force was also made well in advance. The *preloaded build-up force* was that part of the force other than the assault and follow-up for which shipping could be provided in advance of the operation. The *normal build-up force* was that part of the force that had to depend on returning ships and craft. The mounting of these units would be affected by enemy action, casualties in craft, weather, and many other contingencies.

The Allies intended to land over 20,000 vehicles and 176,000 men on D-day and D plus 1—a task of the greatest magnitude. The vehicles included 1,500 tanks, 5,000 other tracked fighting vehicles, 3,000 guns of all types, and 10,500 other vehicles from jeeps to bulldozers. In addition to the eight regimental (or brigade) combat teams in the initial assault, a variety of attached troops were required. These included Ranger and Commando units, special assault engineers, and amphibious tanks. The assault units were also authorized an overstrength of about 25 per cent to replace early casualties.

* These included the old United States battleships *Arkansas*, *Texas*, and *Nevada*.

The magnitude and complexity of the movement is indicated by the following excerpts from accounts of the landings:*

The V Corps was organized for the assault on Omaha Beach as follows: Force O numbered 34,142 men and 3,306 vehicles; and its combat strength, the 1st Division, had as its chief components its own 16 and 18 RCT's, the 116 RCT and 115th Infantry Regiment of the 29th Division, and a provisional Ranger force of two battalions. To lift and land Force O alone required 7 transports, 8 LST's, 24 LST's, 33 LCI's, 36 LCM's, 147 LCT's, and 33 other craft. Its escort, gunfire support, and bombardment missions employed 2 battleships, 3 cruisers, 12 destroyers, and 105 other ships. Force O also included 33 mine sweepers and 585 vessels used in service work. The follow-up force (Force B) was scheduled to arrive off Omaha Beach after noon on D-day and numbered 25,117 men and 4,429 vehicles. It included the 29th Division, consisting of the 175th Infantry Regiment and (attached from the 1st Division) the 26 RCT. Scheduled to arrive on D plus 1 and D plus 2, the pre-loaded build-up contingent had as a main component the 2d Division and totalled some 17,500 men and 2,300 vehicles.

Force U, which was to land the 4th Division on Utah Beach, comprised approximately 865 vessels and craft in twelve separate convoys. Most of the convoys contained three or four sections which sailed from different ports and had to make precise rendezvous. Naval fire support for Force U was provided by a bombardment group of 1 battleship, 5 cruisers, 8 destroyers, and 3 subchasers and a support group of 33 craft variously equipped with rocket launchers and artillery to deliver close-in supporting fires on the beaches.

The three Allied airborne divisions would be mounted from airfields** in southern England on the night of D minus 1 and precede the amphibious forces to the assault by a few hours. Priority of the air lift was given to the United States 82d and 101st Airborne Divisions because of their vital mission of securing the beach exits and facilitating the advance of the 4th Division from Utah Beach. These two divisions would come under control of the VII Corps when contact had been established between them and the 4th Division. Paratroop elements of the two airborne divisions, including six infantry regiments with supporting artillery and engineers and totalling 13,000 men in 925 C-47's, would be dropped early on D-day; an additional 4,000 men, consisting of glider infantry with supporting weapons and medical and signal units, were to arrive in 500 gliders later on D-day and on D plus 1; and seaborne echelons were to join the divisions on D plus 1. The British 6th Airborne

* Historical Division, Department of the Army, *Omaha Beachhead and Utah Beach to Cherbourg*.

** The two American divisions alone were to use fifteen airfields.

Division would land east of Caen to seize bridges over the Orne River and guard the left flank of the British Second Army against anticipated enemy counterattacks. Altogether, 1,662 aircraft and 512 gliders of the IX Troop Carrier Command and 733 aircraft and 355 gliders of the R.A.F. would participate in these airborne operations.

In addition to the air preparations on the Continent, already discussed, the tactical air forces perfected their plans for close support of the ground forces as soon as operations should begin. Preparations were made to send in engineers to construct new airfields as soon as their sites were secured, and close liaison was established with the ground forces. During the assault it was planned to maintain a sustained density of ten fighter squadrons to cover the beach area—five over the British sector and five over the American. An additional six squadrons were to be maintained in readiness to support the beach cover if necessary. Over the main naval approach channels a sustained density of five squadrons centered at sixty miles and three at eighty miles from the southern coast of England was to be maintained. In addition, a striking force of thirty-three fighter squadrons was to be held in reserve for use as the air situation might require, subsequent to its initial employment as escort to the airborne formations. The total fighter aircraft allocated for the D-day assault was as follows:

	<i>Squadrons</i>
Beach cover	54
Shipping cover	15
Direct air support.....	36
Offensive fighter operations and bomber escort.....	33
Striking force	33
Total	171

Over 2,000 heavy bombers of the strategic air forces would also join in the assault by adding their power to the fire support to be provided by the naval vessels.

As shown by the map, the British forces were to utilize embarkation points east of Poole and the Americans the ports to the west. The assault forces were to use all available port facilities in southern England, but the troops coming in later would be moved principally through the Southampton, Portland, and Plymouth areas. The main part of SHAEF remained near London, but General Eisenhower established his tactical headquarters at Portsmouth with General Montgomery and Admiral Ramsay. General Bradley's First Army, the Western Task Force, and the IX Tactical Air Command established their headquarters at Plymouth, while Gen-

eral Dempsey's Second Army, the Eastern Task Force, and the R.A.F. Group No. 83 were at Portsmouth. Because of communication problems, Air Chief Marshal Leigh-Mallory maintained the Allied Expeditionary Air Force headquarters at Uxbridge.* The assault corps and naval force commanders would have their headquarters afloat during the initial stages of the invasion.

Mounting Procedures.—The mounting phase, for the American units, was the responsibility of the Services of Supply, ETOUSA. It assigned the mission to its Southern Base Section. This mission included moving all field forces, air forces, and service forces, with their impedimenta and supplies, from their home stations in the United Kingdom to the ports and loading them aboard ships or landing craft in such a manner that all personnel would embark in a state of maximum fighting efficiency. It planned, constructed, operated, and administered all facilities necessary to accomplish this movement.** These facilities were established in concentration, marshalling, and embarkation areas.

The Concentration Area.—This was the area in which units assembled prior to the start of their journey to embarkation points, the minimum stay being about one week.*** Here equipment was completed and packed for cross-Channel shipment and vehicles waterproofed.

The Marshalling Area.—This was the area in which units were broken down into craft and ship loads preparatory to being called forward for embarkation. Messes were operated by the marshalling area personnel, which also performed all other housekeeping duties. It was intended that a unit would remain there about forty-eight hours. There were a total of six marshalling areas along the southern coast of England completely operated by United States Army personnel and two areas jointly operated by British and American personnel. These areas comprised seventy-seven camps

* The American and British tactical airfields were scattered throughout southern England.

** This included constructing facilities that varied from brick cantonments, which were also potential hospital areas, to tent camps. In addition, existing roads had to be repaired and new roads laid out and constructed; communication facilities had to be installed between all headquarters; aid stations, hospitals, and recreational facilities had to be provided; hard standings for thousands of vehicles were required; and depots and dumps for the storage and issue of vast quantities of equipment and supplies had to be provided.

*** Some divisions had been in the concentration area for months, having trained there,

with a total capacity of 125,000 troops and 24,000 vehicles. In addition, there was one area operated entirely by the British, it having a capacity of 29,000 men and 4,500 vehicles.

The Embarkation Area.—Here, as the name implies, were located the embarkation points—loading docks and “hards”, the latter being paved sections of beach where landing ships loaded. The troops remained in the embarkation area only a few hours, at the most, not being called from the marshalling area until ships were about ready to receive them.

The master valve that controlled the flow of personnel through these various areas or reservoirs and on to the ships was an organization known as the Build-up Control Office (BUCO), located at Portsmouth and consisting of British and American military and naval personnel.

The problem of supplying the Allied forces on the Continent required a tremendous amount of planning and preparation. In the American zone the general plan was for the First Army to coordinate the logistical work of all United States forces for the period D to D plus 14. The agency to assume the supply responsibility initially was to be a group of three engineer special brigades, assisted by army service troops. Two brigades were to operate at Omaha Beach and one brigade at Utah Beach. They were to land early on D-day, behind the assault waves, and commence establishing shore installations. Their initial mission was to prepare for and assist in the unloading of the follow-up vehicles and personnel and prepare the beaches for unloading cargo. As cargo and supplies were moved in, the special brigades were to establish temporary beach dumps. As the next stage of logistical development the Advance Section of the Communications Zone, under the 1st (later named 12th) Army Group, would be responsible for logistical coordination from D plus 15 to D plus 41. It was hoped that by that time sufficient room would be available in the lodgement area for a forward echelon of Headquarters, Communications Zone, to take over control of an area behind the First Army rear boundary and assume responsibility for the logistical support of all United States forces.

After the preparatory logistical planning had been completed, detailed requisitions were made up, these being governed by the tonnage limitations laid down for each day. The main difficulty lay in arriving at the tonnage allocations. The capacity of the beaches for receiving supplies would be limited, and the Navy would not permit any ship or craft carrying troops and vehicles to

carry bulk supplies. Also, the supply-ship tonnage originally allocated was insufficient to meet minimum requirements of the force at the rate of build-up made possible by the allotment of troop- and vehicle-carrying craft. This difficulty was finally overcome and a balance reached between the tonnage requirements of the forces, the capacity of the beaches, and the shipping allocations. Requisitions for supplies, phased by days, were then prepared on this basis and submitted to the Services of Supply during the latter half of April and the beginning of May. For D and D plus 1 the requisitions were broken down into individual vessel loads so as to insure the best distribution of risk during the first crucial days.

As finally scheduled, the build-up was to provide a seven-day reserve of supplies and seven units of fire of ammunition by D plus 20. In the assault forces each individual would carry one K and one D ration, not to be consumed prior to arrival on the far shore; and each unit would carry sufficient C or K rations to provide a three-day reserve in its train. Vehicles were to keep gasoline tanks filled from the time of alerting and were to carry sufficient five-gallon cans to provide 150 operational miles in addition to their filled tanks. Additions to basic ammunition loads were prescribed for the artillery.

It was assumed that the engineer special brigades could start the second phase of their operations by about D plus 3, when they would begin to establish permanent inland dumps, replace temporary beach installations, expand transit areas, stabilize communications, and improve the road network. Prior to D-day 144,000 tons of supplies were preloaded on merchant ships and coasters, ready to move to the Continent.

Having acquainted ourselves with most of the preparations for the invasion, let us briefly consider three other items of vital importance to its success: subversive activities, deceptive measures, and the time for launching the assault.

Subversive Activities.—Subversive activities in France and other countries had been nourished by the British since the German occupation. By the time planning for Overlord was begun, the British S.O.E. (Special Operations Executive) had highly trained agents and teams strategically placed throughout occupied Europe, all tied into London by an effective radio network. They gathered intelligence, instructed resistance groups, designated targets for sabotage, and in general sparkplugged the operations of the resistance organizations. American O.S.S. (Office of Strategic Services) per-

sonnel went to London early in 1942, where they were trained by the British S.O.E. By D-day the O.S.S. was an equal partner with the S.O.E. in clandestine operations on the Continent.

A Special Force Headquarters was established under SHAEF to draw up plans and orders for all agents, teams, and operational groups in the field. Fifty teams were to be employed in direct support of Overlord. Their tasks included cutting railroad lines into the beachhead area, disrupting enemy wire communications, counter-demolition work, and harrassing the movement of German strategic reserves into the assault area. These teams were to be parachuted into France at night from special aircraft that had been flying such missions for over a year. To provide liaison, special operations detachments were attached to each of the Allied armies and army groups. When an army commander required the execution of a mission by clandestine agents behind enemy lines, the request would be forwarded by the special operations detachment to the Special Force Headquarters in London, which would send appropriate orders to its agents in the field.

The number and nature of the French resistance movements were as many and as varied as the complexities of French political cleavage. In general, they fell into two categories: the underground, or those patriots who carried on their normal civilian activities by day and their clandestine activities by night, and organizations of the Maquis type. The latter were full-time sabotage and guerrilla groups, most of which were controlled by a single organization called the French Forces of the Interior (F.F.I.). The F.F.I. were commanded by General Koenig, who had his headquarters in London.

Deceptive Measures.—While all possible means were taken to maintain secrecy in the actual planning and preparations for Overlord, elaborate deceptive measures were also employed. Various cover and diversionary plans had been in effect since American troops first landed in England, and these were coordinated with activities on the other European battle fronts to keep the Germans alerted in every theater. But as the date for the invasion approached, it was impossible to conceal the fact that the Allies intended to launch an attack against the Continent from the United Kingdom. Therefore, the cover plan developed for Overlord was designed to confuse the enemy as to exactly when, where, and in what strength this attack would be launched.

Prior to D-day the enemy would be led to believe that the invasion was to be launched in the Pas de Calais area; after D-day he would be encouraged to think that the landings in Normandy were

a diversion to the main attack, which would still be launched across the Strait of Dover. General Eisenhower explained in a report:

We thought that to the German High Command an assault upon the Pas de Calais would be the obvious operation for the Allies to undertake. Not only was this the shortest sea journey where the maximum air cover would be available, but a lodgement in the Pas de Calais would lead the Allies by the shortest road directly to the Ruhr and the heart of Germany. Such an operation would have to be mounted mainly from southeast England and the Thames area. . . .

Acting on the assumption that this would be the German estimate, we did everything possible to confirm him in his belief.

Troops and shipping ultimately destined for Normandy were concentrated in eastern and southeastern England so as to indicate an assault farther to the east than that actually intended. Camps which might have bivouacked thousands of troops were set up in East Anglia,* and dummy landing ships appeared in the Thames. In the Dover area dummy hard standings, full-scale embarkation signposting, and the presence of reserve American and Canadian troops lent credence to the idea of a major embarkation from that area. As we have seen, the pre-invasion air operations were designed to focus attention on the Pas de Calais by maintaining the heaviest concentration of bombing in that area. Other diversionary operations were also launched, either as a part of the cover plan or in conjunction with the main landings. Some were carried out in the Strait of Dover by specially equipped naval craft and airplanes that gave the same picture to the enemy's radar as would a real invasion force. At the time of the airborne landings in Normandy dummy paratroopers were dropped in other areas to confuse the enemy and delay or disperse his efforts to meet the real landings.

The most important result of these deceptive measures was that the Germans overestimated the Allied strength in the United Kingdom by as much as one-third and for the first six weeks after the landing in Normandy held nineteen badly needed divisions of the Fifteenth Army in the Pas de Calais, awaiting the anticipated "main landing" by General Patton.

Selection of the Time.—During the Overlord planning period a most important question was the exact timing of the assault. The requirements of the land, sea, and air forces conflicted in certain respects, and a compromise solution had to be found. From the point of view of the ground forces a night landing was desirable to reduce

* Actually these camps were dummy tent cities, given semblance of life by enough men to keep the fires burning.

the effectiveness of enemy observation, but it was decided to launch the assault in daylight. This decision was influenced principally by the fact that the Navy would require daylight in order to be reasonably certain that the assault forces would be landed at the proper points and to be able to give adequate fire support. A daylight landing also would favor air action against the coast defenses.

The height and flow of the tides was another controlling factor. Beginning about three hours after high tide, the tide on the Normandy coast runs out so fast that landing craft would not have sufficient time to discharge their personnel and pull away from shore. On the other hand, at low tide the landing craft would be grounded so far out that the assault troops would be forced to advance across a wide strip of exposed beach. A landing at extreme high tide had many advantages, but these were offset by the fact that the underwater obstacles were so emplaced as to offer maximum interference at high tide. The low tide must be late enough in the morning for an hour's good daylight to permit the saturation bombing of defenses that would precede the landings, but it must come early enough in the morning so that a second low tide would occur before darkness set in. Without the second low tide the follow-up divisions could not be landed. The best compromise solution was decided to be three hours before high tide and one hour after first light.

It was also desirable to have a moonlight night to facilitate the airborne drop and the visual bombing of the beach defenses. A late-rising full moon was needed so that the pilots could approach their targets in darkness but have moonlight in which to pick out the drop zones. Above all, the success of the hazardous operation would hang on the weather, because the naval craft and transports would require a reasonable sea and good visibility to reduce the perils of navigation in crowded waters and to keep troops from arriving at the point of assault so seasick they could not leave their ships. Finally, we hoped for a fair wind blowing inshore to drive the smoke and dust of battle toward the enemy.

Since the invasion had already been postponed to early June, the period 5-7 June was calculated to be the time when the most favorable moon and tide conditions would coincide; and the date was tentatively set for 5 June. But on 4 June the forecast of sea and wind conditions was so unfavorable that General Eisenhower postponed the invasion for twenty-four hours. That night the weather forecast indicated some improvement from late afternoon of the 5th to the afternoon of the 6th, followed by an indefinite period of unfavorable wind and sea conditions.

General Eisenhower then had to choose between initiating the operation forthwith or postponing it for some time, for it would be approximately four weeks before proper conditions of tide and moon would appear again; such a long postponement would, of course, reduce the period available for operations before the onset of winter. Moreover, many of the troops were already aboard ships (with some even at sea); and many more were in marshalling areas ready to embark. General Eisenhower describes the situation as follows in his memoirs:

All southern England was one vast military camp, crowded with soldiers awaiting final word to go and piled high with supplies and equipment waiting transport to the far shore of the Channel. . . . The mighty host was tense as a coiled spring, and indeed that is exactly what it was—a great human spring, coiled for the moment when its energy should be released and it would vault the English Channel in the greatest amphibious assault ever attempted.*

At 0400 hours, 5 June, he directed that the operation proceed the following day.

THE NORMANDY CAMPAIGN

(6 June–24 July 1944)

As the mighty invasion fleet sailed through the mine-infested English Channel on the eve of Armageddon in the west, other Allied forces were sweeping through Rome; and the Red Army was massed along the eastern front ready to launch its shattering summer offensive. The tides of war were running strongly against the Germans as the full fury of the Western Allies was at last unleashed in an overwhelming triphibious demonstration of technical, logistical, and organizational superiority.

In a single day, 6 June 1944, the combined power of the Allied air forces, navies, and armies struck with terrific impact against a fifty-mile sector of the French coast (Map 3). Beginning their work shortly after midnight, 1,136 heavy bombers of the R.A.F. Bomber Command unloaded 5,853 tons of bombs by dawn on selected coastal batteries lining the Bay of the Seine between Cherbourg and Le Havre. Next, the airborne troops began the largest airborne operation conducted up to this time. About 0130 hours 6,600 men of the 101st Airborne Division began dropping behind Utah Beach, and an hour later the three parachute regiments of the 82d Airborne Division began their descent to the west of the

* Eisenhower, *Crusade in Europe*.

101st. At 0230 hours two brigades of the British 6th Airborne Division were dropped east of the Orne River, between Caen and the sea.

At dawn the Eighth Air Force took up the air attacks; and in the half hour before the touchdown of the assault forces (from 0600 to 0630 hours) 1,365 American heavy bombers, although hampered by the weather, dropped 2,746 tons of high explosives on the shore defenses. Then the medium and light bombers and the fighter-bombers of the Allied Expeditionary Air Force swarmed in to attack individual targets among the defenses. During the remainder of the day the strategic air forces concentrated their attacks upon the key communication centers behind the enemy's lines; and the tactical air forces roamed over the entire battle area, attacking German defensive positions, shooting up buildings known to house headquarters, strafing troop concentrations, and destroying transport. During the twenty-four hours of 6 June Allied aircraft flew 13,000 sorties, and during the first eight hours alone dropped 10,000 tons of bombs. In contrast to this mighty Allied air assault, such reconnaissance and defense patrols as were flown by the Germans were mainly over the Pas de Calais area, while over the assault beaches and their approaches only some fifty half-hearted sorties were attempted.*

Meanwhile the Allied sea armada drew in toward the coast of France, preceded by its flotillas of mine sweepers. The bad weather and high seas having driven the enemy surface patrol craft into their harbors, the 100-mile movement across the Channel was uneventful. By 0300 hours the ships were anchoring in the transport areas some thirteen miles off their assigned beaches, where a stiff wind and waves up to six feet high were making more difficult the complicated task of loading the troops into their landing craft (from the transports) and forming up the assault waves for the dash to the beaches. At 0550 the heavy naval fire-support squadrons began a forty-minute bombardment of the major coast-defense batteries, which were quickly silenced. As H-hour** drew near, the troops approached their beaches under the "comforting thunder" of fire support from destroyers that were closing in to bombard at close range the enemy pillboxes and strong points that commanded the beaches. In addition, each assault force had its own fire sup-

* Total German air sorties for D-day were about 500.

** The Allied assault forces used four different H-hours to meet the differing conditions of tide and bottom on the main assault beaches. The hour was 0630 at Utah and Omaha, while the British landings came between 0700 and 0800.

port in the form of rocket batteries, tanks, and self-propelled artillery mounted in landing craft. As the assault teams neared the beaches, all this tremendous weight of fire support from the sea and the air reached a climax.

THE INVASION (Map 4)

The terrain behind the beaches generally favors defensive tactics and on the whole is unsuitable for mobile warfare. In the VII Corps zone the smooth and shallow beaches in the vicinity of Varreville are backed by sand dunes that extend inland 150 to 1,000 yards. Behind the sand dunes the low ground had been inundated for a width of one to two miles, restricting travel from the beaches to four easily defended causeways. Farther inland the Merderet River, running parallel to the coast, and the Douve River, from which the ground rises northward to the hills around Cherbourg, restrict traffic to the established roads. Ste. Mère Eglise, St. Sauveur, and Barneville are key points on the road nets leading to Cherbourg. Southeast of Utah Beach the Douve and Vire Rivers flow into the shallow, muddy Carentan Estuary, which marked the boundary between the VII and V Corps.

From Grandcamp, cliffs extend eastward to Arromanches with only two breaks, one in the Vierville-Colleville area (V Corps zone), where there is a beach five miles long, and one at Port en Bessin. The Aure River behind Omaha Beach is a serious obstacle for a distance of ten miles from its mouth, near Isigny. From Arromanches to the Orne River (in the British zone) the beach is backed by sand dunes, low cliffs, or gently rising ground. Between the Orne and the Dives is a wide, marshy valley. Southeast of Caen there is an open, rolling plain that extends to Falaise; but between the Vire and Orne Rivers the area is covered to a depth of forty miles inland by bocage.* In this area observation is limited, and vehicle movement is restricted to the roads. The highlands that extend across the invasion front, with a depth up to twenty-five miles, are broken with steep hills and narrow valleys. The dominant terrain is some eighteen miles southwest of Caen. Although narrow, the roads in the entire area are generally metaled and good. Key centers in the road net, and therefore vital initial terrain objectives, are the towns of Carentan, St. Lo, Bayeux, and Caen.

The area in which the landings were made was initially held by the LXXXIV Corps of the German Seventh Army, with one panzer

* As stated previously, land divided into small fields by hedges, banks, and sunken roads.

and five infantry-type divisions deployed between Cherbourg and Caen.* A panzer brigade, an infantry brigade, and a parachute regiment held the coast of the Gulf of St. Malo from Barneville to Avranches. On D-day Field Marshal Rommel was absent from the front, being at his home near Ulm celebrating his wife's birthday.

The eight Allied regimental-brigade assault teams landed on the beaches generally as planned and joined up with most of the paratroopers. By the end of D-day the four corps had established beachheads as shown by the blue phase line on the map. On all beaches except Omaha the opposition had been lighter than expected; and, although all the D-day objectives had not been secured, a foothold had been gained in western Europe.

VII Corps Landings.—The mission of the VII Corps was expressed in its field order, which read: "VII Corps assaults Utah Beach on D-day at H-hour and captures Cherbourg with minimum delay." The 101st Airborne Division was to clear the way for the seaborne assault by seizing the western exits of the four causeways across the inundated area and organize the southern flank of the corps beachhead for defense and further exploitation. The 82d Airborne Division was to secure the western edge of the beachhead by capturing Ste. Mère Eglise, and it was to establish deep bridgeheads over the Merderet River to facilitate a later attack to the west to seal off the peninsula.** The 4th Division was to establish the Utah beachhead and then advance on Cherbourg. Appendix 8a shows the airborne and seaborne landings and the major operations of the three VII Corps divisions on D-day.

The airborne divisions were preceded by twenty pathfinder crews that experienced some difficulty in marking the six drop zones. The 101st approached France in a tight formation; but from the coast to the Merderet cloud banks loosened the formation, and east of the Merderet flak scattered the transport planes still further. In general, the division did not have a good drop. About 1,500 men were either killed or captured, and approximately 60 per cent of the

* The LXXXIV Corps was commanded by Lieutenant General Marcks, whose headquarters was in St. Lo. The divisions, from west to east, were 243d, 91st, 709th, 352d, 716th, and 21st Panzer. The Seventh Army headquarters was in Le Mans.

** This represented a last-minute change in the corps plan, which had originally prescribed a landing by the 82d Airborne Division west of St. Sauveur to block the movement of enemy reinforcements into the western half of the Cotentin Peninsula. The identification of the German 91st Division in the area at the end of May necessitated employing the 82d farther east to insure the success of the beach landings.

equipment was lost when the bundles fell into swamps or into fields covered by enemy fire. Only a fraction of the division's organized strength could initially be employed on the planned missions, and many of the missions carried out were undertaken by mixed groups formed from the scattered paratroopers. Fifty-one gliders came in about dawn, and thirty-two more arrived at 2100 hours. In spite of the scattered landings, the sudden appearance of the Americans created such confusion among the Germans that it tended to offset the disorganization of the invaders; and by dint of considerable improvisation the 101st was able to accomplish most of its initial missions.

A group of about seventy-five men from the northern regiment made for one of the division's main objectives, an enemy 150-mm. coastal battery at Varreville, and found it deserted. They then pushed on and secured the two northern exits from the beach while other troops established defensive positions to the northwest. A force of about eighty men from the center regiment attacked the Germans holding the southern causeway, forcing them to surrender by noon. About 1230 hours the first contact was established with the 4th Division when one of its infantry battalions advanced across the southern causeway. Other troops of the center regiment captured a German 105-mm. battery. In the south the bridges over the Douve north of Carentan were seized by fifty men about 0500 hours, and 150 others secured the lock in the river northwest of Carentan. Heavy fighting developed east of the Ste. Mère Eglise-Carentan road as the paratroopers tried to move to the southwest to destroy other bridges on the Douve. The Germans were bringing intense artillery, mortar, and small-arms fire on the Americans in this area, but a naval shore fire-control officer was able to contact the cruiser *Quincy*, whose 8-inch salvos neutralized the enemy fire. By evening 2,500 of the original 6,600 men of the 101st were working together. The division had accomplished all of its initial missions except destroying the Douve bridges west of Carentan and was assembling in the southern part of its zone to resume the attack to the southwest.

Of the 82d Airborne Division's three regiments, the two that were to land west of the Merderet had the worst drop pattern of all the airborne units. In contrast, the regiment that landed east of the Merderet had a very successful drop; and almost half of its 1,000 men were able to assemble rapidly. One battalion immediately started for Ste. Mère Eglise. The men were ordered to go directly into town without searching buildings; and they were told

to use only knives, bayonets, and grenades while it was dark so that enemy small-arms fire could be spotted by sight and sound. By 0430 the battalion had occupied the town and had hoisted the same American flag that it had raised over Naples upon its entry into that city. Enemy counterattacks had to be beaten off during the day, but by nightfall the situation was well in hand.

The chief concern, however, of the 82d Airborne Division during D-day was around two Merderet River bridges west of Ste. Mère Eglise, where the bulk of the assembled forces were committed and where the enemy put up his strongest resistance.* A miscellaneous group of about 400 men from all regiments of the 82d launched an attack about noon and seized one bridge, but they were unable to consolidate a position on the west bank. About this time the Germans launched a counterattack that recaptured the bridge and isolated the Americans west of the river. The enemy continued to attack across the bridge during the afternoon, but the 82d held the east bank. An attempt by the paratroopers to seize another bridge farther south was unsuccessful. Thus we see that at the end of D-day the situation in the 82d Division area was not good. The failure to hold the Merderet bridge created a tactical problem that was to engage the major forces of the entire division for the next three days. Probably the weakest feature of the situation of the airborne divisions at the close of D-day was the lack of communication between their own units and lack of information on the progress of the seaborne landings.

In the meantime the 4th Division was making its assault on Utah Beach with relative ease, much to the surprise of everyone. During the naval pre-invasion bombardment 276 medium bombers of the Ninth Air Force dropped over four thousand 250-pound bombs on beach objectives in the assault area. While the first waves of the assault troops were 700 yards off shore, seventeen fire-support craft discharged their rockets. The first wave consisted of twenty LCVP's, each carrying a thirty-man infantry assault team, and eight LCT's, each carrying four amphibious (DD) tanks. Almost exactly at H-hour the assault craft lowered their ramps, and 600 men walked into waist-deep water to wade the last 100 yards to the beach. Enemy artillery fired a few shells, but otherwise there was no opposition. The tanks were launched from their LCT's about 3,000 yards

* This resistance was partially due to the fact that the 82d Airborne Division's regiments west of the Merderet had landed practically on top of the headquarters of the German 91st Division.

from the beach and landed about fifteen minutes after the first assault wave.* The only major divergence from the plan was that the entire force was landed 2,000 yards south of the planned landing area. This error may have been caused by lack of naval control vessels,** by the strong tidal current, or because the shore had been obscured by the smoke and dust of the air and naval bombardment. The error proved fortunate, however, since the defenses in the south were found to be weaker than those where the landing was supposed to take place.

Army and Navy demolition teams following the assault infantry found the beach less thickly obstructed than anticipated, and the entire area was cleared in an hour. The work of demolishing the sea wall behind the beach and clearing paths through the sand dunes progressed rapidly. The infantry found enemy troops occupying field fortifications; but, apparently demoralized by the preparatory bombardment, they showed little fight. Beach opposition was soon cleaned up, and the assault troops reorganized for the advance inland. By 0800 hours four battalions of infantry had landed, and two more came in about 1000. The leading regiment crossed the flooded area on the three southern causeways and then advanced to the west to gain contact with the airborne troops. By evening two battalions were on the Carentan road south of Ste. Mère Eglise, while the third battalion was compressing the large enemy pocket that separated the 82d Airborne Division at St. Mère Eglise from the rest of the corps. The other infantry battalions of the 4th Division came ashore about noon and began moving out to the northwest to enlarge the beachhead. Since all the causeways were already congested or under enemy fire, these troops had to wade through the waist-deep water in the inundated areas, somewhat delaying their advance. One of the most critical problems during the morning had been the vehicle congestion created on the beach because of the limited number of exits.

The landing at Utah Beach met less opposition than any of the others, and the 4th Division's losses were astonishingly low. Its total D-day casualties were 197 men, including sixty lost at sea. No less noteworthy was the speed of the landings. The entire division (except one artillery battalion) landed during the first fifteen

* The thirty-two DD tanks played little part in the assault. One LCT struck a mine and sank; so only twenty-eight of the tanks reached the beach.

** Only one of the original four control craft was available to guide the assault wave because two had been sunk and one was bringing in the tanks.

hours, and by the end of the day over 20,000 troops and 1,700 vehicles had reached Utah.*

D-Day on Omaha Beach.—The mission of the V Corps was to secure a beachhead in the area between the Vire River and Port en Bessin, from which its troops would push southward toward Caumont and St. Lo, conforming to the advance of the British Second Army. The D-day mission of the 116th Regimental Combat Team, on the right, included the capture of Vierville and St. Laurent, an advance to the west to occupy the area between the flooded Aure River and the sea, and preparations to seize Isigny and make contact with the VII Corps. The 16th Regimental Combat Team, on the left, would seize Colleville, cross the Isigny-Bayeux road, and take up defensive positions covering the southeastern section of the beachhead, from Trévières to Port en Bessin.** Follow-up regiments of the 1st Division would pass through the 16th Regimental Combat Team and establish contact with the British. The operations on Omaha Beach will be discussed somewhat in detail because it was there that the Allies met their most serious initial resistance. Appendix 8b shows the terrain at Omaha Beach, the planned and actual landings of the first assault wave, some of the enemy strong points, and major V Corps operations during D-day.

In the Omaha sector the part of the beach regarded as suitable for landing operations is about 7,000 yards long, on a shore that curves landward in a very slight crescent and is backed with bluffs that merge into the cliffs at either end of the sector. The diagrammatic cross-section in the appendix shows the principal features of the beach. The tidal flat of firm sand is exposed at low tide, but at the high-water mark it terminated in a bank of shingle (very heavy gravel that was removed after the landing) that sloped up rather steeply to a height of some eight feet. In places the shingle embankment was as much as fifteen yards wide, the stones averaging three inches in diameter. On the eastern two-thirds of the beach the shingle lay against a low sand embankment or line of

* The troops included, in addition to the 4th Division, one battalion of the 90th Division, an armored field artillery battalion, a tank destroyer battalion, a chemical mortar battalion, two tank battalions, and the 1st Engineer Special Brigade.

** The 116th and 115th Regimental Combat Teams of the 29th Division were attached to the 1st Division for the landing. Later in the day the 29th Division was to assume control of operations on the right and the 1st Division on the left. This organization was designed to fit an operation that would develop from an assault by one reinforced division into an attack by two divisions abreast.

dunes that formed a barrier impassable for vehicles. On the western part of the beach the shingle was piled against a sea wall. Between the dune line or sea wall and bluffs lies the beach flat or shelf. Very narrow at either end of the main landing zone, this level shelf of sand widens to more than 200 yards near the center of the stretch. The flat was marked by large patches of marsh and high grass, a road parallel to the beach, and some summer villas. Bluffs 100 to 170 feet in height rise sharply from the flat and dominate the whole beach area. Their slopes are generally steep, but in varying degree. Four valleys provide exits from the beach flat and were, inevitably, key areas both in the plan of attack and in the arrangement of the defense.

Realizing that Omaha Beach was a suitable landing area, the enemy had prepared formidable defenses. In the tidal flat were three bands of heavily mined underwater obstacles consisting of element C's, heavy logs, and steel hedgehogs. On the shelf behind the shingle liberal use was made of barbed wire and mines. Firing positions were laid out to cover the tidal flat and beach with direct fire, both plunging and grazing, from all types of weapons. Observation on the whole Omaha area and flanking fire from cliff positions at either end were aided by the crescent-shaped curve of the shore line. Each strong point was a complex system of pillboxes, gun casemates, open positions for light guns, and fire trenches surrounded by mine fields and wire. These were connected with each other and with underground quarters and magazines by deep trenches or tunnels. Most of the strong points were situated near the entrances to the valleys, which were further protected by anti-tank ditches and road blocks. While machine guns were the basic weapons in all emplacements, there were over sixty light artillery pieces of various types. The heavier guns were sited to give lateral fire along the beach, with traverse limited by thick concrete wing-walls that concealed the flashes and made the guns hard to spot or destroy from the sea. All main enemy defenses were on the beach or just behind it, defenses beyond the beach depending largely on the use of local reserves in counterattacks.

The V Corps plans had been worked out in great detail; the assault landing teams had been built up to include every type of specialized technique and weapon needed to fight at the beach; and every unit, down to the smallest, had been trained to carry out a particular task in a definite area. Six companies of tanks (including ninety-six tanks and sixteen tank dozers), eight companies of infantry (1,450 men), and twenty-four special Army and Navy engineer demolition teams would come in with the first wave.

Thirty minutes later, after the demolition teams had cleared gaps through the obstacles, the remainder of the two leading assault infantry regiments and two battalions of Rangers would begin to arrive. By H plus 90 minutes the artillery and engineer special brigades would start landing.

The naval bombardment included 600 rounds of 12- and 14-inch shells from battleships and about 3,000 rounds of 4- to 6-inch shells from cruisers and destroyers, all directed against the beach strong points. The fire-support craft drenched the beach defenses with about 9,000 rounds of light artillery fire from H minus 30 to H minus 5 minutes; and when the assault waves were 300 yards from the beach, 9,000 rockets were fired.

As the landing craft neared the beach* at 0630 hours, there was every reason to hope that the enemy shore defenses might have been neutralized by the bombardment. But almost at once many of the landing craft began to come under fire from automatic weapons and artillery that increased in volume as they approached the touch-down points. It was evident that the enemy fortifications had not been knocked out. The situation rapidly became worse when the assault troops hit the beach, which they found unscarred by the heavy air bombardment that had just been completed.** Only sixteen of the forty-eight tanks in the 16th Regimental Combat Team sector survived the landing, and only three of the tank dozers arrived in working condition. The special demolition teams suffered 41 per cent casualties during the day—most of them in the first half hour.*** Most of the landing craft grounded fifty to a hundred yards out, sometimes in water neck deep. In crossing the 200 yards of open sand to the cover of the shingle and sea wall the infantry suffered their heaviest casualties of the day from mortar, artillery, and converging machine-gun fire. Only one of the eight infantry companies in the first wave was ready to operate as a unit after crossing the lower beach.

The second assault wave began touching down at 0700 hours; but since no advance had been made beyond the shingle, and since

* As shown by Appendix 8b, a majority of the landing craft came in east of their appointed beach sectors, some being as much as 1,000 yards out of position. This made reorganization of units most difficult and caused much confusion.

** The heavy overcast had forced the use of pathfinder instruments by the Eighth Air Force. With this technique and its greater range of possible error, it was necessary to push the center of the drop pattern farther inland to insure the safety of the assault craft.

*** However, they did succeed in blowing six gaps through the bands of obstacles, although only one of them could be marked because of loss of equipment.

neither the tanks nor the scattered groups of infantry already ashore were able to give much covering fire, these later troops experienced the same difficulties as the first wave. Mislandings continued to hinder reorganization, and at 0830 the landing of vehicles was suspended. The following account indicates how critical the situation had become:

As headquarters groups arrived from 0730 on, they found much the same picture at whatever sector they landed. Along 6,000 yards of beach, behind sea wall or shingle embankment, elements of the assault force were immobilized in what might well appear to be hopeless confusion. As a result of mislandings many companies were so scattered that they could not be organized as tactical units. At some places, notably in front of the German strong points guarding draws, losses in officers and noncommissioned officers were so high that remnants of units were practically leaderless. . . . In some areas later arrivals found it impossible to find room behind the shingle and had to lie on the open sands behind. Disorganization was inevitable, and dealing with it was rendered difficult by the lack of communications and the mislanding of command groups. Even landing at the best point, a command party could only influence a narrow sector of beach. It was a situation which put it up to small units, sometimes only a remnant of a single boat section, to solve their own problems of organization and morale.

There was, definitely, a problem of morale. The survivors of the beach crossing, many of whom were experiencing their first enemy fire, had seen heavy losses among their comrades or in neighboring units. No action could be fought in circumstances more calculated to heighten the moral effects of such losses. Behind them the tide was drowning wounded men who had been cut down on the sands and was carrying bodies ashore just below the shingle. Disasters to the later landing waves were still occurring, to remind of the potency of enemy fire. Stunned and shaken by what they had experienced, men could easily find the sea wall and shingle bank all too welcome a cover. It was not much protection from artillery or mortar shells, but it did give defilade from sniper and machine-gun fire. Ahead of them, with wire and mine fields to get through, was the beach flat, fully exposed to enemy fire; beyond that the bare and steep bluffs, with enemy strong points still in action. That the enemy fire was probably weakening and in many sectors was light would be hard for the troops behind the shingle to appreciate. What they could see was what they had suffered already and what they had to cross to get at the German emplacements. Except for supporting fire of tanks on some sectors, they could count on little but their own weapons. Naval gunfire had practically ceased when the infantry reached the beach; the ships were under orders not to fire, unless exceptionally definite targets offered, until liaison was established with fire-control parties. Lacking this liaison, the destroyers did not dare bring fire on the strong points through which infantry might be advancing on the smoke-obscured bluffs.

At 0800 the German observers on the bluff, sizing up the grim picture below them, might well have felt that the invasion was stopped at the edge of the water. Actually, at three or four places on the four-mile beachfront, United States troops were already breaking through the shallow crust of enemy defenses.*

The outstanding fact about these first two hours of action is that despite heavy casualties, loss of equipment, disorganization, and all the other discouraging features of the landings, the assault troops did not stay pinned down behind the sea wall and embankment. At half a dozen or more points they found the necessary drive to leave their cover and move out over the open beach flat toward the bluffs. In nearly every case where an advance was attempted, it carried through the enemy beach defenses. Some penetrations were made by units of company strength; some were made by intermingled sections of different companies; some were accomplished by groups of twenty or thirty men, unaware that any other assaults were under way. Various factors, some of them difficult to evaluate, played a part in the success of these advances. Chance was certainly one; destroyers' guns and tanks were called on for support and rendered good service; combat engineers blew gaps through enemy wire and cleared paths through mine fields. But the decisive factor was leadership. Wherever an advance was made, it depended on the presence of some few individuals, officers and noncommissioned officers, who inspired, encouraged, or bullied their men forward, often by making the first forward moves. A characteristic of these early penetrations that influenced the rest of the action on D-day was that they were not made up the draws, as planned, but up the bluffs, as shown on the chart.

Conditions on the beach improved later in the morning. Fire from the main enemy strong points was gradually reduced as one gun emplacement after another was knocked out, often by tanks. Support from naval units, necessarily limited during the first landings, began to count heavily later on and became a major factor as communications improved between shore and ships. The first decisive improvement along the beach came at the draw northeast of St. Laurent. About 1130 the last enemy defenses in front of it were reduced, and within half an hour engineers were clearing mines in the draw and working dozers on the western slope to rush through an exit road. This road became the main funnel for movement off the beach, although traffic soon became jammed on the plateau at the head of the draw, since the ground was not cleared farther inland.

* Historical Division, *Omaha Beachhead*.

No attempt will be made to describe the fighting inland during D-day. In general the action centered around the towns of Vierville, St. Laurent, and Colleville. In all three areas assault units, usually in less than battalion strength, fought more or less uncoordinated and separate actions. For example, in the St. Laurent area elements of five battalions spent the afternoon and evening fighting through an area of about a square mile that contained only scattered pockets of enemy resistance. The effectiveness of the attacking forces had been reduced by a number of factors, including lack of communications, difficulties of control, and the absence of artillery and armored support.

So in spite of continued enemy fire on the beach and the over-all confusion, progress was steady as the day wore on. The two support infantry regiments arrived about noon, and General Huebner and the command group of the 1st Division landed at 1900. By evening thirteen gaps in the beach obstacles had been made, and work was progressing on additional beach exit roads. One account summarizes the situation at the end of D-day as follows:

The assault on Omaha Beach had succeeded, but the going had been harder than expected. Penetrations made in the morning by relatively weak assault groups had lacked the force to carry far inland. Delay in reducing the strong points at the draws had slowed the landing of reinforcements, artillery, and supplies. Stubborn enemy resistance, both at strong points and inland, had held the advance to a strip of ground hardly more than a mile and a half deep in the Colleville area, and considerably less than that west of St. Laurent. Barely large enough to be called a foothold, this strip was well inside the planned beachhead maintenance area. Behind United States forward positions cut-off enemy groups were still resisting. The whole landing area continued under enemy artillery fire from inland.

Infantry assault troops had been landed, despite all difficulties, on the scale intended; most of the elements of five regiments were ashore by dark. With respect to artillery, vehicles, and supplies of all sorts, schedules were far behind. Little more than 100 tons had been got ashore instead of the 2,400 tons planned for D-day. Only the first steps had been taken to organize the beach for handling the expected volume of traffic, and it was obvious that further delay in unloadings would be inevitable.*

Casualties for the V Corps were in the neighborhood of 3,000 killed, wounded, and missing. The two assaulting regimental combat teams lost about 1,000 men each. The highest proportionate losses were taken by units that landed in the first few hours, in-

* Historical Division, *Omaha Beachhead*.

cluding engineers, tank troops, and artillery. Whether by swamping at sea or by action at the beach, matériel losses were considerable, including twenty-six artillery pieces and over fifty tanks. About fifty landing craft and ten larger vessels were lost, with a much larger number of all types damaged.

The principal cause of the difficulties of the day was the unexpected strength of the enemy at the beaches. The German 352d Division had just moved into the area to reinforce the coastal troops. As a result, all strong points were completely manned, reserve teams were available for some of the weapons positions, and there were units close behind the beach in support of the main defenses. A most surprising feature of the day's action was the enemy's failure to stage any effective counterattacks. A determined counterblow of even battalion strength might have pushed the battle back to the beach; but, instead, the enemy's power had been frittered away in stubborn defensive action by small groups.

A subsidiary V Corps operation was an attack by Rangers on an enemy coastal battery of six 155-mm. howitzers at Pointe du Hoc, three miles west of Omaha Beach. Three Ranger companies made a frontal assault on the position and with the help of ropes* managed to scale the cliffs. The enemy guns had been removed from their casemated positions; but by 0900 the Rangers had discovered them some distance away, where they had been cleverly camouflaged and sited to fire on either Utah or Omaha Beaches. The guns were destroyed; and the Rangers beat off counterattacks for the rest of the day while waiting for other Rangers to join them overland from Vierville, where they had landed with the rest of the V Corps assault troops.

Other D-Day Operations.—While General Bradley's troops were meeting with varying fortunes on Utah and Omaha Beaches, the British Second Army was achieving good results in its zone. General Dempsey's D-day objective was to secure a beachhead extending generally from Port en Bessin through Bayeux and Caen and along the Orne to the sea. The airborne landings began at 0200 when six gliders silently landed "like thieves in the night" to seize the Orne bridges north of Caen. Half an hour later two brigades of the 6th Airborne Division dropped east of the Orne. The Orne bridgehead was reinforced, and bridges over the Dives were destroyed. By 0500 hours enemy counterattacks began to develop;

* These ropes were anchored by grapnels that had been attached to rockets and fired from the landing craft.

but the position was stubbornly defended, and in the afternoon contact was established with seaborne forces.

The organization of the British assault teams, and their naval and air support, was similar to that of the American teams. (Appendix 8c includes a schematic diagram of one of these teams.) They also experienced unfavorable weather and seas, but the German beach defense was less spirited than at Omaha. Infantry of the two brigade assault teams of the British 50th Division, followed by DD tanks, landed east of Arromanches about 0725; the Canadian 3d Division's two brigades touched down astride Courseulles about 0800; and the British 3d Division landed just east of Lion sur Mer at 0725 hours. Once clear of the beaches, steady progress was made, although some enemy strong points were by-passed. Probably the most severe opposition occurred in the afternoon north of Caen, where an enemy counterattack by infantry and some twenty tanks of the 21st Panzer Division was stopped by the British 3d Division and some armor.

By the end of D-day the Allies had breached the Atlantic Wall all along the invasion coast, and all assaulting divisions were ashore. Apart from the factor of tactical surprise, the comparatively light casualties that were sustained on all the beaches except Omaha were in large measure a result of the splendid equipment (amphibious tanks, modern types of landing craft, rocket boats, etc.) that we employed. The greatest and longest step toward the destruction of the German armies in the west had been taken.

Initially dazed and confused by the pre-invasion air and naval bombardment and the air landings, and with his communications disrupted throughout the invasion area, the enemy was unable to diagnose the extent of the invasion or to react quickly with effective countermeasures. The German reaction is well described in the following account that has been pieced together from captured documents and prisoner-of-war interviews:

At 0130 on 6 June the German Seventh Army received word from LXXXIV Corps that landings from the air were under way from Caen to the northern Cotentin. By 0230 Army felt able to designate the focal areas as the Orne River mouth and the Ste. Mère Eglise sector. In contrast to Seventh Army's views that the Allies were attacking to cut off the Cotentin Peninsula, Army Group [B] and Western Command [OB West] were of the opinion that a major enemy action was not in progress.

Despite further reports of parachute landings at inland points all through western Normandy, at 0400 General Marcks (LXXXIV Corps) confirmed the first impression that the focal points were the Caen sector and around Ste. Mère Eglise. He reported that the

915th Infantry [a regiment of the 352d Division], corps reserve, had been ordered to occupy the Carentan area with the mission of maintaining communications throughout that point. Army Group alerted the 21st Panzer Division, attached it to Seventh Army, and ordered it to attack in the Caen area with main effort east of the Orne.

At 0600 Corps reported heavy naval gunfire from Grandcamp to the Orne; at 0645 Army told Army Group that the Allied intentions were still not clear and expressed an opinion that the naval gunfire might be part of a diversionary attack, to be followed by the main effort in some other area. Not until 0900 did Army hear from LXXXIV Corps that heavy landings from the sea had taken place from 0715 on; the sectors reported were from the Orne to northeast of Bayeux and at Grandcamp. At 0925, Corps reported the situation as very threatening north of Caen, with Allied armor reaching artillery positions, and asked for a mobile reserve to be constituted at once west of Caen. Penetrations in the forward positions of the 352d Infantry Division were reported at this time but were not regarded as dangerous.

Corps reported at 1145 an Allied bridgehead 16 miles wide and over 3 miles deep north and northwest of Caen; no information was on hand from the 352d Division, and communications were out with the eastern Cotentin area. Both Army and Corps were convinced that the Caen landings presented the main threat; the 21st Panzer Division was headed for the beachhead both east and west of the Orne. At noon Corps stated that attempted sea landings from the Vire to the coast northeast of Bayeux had been completely smashed and the only critical area was that near Caen.

The 352d Division advised Army at 1335 that the Allied assault had been hurled back into the sea; only at Colleville was fighting still under way, with the Germans counterattacking. At 1500 Army Group decided to put I SS Panzer Corps in charge of the Caen area. The 12th SS Panzer would move at once from the Alençon area toward Caen; Panzer Lehr was to come behind it. The 21st Panzer Division had elements north of Caen by 1600 and was expected to enter the battle at any moment.

At 1620 Army gave Army Group a general estimate of the situation. The situation in the Cotentin was noted as reassuring, and German forces on hand there were regarded as adequate. Army expressed its surprise that no landings by sea had supported the airborne troops, and hazarded the view that the Allied operation in this sector was diversionary. Twenty minutes later this conclusion was upset by word from Corps that sea landings had taken place just north of the Vire mouth. At 1800 more bad news came from the 352d Division: Allied forces had infiltrated through the strong points, and advance elements with armor had reached Colleville. As for the evening attack of the 21st Panzer Division, that unit had at first made progress and nearly reached the coast [near Douvres]; it then met heavy resistance and was forced to yield ground.

By midnight Seventh Army and Army Group had made plans for a heavy panzer counterattack on 7 June against the British landing

area by I SS Panzer Corps, with the 716th Division attached. The 21st Panzer Division would attack east of Caen; 12th SS Panzer and Panzer Lehr west of Caen. Steps had been taken during the day for setting in motion other units to reinforce the battle area. Battle groups from the 266th and 77th Divisions were put in a state of readiness, and those from the 265th Division were started by rail transport as reinforcement for LXXXIV Corps. All these units were in Brittany, and some hesitation was felt by Army Group in taking too much strength from that area before Allied intentions were fully clarified.

At the end of D-day the German Seventh Army had decided that the landings near the Orne constituted the main threat and had taken steps to commit its strongest and most readily available reserves in that sector. The situation in the Cotentin was not causing particular worry. Information as to the Omaha Beach sector had been scanty throughout the day, and both Corps and Army tended to pay little attention to developments there.

When Hitler, on 6 June, received word of the invasion he announced, "It's begun at last." He was confident that all measures were being taken to meet the crisis and that by 13 June counter-attacks would wipe out any beachheads.*

Operations, 7-12 June.—During the next five days the Allies concentrated their efforts toward joining up the beachheads into one uninterrupted lodgement area and bringing in the supplies of men and materials necessary to consolidate and expand their foothold. General Bradley's first concern was to strengthen his tenuous hold at Omaha Beach, launch attacks to secure Isigny and Carentan—to join the V and VII Corps beachheads—and establish firm contact with the airborne divisions so that the VII Corps could begin its drive for Cherbourg. The gap between the British and Americans also had to be closed, and General Dempsey planned to develop his operations with all possible speed to capture Caen. On 7 June slow progress was made on all fronts. Enemy artillery fire continued to harass beach operations, and scattered enemy groups still held positions within the perimeter of the beachheads.** The Allied forces had not yet recovered from their D-day disorganization, and in many cases units were not only understrength but lacked even the infantry heavy weapons that were necessary for any effective attack. However, since the Allied build-up continued at a faster tempo than the enemy could shift reserves to the threatened points on the beachhead perimeter, the situation gradually improved along the entire line.

* Prepared by Historical Division, Department of the Army.

** The largest of these strong points was at Douvres in the British zone, where the Germans held out until 17 June in installations 300 feet underground.

By 9 June the VII Corps had secured most of its D-day objectives. The 4th Division had advanced about three miles toward Cherbourg but was meeting stiff resistance from German coastal fortifications northwest of Varreville. In the center the 82d Airborne Division had been stalemated at the Merderet Bridges on the 7th but by evening of the 9th had fought its way westward to establish a bridgehead that included the elements of the division that had been isolated since D-day. But it was on the left that General Collins' chief concern lay. Here, similar to the early situation at Salerno, an eight-mile gap remained between his left flank and the right flank of the V Corps. General Bradley designated as first-priority missions the capture of Carentan by the VII Corps and Isigny by the V Corps.

General Collins directed the 101st Airborne Division to capture Carentan, and the division launched a coordinated attack on that objective early on 8 June. By evening the 101st had advanced to the Douve River; but further progress was difficult because any attack from the northwest was canalized along the Ste. Mère Eglise-Carentan causeway, the only approach to Carentan over the inundated countryside. A new attack was launched during the night of 9-10 June, with one force directed to cross the Douve on the causeway, by-pass Carentan, and seize the high ground southwest of the city. A left-flank force of the 101st was to cross the Douve on the bridges that had been held since the 6th, establish contact with the V Corps between the Vire and Douve, and press in on Carentan from the east. A bitter two-day battle developed on the causeway, but by evening of the 11th the paratroopers had gained control of that important stretch of road. At the same time the left-flank force made more rapid progress to the east; one company established contact with the 29th Division on the morning of the 10th, and the rest of the force pressed on against Carentan. During the night of 11-12 June the town was set ablaze by artillery and naval gunfire; and early the next morning the 101st closed the pincers on Carentan, which was seized by 0730 hours. The paratroopers immediately organized defensive positions southeast of the town to meet impending counterattacks from the German 17th SS Panzer Grenadier Division, which was just arriving in this critical area.*

In the center of the VII Corps zone General Collins decided to commit the fresh 90th Division through the 82d Airborne's Mer-

* The position of the 101st Airborne Division at Carentan remained precarious until 13 June, when it was reinforced by one combat command of the 2d Armored Division (V Corps).

deret bridgehead in an attempt to break through to key terrain in the west. The 90th launched its attack early on the 10th; but enemy artillery fire on the Merderet bridges, strong defensive positions on high ground to the west, and persistent counterattacks held the new division to gains measured in hundreds of yards. By the 12th the 90th was still making only slow progress in its attempt to cut the peninsula. The 4th Division had captured the enemy forts barring its advance and by the 12th was approaching its objective, a ridge running through Montebourg to Quineville; but enemy resistance increased as the German 77th Division was committed near Montebourg, and it threatened to block this drive on Cherbourg.

In the meantime in the V Corps zone isolated enemy strong points were cleared on the 7th, and all exit roads from the beach were opened by noon. The 29th Division became operational and took up the attack to the west but made little progress the first day. On the 8th, however, this division scored remarkable gains as one regiment relieved the besieged Rangers on Pointe du Hoe and moved on to seize Grandcamp and enemy artillery batteries that had been firing on the beaches. The center regiment advanced twelve miles, capturing Isigny and a bridge across the Aure River by 0800 hours on the 9th. The left-flank regiment closed up along the Aure. The 1st Division's attack carried across the Isigny-Bayeux highway and struck an enemy pocket south of Port en Bessin. During the night of 8-9 June the Germans evacuated this pocket with considerable losses, and early the next day the 1st Division established contact with the British along the Bayeux highway. So by early morning of the 9th the V Corps had also reached most of its D-day objectives, and artillery fire on the beaches had been practically eliminated.

At noon on the 9th General Gerow launched a new attack with three divisions abreast, the 2d Division having taken over a 5,000-yard zone in the center. On the 9th the greatest gains were scored on the right by the 29th Division, which crossed the Aure and cleared out the area east of the Vire. As we have already seen, contact was made with the 101st Airborne Division on the 10th; and on the 11th the V Corps' right flank was further strengthened by the arrival of elements of the 2d Armored Division. In the center the 2d Division initially met strong resistance around Trévières; but on the 10th, strengthened by the arrival of much of its missing equipment, it moved rapidly ahead to clear Trévières and most of the Forêt de Cerisy as the remnants of the German 352d Division collapsed. On the left the 1st Division gained momentum to the south as the corps' attack was renewed on the 12th to gain the high

ground near St. Lo and Caumont. The 1st Division reached the edge of Caumont by evening, and the 2d Division secured the high ground south of the Forêt de Cerisy; but as the 29th Division approached the hills north of St. Lo, it met resistance that indicated the importance the Germans attached to that key road center. In its first week of fighting the V Corps suffered 5,846 casualties, of which 1,225 were killed; it captured about 2,500 prisoners and practically destroyed the German 352d Division.

The British Second Army also scored good gains on its right, entering Bayeux on the 7th and Port en Bessin on the 8th. The British 50th Division then pressed on to the south abreast of the American 1st Division. The British 7th Armored Division came into action near Tilly on the 10th, but increasing enemy resistance and heavy counterattacks by elements of the Panzer Lehr and 12th SS Panzer Divisions halted progress in the British XXX Corps zone. In the Caen area the Canadian 3d Division advanced across the Caen-Bayeux road but then met heavy counterattacks by the 12th SS and 21st Panzer Divisions that stopped further progress. The British 3d Division made little headway against the strong German defensive positions covering Caen. In the Orne bridgehead the 6th Airborne Division withstood persistent counterattacks while the British 51st Division was arriving to launch an attack toward the eastern outskirts of Caen.

By 12 June the entire Allied beachhead was continuous and securely held. The Allies had landed in France and had staked out their claims. It was now evident that they were there to stay. With sixteen divisions already in the beachhead, supported by a steadily growing amount of nondivisional artillery and armor, the danger of a decisive enemy counterattack was fading from reality.* Three airstrips had already been built in the American zone, and others were under construction.

It is almost impossible to comprehend the stupendous logistical difficulties that were overcome by the Allies during the days following the landing. The details of this effort, far beyond the scope of this account, will make an epic story, for on the outcome of the battle of supply depended the success of the invasion of western Europe. With the elimination of enemy artillery fire from the beaches, the supply situation improved rapidly despite continuing unfavorable weather conditions. By the 12th the beaches were cleared of debris and working smoothly, construction of the arti-

* On 12 June the Germans had only thirteen understrength divisions in Normandy.

ficial harbors had begun, and the beach maintenance areas were being established. Although behind planned discharge schedules, during the first six days of the operation 326,547 men landed and 54,186 vehicles and 104,428 tons of stores were brought over the beaches.

Even though hampered by poor flying weather during the entire week, all records were broken by the Allied air forces. The Eighth Air Force and the R.A.F. began to work on the Loire River bridges, while the Ninth Air Force went after the railroad bridges between the Seine and the Loire. Marshalling yards and other traffic centers received due attention. From the 6th through the 11th over 37,000 tons of bombs were dropped, and 55,000 sorties were flown. Within an arc extending from the Pas de Calais through Paris to the Brittany Peninsula, 16,000 tons of bombs were dropped on coastal batteries, 4,000 tons on airfields, and 8,500 tons on railway targets. Complete Allied air supremacy was maintained over the beachhead, with only a slight increase in enemy air activity (mostly nighttime mine-laying operations in the Channel) being noted.

The map indicates the time of arrival of enemy divisions in Normandy, but it cannot depict the delays encountered en route. As the Allied air attacks on bridges, roads, railroads, and moving columns began to take effect, the German divisions negotiated the distance to the battle area with more and more difficulty. Consequently, units arrived piecemeal, lacking essential weapons and vehicles and short of fuel and ammunition. The increasing Allied pressure on the ground forced the enemy to commit these divisions as they arrived. He was kept so busy plugging the gaps that his much-discussed major counterattack had to be postponed repeatedly. By 12 June his golden opportunity to crush the invasion had passed, and the Allies definitely held the initiative. During this first week the Germans lost some 150 tanks and 10,000 men as prisoners. As yet no divisions had arrived from the Fifteenth Army area in the Pas de Calais, a very significant fact. Rundstedt's entire strategic reserve* had been committed, and three** of the seven divisions in the Brittany Peninsula and the II Parachute Corps had already been shifted to the north. By committing his strongest reserves at Caen, Carentan, and Valognes, Rommel clearly indicated where he most feared Allied advances; and the concentration of panzer forces around Caen demonstrated his particular concern over that important area, whose loss would effectively break the connection with the Fifteenth Army in the Pas de Calais.

* 12th SS Panzer, Panzer Lehr, and 17th SS Panzer Grenadier Divisions.

** 77th, 3d Parachute, and 265th Divisions.

THE CAPTURE OF CHERBOURG (Map 5)

After the establishment of the beachhead the next major mission of the 21st Army Group was to drive forward before the enemy could recover his breath. Toward the end of July 1918 Marshal Foch wrote: "Material forces are veering in our favor. Moral ascendancy we have always had. The moment has now come for us to pass to the offensive." A similar moment had arrived for the Allies in June 1944. They needed elbowroom for the ever increasing flow of reinforcements and supplies and maneuver room for large-scale offensive operations.

The most important initial step in the accomplishment of this purpose was the capture of Cherbourg, in order to win essential port facilities for the vast build-up and supply of our forces. Other objectives would be Caen and St. Lo, both key road centers of great importance to either side. But before all these objectives could be secured, six weeks of grueling hedgerow fighting was to take place.

After the capture of Carentan the Germans launched panzer counterattacks against that important link in the Allied beachhead, but the American paratroopers (reinforced with armor) held firm and even expanded their foothold southwest of the Douve. At the same time three enemy divisions were ordered to hold the Montebourg-Quineville ridge at all costs to stop the 4th Division's drive on Cherbourg. With the bulk of the enemy's available forces on the Contentin Peninsula committed in these two areas, General Bradley resolved to exploit the weak center and to cut off the peninsula preparatory to an all-out attack on Cherbourg.

Accordingly General Collins launched a new attack through the Merderet bridgehead on the morning of 14 June. The reorganized 82d Airborne Division attacked along the Douve toward St. Sauveur; and the veteran 9th Division, which had just landed, was directed on Ste. Colombe. In spite of the difficult terrain, the appearance of a new enemy division in front, and persistent counterattacks against the 9th Division's right flank, the attack progressed well. By the evening of 16 June the 82d Airborne Division securely held St. Sauveur, west of the Douve. About the same time leading elements of the 9th Division also established a bridgehead across the Douve, at Ste. Colombe. These gains broke the main enemy resistance; and while the 82d pivoted to the south to protect the corps' left flank, the 9th continued its attack to the west, debouching through both the Douve bridgeheads. Early on 18 June the 9th Division occupied Barneville, and by evening the VII Corps had driven a corridor five miles wide across the peninsula. The enemy

north of the corridor counterattacked in a vain effort to reestablish contact with the Germans to the south and then fell back in some disorder toward Cherbourg.

Protection of the south flank gradually fell to Major General Troy H. Middleton's VIII Corps, which became operational on 15 June. On that day it took over the 101st and on the 19th the 82d Airborne Division. Later the 90th Division also came under its control. With these adjustments the VII Corps was free to concentrate on its drive on Cherbourg.

On the 18th Generals Bradley and Collins decided to use three divisions for the attack to the north. The 4th Division launched a surprise night attack near Montebourg, and the 79th and 9th Divisions began their northward advances early the next morning. That evening, as the 4th and 79th closed in on Valognes, the Germans decided to withdraw to the strong defensive perimeter they had established in the hills around Cherbourg. By evening of the 20th the VII Corps reached this position, which consisted of well-prepared field fortifications reinforced by permanent structures of concrete.

An ultimatum for the Germans to surrender having expired, General Collins launched a coordinated attack on the afternoon of the 22d, which was supported by 1,000 aircraft of the tactical air forces and heavy artillery fire. However, no real breakthrough was achieved; and the VII Corps was forced to resort to a methodical reduction of strong points. Not until 24 June were the main defenses cracked. The next day all three divisions, supported from the sea by a heavy naval bombardment force,* reached the outskirts of the city; and the 79th Division captured Fort du Roule, the formidable bastion whose 280-mm. guns dominated the entire harbor area and sea approaches. On the 26th the German Army and Navy commanders surrendered, having previously exacted no-surrender pledges from their men; and the next day all organized resistance within the city ended. However, the excellent port installations had been so thoroughly demolished and the harbor, which could provide anchorages for over a hundred ships, had been so heavily mined and blocked by sunken ships that it was 19 July before unloading could begin and late August before large ships could be brought alongside the docks. By 1 July the 9th Division had cleaned out the last German resistance in the northwestern tip of the peninsula.

* Including three battleships, four cruisers, and eleven destroyers.

The capture of Cherbourg marked the attainment of the first major Allied strategic objective in western Europe. The VII Corps had suffered over 22,000 casualties, including 2,800 killed; but the enemy had lost 39,000 captured in addition to an undetermined number of killed and wounded. Even Rommel had to admit that, with Cherbourg in our hands, elimination of the beachhead was no longer possible. His plan of frustrating the invasion at the beaches had failed, and the next few weeks were to see the enemy making a frantic but unavailing effort to create a mobile striking force under Rundstedt's control.

While the VII Corps was capturing Cherbourg, the rest of the First Army regrouped to the south and, with the British Second Army, initiated a series of limited-objective attacks designed to gain additional maneuver room and the key terrain features considered essential for a line of departure for a general offensive. The XIX Corps, Major General Charles H. Corlett commanding, became operational on 14 June and immediately launched an attack between Carentan and St. Lo. Some progress was made toward St. Lo, but on the right the attack was halted along the canal that connects the Taute and Vire Rivers. On 21 June an active defense was assumed on the fronts of both the XIX and V Corps, and there were no further appreciable changes in the front lines during the rest of the month. This lack of action was partially dictated by the critical logistical situation that had developed on 19 June, which had forced ammunition expenditures to be cut to one-third of a unit of fire per day.

In the British Second Army zone the XXX Corps succeeded in entering Villers Bocage on the 13th with an armored division, but the sudden arrival of strong panzer forces caused the British to give up the town the next day. Farther east bitter fighting developed around Tilly, which was captured on the 19th. The British I Corps' attacks on Caen from the north and from the Orne bridgehead made little progress against tightening German resistance. General Montgomery then planned an all-out British offensive to capture Caen. Originally scheduled for 18 June, bad weather forced a postponement until the 25th, when the British XXX Corps began attacks that were designed to envelop the city from the southwest. Fierce resistance held the XXX Corps to small gains, but the British VIII Corps* launched the main effort the next day with an armored and two infantry divisions. On the 27th the armored division secured a bridgehead over the Odon River that was enlarged during

* The British VIII Corps, Lieutenant General R. N. O'Connor commanding, had arrived in France on 15 June.

the next two days. However, by the 29th it had become apparent that the enemy had concentrated most of his available strength in this area; so Montgomery decided to hold the ground won and regroup for a renewed thrust farther to the east.

In contrast to the infantry-artillery fighting around Cherbourg, the battles in the British zone were mostly armored engagements. By the end of the month the Germans had committed practically all of their strongest reserves, their panzer divisions, in this area. Moreover, the constant pressure around Caen had prevented the withdrawal of any of their panzer units for a counterattack that might have seriously threatened the Allied beachhead.

Whereas the Allies had landed twenty-five divisions (including five armored) by the end of June, the Germans had been able to concentrate only twenty divisions (including nine panzer-type divisions) in Normandy; and the bulk of four of these had been cut off and captured by the VII Corps. Rommel's reinforcements included two of the three panzer divisions from the Fifteenth Army sector, but only one infantry division from north of the Seine. Elements of most of the divisions in Brittany had been shifted north, and two SS panzer divisions, the 9th and 10th, had been recalled from the eastern front. The fact that these two divisions had taken as long to move from eastern France to Normandy as from Poland to the French frontier was indicative of the effectiveness of the Allied air operations. The destruction of the Seine bridges below Paris and the principal crossings of the Loire had virtually isolated Normandy except for the routes leading through the Paris-Orleans gap, and there the congested roads were offering rich targets for bombing and sabotage.

On 17 June Hitler suddenly appeared in northern France (his first and only visit to the west after 1940). By that time Rommel and Rundstedt were in agreement that their only hope was to withdraw from Caen to a strong defensive position that could be held by infantry while the panzer divisions were refitted for a powerful counteroffensive against the Americans in the Cotentin Peninsula. Characteristically, Hitler refused to consider such a proposal and insisted that the line be held at all costs. The German Seventh Army commander, General Dollmann, died on 29 June from a heart attack and was replaced by Lieutenant General Hausser (the first SS officer to command a field army).^{*} About 3 July von Rundstedt

^{*} Hausser had boasted that he reveled in the assignment of impossible tasks.

General Montgomery was reported as countering with the remark that such was an essential qualification for any general who took command of the German Seventh Army at this time.

was relieved by Field Marshal Gunther von Kluge as Commander in Chief West. From then on, Hitler's personal interference in the strategy and tactics of the campaign was unchecked.

The greatest detriment to the Allied build-up had not been the enemy, but the weather. It will be recalled that two of the great Allied "secret weapons" planned for the invasion were the artificial harbors that were to be installed at St. Laurent and Arromanches to provide the logistical support for the ground forces until large French ports could be captured. The placing of these installations began on D plus 1; and by 19 June the American harbor, which was designed to provide moorings for seven Liberty ships and twelve coasters, was about 90 per cent complete. The map inset shows the plan for this harbor, which was called Mulberry A. But from 19 to 22 June one of the worst summer gales in Channel history hit the Bay of the Seine. Unloading operations were virtually stopped, the floating steel caissons broke adrift and sank, the concrete caissons shifted, ferry craft broke loose and smashed into the piers, and the beach was strewn with some 800 stranded and damaged craft. Although the line of sunken ships held together fairly well, the American Mulberry as a whole was irreparably damaged.* Fortunately, the DUKW's were still available; and by their efficient use, plus emergency measures such as "drying out" the landing ships and coasters so they could be unloaded directly onto the beaches, operations were soon under full swing again. General Eisenhower comments as follows on his visit after the storm:

There was no sight in the war that so impressed me with the industrial might of America as the wreckage on the landing beaches. To any other nation the disaster would have been almost decisive; but so great was America's productive capacity that the great storm occasioned little more than a ripple in the development of our build-up.**

In spite of the appalling damage wrought by the storm, by 26 June Omaha Beach was discharging 122 per cent of its planned cargo capacity; and thereafter operations over the beaches continued to surpass our best expectations as supplies and personnel moved inland at an ever increasing rate. By the 26th, 268,718 men, 40,191 vehicles, and 125,812 tons of cargo had been discharged over Omaha Beach alone.

* The British Mulberry was less seriously damaged, and by using salvaged material from St. Laurent it was soon repaired. It operated effectively during the summer and autumn.

** Eisenhower, *Crusade in Europe*.

EXPANDING THE BEACHHEAD (Map 6)

By 1 July the Allied commanders were not worried as much about a German counterattack that would threaten their beachhead as they were over the possibility that the enemy might bring in sufficient reserves to create a stalemate in Normandy. We still needed more room to maneuver; and we needed more time to build up reserves of men, tanks, and supplies to support a sustained offensive toward the Seine. The general strategy for the breakout (which will be discussed in more detail in the next chapter) called for the main effort to be launched by the Americans on their right while the Allied line pivoted around the British at Caen, who would attempt to hold the bulk of the enemy strength in that area. Consequently, the period 1-24 July involved a struggle for limited objectives in which the First Army fought its way out of the restricted terrain at the base of the Cotentin Peninsula and into more open country west of St. Lo and the British Second Army established strong forces southeast of Caen.

After the capture of Cherbourg the VII Corps moved to the south and took over the portion of the First Army front around Carentan. Regrouping was completed by 3 July; and on that date the VIII Corps, on the right flank, began Bradley's offensive by launching an attack toward La Haye du Puits with three divisions.* In the fighting that ensued, slow progress was made through the marshlands and bocage country, where every field was a fortress and every hedgerow a German strong point. The VIII Corps converged on La Haye du Puits, capturing the town on the 7th; and by the 14th Middleton had reached his initial objectives, around Lessay, where he was ordered to halt. On the 4th two divisions of the VII Corps began an attack that met increasing resistance as it progressed along the Carentan-Periers road. On the 12th this drive was halted, since it had gained the high ground southwest of Carentan; but General Collins continued to attack with his left, which was reinforced by two more divisions. By the 18th the VII Corps had reached the Periers-St. Lo road and held the key terrain for the breakout to the south.**

The XIX Corps joined the First Army offensive on the 7th when it struck across the Vire River and to the southwest. It then turned

* VIII Corps: 79th, 82d Airborne, 90th Divisions. The 82d Airborne Division was released to army reserve on 8 July and was replaced by the 8th Division.

** VII Corps: 4th, 83d, 9th, 30th Division. The 83d Division had relieved the 101st Airborne Division, which was placed in army reserve at Cherbourg. The 3d Armored Division was in corps reserve.

over the right of its zone to the VII Corps and on the 13th drove toward St. Lo with its two remaining divisions.* In spite of a strong counterattack, the XIX Corps closed in on St. Lo from the north and east and completed the occupation of the key road center by evening of the 18th. Since General Bradley's plan called for the greatest advance to be made on his right, the V Corps** remained relatively inactive. During the period 1-18 July the First Army had gained its jump-off positions and had regrouped its divisions for the breakout that was scheduled to begin on 19 July. However, bad weather, which had limited air operations during the entire period, forced a postponement of the big attack until the 25th. During the difficult fighting in the marshlands and hedgerows the enemy had put up a stubborn defense and had even shifted some of his strength from in front of the British, particularly the 2d SS Panzer Division, to stop the Americans. In his book General Eisenhower summarizes the significance and character of these operations as follows:

The Battle of the Beachhead was a period of incessant and heavy fighting and one which, except for the capture of Cherbourg, showed few geographical gains. Yet it was during this period that the stage was set for the later, spectacular liberation of France and Belgium. The struggle in the beachhead was responsible for many developments, both material and doctrinal, that stood us in good stead throughout the remainder of the war. . . .

Although the nature of the terrain and enemy resistance combined with weather to delay the final all-out attack until July 25, the interim was used in battling for position and in building up necessary reserves. . . . The artillery, except for long-range harassing fire, was of little usefulness [because of limited observation]. It was dogged "doughboy" fighting at its worst. Every division that participated in it came out of that action hardened, battle-wise, and self-confident.***

In the meantime fierce armored battles had continued in the Caen area. If the American breakout was to succeed, it was essential that Dempsey contain most of the enemy's panzer forces on the Allied left; so Montgomery had directed the British Second Army to continue its offensive tactics. On 1 July the Germans made their last and strongest effort against the British positions when elements of five SS panzer divisions launched repeated, though not simulta-

* XIX Corps: 35th, 29th Divisions.

** V Corps: 2d, 5th Divisions. The 2d Armored and 1st Divisions were withdrawn into assembly areas in preparation for the next operation.

*** Eisenhower, *Crusade in Europe*.

neous, attacks. Fortunately the attackers were engaged by British massed artillery with telling effect and were dispersed.

On the 8th the British I Corps launched an attack on Caen from the north, employing three infantry divisions supported by armor. To assist in this attack the strategic air forces were called upon to blast an area on the northern outskirts of Caen, as shown on the map,* and heavy naval and artillery preparations were fired. By evening the British I Corps had closed in on the outskirts and by the end of the next day had occupied that part of the devastated city west of the Orne. From 10 to 18 July Dempsey continued to attack, maintaining pressure on as broad a front as possible. Considerable regrouping was also undertaken as the British XII Corps (Lieutenant General N. M. Ritchie commanding) relieved the British VIII Corps in the Odon bridgehead and the Canadian II Corps (Lieutenant General G. G. Simonds commanding) took over the Caen sector from the British I Corps. Attacks by the British XXX and XII Corps failed to gain much ground, but they succeeded in forcing the enemy to keep his panzer units in the line.

On the 18th the British VIII Corps launched a powerful attack to the south, using three armored divisions. This attack, assisted by another heavy air preparation** and naval bombardment, and supported on the right by the Canadian II Corps and on the left by the British I Corps, was pressed forward until the 21st, when rain turned the battlefield into a sea of mud. This last attack had been intended as a diversion to the main (American) breakout offensive, which, we have seen, was scheduled for the 19th but had to be postponed because of the weather. Although the British VIII Corps attack had gained only four miles—east and south of Caen—it had succeeded in drawing additional German forces to the east, destroying many enemy tanks, and placing the British in position to threaten seriously the strategic flank of the German forces in Normandy.

During the period between the capture of Cherbourg and the beginning of the breakout offensive the bad weather continued to

* Six hours before the ground attack was launched, 460 aircraft of the R.A.F. Bomber Command dropped about 2,300 tons of 500- and 1,000-pound bombs on an area approximately 4,000 yards wide and 1,500 yards deep in the first "carpet-bombing" operation of the campaign.

** Some 1,700 heavy bombers of the Bomber Command and Eighth Air Force and 400 medium bombers of the Ninth Air Force took part in this preparation. The medium bombers were assigned a target area directly in front of the British VIII Corps, while the heavies were given targets a little farther away.

handicap air operations to some extent; but, as already indicated, the Allied air forces were able to offer strong support to the ground forces. A Ninth Air Force report describes the operations of the tactical air forces during this period:

The chief contribution of fighter-bombers was the almost total restriction of enemy movement and reinforcement during flyable daylight hours to a depth of approximately thirty kilometers behind the lines. Von Rundstedt reported to Berlin that "whenever assembly areas are detected, an attack by fighter-bombers is launched without delay." The planes were successful in attacks on strong points, troop formations, self-propelled guns, tanks, armored vehicles, and field fortifications at the fighting front and drastically reduced the volume of enemy artillery fire by their mere threatening presence over the battle area. The "Jabos," as the German troops called fighter-bombers, were indeed the Allies' "most terrible weapon."

During the first three weeks of July the enemy, still fearful of a landing in the Pas de Calais, continued his half-hearted attempts to reinforce the battered units in Normandy by calling up divisions from southern France and Holland. Alarmed by the fall of Cherbourg, Hitler ordered that every coastal fortress be reinforced and prepared for a long siege; and likewise he ordered that every sizable town (such as St. Lo and Caen) be defended to the last. The explanation that OB West later gave for this hold-at-all-cost policy of Hitler's was that, if everything else failed, he hoped to destroy enough Allied forces so that finally only the famous "one German battalion" would be left.*

During this period several changes were made in the German High Command in the west. A new army, the Fifth Panzer, was organized in July with Lieutenant General Eberbach as commander.** On 17 July Allied fighter-bombers attacked a car in which Rommel was visiting the front, and the German commander suffered a bad skull fracture.*** Field Marshal Kluge was directed to take over the post of commander of Army Group B in addition to his duties as Commander in Chief West, and he immediately established his personal headquarters with the army group staff.

* Hitler had once said that it did not matter so much how the war was fought or who won the battles if at the end the one battalion left was German.

** This headquarters had formerly functioned as Panzer Group West in controlling the panzer divisions in Normandy.

*** Rommel recovered at his home in Ulm but, being implicated in the plot against Hitler, was given the choice of going to Berlin for interrogation or taking poison. He chose the latter and died on 14 October.

COMMENTS

The invasion of western Europe constituted the long-awaited "second front" and proved that the Allies could seek the enemy out, engage him in combat, and defeat him on his own ground. It showed that we could do against the Continent what the Germans had not been able to do against England, that is, execute an amphibious assault on a well-defended hostile shore and secure a lodgement. In this most complex of military operations, requiring the closest coordination of air, naval, and ground forces, painstaking and untiring efforts in the planning had borne fruit in successful operations. Undoubtedly some details of planning and execution could have been improved; but, gauged by final results, Overlord was a success in every respect.

The Normandy campaign officially ended on 24 July. That date marked the successful conclusion of the great amphibious operation—an achievement that will undoubtedly have a profound influence on the art of war. It showed that beach maintenance can be relied upon under almost all conditions. By this means there is conferred on the amphibious assault complete liberty regarding the point of attack, provided suitable beaches are available; and thus increased opportunities for surprise are obtained. Prior to 6 June 1944 the Allies had already demonstrated the practicability and effectiveness of amphibious operations in the Mediterranean and the Pacific, but it was in Normandy that we conclusively proved that large military forces could be landed and supported on a strongly defended hostile shore. In Normandy the Allies landed and supplied thirty-four divisions across the beaches* during the first seven weeks of the campaign. The millionth man stepped ashore in France on D plus 28, and by D plus 38 a million tons of supplies and 300,000 vehicles had been landed.

The greatest advantage (aside from the top priority on most Allied resources) that Overlord enjoyed over most other amphibious operations of the war was the proximity of a great base—the United Kingdom. This factor enabled land-based aircraft to maintain complete air superiority over the invasion area and at the same time conduct a powerful air offensive against the enemy. For example, during good weather over 1,000 United States heavy bombers by day** and 1,000 British heavy bombers by night could be

* In Italy the Fifth Army had supported about eight divisions over the beaches at Salerno, and later in the war the Sixth Army supported about eleven divisions over the beaches of Luzon.

** On 12 June the largest force of heavy bombers hitherto airborne on a single mission, 1,448 B-17's and B-24's, launched a mass attack on French airfields.

dispatched against strategic targets, while the Allied Expeditionary Air Force flew as many as 4,000 tactical sorties a day. In contrast, the Luftwaffe's activities were normally limited to defensive patrolling behind German lines, with an average of 300 to 350 sorties per day. Our naval victory in the Battle of the Atlantic had been so complete and our sea forces based in the British Isles were so strong that the biggest problem facing the Allied navies was the mines that the enemy managed to lay off the transport anchorages.* The logistical accomplishments would have been impossible, or would have required a fantastic number of ships, if the supplies had not been so readily available.

On the other hand, the invasion was no "push over." In order to use the close base the Allies were forced to assault a strongly defended coast. The efficient Germans had had four years in which to build their much-propagandized Atlantic Wall; the geography of northwestern France favored the rapid transfer of troops to the threatened area; the enemy had available in France one of the finest communication systems in the world, with its resultant advantage of interior lines; and strong armored units were available to counter any attempted invasion. But overwhelming air superiority overcame all these disadvantages.

Another handicap to the Allies was the atrocious weather that persisted until August in plaguing the operations of the navies, the air forces, and the troops on the ground. A special problem created by the very immensity of the project was the planning, organizing, and coordinating of the resources of two Allied powers. Perhaps the successful solution to this problem was the outstanding factor in the Allies' success; we know that dissension in its High Command contributed mightily to the collapse of Germany.

Unity of command had already been established as the best means of achieving coordination among the different services of one nation, but never before had such close cooperation between Allies been achieved. Montgomery comments as follows in his book on the operations in western Europe:

It should be remembered that the highly complex Anglo-American organization set up for launching Overlord had little more than five months for the completion of its task, from the time the higher command was finally settled. Events have amply shown that a splendid spirit of cooperation was established between the

* During the three months following D-day the number of mines swept off the invasion ports totalled one-tenth of those swept in all theaters combined from the beginning of the war to 6 June.

British and American services and that under General Eisenhower a strong, loyal team was quickly brought into being, while the various components of the great invasion force were welded into a fine fighting machine.*

The lessons the Allies had learned in the Mediterranean were indeed well applied.

Certain features of the landing are of special interest:

1. The airborne troops were employed on a hitherto unmatched scale. In spite of the difficulties they encountered, they demonstrated that, under conditions that are favorable for the use of parachute and glider units, the beach assault troops do not have to meet fresh enemy local reserves after exhausting themselves in overcoming the beach defenses, as was the case in the April 1915 landings on the Gallipoli Peninsula. Now, as happened in Normandy, the beach defenses and local reserves can be engaged simultaneously, the latter by airborne troops.

2. Naval gunfire, although failing to knock out the beach strong points prior to the assault, provided effective support for the ground forces. Fire from destroyers that came in close to shore was particularly effective in attacking enemy beach strong points, and the larger ships provided heavy artillery support** for the advance inland until heavy field artillery could be landed.

3. Although they suffered heavy casualties, the early landing of tanks gave much needed strength to the assaulting infantry.

But the most important reason for the success of the landing must not be pushed into the background. We must not lose sight of the fact that, in spite of the intense pre-invasion air and sea bombardment, for the first few critical hours the issue rested squarely on the shoulders of those "few brave men"*** selected to set foot first on the soil of France. Overwhelming material superiority, the most detailed plans, and the most meticulous preparations could not insure the success of the operation without the bravery and determination of the officers and men who first advanced across the fire-swept beaches.

* The Viscount Montgomery of Alamein, *Normandy to the Baltic* (Boston: Houghton Mifflin Co., 1948).

** The two divisions that landed on Omaha Beach on D-day were each supported by a naval fire-support group of a battleship, one or two cruisers, and four destroyers; and each infantry battalion was accompanied by a naval shore fire-control party.

*** Mr. Churchill once spoke of "the countless hours of work, the enormous amount of time and effort that must be expended by thousands of people, in order that a few brave men can rush on to the beaches of France and plunge their bayonets into the bowels of the enemy."

An analysis of the lessons to be learned from the Normandy campaign brings out nothing more startling than the realization that the broad principles of troop leading and staff functioning as developed in the past are sound. The meter of success continues to be the ability of commanders to apply these principles. Unity of command, an aggressive spirit, coordination in amphibious and airborne operations, air-ground cooperation, infantry-tank coordination, and supply discipline are basic requirements for success in any military operation. Overlord confirmed all of these old lessons and brought out some new ones. Meticulously coordinated planning and frequent full-scale rehearsals are essential and eradicate many of the "bugs", making an operation as nearly sure-fire as possible; but in the actual assault nothing will take the place of aggressive, intelligent leadership by all commanders to overcome the inevitable difficulties, unforeseen and unpreventable, that arise in every tactical and logistical situation.

In his report to the Combined Chiefs of Staff General Eisenhower discussed the reasons for Germany's failure to stop the invasion:

Lack of infantry was the most important cause of the enemy's defeat in Normandy, and his failure to remedy this weakness was due primarily to the success of the Allied threats leveled against the Pas de Calais. . . . The German Fifteenth Army, which, if committed to battle in June or July, might possibly have defeated us by sheer weight of numbers, remained inoperative throughout the critical period of the campaign; and only when the breakthrough had been achieved were its infantry divisions brought west across the Seine—too late to have any effect upon the course of victory.

A certain amount of reinforcement of the Normandy front from other parts of France and from elsewhere in Europe did take place, but it was fatally slow. The rate of the enemy's build-up in the battle area during the first six weeks of the campaign averaged only about half a division per day. . . . This process of reinforcement was rendered hazardous and slow by the combined efforts of the Allied air forces and the French patriots. . . .

The consequence of these attacks upon enemy communications was that the Germans were compelled to detrain their reinforcement troops in eastern France, after a circuitous approach over a disorganized railway system, and then to move them up to the front by road. Road movement, however, was difficult by reason of the critical oil shortage, apart from the exposure of the columns to Allied bombing and strafing. Whole divisions were moved on seized bicycles, with much of their impedimenta on horse transport, while the heavy equipment had to follow as best it could by rail, usually arriving some time after the men. . . . Traveling under such conditions, the reinforcements arrived in Normandy in a

piecemeal fashion, and were promptly thrown into battle while still exhausted and unorganized. By mid-July units had been milked from Brittany, the southwest and west of France, Holland, Poland, and Norway; only the Fifteenth Army in the Pas de Calais, waiting for a new invasion which never came, was still untouched. . . .

[The] continuing failure by the enemy to form an armored reserve constitutes the outstanding feature of the campaign during June and July; to it we owed the successful establishment of our lodgement area, safe from the threat of counterattacks which might have driven us back into the sea. Every time an attempt was made to replace armor in the line with a newly arrived infantry division, a fresh attack necessitated its hasty recommitment. These continual Allied jabs compelled the enemy to maintain his expensive policy of frantically "plugging the holes" to avert a breakthrough. So long as the pressure continued, and so long as the threat to the Pas de Calais proved effective in preventing the move of infantry reinforcements from there across the Seine, the enemy had no alternative but to stand on the defensive and see the Seventh Army and Panzer Group West slowly bleed to death. All that he could do was play for time, denying us ground by fighting hard for every defensive position.

In defending against an invasion from the sea there are certain sound principles of land warfare that may be applied. The most desirable procedure, of course, is to repel the invaders on the beaches; but it is seldom that a long coast line can be so strongly defended. If too many troops are committed to the defense of the shore line, the result will be a cordon defense, with insufficient reserves held out for a counteroffensive. So the best that can usually be done is to make the landings costly and contain the enemy within a small area while reserves are being assembled to "drive him into the sea." Properly timed, and with sufficient reserves available, the counteroffensive should be successful, for the invader is at a serious disadvantage during that early stage. Prior to the capture of a port his supply problem is difficult; he can usually bring in only a limited amount of heavy material; and under ordinary conditions the follow-up divisions cannot come in as fast as the defender can assemble his reserves. So if the counteroffensive is made while the invader has one foot in the water and one on shore, it should have a good chance of success.

There are, however, two important points that apply to the counteroffensive. The first is that since the reserves must not be committed against a subsidiary or secondary landing, the commander must be able to recognize the main landing. If he attacks at the wrong place, it will probably be too late to rectify the mistake. The second point is that the reserves must be so located, and the road

and rail net such, that they can be assembled quickly at the proper place.

These principles were, of course, well known to the German High Command. Why then did it fail? The answer may be found in German documents that describe what took place at OKW and OB West. First let us examine the situation on D-day as understood by OKW:

The picture of the situation corresponded entirely to the [operations staff's] expectations with regard to the first phase of a large-scale invasion. It left the question open, in the [operations staff] as well as in OKL and OKM, as to whether this was a tactical diversion, a strategic landing with a limited objective, or the prelude to the decisive main effort. . . . The picture of the situation at the time did not justify the opinion that the enemy's main landing operation had already begun. The choice of location, extent evident up to that moment, and prevailing weather conditions all indicated with much greater likelihood that this was a diversion or a holding attack, without any major strategic objective. . . . Hitler, therefore, was still convinced on the afternoon of 6 June that the main landing was yet to come (either on the Channel coast or—in close cooperation with the landing between the Orne and the Vire—on the west coast of Normandy, or in Brittany).

This impression had not changed by 9 June, as we see from the following:

Evaluation of the information about the enemy and reports in the possession of OKW showed on 9 June that the enemy had not as yet committed in Normandy even 20 per cent of the combat units which, according to evidence on hand, he was presumed to have in England.

Even if it were assumed that Montgomery's group of armies was more or less tied down for the continuation and reinforcement of the battle in Normandy, the enemy still had at his disposal for further landings from England the whole group of armies under Patton, and for further landings from North Africa another group of some 15–20 combined-arms units. There was no reliable evidence as to the planned commitment of Patton's group of armies or of the North African group.

At that time the [operations staff] believed it fairly certain that the enemy would land his African group on the southern coast of France, since an attack against the deep flank of OB Southwest in Italy would mean excluding these Allied forces from the decisive battle in France, for the sake of a secondary operation. The question of where Patton's group of armies would attack still remained open.

It is apparent that German intelligence was not what it should have been and that the disruption of signal communications and the

general confusion in Normandy gave the High Command a distorted picture of the landings already made.

By 13 June a rift in the German High Command was beginning to develop, as shown by the following:

The [operations staff] submitted a brief estimate to Hitler, to the effect that one of the chief reasons for the unsatisfactory combat situation in Normandy was the conduct of operations in the west up until then, particularly the failure to stick to the principle established and approved before the invasion: "Once the enemy has landed, concentrate all forces against that one spot—regardless of risk—and destroy him there." The [operations staff] suggested that, regardless of the obscurity surrounding the intentions of Patton's group of armies and of the North African group, the risks involved on other coasts be accepted, the combat front in Normandy be reinforced by all forces available in the west, and, in addition, forces be transferred to France from other theaters on as large a scale as possible, the combat missions of these other theaters being altered accordingly. This would have meant a definite shifting of the main weight of our over-all effort to France.

The [operations staff] made this suggestion with the conviction that if the invasion in France could be wiped out in its present (first) phase, then time and forces would be available at a later date to make good the disadvantages and reverses now accepted on other fronts.

Hitler only partially approved this view. In particular, he could not bring himself—probably chiefly for political and economic reasons—to agree to a decisive weakening of other theaters of operations. . . . Hitler, who in those days again inclined to the opinion that Patton's group of armies would make the second landing in the Fifteenth Army sector after all, ordered that the enemy's intention of preventing our commitment of strong forces in Normandy, by transmitting false radio announcements, was to be frustrated by concentrating our forces as much as possible and destroying the enemy beachhead little by little—the weakening of other fronts in the west must be accepted. But at the same time Hitler exempted the one really strong army in the west, Fifteenth Army, from giving up any appreciable number of troops.

Field Marshal Rundstedt reported as follows on a conference with Hitler that he attended on 30 June:

After Rommel and I had given an exhaustive exposition of the complete untenability of the situation, no clear decision was reached. Always: Hold! Hold! New weapons are coming, new fighter planes, more troops—and the same old talk. Here again we said that now something political must happen. Icy silence.

I left the conference without any hope, arrived in St. Germain [Paris] after an eighteen hours' journey by automobile, and found the situation there had become still more acute.

The next day I was dismissed.

Finally, an OB West report includes a realistic account of the German situation in July:

The fighting raged on without pause, forcing Army Group B to constantly expend forces at the front, so that there could never be any real formation of a large reserve, let alone any planned relief and rehabilitation of units behind the front or any extensive construction of positions for sealing off Normandy. The field forces suffered incredibly under the massed air attacks, which we were powerless to engage in the air. Supplies were stalled, delivery of fuel had become particularly difficult, and, in the last analysis, all tactical measures of the panzer units were dictated by the amount of fuel available. These were the factors at the end of July 1944 which were to determine the outcome of the Normandy battle for the Western Allies.

In summary, some of the factors that contributed to the failure of the Wehrmacht to repel the invasion were as follows:

1. Rigid adherence to a preconceived idea of the High Command (that the main landings would occur in the Pas de Calais).
2. Lack of effective combat intelligence, which enabled the Allies to gain tactical surprise.
3. Complete combat inferiority, particularly in the air.
4. Lack of a strong, mobile strategic reserve.
5. Dissension in the High Command, which resulted in a lack of a positive defensive strategy or authority to initiate prompt and effective countermeasures.

THE CAMPAIGN IN NORTHERN FRANCE (25 July-14 September 1944)

INTRODUCTION (Map 7)

During the first seven weeks of the war in western Europe, while the Western Allies were completing the initial phase of their master plan (Overlord) to secure a lodgement area in France, other Allied armies were achieving notable successes against Germany's "Fortress Europe." In Italy Anglo-American forces had reached the outposts of the Gothic Line, having completed a 150-mile pursuit from Rome. On the eastern front the Russians had launched a powerful summer offensive north of the Pripet Marshes on 23 June that had carried their forces almost to the Vistula. In the Pacific the American offensive gained momentum as General MacArthur completed his conquest of New Guinea and Admiral Nimitz seized heavy bomber bases in the Marianas.

The Normandy campaign had gained only a small piece of French soil for the Western Allies, and operations had fallen far behind the original Overlord schedule. The line that we actually held on 25 July was approximately that which had been planned for D plus 5; but the build-up was continuing generally as anticipated, and the destruction of German forces was proceeding apace. On 23 July Lieutenant General Henry D. G. Crerar's Canadian First Army* had become operational on the left of the Allied line, with the British I Corps under its command, and Lieutenant General George S. Patton's Third Army headquarters had begun moving to the Continent on 5 July in anticipation of assuming control of the American divisions on the right of the Allied line. Thirty-four Allied divisions had been concentrated in the beachhead:

	<i>Infantry</i>	<i>Armored</i>	<i>Airborne</i>	<i>Total</i>
United States	13	5		18
British	8	4	1	13
Canadian	2	1		3
Total	23	10	1	34

In addition, hundreds of nondivisional supporting units had arrived.**

The original build-up plan for American divisions had scheduled eighteen divisions (each accompanied by 25,000 supporting and service troops) to be on the Continent by 1 August. This goal was reached on 25 July.*** United States cargo discharges were also meeting the original SHAEF estimates by averaging 20,000 tons

* The Canadian First Army was activated on 6 April 1942 in London. In June 1943 the army was split when the Canadian I Corps and two divisions were sent to the Mediterranean to participate in the Sicilian campaign, the Canadian II Corps and the other three divisions remaining in the United Kingdom. On 20 March 1944 General Crerar was recalled from Italy to assume command of the First Army.

** For example, the First Army station list for 24 July 1944 included over 900 nondivisional units, most of them on the Continent, which varied from corps headquarters to army postal units. Included on this list were approximately 48 field artillery gun or howitzer battalions, 20 tank destroyer battalions, 55 anti-aircraft gun and automatic weapons battalions, 12 tank battalions, 8 cavalry reconnaissance squadrons, 37 engineer combat battalions, 25 field or evacuation hospitals, and 45 quartermaster truck companies (each with fifty-six 2½-ton cargo trucks).

*** The order of battle for the Normandy campaign shows nineteen divisions. Of these, the two airborne divisions had returned to the United Kingdom. The 5th Armored Division, which arrived on 25 July, is not included because it did not enter combat until 2 August.

per day, mostly over the beaches.* An idea of the supply task being accomplished can be gained from the fact that, although over 29,208,000 rations and 15,689,000 gallons of gasoline had already been expended, by 31 July the First Army had a seventeen-day reserve of Class I and a ten-day reserve (based on fifty miles per vehicle per day) of Class III supplies on hand.

By 24 July eighteen fighter-bomber and reconnaissance groups of the Ninth Air Force were operating from fifteen bases in Normandy, and seven additional airfields were under construction. The medium and heavy bombers could continue to support the ground operations from their bases in the United Kingdom.

As for the enemy situation, an attempted assassination of Hitler by a group of Army officers on 20 July had produced a general feeling of moral oppression and worry in Germany. The soldiers at the front continued fighting as though nothing had happened, but Nazi propaganda capitalized on the incident to deride the General Staff. Hitler's mistrust of his generals increased, and his direct control of military operations became stronger than ever. The Army silently went on doing its duty, though with the bitter subconscious knowledge that an unavoidable catastrophe was impending. In France all responsible commanders wanted to construct rearward defensive positions, particularly along the Seine, Somme, and Marne Rivers; but Hitler prohibited such action, saying, "Whenever a line of defense is built back of the front line, my generals think of nothing but going back to that line."

In Normandy the Germans opposed the American forces with fourteen divisions (nine infantry, two parachute, one panzer grenadier, and two panzer) and the British with thirteen (eight infantry and five panzer). However, General Eisenhower estimated the actual strength of these divisions as equivalent to only nine infantry, one parachute, and six panzer divisions. Of the German Seventh Army only one division in the Channel Islands and parts of two divisions in Brittany remained uncommitted. All available divisions had been stripped from Holland and from the First Army, in southwestern France. The threat of an Allied landing in southern France and French resistance activities prohibited further weakening of the Nineteenth Army, on the Mediterranean coast. The Russian offensive prevented further reinforcement of the western front from Germany or the east. Thus the German Fifteenth Army, north of the Seine, remained the only available source of

* Daily average American cargo discharges in long tons for July 1944 were: beaches, 17,700; Normandy minor ports, 1,300; Cherbourg, 1,000.

reinforcements. During the last week in July some of its divisions were finally started south.

The Allied strategy for the breakout from Normandy still conformed to the Overlord plan, namely: an eastern expansion of the beachhead to the Seine and the seizure of the Paris-Orleans gap; a drive by United States forces (the Third Army) to the south to cut off the Brittany Peninsula and then to the west to seize the badly needed ports; and the expansion of the lodgement area south to the Loire River before advancing east of the Seine.

THE ST. LO BREAKTHROUGH (Map 8)

The over-all tactical plan was well expressed in an official after-action report:

Having established strong bridgeheads to the east of the Orne River around Caen, the 21st Army Group issued a general directive for an offensive to break out of the Normandy Peninsula, gain control of Brittany, and swing wide to the east. British and Canadian armies on the left flank were to attack continually to the south and east to screen the location of the main effort, which was to be undertaken by the First Army in a pivoting move on its left flank and a swing south on its right flank which would secure the whole of the Normandy Peninsula. On reaching the base of the peninsula, it was to turn VIII Corps west into Brittany toward Rennes and St. Malo. Third Army was instructed to follow the advance of VIII Corps on the extreme right flank to take command of this operation when ordered.

The First Army's attack (called Operation Cobra) was to be launched by the VII Corps on a narrow front across the Periers road west of St. Lo. This main effort of General Bradley's army was to be supported by a heavy artillery bombardment and by a great carpet-bombing attack by heavy and medium bombers. The other corps of the First Army (VIII, XIX, and V) were initially to exert strong pressure against the enemy to harrass any attempted withdrawal and were later to increase this pressure, "forcing him to withdraw and exploiting every advantage gained from his state of disorganization."

General Collins visualized Operation Cobra as a quick power drive through the crust of the enemy's organized position. His operations were divided into two phases: First, three infantry divisions were to attack abreast after the carpet bombing to penetrate the enemy line to the vicinity of Marigny and open a gap for the exploiting forces; second, two armored and a motorized infantry

division* would pass through the gap to exploit the breakthrough. The 1st Division, reinforced with armor, would turn to the southwest toward Coutances, where it would cut off enemy forces opposing the VIII Corps and form an anvil on which that corps could hammer those forces to destruction. Other armor of the exploiting force would block to the south and southeast to hold by-passed enemy units in position (where they could be destroyed later) and also to prevent reinforcements from moving west.

It will be recalled that the British Second Army had launched a diversionary attack east of Caen on 18 July and that bad weather, which prevented the air bombardment, had caused the postponement of the main attack by the First Army.** On 25 July, after a false start the day before that was stopped because of the weather, Operation Cobra was finally begun. Starting at 0940 hours, an area 3,000 yards deep and 7,000 yards wide (shown on the map) south of the St. Lo-Periers road was saturated with over 4,700 tons of bombs from 1,500 heavy bombers, 400 medium bombers, and 550 fighter-bombers of the Eighth Air Force and the Allied Expeditionary Air Force.*** Although our troops had been withdrawn 1,200 yards from the target area, some assault divisions suffered casualties from the bombs;† but the effect on the enemy was devastating. General Bayerlein, whose Panzer Lehr Division was opposite the VII Corps, described the St. Lo carpet bombing to an interrogator:

He saw waves of four-motored aircraft come over. His divisional flak opened up; but they had "scarcely opened their mouths," as he puts it, when the rain of bombs began to fall and half of his antiaircraft guns were immediately knocked out. Their commanding officer ordered the rest to cease firing.

Every living person immediately went for whatever cover he could find and stayed there. The waves of planes kept coming

* 2d and 3d Armored Divisions and 1st Infantry Division (motorized). Both armored divisions were organized under an old table of organization and contained twice the number of tank battalions normal to the other American armored divisions.

** First Army, 25 July (west to east):

VIII Corps: 79th, 6th Armored, 8th, 90th, 4th Armored, 83d Divisions.

VII Corps: 9th, 1st, 3d Armored, 4th, 2d Armored, 30th Divisions.

XIX Corps: 35th, 29th Divisions.

V Corps: 5th, 2d Divisions.

Reserve (coming ashore): 5th Armored, 28th Divisions.

*** The tactical air forces flew almost 5,000 sorties during the day. Of all the Allied planes employed on the 25th our air losses were only 6 heavy bombers, 4 light bombers, and 19 fighters, chiefly the victims of flak.

† Including Lieutenant General Lesley J. McNair, who was killed while observing the operation.

"like a conveyor belt," seemingly without end. He heard the bomb carpets come down, now before him, now on the right, now on the left, rolling forward relentlessly. He felt certain now that a big attack was coming and that he must contact his forward positions. From 0930 on he was completely out of communication with all levels, even by radio. By 1200 hours nothing could be seen at all in any direction, so thick were the smoke, dust, and murk. Being entirely out of communication, he sent runners to his regiments and then for the first time noticed that there was also heavy artillery fire.

His front line he describes as a *Mondlandschaft*—a landscape on the surface of the moon, all craters and death. At least 70 per cent of the personnel were out of action, either dead, wounded, crazed, or dazed. The thirty to forty tanks he had in the front line were all knocked out, some turned over on their backs, some unable to climb out of craters. On a farm he found the whole command post of his 902d Regiment completely destroyed right in the center of a bomb carpet.

The three infantry divisions began the attack at 1100 hours on a six-mile front while all available guns of the four corps that could reach the breakthrough area fired heavy concentrations.* Initially progress was slow because some well-emplaced automatic weapons that had not been destroyed offered stubborn resistance. By evening, however, the line had moved forward almost two miles. The VII Corps casualties for the day totalled 1,060 men, including 152 killed.

Although the initial objectives of the penetrating forces had not been secured, the next day General Collins committed most of his exploiting force, which took up the attack and pushed about four more miles to the south, past Marigny. Only small gains had been registered on the flanks, but the VII Corps had definitely broken the German position. General Collins had correctly assumed that the advantage to be gained from refusing the enemy any time to regroup would outweigh that of waiting until all initial objectives had been captured. He said: "We had broken through the principal defenses of the Germans. I felt that the added punch of the armored divisions would be sufficient to make a clean break-away."

On the 27th the decisive actions of the operation took place. The last of the exploiting forces were committed, and elements of the VII Corps advanced to within two miles of Coutances. There they met stubborn resistance from enemy troops who were attempting to hold open an escape corridor for that part of the German Seventh Army that had begun to withdraw from in front of the VIII Corps.

* The VII Corps artillery had attached for Operation Cobra fourteen gun and howitzer battalions, which included all the army heavy artillery.

Other elements of the VII Corps were probing deep to the south against slackening resistance. The XIX Corps, after being reinforced, extended its zone of action to the west to protect the left wing of the VII Corps, which was driving toward Villedieu. Determined enemy resistance held the V Corps and the British to small gains. The phase line on the map shows the situation at the end of the 27th, when the heaviest fighting was over and enemy resistance west of St. Lo was beginning to disintegrate.

From 28 to 31 July isolated enemy pockets were mopped up as the spearhead divisions continued their drives to the south. On the west flank the VIII Corps' 4th Armored Division established contact with the VII Corps' 1st Division northeast of Coutances at noon of the 28th and captured the city later in the day. The enemy withdrawal after the loss of Coutances began to degenerate into a disorderly retreat, and 4,500 prisoners were taken during the 28th. Although mine fields were laid to slow the pursuit and German armored units fought a stubborn rear-guard action, the Americans' advance was not checked. The direction of attack of the VII Corps was shifted from the southwest to the south while Middleton's 6th and 4th Armored Divisions led the VIII Corps' attack along the coast. Bradley's original plan had envisaged a drive by the VII Corps to the coast and then a period of mopping up in the pocket thus formed north of Coutances, but the rapid advance of the VIII Corps made this unnecessary. Instead, both Collins and Middleton concentrated on the drive to Avranches.

These operations were supported by probably the most effective close air support attained to that time. Carefully laid plans for air-ground coordination enabled continuous air support to be maintained over the tank columns and their routes of advance.* During the six days from 26 July to 1 August over 400 armored-column support missions were flown, accounting for the destruction of large numbers of enemy armored vehicles, motor transport, and personnel. Night movement of German troops and supplies was hampered by the use of delayed-action bombs dropped on key crossroads prior to dark and timed to explode during the hours of darkness.

On the 29th General Collins' armored divisions trapped an enemy column about seven miles southeast of Coutances. Fighter-bombers

* One successful method employed throughout the war was to put an air liaison detachment in a tank belonging to the attacking armored division. Each such detachment was equipped with a radio capable of communicating with planes in the air. With this direct communication between the armored spearheads and the fighter-bombers, the aircraft could be directed to important targets and could be kept informed of the ground situation; and the eyes of the armor were extended to the range of the airplanes.

came in to attack the triple-banked, bumper-to-bumper columns of jammed vehicles and destroyed 137 tanks and over 500 other vehicles. Added to these losses were those caused by our armor and our artillery fire. The next day the 6th Armored Division, closely followed by an infantry division, closed in on Granville; the 4th Armored Division entered Avranches and secured two bridges across the See River; the 1st Division reached the Seine; and Collins' armor approached Villedieu. The breakthrough was completed on 31 July when the 6th Armored Division cleared the area between Granville and Avranches, the 4th Armored exploited beyond Avranches and seized a bridge over the Selune River, the 1st Division secured a bridgehead over the See south of Brecey, and other elements of the VII Corps drove south of Villedieu.

In the meantime there had been stiff resistance in front of the left wing of the First Army, and identification of two new divisions (one panzer and one infantry) in that area indicated Field Marshal Kluge's determination to hold the key road center of Vire and the commanding ground to the north and west. Another panzer division was shifted from east of the Orne to the vicinity of Tessy sur Vire. Consequently the XIX and V Corps made only moderate gains.

During Operation Cobra the British assisted the First Army by attacking in their zone. On the 25th the Canadian II Corps struck along the Caen-Falaise road, but a strong panzer counterattack wiped out its gains. With the enemy panzer divisions still concentrated around Caen, General Montgomery then decided to regroup quickly for a heavy attack south from Caumont—toward Vire—to get behind the enemy divisions that had been forced back onto a north-south line by the American breakthrough. The British VIII Corps was shifted over to Dempsey's right flank, and on the morning of 30 July the British VIII and XXX Corps launched an attack with three armored and three infantry divisions, supported by heavy and medium bombers. The VIII Corps made good progress and by the 31st had reached the high ground just west of Le Beny Bocage; but rough terrain, mines, and well-sited antitank and machine guns held the XXX Corps to small gains.

At the end of the month the Fifth Panzer Army was still holding Kluge's right flank, but his left had been shattered. The Seventh Army's left-flank corps (the LXXXIV) consisted of only remnants of seven divisions, some of them down to a strength of 300 infantrymen. These remnants were formed into a single division, and the arrival of three new divisions partially restored the combat

strength of the corps; but with the Americans beginning to break out of the peninsula into more open terrain, where their superior mobility could be applied against the grounded enemy troops, the situation facing the Germans was indeed critical.

THE BREAKOUT (Map 9)

On 1 August, as the Americans poured around the crumpled German flank at Avranches, a major revision was effected in the organization of the Allied forces. The Third Army (Lieutenant General George S. Patton) became operational, taking over the VIII, XV, XX, and XII Corps.* The 12th Army Group headquarters also became operational and assumed control of the First and Third Armies. When General Bradley began functioning as 12th Army Group commander, he turned over command of the First Army to Lieutenant General Courtney H. Hodges, who had been understudying him.

The day before (31 July), the zone of operations of the Canadian First Army was extended to include the Caen area, and the Canadian II Corps was placed under General Crerar's command. The 21st Army Group then included only the British Second and the Canadian First Armies. However, General Montgomery continued to act as coordinator of the operations of both Allied army groups. This arrangement was not changed until 1 September, when SHAEF became operational on the Continent. Appendix 6 gives the Allied order of battle on 1 August.

At last the German High Command decided that the Allies would not launch large-scale landings in the Pas de Calais. Increasing reports of the appearance of Canadian and other formations formerly regarded as belonging to "Patton's group of armies" and the operations of the First Army during the last week of July finally convinced the Germans (when it was too late) that the Normandy operation was the Allies' main effort. Divisions from the Fifteenth Army began moving to the front during the last week of July; but, as had been the case since the first landings, Allied air power continued to dominate the skies so completely that the movement of the enemy divisions was hazardous and slow.

* XII Corps: Major General Gilbert R. Cook.

XV Corps: Major General Wade H. Haislip.

XX Corps: Major General Walton H. Walker.

We have seen that the VIII Corps was commanded by Major General Troy H. Middleton.

The cutting of the German lines of communication to Normandy was a classic example of air-force interdiction operations. The map shows the lines originally attacked to seal off the lodgement area. During July attacks were continued on these lines and on other key points in the enemy's communication system. Captured German generals described the Seine-Loire-Chartres gap area as a "traffic desert." Reconnaissance pilots reported that the country appeared to be a "dead area." There was little rail or road movement during daylight hours, and columns moving during the short nights were continually harassed by our night bombers. (In contrast, the Allies' motor transport was moving bumper to bumper, day and night.) An official report describes some of the difficulties that faced the Germans in western France during the summer:

Of fourteen enemy divisions which carried out at least a portion of their journey to the Allied beachhead by rail, only four were able to move by rail inside the area Seine-Loire-Chartres. Having detrained, combat units attempting to reach the battle were forced to move mainly by night. Units arrived in the area lacking essential equipment, and were often too late or too weary for effective participation in the battle. Attempts to overcome delays led to frequent changes in orders and to desperate "last-ditch" efforts to move units and supplies during daylight. This procedure resulted in almost prohibitive losses from fighter-bomber attacks. The delays resulted in a lengthening spread between the arrival of the first elements of a formation and the final assembly of the unit in the battle zone. The Germans were consequently forced to commit their forces piecemeal, further increasing their losses and sacrificing much of their effectiveness.

In addition to the activity of the combined Allied air forces in the battle area, the strategic bombers were striking rear communication lines with telling effect. The G-3 of OB West described the results of these operations as follows:

The movement of all types of supplies came to a virtual standstill. This was true of strategic supply as well as tactical supply; the effect of this on combat power and the tactical situation is obvious. On major railway sections, particularly near the borders of the Reich, there was an enormous jam of rolling stock. After about three weeks of invasion the number of supply trains stalled there was sometimes as high as 2,000. A large amount of rolling stock was jammed on French-Belgian railway sections and could go neither forward nor backward. Time-consuming shifts to truck transport had to be made; the supply of fuel, already scarce, was further diminished by using it for these purposes. Though every effort was made to improve the situation, and the rail jam on some days sank to only 1,300 trains, on the average, as far as I remember, the number of stalled trains remained at around 1,800. Under these circumstances an orderly conduct of operations was no longer possible for any length of time.

During August most of the tactical air operations were to be in direct support of the ground forces, the isolation of the battlefield having been effectively accomplished. The XIX Tactical Air Command (Weyland) of the Ninth Air Force became operational with the Third Army, while General Quesada's IX Tactical Air Command continued to support the First Army. Effective air support for his armored divisions was to be a major factor in the success of General Patton's spectacular operations during the month.

Let us now return to the ground operations. The Third Army drove southward from Avranches on 1 August with the mission of securing the Brittany ports and clearing the peninsula. The VIII Corps led the attack, with the 4th and 6th Armored Divisions spearheading its advance. There was little organized resistance and no coordination of what there was, some enemy groups fighting independently and others fleeing. As a consequence, there were no mine fields and few demolitions to impede the progress of the armored and motorized columns, which advanced boldly, leaving centers of resistance to be mopped up by other troops. The weather was hot and dry, and inland from the sea there was little fog. Fighter-bombers mercilessly attacked enemy daylight concentrations and movements, helping to turn the retreat into a rout. By 3 August the 6th Armored had reached Loudeac, the 83d Division was closing in on the fortress of St. Malo, the 4th Armored was driving toward Vannes and Nantes, and the 8th Division had captured Rennes. These moves placed the VIII Corps astride all the main and unimpaired routes of communication from the Brittany ports. Various resistance groups of the French Forces of the Interior, totalling about 30,000 armed combatants, came under Patton's control and were given the tasks of seizing key terrain and protecting railroads. In the meantime the XV Corps was closing up on the line St. Hilaire-Fougères to protect the Third Army's left rear.

Along the rest of the front the Germans managed to hold a cohesive line and were doggedly resisting the attacks of the First Army and the 21st Army Group. However, the VII Corps occupied Mortain on the 3d to widen the Avranches gap for the Third Army. The phase line on the map shows the Allied gains up to the evening of 3 August. At this time the first major change in the Overlord plan was made.

In June the SHAEF planning staff had developed a plan* that was based on three assumptions: (1) that no appreciable enemy forces were left in Brittany; (2) that few enemy forces were in the

* Called Lucky Strike.

area between the Loire River and the line Laval-Le Mans-Chartres; and (3) that no strong mobile enemy forces were south of the Loire. The plan contemplated a straight drive east by the 21st Army Group and a portion of the United States forces and, simultaneously, a wide sweep by a strong American armored force along the north bank of the Loire to block the Paris-Orleans gap. The armored force would then cooperate with the other armies in the destruction of the German divisions west of the Seine. Operations in Brittany would proceed at the same time but with a minimum of troops.

Presented on 3 August with an actual situation comparable to the foregoing, which made the destruction of the German armies west of the Seine a distinct possibility, General Eisenhower hastened to exploit it and directed that—

1. Third Army, leaving only minimum forces to clear the Brittany Peninsula, make its main effort to the east, driving with strong armored forces on the general axis Laval-LeMans-Chartres.

2. First, British Second, and Canadian First Armies maintain relentless pressure on the enemy and, by continued strong attacks, prevent his disengagement.

3. Plans be completed for an airborne operation to seize the Chartres area to block the Paris-Orleans gap and assist the drive of the Third Army.

Thus General Patton's primary mission was suddenly changed from one of seizing the Brittany ports to a rapid exploitation toward the Seine in an attempt to destroy the German armies stubbornly holding out in Normandy. Several considerations led the Supreme Commander to this decision:

1. There was an excellent opportunity, which might not return soon, to destroy a large part of the German Army. The combat power was available.

2. The main Brittany ports, particularly Brest, would probably require siege operations. The use of a smaller force against them would delay their capture, but the delay was not expected to be long. Logistical considerations made their capture important, but supply up to the Seine could be maintained without them.

3. The terrain that would be encountered in a drive to the Seine would be favorable for the use of armor, and the weather was expected to be good.

4. The air forces could keep the Seine and Loire bridges out of commission and could harass crossing attempts by other means. With good weather and long hours of daylight, the fighter-bombers could provide most effective support for the ground forces. In his

book General Eisenhower comments upon the "human element" of the situation:

Another factor that justified this very bold decision was the confidence that both Bradley and I had now attained in our principal battle commanders. In Patton, who took command of the Third Army on the right immediately after the breakout was achieved, we had a great leader for exploiting a mobile situation. On the American left we had sturdy and steady Hodges to continue the pressure on the Germans, while in both armies were battle-tested corps and division commanders. They could be depended upon in any situation to act promptly and effectively without waiting for detailed instructions from above.*

General Patton quickly launched his Third Army on its drive to the east. The VIII Corps was given the mission of securing the Brittany ports. The XV Corps was directed to seize and hold a bridgehead east of Mayenne until relieved by the First Army; to seize a bridgehead at Laval; to secure the Mayenne River as far south as Chateau Gontier; and to capture Le Mans and be prepared for further offensive action to the north, northeast, or east. The XX Corps was ordered to concentrate in the vicinity of Vitre, to secure crossings of the Mayenne River south from Chateau Gontier to the Loire, to advance rapidly to the east, and to protect the south flank of the Third Army. The XII Corps was to assemble in the rear and be prepared to move forward on army order.

On 4 August the XV Corps captured Mayenne and established contact on its left with the VII Corps of the First Army. The next day the VIII Corps reached Vannes, near Quiberon Bay; and the XV Corps crossed the Mayenne River south of Laval. By the 7th the VIII Corps' armor was containing the garrisons of Brest and Lorient, while to the east armored spearheads of the XV Corps were within twelve miles of Le Mans. The next day the XV Corps captured Le Mans (the main supply base of the German Seventh Army) and crossed the Sarthe. Elements of one division of the XX Corps reached Nantes and Angers, along the Loire. During these five days, in which the Third Army drove eastward eighty-five miles, from Rennes to Le Mans, and westward 120 miles, to Brest, the Luftwaffe made an all-out bid to block Patton's line of communication at the Avranches bottleneck; but it was never a match for the Allied air forces and antiaircraft defenses and succeeded only in harrassing the Third Army. A more serious situation, however, had developed elsewhere.

* Eisenhower, *Crusade in Europe*.

The German Mortain Counterattack (7-12 August).—While the Third Army was breaking out of Normandy, the First Army continued its operations northeast of Avranches, which had begun with the St. Lo breakthrough. The VII Corps, with an armored and four infantry divisions, was still on Hodges' right and by 6 August had just closed the 30th Division into Mortain. Two other divisions held the line extending southeast to the left flank of the Third Army at Mayenne. The XIX Corps, driving east against determined resistance, captured Vire—toward which point the V and British VIII Corps were also converging—on the evening of 6 August.

In the zone of the 21st Army Group the attack of the British VIII Corps along the army group boundary continued to make the most progress and reached the northern outskirts of Vire late on the 2d, but increased resistance at that point and on the high ground northeast of the city practically stopped further advances of the Second Army by the 4th. Montgomery then decided to launch another attack along the Caen-Falaise road with the Canadian First Army. On 5 and 6 August General Crerar was making final preparations for this attack.

In the meantime the enemy had been making plans. As the Allies broke out of the beachhead, the operations staff of OKW saw two possibilities for the further conduct of operations:

1. The Germans could break off the battle in Normandy and, by delaying on successive positions, withdraw their forces behind the Seine while Army Group G simultaneously evacuated southern and southwestern France. This action would probably result in heavy losses because of Allied superiority in personnel, matériel, and in the air; and it would undoubtedly be only the first step in a general withdrawal to the West Wall. In addition to the surrender of France, with its political and economic consequences, the Germans would lose their V-weapon launching sites along the Channel, the situation in Italy would be so aggravated that a withdrawal from upper Italy to the Alps might be necessary, and the Allied air attacks on the industries in western Germany could be intensified.

2. The Germans could continue the battle in Normandy, the first objective being to close the Avranches gap; then, disregarding the divisions that had broken out to the south and into Brittany, to attack toward the north. This solution still appeared tactically feasible to OKW at the beginning of August. Although it avoided the decisive disadvantages of the first solution, it involved the risk that if the attack should fail there would be an unavoidable crisis on the Normandy front.

Hitler chose the second solution and on 2 August ordered a strong panzer counterattack toward Avranches. The infantry units from the Fifteenth Army that were then arriving were to be committed between the Orne and Vire Rivers so that the panzer divisions could be pulled out for the counterattack. Field Marshal Kluge received the following order from OKW:

Under no circumstances is the enemy to be allowed to gain freedom of action "in the open." OB West will get ready immediately, with all available panzer units, for a large-scale counterattack in in order to push past Avranches to the coast, cut off the enemy, and destroy the forces that have already broken through. All available panzer units, regardless of their present commitment, are to be taken from the other parts of the Normandy front, joined together under one specially qualified panzer operations staff, and sent into a concentrated attack as soon as possible. The outcome of the whole campaign in France depends on the success of this attack.

The order struck von Kluge like a thunderbolt because he knew that its execution meant the collapse of the Normandy front and probably catastrophe. He therefore protested to OKW:

I report that, to the best of my knowledge and conscience, the execution of this order means the collapse of the whole Normandy front. Tanks are the backbone of our defense. Where they are withdrawn, our front will give way. Because of the air situation tanks can cross behind the front only at night; complete confusion will arise, and, above all, the supply of motor fuel is completely inadequate for effective movements. If, as I foresee, this plan does not succeed, catastrophe is inevitable. You are urgently requested to re-examine the matter and bring it to the Führer's attention.

However, Hitler insisted that his order be carried out; so a special panzer staff under General Eberbach was set up, and elements of six panzer divisions were earmarked for the operation. After overcoming many difficulties, their movements and preparations were completed on 6 August.

The attack began on 7 August, shortly after midnight. Its full force struck the 30th Division at Mortain; and by morning the enemy armored units had penetrated the American lines some three or four miles, although an isolated infantry battalion* held out on a hill near the town. At dawn, though, the Allied air forces, particularly the rocket-firing Typhoons of the British Second Tactical Air Force, concentrated on the panzer formations with good effect. General Bradley quickly shifted three more divisions** to the threatened area. For the next three days a fierce battle was waged around Mortain as the Germans tried desperately and repeatedly to cut the

* The 2d Battalion, 120th Infantry Regiment, 30th Division.

** The 35th, on its way to join the XX Corps, and the 2d Armored and 4th Divisions.

twenty-mile corridor through which the Third Army was pouring onto the plains of western France. Although the isolated battalion near Mortain had to be supplied by air, it valiantly held its position.* By the 10th the VII Corps, with strong fighter-bomber support, had blocked the German threat and had taken a heavy toll of the concentrated enemy armor. Late the next day the 30th Division re-entered Mortain.

General Warlimont** later commented as follows on the Mortain counterattack:

Hitler obviously made his decision from a map, without taking into consideration the difficulties involved in the field of executing the decision. The idea itself was sound, but Hitler's insistence on supervising the smallest details of the counterattack caused it to turn into a disaster for us. Again and again the same thing! Hitler would grasp an operational idea, without giving any consideration whatsoever to the necessary means, the necessary time and space, troops and supplies. Those are the fundamental elements of strategy which are necessary for success, but Hitler rarely took them into consideration.

When Warlimont returned to Hitler's headquarters in East Prussia to report the failure of the counterattack, in spite of the efforts of everyone in the west to make it succeed, Hitler's only comment was: "Von Kluge did that deliberately. He did it to show me that my orders were incapable of being performed."

The Close Encirclement (9-13 August).—Despite the threat to its lifeline at Avranches, the Third Army continued to advance to the east. With the Germans still fighting in the Mortain area, a new opportunity was presented to the Allies. General Bradley discussed the possibilities with General Eisenhower and outlined his scheme to Montgomery, who quickly approved. In his book General Montgomery describes the plan in these words:

Up to this period my plan was to make a wide enveloping movement from the southern American flank up to the Seine about Paris, and at the same time to drive the center and northern sectors of the Allied line straight for the river. In view of the Mortain counter stroke, I decided to attempt concurrently a shorter envelopment with the object of bottling up the bulk of the German forces deployed between Falaise and Mortain. It was obvious that if we could bring off both these movements we would virtually annihilate the enemy in Normandy.***

On 8 August General Bradley halted the eastward advance of the Third Army and directed Patton to drive northward on Argentan. The First Army would take care of the enemy threat at Mortain.

* The battalion was finally relieved on 12 August.

** General Warlimont was an OKW staff officer whom Hitler had sent to Kluge's headquarters to explain the order for the Mortain operation.

*** Montgomery, *Normandy to the Baltic*.

In conjunction with the Canadian drive toward Falaise, this move would complete the close encirclement of most of Kluge's forces.

On the 9th the XV Corps, which had assembled near Le Mans, launched a powerful drive on the axis Alençon-Argentan with two armored and two infantry divisions.* The armor, closely followed by the infantry, made good progress during the next three days and, despite increasingly violent enemy resistance, reached Argentan on the 13th. Here Patton's northward advance was halted to avoid becoming involved with the 21st Army Group's southward attack. During the drive on Argentan the XX Corps, in the south, had captured Angers and by the 13th was assembling east of Le Mans for an attack to the northeast. Back in Brittany the 83d Division was continuing its attack on the fortress of St. Malo; the 6th Armored Division was containing Brest and Lorient; and the 4th Armored Division, having been relieved by the 6th Armored, cleared Nantes on the 13th and moved on east to join the XII Corps, which was assembling southeast of Le Mans.

In the meantime, as we have seen, the Canadian First Army prepared a strong offensive to be launched along the Caen-Falaise highway by its Canadian II Corps. A novel scheme was to be employed: the infantry was to be transported through the enemy's zone of defensive fire and through his forward positions in heavy armored vehicles. Following a heavy carpet bombing, the attack was launched on the night of 7-8 August. Montgomery describes it as follows:

The Canadian 2d and British 51st Divisions with their armored brigades moved forward. The assault was organized in eight columns of armor, each with vehicles four abreast, which advanced preceded by gapping teams of assault engineers and flail tanks. The enemy was greatly confused by these armored columns driving through his defenses. At first light the infantry debussed in their correct areas after a four-mile drive within the enemy lines, and preceded to deal with their immediate objectives. In rear of the advance other troops began mopping-up operations, which in fact proved to be a most difficult task.

By midday [8 August] . . . the first phase of the operation had been successful; and, following an attack by strong formations of Flying Fortresses, the armored formations began to move south at 1355 hours. The Canadian 4th Armored Division, on the right, was held up eventually by an antitank-gun screen, and on the left the Polish Armored Division was also unable to make much headway.

It was clear that the attack had come up against a very strong lay-back position astride the high ground about [ten miles south-east of Caen].**

* 5th Armored, French 2d Armored, 79th, 90th Divisions.

** Montgomery, *Normandy to the Baltic*.

Further progress was made during the next few days; but by the 13th, although he had gained about eight miles, Crerar had not yet achieved a clean breakthrough and had run into another strong position about eight miles short of Falaise. Here some 88-mm. guns that had been hastily emplaced had taken a heavy toll of British armor. On the 8th and 9th alone they had knocked out some 150 Sherman tanks.

THE EXPLOITATION (Map 10)

From 14 to 25 August some of the most decisive and spectacular operations of the war took place as the Allied armies hastened to take advantage of Hitler's errors. During the first week of this period two simultaneous battles were fought: one by the Third Army driving hard to the Seine and one by the First Army and 21st Army Group around the Falaise-Argentan pocket.

The Deep Encirclement and Battle of the Falaise Pocket (14-19 August).—After the failure of the Mortain counterattack the only alternative for Kluge was retreat. On 13 August he ordered a gradual withdrawal to the Seine, more troops being sent south from the Fifteenth Army to help cover the movement. OKW attempted to cover Paris by building up a defensive line from Pontoise to the Loire. For this purpose it moved the headquarters and a few army troops of the First Army from southwestern France to the north. In addition, two divisions from the Fifteenth Army, two panzer brigades from Germany, and one Nineteenth Army division from southern France were ordered to the new line; but these units experienced so much difficulty in reaching their destination that they were unable to accomplish their mission.

On 14 August General Bradley ordered the Third Army to leave sufficient forces to hold Argentan and to take advantage of the enemy's disorganization by continuing the main advance to the east. Patton directed the XV Corps on Dreux with the 5th Armored and 79th Division. The XX Corps,* which was then moving on Dreux, was given Chartres as a new objective; and the XII Corps** was to move toward Orleans to cover the Army's south flank. The VIII Corps*** continued to operate in Brittany.

The XX Corps entered Chartres on the 15th. The next day the XV Corps captured Dreux, and the XII Corps entered Chateaudun and Orleans. These spectacular advances eliminated the necessity

* XX Corps: 7th Armored, 5th Divisions.

** XII Corps: 4th Armored, 35th Divisions.

*** VIII Corps: 6th Armored, 8th, 83d Divisions.

for the airborne operation to seize the Paris-Orleans gap that was being planned by the new First Allied Airborne Army.* Mopping-up in these areas continued for the next few days. On 17 August the First Army took over the Third Army troops at Argentan. The next day the XV Corps swung north to seize crossings of the Seine below Paris and to begin the deep encirclement of the Germans south of the river. On the night of the 19th the XV Corps' 79th Division forced a crossing of the Seine near Mantes, and the 5th Armored Division started to move down the left bank of the river to block other enemy crossing sites. By that time the XX Corps had consolidated its positions in the Dreux-Chartres area; and the XII Corps** had won its first engagement around Orleans, where it was assembling for a new drive to the east. The first supplies to reach the Third Army by air were landed near Le Mans to relieve Patton's strained communication lines. Back in Brittany the 83d Division had captured the last Germans in the citadel of St. Malo on the 17th.*** The division had then moved to the southeast to cover Patton's Loire flank west of Tours. The phase line on the map shows the Third Army's front on 19 August, the day the Falaise-Argentan pocket was closed.

In the meantime a battle as disastrous to the Germans as El Alamein or Stalingrad was being fought back in the Falaise-Argentan pocket, where twenty-seven Allied divisions were pressing in on the remnants of nineteen German divisions. Our artillery poured shells into the pocket, and our aircraft (so numerous that they had to await their turn to attack targets) hammered the Germans relentlessly. On the 14th the Canadians resumed their attack and by evening were only four miles from Falaise. At first the enemy forces inside the pocket retained a semblance of order. Panzer divisions concentrated near the neck, where Allied pressure was

* The First Allied Airborne Army was formed on 8 August. It served throughout the rest of the war primarily as a planning and administrative headquarters for airborne operations and troops. Lieutenant General Lewis H. Brereton was its commander, he having been replaced by Major General Hoyt S. Vandenberg as commander of the Ninth Air Force. Chief components of this army included the XVIII Airborne Corps (82d, 101st, and 17th Airborne Divisions) under Major General Mathew B. Ridgway, the British 1st and 6th Airborne Divisions, the IX Troop Carrier Command, and two R.A.F. troop carrier groups.

** On 19 August Major General Manton C. Eddy replaced General Cook as commander of the XII Corps. General Cook had to give up his command because of ill health.

*** The approaches to the harbor were not cleared until 2 September; and even then, because of demolitions and mines in the narrow estuary, the port was of little value.

strongest, to try to keep it open while the infantry divisions conducted rear-guard actions. By 16 August, however, almost all cohesion had been lost; divisions were hopelessly jumbled up, and commanders were able to control only small battle groups. The wreckage of German transport and equipment littered the countryside, and the air forces were presented some of the finest targets of the war. On the 17th the VII Corps contacted British forces, pinching out the XIX and V Corps; and the Canadian First Army cleared Falaise.

It was then necessary for Bradley to regroup the American forces. Two First Army infantry divisions* were sent to Brittany to assist the VIII Corps in the siege of Brest, releasing armor for Patton's use to the east. The V Corps took over the XV Corps' divisions in the Argentan zone and resumed the attack to the north; and the XIX Corps was shifted to Hodges' right flank to fill the gap between the V and XV Corps and to assist the latter in its effort to complete the deep encirclement south of the Seine. These adjustments took place on the 18th. On the 19th the 90th Division of the V Corps contacted the Polish Armored Division of the Canadian First Army at Chambois to close the trap on elements of fifteen enemy divisions. The official Canadian Army history gives a vivid description of the carnage of the battle:

On 17 August began three days of the largest-scale movement, presenting such targets to Allied air power as had hitherto only been dreamed of. During these bright summer days our fighter-bombers struck at the packed roads hour after hour, turning the whole area of the gap into a gigantic shambles; while our artillery, moving up within range, poured thousands of shells into the killing-ground. In that seething bloody cauldron, which the Germans were to remember as "der Kessel von Falaise," one of the haughty armies that had terrorized Europe was perishing miserably.

By the morning of 22 August fighting had virtually ceased in the area where the gap had been. The whole vicinity of [Chambois] was covered with the human and material debris of an army which had suffered the greatest disaster in modern military history. At many places the bodies of German soldiers literally carpeted the ground. Masses of destroyed or abandoned tanks, lorries, and cars blocked the roads and filled the ditches; while some 8,000 dead horses, which had drawn the vehicles of the German infantry divisions, lay offending the air. In the carnage of the pocket and the gap at least eight German divisions had been destroyed, and about twice as many more had suffered crippling losses. The remnants of the armored formations—small remnants in most cases—had saved themselves at the expense of the infantry, who were left to their fate.

* 2d and 29th.

Enemy losses included 70,000 killed and captured. General Eisenhower said: "Even though the battle of the Falaise-Argentan pocket did not accomplish the utter annihilation of the German armies in Normandy, they were broken as an effective fighting force; and our way across France was opened."

The Advance to the Seine (20-25 August).—Further difficulties beset the enemy when American and French troops of the United States Seventh Army invaded southern France on 15 August. While this force drove north to join the other Allied forces, the 12th and 21st Army Groups continued their advance to the Seine.

Leaving the mopping-up of the Falaise-Argentan pocket to the 21st Army Group, the First Army sideslipped eastward. While the V and VII Corps reorganized, the XIX Corps* moved north on the left flank of the Third Army's XV Corps. By the 23d the XIX Corps had reached Evreux; and during the next two days it closed in on Elbeuf, where the corps artillery found many lucrative targets at the Seine crossings. The XV Corps closed up on Louviers, strengthened its Mantes bridgehead, and on the 24th passed to the control of the First Army, the army boundary having been shifted on the 23d to free Patton for his drive eastward. On the 25th the XIX Corps established contact with the Canadian II Corps near Elbeuf to close another pocket containing parts of some five German divisions. Montgomery's armies mopped up rapidly in their zone; and, although the Germans still had a bridgehead west of Rouen, on the evening of the 25th the Allies held most of the Seine west of Paris.

During this period, as the Germans frantically tried to retrieve what they could of their forces in the west, some changes occurred in their High Command. On 17 August Field Marshal Walter Model arrived unexpectedly and replaced Kluge as Commander in Chief West and commander of Army Group B.** General Hausser was severely wounded on the 23d and was replaced by General Eberbach as commander of the shattered Seventh Army. OB West made these comments on the operations west of the Seine:

If the enemy had immediately and ruthlessly exploited his Seine crossings to the utmost—with his main effort between Vernon and Mantes—and had then followed up with a strategic envelopment along the north bank of the Seine as far as the approaches to the fortress of Havre, the fate of Fifth Panzer Army and of the thoroughly battered Seventh Army would have been absolutely sealed.

* XIX Corps: 2d Armored, 28th, 30th Divisions.

** The next day Field Marshal Kluge committed suicide on his way back to Berlin.

The gap that would have been created between Fifteenth Army and the Loire (First Army with its weak security forces was operationally insignificant) could not have been closed. The enemy's path to the east and the north would have been completely clear. In such an event further resistance in France would presumably have become futile and a fairly orderly withdrawal and the re-establishment of a continuous front would no longer have been feasible.

As it was, during the period 21-25 August we succeeded in withdrawing in phases toward the lower Seine, with our main effort on both sides of Rouen, and in crossing the river by ferry and, to some extent, even with amphibious tanks and volkswagens. It is true that this was accomplished at the expense of losing the bulk of matériel, in an almost inextricable confusion of units, and with tremendous losses. The fighter-bombers attacked incessantly, Rouen itself underwent severe carpet bombings, and several enemy tanks advanced as far as the bends of the Seine and fired into the columns and the elements crossing the river. An enormous traffic jam resulted, especially near Elbeuf, where some 2,000 massed vehicles fell prey to the air attacks. Nevertheless about 20-30 per cent (on the average) of the units and matériel, including staffs, managed to get across the Seine. Fifth Panzer Army directed the crossing from the vicinity of Rouen. A reception force and river defense was improvised from any and all means and was immediately reinforced by elements that crossed the river. To be sure, there was scarcely a thought of maintaining the Seine line, for the weak forces of First Army had long since been broken through and enemy tanks were south of Paris as early as 22 August.

Meanwhile Patton was having great success south of Paris. On the 20th the XX Corps launched an attack to the east that reached Etamps by evening, and the XII Corps captured Pithiviers. Strong but temporary infantry and tank opposition was met as the Third Army approached the Seine, but on the 21st the XII Corps captured Sens. The XX Corps reached the Seine at Melun and Fontainebleau on the 22d and by the 24th had captured both towns and had started bridging the river. The 4th Armored Division continued to spearhead the XII Corps' attack, capturing Troyes on the 25th. In Brittany only the fortresses of Brest, Lorient, and St. Nazaire still offered resistance. The VIII Corps launched a coordinated attack on Brest on the 25th with three infantry divisions.*

With the Third Army's main effort concentrated on its drive to the east, few troops were available to protect the extended south flank. As the attack was pressed toward the Seine, one of the commanders on this flank asked General Patton how much he should worry about his right flank. Patton replied that that depended on how nervous he was by nature. Actually Patton was depending on

* 2d, 8th, 29th Divisions.

the XIX Tactical Air Command to cover his long, open right flank; and the successful accomplishment of this mission was one of the most important features of the Third Army's campaign. Writing of the air-ground operations during his drive across France, Patton said:

Whenever armor and air can work together in this way, the results are sure to be excellent. Armor can move fast enough to prevent the enemy having time to deploy off the roads; and so long as he stays on the roads, the fighter-bomber is one of his most deadly opponents. To accomplish this happy teamwork two things are necessary: first, intimate confidence and friendship between air and ground; second, incessant and apparently ruthless driving on the part of the ground commander. A pint of sweat saves a gallon of blood.*

While Bradley was securing crossings above and below Paris, significant events were occurring in the city itself. The Allies had originally planned to by-pass Paris to avoid its destruction in an assault. However, on the 19th fighting between the French Forces of the Interior and the Germans broke out in the city. The French were soon in need of relief because of a shortage of ammunition; so the V Corps was quickly shifted to the east and on 23 August began a march on the city with the American 4th Infantry and the French 2d Armored Divisions. Meeting little resistance, these divisions entered the city about 0700 hours on the 25th; and by noon the German commander had formally surrendered.** The last German resistance ceased by the 27th, and the next day the Americans turned Paris over to General Koenig, who had been designated as the military governor.

As Montgomery closed up on the lower Seine, the First Army moved southeast to clear the British zone; and Bradley quickly regrouped his forces to continue the pursuit. Although isolated enemy pockets west of the Seine were not completely cleaned up until 31 August, for all practical purposes the Overlord campaign to secure a lodgement area in western France between the Seine and the Loire Rivers ended on 25 August (D plus 80), ten days ahead of the date planned.

* George S. Patton, Jr., *War As I Knew It* (Boston: Houghton Mifflin Co., 1947).

** The surrender was received by General Le Clerc, commander of the French 2d Armored Division. The veterans of this division had started at Lake Chad in central Africa three years before. They had made an almost impossible march across the Sahara Desert, had joined the British Eighth Army to participate in the latter part of the African campaign, and had then moved to England to join in the invasion of western Europe.

THE PURSUIT TO THE WEST WALL (Map 11)

Strategic Considerations on Securing the Lodgement Area.—Early estimates of developments beyond the lodgement area had visualized a pause by the Allied forces on the line of the Seine for a period of some three months as a likely necessity. Such a halt was anticipated in order that our forces might be reorganized and reinforced and their logistical situation strengthened before initiating the next phase of the campaign. However, the decisive victory in the Falaise-Argentan pocket and the disintegration of German resistance in front of the Allies revised this concept. The situation in northern France, coupled with the success of the Seventh Army's campaign in southern France, now afforded an unusual opportunity. It was decided, therefore, to continue the attack without delay, regardless of the logistical difficulties that might be incurred. (These logistical difficulties, which eventually proved insurmountable, will be discussed later.) But before following the Allied pursuit to the West Wall it is necessary to examine the strategic plans for the advance into Germany. There was considerable acrimonious debate over these at the time, and the argument still goes on. Montgomery and Patton each felt strongly that if he received full priority in the use of available resources he could end the war in a very short time. Therefore, it is well to consider the development of the plans at the SHAEF level.

It will be recalled that General Eisenhower's mission, as laid down by the Combined Chiefs of Staff, was to "enter the continent of Europe and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces." Overlord was only the first phase of the operations to accomplish that mission; the plans for subsequent operations would have to be made after the lodgement area had been seized. Nevertheless, General Eisenhower had made his basic decision prior to the invasion. This decision was that the Ruhr, the nearest of the industrial areas vital to German economy, would be the primary Allied terrain objective in Germany. Of course it was hoped that the German Army would be destroyed prior to reaching that objective; but even if it should succeed in eluding the Allies, the loss of the Ruhr and its heavy industries should virtually seal the fate of the Wehrmacht.

Once the Allied forces were securely established on the Continent, four general courses of action would be open:

1. To advance southeast from the lodgement area in an effort to cut off the German units in southern France and defeat the enemy forces in detail.

2. To advance eastward from the lodgement area with the main threat directed toward Metz and the Saar; that is, to make the main effort south of the Ardennes.

3. To advance in a northeasterly direction with the object of striking directly at the Ruhr by the route north of the Ardennes.

4. A combination of 2 and 3.

The first course was quickly discarded because it would not lead to the strategic objective nor toward the main German forces. The other possibilities were then examined in detail and certain conclusions were reached.

The Route South of the Ardennes.—Advantages were that the first part of the advance would be over terrain favorable for the use of armor and for the construction of advanced airfields; consequently a quick approach to Metz was believed possible. Among the disadvantages were the following: (1) It was not a direct route to the Ruhr; (2) both flanks would be exposed; (3) communications would be extended over the width of France.

The Route North of the Ardennes.—An advance along this the most direct path to the Ruhr would have the left flank protected by the Channel. The country not only contains good airfield sites but also has some excellent ports, particularly Antwerp. An advance through this region would capture the V-weapon sites nearest England. Disadvantages were that there would be nothing to prevent German forces in southern France from escaping and taking part in the fighting in the north and that there were numerous water obstacles that would have to be crossed.

Simultaneous Advances Through the Metz Gap and North of the Ardennes.—An advance on a broad front would force the defender to extend his front and would leave him in doubt as to the direction of the attacker's main thrust. The latter would have opportunities for surprise and maneuver. The disadvantage, according to the planners, was that the use of two axes would require the maintenance of two widely separated lines of communication. Events were to prove that this was not the disadvantage it was thought to be.

After reviewing all the factors, General Eisenhower, in May 1944, approved the plan to use both the route north of the Ardennes and the Metz gap. It was decided to make the main effort on the northern axis (Amiens—Mons—Liège—the Ruhr) and a secondary effort on the axis Verdun—Metz. The mission of the secondary attack would be to divert enemy resistance from the path of the main thrust and, by linking up with the Allied forces moving up from the Mediterra-

nean, to prevent the escape of enemy troops from southern France. At the end of August the plan was modified to provide for a stronger attack along the Reims-Verdun-Metz axis by the Third Army, which would continue east through the sector of the West Wall covering the Saar and then cross the Rhine and seize Frankfurt. The 21st Army Group and that portion of the 12th Army Group that was to advance north of the Ardennes were still to make the main effort, there being no change in their objective—the Ruhr.

The execution of this plan would bring other advantages to the Allies, some of them of no mean importance. The Germans would lose submarine bases along the coast as well as rocket-launching sites; we would free France, Belgium, and at least a part of Holland and would secure one of the finest ports in Europe by the capture of Antwerp. The use of this port would materially shorten our lines of communication and decrease the difficulty of supplying the large armies.

Operations, 26 August–3 September.—On 25 August General Bradley issued the following order: "The 12th Army Group will regroup and resume its advance to the northeast in zone, cross the Seine, and . . . continue the advance to the northeast with the main effort initially on the left (west) flank prepared for further advance into Germany."

The Third Army had immediately available the XX and XII Corps,* which were assigned the objective of Reims and Châlons, respectively. On the 26th both corps drove northeastward from their Seine bridgeheads, and the XX Corps' armor captured the historic city of Chateau Thierry on the Marne. As enemy resistance disintegrated, the pursuit continued, with the XII Corps capturing Châlons on the 28th and the XX Corps occupying Reims the next day. Patton then swung east, his next mission being to secure bridgeheads over the Meuse between Verdun and Commercy and to be prepared for further advances to seize crossings over the Rhine between Coblenz and Mannheim. On the 30th the XII Corps reached St. Dizier; and the next day its armor seized the high ground east of the Meuse near Commercy, while the XX Corps captured Verdun and also crossed the river.

But at the end of the month a critical shortage of fuel halted Patton's spectacular advance.** During the first three days of Sep-

* XX Corps: 7th Armored, 5th, 90th Divisions.

XII Corps: 4th Armored, 35th, 80th Divisions.

** On 30 August Patton was notified that there would be no gasoline available in appreciable amounts for several days.

tember positions were consolidated on the Meuse, the XV Corps continued concentrating southeast of Paris, and the VIII Corps continued its attack on Brest. In its first month of operations the Third Army had liberated 35,000 square miles of French territory, extending from the Atlantic to the Meuse, and in the process it had inflicted an estimated 148,000 casualties on the Germans (including over 70,000 captured) at a cost to itself of about 16,000, including 2,445 killed.

In the meantime the rest of the First Army had moved up from the Falaise-Argentan area to the Seine and had regrouped for a new drive to the northeast. While the Third Army was grinding to a stop on the Meuse for lack of fuel, the First Army had priority on all supplies that could be moved to the battle area. On 27 August the VII Corps,* Hodges' right wing, drove across the Seine above Paris. The next day the armor reached the Aisne at Soissons, overcoming scattered light resistance. The infantry closed up rapidly, and by the 30th the armor had moved on to capture Laon and four trainloads of escaping enemy troops. Leaving the French 2d Armored Division in Paris, the V Corps,** the center corps of the First Army, reached Compiègne by the 31st. On the left the XIX Corps*** took over the XV Corps' troops in the Mantes bridgehead and launched an attack on the 29th that in four days carried it across the Somme east of Amiens.

General Hodges' rapid advance prevented the enemy from forming a cohesive battle line, and all three corps continued to pursue the fleeing Germans. By 3 September they had cleared most of the army's zone south of the Belgium border. On that day there was great activity in the VII Corps zone. General Collins' left division, the 1st, which was covering the long exposed flank that extended southwest from Mons, suddenly found itself blocking the retreat of a large body of Germans who were struggling eastward to escape from the British zone. Blocked in the east by the VII Corps, pressed from the south by the V Corps, and cut off in the west by the XIX Corps (which by then had reached the Belgian border), remnants of twenty disorganized divisions, totalling 25,000 men, were trapped and quickly liquidated with the help of Belgian partisans.

Let us now turn to the operations in the British zone. Montgomery's immediate tasks were to clear the Pas de Calais with its

* VII Corps: 3d Armored, 1st, 9th Divisions.

** V Corps: 5th Armored, 4th, 28th Divisions.

*** XIX Corps: 2d Armored, 30th, 79th Divisions.

V-weapons sites, capture airfields in Belgium, and open the port of Antwerp. By 30 August the British Second and the Canadian First Armies had secured Seine bridgeheads for four corps* between Vernon and the Channel. The British XXX Corps led Dempsey's attack, followed by the British XII Corps. Attacking with three armored divisions on a narrow front on the 29th, the Second Army scored remarkable gains during the next few days. On the 31st Amiens was reached, a bridge over the Somme was secured intact, and General Eberbach** and the tactical headquarters of the German Seventh Army were captured. The speed of the drive continued, and early on 3 September Dempsey crossed the Belgian frontier; by nightfall he had an entire armored division in Brussels.

On the left of the Allied line the Canadian First Army, which had the mission of clearing the Channel coast, entered Rouen without opposition on 30 August; but resistance then increased as the retreating Germans withdrew into the fortresses along the coast. By 3 September the British I Corps was closing in on Le Havre, which was strongly fortified and garrisoned by some 12,000 Germans; and the Canadian II Corps had secured a bridgehead over the Somme. Dieppe fell without a struggle on 1 September,*** the Germans having left without even destroying the small port.

During the first half of September organized operations by the enemy were not possible. When the Allies crossed the Seine, Field Marshal Model had hoped to hold a defensive line along the Somme, Marne, and Saone Rivers;† but Hitler's violent prejudice against rearward defensive positions had prohibited any extensive preparation of this line, and it was quickly overrun by the Allies. Early in September even Hitler realized that further "holding at all cost" would invite complete disaster; so OKW directed a general withdrawal to the West Wall (except for the fortresses on the Channel and Atlantic coasts). However, to gain time to rearm the West Wall, stubborn delaying action had to be fought along the line Berskens-Antwerp-Meuse Escaut Canal-Maastricht-Meuse River-Nancy-Epinal-Swiss border.

General Zangen was called up from Italy to take over the German Fifteenth Army, which by late August had been stripped to six divi-

* One corps, the British VIII, was grounded back in the Falaise area to provide extra transportation for the rest of the army group.

** Eberbach was succeeded by General Brandenberger as commander of the German Seventh Army.

*** The town was liberated by the Canadian 2d Division, the same unit that had suffered such heavy casualties there in the raid of August 1942.

† The so-called Kitzinger Line.

sions. He withdrew northward along the Channel, leaving garrisons in the fortresses; and with the help of the German Navy he succeeded in moving most of his army and some 500 guns across the Scheldt Estuary. The rest of Army Group B, the Fifth Panzer Army* and the Seventh, pulled back to the positions shown on the map. About this time OKW ordered the formation of a new army, the First Parachute Army, under General Student; and it was subsequently inserted in the line on the left of the Fifteenth Army. On 5 September Field Marshal von Rundstedt returned to the western front and again became Commander in Chief West, leaving Model as commander of the thoroughly demoralized Army Group B. Rundstedt quickly went about the task of setting things in order.

Operations, 4-14 September.—On 1 September General Eisenhower assumed active direction of the operations of both Allied army groups (SHAEF having been established at Versailles), and Montgomery ceased to exercise operational control over the 12th Army Group. At this time General Eisenhower's chief concern was supply. Limited to Cherbourg and the beaches as points of entry for supplies, and without a major port near the battle front, the supply services could not keep up with the racing armored and motorized columns during the whirlwind offensive to the German frontier. Everything had to be hauled from far to the rear in trucks or airplanes, since it would take time to repair the shattered French railway system and establish forward supply depots. By early September the trucks were making round trips of 600 to 900 miles to bring up the necessary fuel, ammunition, and rations for the combat forces. All units were running short of supplies; so the problem was to allot the available resources to armies in accordance with the priority of the missions assigned.

Nevertheless, the pursuit continued during the period 4-14 September, with the greatest gains being won on the northern part of the front, where the divisions had a higher priority in the allocation of the dwindling supplies. On 3 September the army group boundary had been shifted to extend from Tournai toward the Rhine north of Cologne, and as a result the direction of attack of the British Second and the First Armies swung to the east.

In Field Marshal Montgomery's** zone the next ten days were spent in closing up to the Channel fortresses and the water obstacles

* In early September General Manteuffel assumed command of the Fifth Panzer Army.

** Montgomery was promoted on 31 August.

in the north. General Dempsey's armor continued its headlong pursuit through Brussels and on the 4th seized Antwerp—one of the greatest prizes of the war—with its dock facilities virtually intact, though useless until the approaches could be cleared of the enemy. While the British XXX Corps assembled in the Antwerp-Brussels area and the British XII Corps cleaned up the rear areas and moved forward to capture Ghent on the 5th, Montgomery planned his next move, which was to "bounce" across the Rhine north of the Ruhr. On 7 September the XXX Corps resumed the advance, but it soon met stubborn resistance. By the 14th Dempsey had closed up to the Meuse-Escaut Canal and had secured bridgeheads across it, but he had not yet reached the Meuse. On the left General Crerar was meeting more opposition at the Channel ports. Ostend was occupied on the 9th; but on the 14th Boulogne, Calais, and Dunkirk were still holding out against mounting pressure from the Canadian First Army. Back in the rear the British I Corps, on 10 September, mounted a powerful attack against Le Havre with two infantry divisions supported by heavy guns from battleships of the Royal Navy and a series of attacks by the R.A.F. Bomber Command. The German commander surrendered on the 12th, and another fine but heavily damaged port was in Allied hands.

In General Bradley's zone the First Army made the greatest gains during the period (4-14 September). With the change in direction of attack on the 3d the V Corps was pinched out and was assigned a new zone of action on the army's right. General Hodges issued orders for a continuation of the offensive directly to the east with his three corps abreast. The VII Corps led the attack, reaching Namur on the 4th and the next day crossing the Meuse—the first defended line that the First Army had met since crossing the Seine. Final resistance was mopped up in Liège on the 8th, and by the 14th the VII Corps had closed up to the German frontier in its zone and had crossed the border near Aachen. On the right the V Corps also crossed the Meuse on the 5th, captured Sedan on the 6th, and drove through the Ardennes along the route of the German drive of 1940. The Germans abandoned Luxembourg City on the 10th, and on the 11th patrols of the V Corps were the first Allied troops to enter Germany proper. By the 14th the V Corps was holding a fifty-mile front along the border, with some troops on its left moving into the West Wall fortifications. The XIX Corps had regrouped when its axis of advance was shifted to the east. It then moved rapidly forward, entering Holland on the 9th. On the 11th the corps crossed the Meuse, and two days later captured Maastricht. By the 14th the sustained drive of the First Army had

ended, and the enemy was fighting on his own soil for the first time since the days of Napoleon.

During the preceding ten days General Patton had been fighting more for gasoline to move his armor than against the Germans. But his efforts were generally unavailing, and the offensives of his XX and XII Corps finally came to a halt at the Moselle River. On the 5th the XII Corps forced a small bridgehead across the river north of Nancy while the XX Corps crossed above and below Metz. At that time, however, the Germans indicated their intention of holding the line of the Moselle by launching numerous counter-attacks against the American forward units and occupying the forts around Metz. For the rest of the period the XX and XII Corps fought to enlarge their Moselle bridgeheads; and although little forward progress was made, the XII Corps did succeed in completing a double envelopment of the city of Nancy, which fell on the 15th. Meanwhile the XV Corps* had moved up on the Third Army's south flank. On the 10th it launched an attack to secure bridgeheads over the Moselle below Epinal. Mirecourt was captured, and Epinal was reached by the 14th. On 11 September patrols of the French 2d Armored Division made contact with elements of the French II Corps at Sombarnon, near Dijon; and by the 14th a continuous front had been established by the Third and Seventh Armies, trapping the remaining Germans trying to retreat from southwestern France.** Organized groups of the French Forces of the Interior had been particularly helpful in operating on the long Third Army flank during early September.

While the Third Army was battling a determined enemy on the Moselle, the VIII Corps back in Brittany was still trying to reduce the fortress of Brest. However, this task was shifted to Lieutenant General William H. Simpson's new Ninth Army,** which became operational under General Bradley on 5 September. It was given the troops then operating in Brittany and the mission of reducing enemy resistance in the peninsula and protecting the Third Army's flank along the Loire River. The VIII Corps artillery was reinforced to seventeen battalions, mostly medium and heavy calibers; and after sufficient ammunition was accumulated, a strong attack

* French 2d Armored, 79th Divisions.

** About 9 September 20,000 Germans, the bulk of the combat groups and administrative troops that had formerly been with the German First Army in southwestern France, surrendered to the 83d Division south of Orleans when they saw they had no chance of escape.

*** Ninth Army divisions on 5 September included the 6th Armored, 2d, 8th, 29th, and 83d.

on Brest was launched on 8 September by three infantry divisions. But on 14 September that fortress was still in German hands. On that date the XXIX Tactical Air Command* was activated under the Ninth Air Force and was assigned the mission of providing close tactical air support for the Ninth Army.

On 15 September the 6th Army Group came under General Eisenhower's control, and a new phase of operations began.

COMMENTS

In seven weeks the Western Allies had liberated much of western Europe and had destroyed or put to rout five German armies. General Marshall called it "a campaign which for speed and boldness has few parallels." After the war the Germans expressed amazement at the speed and power of the Allies. General Jodl called the breakout of the Third Army "a piece of impertinence"; and he went on to describe the American operations as "first-class, courageous, with long operational aims" and admitted that "this American planning and execution was a surprise for us." Even our Russian allies suggested that of all the spectacular feats of the war, including their own, our success in providing supplies for the pursuit across France would go down in history as the most astonishing.

The campaign vindicated the Overlord plan, our Army's tactical doctrine, and the doctrine of the Army Air Forces. It justified the American planners' belief that on the plains of western Europe the mobility of the Allied armies could be employed to inflict a decisive defeat on the enemy. During the Normandy campaign and the bitter fighting among the hedgerows, faith in the Overlord plan waned as a stalemate threatened and the morale of the troops fell; but after the St. Lo breakthrough the campaign developed beyond the wildest hopes of the planners, and morale in the armies soared to a new high. The operations proved that American tactical doctrine on armored warfare was sound; they showed what could be accomplished by aggressive leadership; and they provided a striking illustration of our Army's teaching that the faster you move and the harder you hit the fewer your casualties will be—a theory vigorously propounded and applied by General Patton. A graph of the American casualties and prisoners captured during the war in western Europe (see Appendix 9) shows that some of our lightest casualties were suffered in August and September—at the very time that we were making a great haul of prisoners and liberating vast territories. It demonstrated to the world the decisiveness of over-

* Brigadier General Richard E. Nugent commanding.

whelming air power. The long and costly strategic bomber offensive at last paid off with an immobilized enemy and a faltering German economy. The tactical air forces were able to contribute more to the support of the ground forces than the enemy had ever believed possible.

The historical significance of one of the major battles of the campaign, the St. Lo breakthrough, has been discussed by an instructor at our Command and General Staff College:

Although it is still too soon to fully evaluate the critical importance of this operation, it may well be listed among the decisive battles of the world. If the Allies had failed at St. Lo, the extent of the disaster would have been tremendous. There was still a German army in reserve in the Pas de Calais area. If the First Army had been defeated at St. Lo, following the German defensive victory at Caen, that army would undoubtedly have moved to strike the bridgehead. Although the Allies would have been able to pour more troops ashore, they would not have been able to supply them properly, nor would they have had the area in which to maneuver them. The Allies would have lost the initiative. However, Operation Cobra succeeded, thus opening the door to ultimate victory.*

German comments indicated that the Allies missed an opportunity to complete the annihilation of the Fifth Panzer and Seventh Armies south of the Seine by not completing the deep encirclement begun by General Bradley about 19 August. Our commanders, of course, realized that such a maneuver would be decisive; and the fact that they failed illustrates the point that maneuvering of large bodies of troops and supplying those troops in battle is a complicated business. General de Guingand, Montgomery's chief of staff since El Alamein, comments upon that particular situation in his book on the war:

After the link-up at Chambois had taken place, Montgomery decided to shift [the army group boundary] back [to the south] again. The new boundary gave the road Argentan-Evieux to the British Second Army. The decision was not very popular with the Americans, and their attitude was understandable. They argued that having been asked to come and help north of the old original boundary, why couldn't they be allowed to "crack" straight on to the Seine. The change necessitated some complicated maneuvering, and it was very nearly forty-eight hours before the armies were sorted out again in their correct sectors. It was a great pity that this had to happen, but Montgomery felt that it was necessary in order to get the armies which he controlled tidied up, and each with

* Lt. Col. Howard P. Persons, Jr., "The St. Lo Breakthrough," *Military Review*, December 1948.

sufficient major road axes. If this had not taken place, the extremely rapid advance northwards into Holland might not have been possible.*

Nevertheless the defeat inflicted on the Germans in western France was staggering, as evidenced by an OB West report:

The campaign in the west cost Germany about 500,000 men, from the beginning of the invasion until the arrival of the units at the West Wall. Of these, approximately 200,000 men—in compliance with orders—remained in the coastal fortresses, on the Channel islands, and in other “last-ditch” positions; the remaining 300,000 men comprise the killed, wounded, and the missing. Even if one assumes that, of these, about 100,000 wounded remained in German hands, there remains a loss of some 400,000 men to be written off. (These figures are based on estimates but probably come pretty close to the truth.) The number of higher commanders killed and wounded was unusually high, and the same was true of General Staff Corps officers. . . .

Losses in matériel and equipment cannot even be estimated. Everything in the coastal defenses that was permanently installed or lacked mobility was absolutely lost, regardless of whether it was destroyed or not. To this must be added our matériel losses during the battles themselves, particularly in the Falaise pocket and south of the lower Seine, as well as all equipment, including vehicles and rolling stock, which had to be left behind.

And all these sacrifices were in vain. For not only the campaign in the west, but the whole war was definitely lost once the invasion had succeeded. It should have been the concern of the Supreme Command to draw the necessary conclusions from this fact.

Later events proved that the war was far from won in September 1944, but the debate that it could have been won then still goes on. Extracts of comments by some of the leading participants are given below. Field Marshal Montgomery has this to say in his book:

My own view, which I presented to the Supreme Commander, was that one powerful full-blooded thrust across the Rhine and into the heart of Germany, backed by the whole of the resources of the Allied armies, would be likely to achieve decisive results. Success in such a plan would have been, to my mind, dependent upon our ability to concentrate sufficient strength, supported by adequate administrative resources, to ensure the maintenance of the momentum from the time we crossed the Seine. The project therefore involved calling upon combined Allied resources in the widest sense, and would have entailed reverting sectors of the Allied front to a purely static role.

There appeared to be two feasible axes along which such a thrust into Germany could be mounted. The first was the northern axis through Belgium to the Rhine, crossing the river north of the Ruhr

* Sir Francis de Guingand, *Operation Victory* (New York: Charles Scribner's Sons, 1947).

industrial region; once over the Rhine, this route led into the open plains of northern Germany. The alternative axis was through Metz and the Saar area, leading into central Germany.

I favored the northern route since it would enable us to exploit our greatly superior mobility and strength of armored forces in the plains of northern Germany, with greater effect than would be possible in the more difficult southern country. . . . If we could maintain the strength and impetus of our operations beyond the Seine sufficiently to keep the enemy on the run straight through to the Rhine, and "bounce" our way across that river before the enemy succeeded in reforming a front to oppose us, then we should achieve a prodigious advantage. If, on the other hand, we were to give the enemy sufficient respite to enable him to organize a cohesive front to oppose our advance and to check our progress, we might well become involved in a heavy "dog-fight" west of the Rhine obstacle, the effects of which, combined with the advent of winter weather, might well hold us up until the spring of 1945. Moreover, should the enemy once establish a proper defensive system based on the Meuse and the Rhine, we should be involved in an opposed river crossing operation of the first magnitude, which would inevitably take time and prove costly in lives and material. . . .

Apart from the administrative difficulties, my objection to the broad front policy was that nowhere should we be strong enough to get decisive results quickly; the Germans would thus have time to recover and we should become involved in a long winter campaign.*

General de Guingand comments as follows:

Throughout the war, this was the only major issue over which I did not agree with my Chief. I have always held the contrary view, and in the event, I am more than ever convinced that I was right. It fell to me to discuss these matters with the Supreme Commander on a number of occasions. . . . In general, Eisenhower was agreed that the major effort should be north of the Ruhr, but he did not believe that the strength of forces which we could maintain without the use of Antwerp would be sufficient to finish the war—especially in view of the nearness of winter. He also could not agree to relegating a large portion of the American armies to a purely static role—virtually without the means to maneuver. He, therefore, agreed to Patton's army advancing towards Verdun. Montgomery felt that it should be halted, protecting Paris from the east. There were, I think, certain factors that the Supreme Commander had to take into account which Montgomery did not perhaps fully appreciate. . . .

It certainly did look as if a thrust of some dozen divisions, provided they could keep up their momentum, would be able to deal with the initial opposition which they would meet north of the Ruhr. . . . [But] even assuming that such a force or spearhead did cross the river, I cannot see how it would have produced a German capitulation. If there was a good chance of Hitler throwing up the sponge,

* Montgomery, *Normandy to the Baltic*.

then it would have been worth the gamble; but we now know there never was any chance of that. The generals knew that the war had been lost soon after we landed, and told Hitler so; but the German nation were prepared to accept untold horrors and misery for long after this. It took a Russian offensive, using about 160 divisions, massive offensives on our part, as well as eight more months of devastating air attack, to force the Germans to capitulate. And even then Hitler and his gang never gave up. . . . Finally, one should consider the repercussions if this gamble did not come off. The Supreme Commander would have been in for a very difficult time. What would his commanders and troops who had been "grounded" say about it? Their resources had been given to the British just when they had the ball at their feet, and even with that help nothing decisive had been achieved. I can well imagine our reactions if the process had been reversed!

My conclusion is, therefore, that Eisenhower was right when in August he decided that he could not concentrate sufficient administrative resources to allow one strong thrust deep into Germany north of the Rhine with the hope of decisive success. If he had not taken the steps he did to link up at an early date with "Anvil" and had held back Patton, and had diverted the administrative resources so released to the north, I think it possible that we might have obtained a bridgehead over the Rhine before the winter—but not more.*

Patton wrote in his diary:

The 29th of August was, in my opinion, one of the critical days in this war . . . Everything seemed rosy, when suddenly it was reported to me that the 140,000 gallons of gas we were to get that day had not arrived. . . . I presented my case for a rapid advance to the east for the purpose of cutting the Siegfried Line before it could be manned. Bradley was very sympathetic; but, I gather, SHAEF's staff did not concur. It was my opinion then that this was the momentous error of the war. So far as the Third Army was concerned, we not only failed to get the back gas due us, but got practically no more, because, in consonance with the decision to move north, in which two corps of the First Army also participated, all supplies—both gasoline and ammunition—had to be thrown in that direction . . . I was sure it was a terrible mistake to halt even at the Meuse, because we could continue to the Rhine in the vicinity of Worms. . . . I was convinced, and have since discovered that I was right, that there were no Germans ahead of us except those we were actually fighting.**

General Zimmermann, G-3 of OB West, has said:

The question in the middle of September 1944 was whether the enemy would proceed at once to assault the West Wall. The chances for the enemy to break through the West Wall, or to overrun the Vosges while fortifications there were still being built, were indis-

* De Guingand, *Operation Victory*.

** Patton, *War As I Knew It*.

putably great. In the opinion of OB West the Western Allies, with massed forces, could doubtless have overrun both the West Wall and the Vosges position, and have thrust to the Rhine. In this case the final decision would have come half a year earlier. However, from the subsequent, relatively hesitant, groping approach of the enemy toward the western fortifications, we could conclude that the Western Allies wanted to close up first and undertake a planned strategic concentration in front of the western fortifications. Since, as far as strength was concerned, they would have been in a position to pursue the attack forthwith, this halt would seem to have been dictated by supply problems.

General Eisenhower says in his memoirs:

When action is proceeding as rapidly as it did across France during the hectic days of late August and early September, every commander from division upward becomes obsessed with the idea that with only a few more tons of supply he could rush right on and win the war. This is the spirit that wins wars and is always to be encouraged. . . . But the question remaining was whether or not it was advantageous, before taking on the arduous task of reducing the Antwerp approaches, to continue our eastward plunge against the still retreating enemy with the idea of securing a possible bridgehead across the Rhine in proximity to the Ruhr.

While we were examining the various factors of the question, Montgomery suddenly presented the proposition that, if we would support his 21st Army Group with all supply facilities available, he could rush right on into Berlin and, he said, end the war. I am certain that Field Marshal Montgomery, in the light of later events, would agree that this view was a mistaken one. . . .

I explained to Montgomery the conditions of our supply system and our need for early use of Antwerp. I pointed out that, without railway bridges over the Rhine and ample stockages of supplies on hand, there was no possibility of maintaining a force in Germany capable of penetrating to its capital. There was still a considerable reserve in the middle of the enemy country and I knew that any pencil-like thrust into the heart of Germany, such as he proposed, would meet nothing but certain destruction. This was true, no matter on what part of the front it might be attempted. I would not consider it.

It was possible, and perhaps certain, that had we stopped, in late August, all Allied movements elsewhere on the front, he might have succeeded in establishing a strong bridgehead definitely threatening the Ruhr, just as any of the other armies could have gone faster and farther if allowed to do so at the expense of starvation elsewhere. However, at no point could decisive success have been attained; and, meanwhile, on the other parts of the front we would have gotten into precarious positions from which it would have been difficult to recover. . . .

Any idea of attempting to thrust forward a small force, bridge the Rhine, and continue on into the heart of Germany was completely fantastic. Even had such a force been able to start with a

total of ten or a dozen divisions—and it is certain no more could have been supported even temporarily—the attacking column would have gradually grown smaller as it dropped off units to protect its flanks and would have ended up facing inescapable defeat. Such an attempt would have played into the hands of the enemy.*

As has been indicated, one of the controlling factors in this campaign, as in all others, was the logistical situation. It will be discussed in a later chapter, after we have viewed the landings in southern France.

THE CAMPAIGN IN SOUTHERN FRANCE

(15 August–14 September 1944)

PLANS AND PREPARATIONS (Map 12, inset)

It will be recalled that the Combined Chiefs of Staff discussed an invasion of southern France, known as Operation Anvil,** at the Quadrant Conference at Quebec in August 1943. They believed that offensive operations against southern France, to include the use of well-trained and American-equipped French forces, should be undertaken to establish a lodgement in the Toulon–Marseilles area and to exploit northward to create a diversion for Overlord. At the Cairo Conference in November 1943 it was decided that the proposed operation would be undertaken.

Headquarters, Seventh Army,*** then in an inactive role in Sicily, was chosen to conduct the expedition and was moved secretly to Algiers, where it initiated detailed planning. However, the early planning was plagued with uncertainties; and detailed preparations could not be undertaken until firm decisions were reached on the size of the force and the target date for the assault. The demands of Overlord for shipping and landing craft and the unfavorable ground situation in Italy, where all our forces were committed to holding the Anzio beachhead and attempting to break the Cassino

* Eisenhower, *Crusade in Europe*.

** Prior to the invasion the name of the operation was changed to Dragoon.

*** On 1 January 1944 Lieutenant General Patton had been released from command of the Seventh Army to go to England to command the Third Army. Lieutenant General Clark assumed responsibility for the Seventh Army planning, in addition to his duties as commander of the Fifth Army in Italy, until Lieutenant General Alexander M. Patch was appointed commander of the Seventh Army on 2 March 1944. During the planning period Headquarters, Seventh Army, was known as "Force 163."

line, militated against positive commitments for an invasion of southern France. Nevertheless a general plan was drawn up for an attack up the Rhone Valley. Some major considerations concerning the location of the assault area were:

1. The early capture of a major port was essential. Of the three possibilities, Sete was unsuitable because the approaches to the harbor could be easily blocked and the exits from the port were difficult; Toulon would be adequate for only a short time; Marseilles would have to be developed as the major base.

2. The only suitable beaches were west of Sete or east of Toulon.

3. Land-based fighter air cover could not be provided for an assault anywhere west of Marseilles.

For these and other reasons it was decided that the assault had to take place east of Toulon.

In late June 1944 a conference, attended by General Eisenhower and representatives from the Mediterranean Theater, was held in London. Despite some pressure to exploit the favorable situation in Italy or to launch an assault in the Bay of Biscay,* General Eisenhower insisted upon Anvil as an essential contribution to Overlord; and he released sufficient shipping and landing craft to complete the lift of a three-division assault. The Combined Chiefs of Staff then directed Allied Force Headquarters in the Mediterranean to complete preparations and set 15 August as the target date. At last Anvil was given priority over all other operations in the Mediterranean. The headquarters of the Seventh Army moved to Naples on 4 July, where final plans and preparations were made.

The Invasion Force.—Fortunately, the troops to be employed in the assault were veterans of other operations in the Mediterranean area; so, despite the short time available for preparations, an efficient invasion force was quickly organized. The order of battle

* Churchill continued to press General Eisenhower with these ideas until August. Eisenhower said later (*Crusade in Europe*): "The Prime Minister held that we were now assured of early use of the Brittany ports and that the troops then in the Mediterranean could be brought in via Brittany, or even might better be used in the prosecution of the Italian campaign with the eventual purpose of invading the Balkans via the head of the Adriatic." However, Eisenhower stuck to his plan, realizing that one of the important advantages of the invasion of southern France would be to open up another major port through which divisions from America could rapidly pour into France. But for Marseilles, the logistical situation might have become impossible.

during the period 15 August to 14 September (before the 6th Army Group became operational) was as follows:

SEVENTH ARMY	Lt. Gen. A. M. Patch
VI Corps	Maj. Gen. L. K. Truscott
3d Division	Maj. Gen. J. W. O'Daniel
36th Division	Maj. Gen. J. E. Dahlquist
45th Division	Maj. Gen. W. W. Eagles
1st Airborne Task Force.....	Maj. Gen. R. T. Frederick
French Army B	General Jean de Lattre de Tassigny
French II Corps	Lt. Gen. de Larminat
French 1st Armored Division	
French 1st Division	
French 3d Algerian Division	
French 9th Colonial Division	
French I Corps	Lt. Gen. Bethouart
French 5th Armored Division	
(did not arrive until 1 October)	
French 2d Moroccan Division	
French 4th Mountain Division	

The VI Corps was to be the assault force, the French II Corps the follow-up force, and the French I Corps the build-up force. Once the beachhead was established, General Patch would assume operational command of all forces, but during the landings General Truscott would have complete control of the assault forces. General de Tassigny would be with the French II Corps; and when the French I Corps arrived, he would establish his Army B headquarters, which, however, would continue for a time to operate under the over-all command of General Patch.* The 1st Airborne Task Force, consisting of all the separate American airborne units from the Mediterranean Theater and a British parachute brigade, was organized as a provisional division. In addition, the 1st Special Service Force and some French Commandos and demolition parties would participate.

As fast as the troops could be relieved from the fighting in Italy, they were moved to their embarkation ports, where they were refitted and reorganized; and the three American assault divisions underwent a three-week training program in the Salerno area.

The naval phase of the invasion was to be conducted by a special force known as the Western Task Force, which was commanded by Vice Admiral Hewitt and comprised 835 vessels from the Allied navies.**

* It was anticipated that an army group headquarters would be established at a later date to assume command of the Seventh Army and French Army B (later French First Army).

** The Western Task Force included 505 American, 252 British, 19 French, and 6 Greek ships and craft, and 63 merchant vessels.

The main air force was the XII Tactical Air Command, commanded by Brigadier General Gordon P. Saville, which was to control all tactical air units in the assault area, including the carrier-based aircraft, and provide the tactical air support for the Seventh Army's advance up the Rhone Valley. The XII Tactical Air Command was a composite force of approximately forty American, British, and French squadrons with about 1,100 operational aircraft that were based on fourteen fields in Corsica. The Fifteenth Air Force, with some 900 heavy bombers based in the Foggia area, would assist in the invasion as well as continue its strategic missions over Germany. The Carrier Task Force of seven British and two American escort carriers and about 200 aircraft would also support the assault. A provisional troop-carrier air division was based on ten Italian fields north of Rome. Including planes sent from the United Kingdom, it numbered about 450 transport aircraft.

Preliminary air operations were divided into three phases. The first phase, 5-10 August, was a continuation of the regular air activities that had been started by the Mediterranean air forces in April. It was designed as a preparation for the impending assault on southern France; but since tactical surprise could not be jeopardized, enemy airfields, submarine bases, and major communication lines were attacked in the Genoa area and the Po Valley as well as in the Marseilles-Toulouse area. Destruction of rail and highway communications in southern France was so complete that by the close of the period the only available route from the west was over a hastily repaired railway bridge across the Rhone at Avignon; and direct traffic from Lyon was blocked, as well as the routes across the French-Italian border. The second period, 10-14 August, was devoted to the neutralization of the Germans' main coastal batteries and radar installations and to intermittent attacks on coast-defense troops from Sete to Genoa. During these four days over 5,400 sorties were flown and 6,400 tons of bombs were dropped, of which the Fifteenth Air Force supplied 4,450 tons. Finally, during the four hours preceding the assault all available aircraft were employed against the coastal and beach defenses in the landing areas. Almost 1,000 sorties were flown, and 774 tons of bombs were dropped.

The intense activity of the Allies in the ports of Italy and North Africa indicated to the Germans that some major operation was under way; but the violence of the Italian campaign threw them off balance strategically, and they decided that the operation was to be directed against Genoa in an attempt to turn their right flank in Italy. The Allied air preparations had been conducted to encourage this belief.

Enemy Forces.—By mid-August the German situation in southern France was precarious. OB West had wanted to withdraw Army Group G shortly after the Allies invaded Normandy, but again Hitler had insisted on holding the Mediterranean coast. Nevertheless, Army Group G was gradually weakened as four divisions were shifted to the north. Only one, the remains of the coast-defense division that had opposed the British landings near Caen, had been sent south as a replacement.

All that was left of the German First Army in southwestern France was one corps headquarters and two reserve divisions along the Atlantic coast. The Nineteenth Army included three corps headquarters and eight low-order infantry, coast-defense, and reserve divisions. These divisions ranged from 50 to 75 per cent effective on D-day, contained about 35 per cent non-Germans, including impressed prisoners of war, and were woefully short of motor vehicles and fuel. The coastal defenses included casemated artillery, mine fields, and beach obstacles similar to those in the Atlantic Wall; they were particularly formidable around Toulon and Marseilles. The only mobile and comparatively strong unit available was the 11th Panzer Division, which General Blaskowitz had placed under General Wiese's command on 13 August. This division was en route to the Nineteenth Army from Toulouse and was west of Avignon on the night of 14–15 August. German air reconnaissance had provided some knowledge of an impending attack, but the Luftwaffe was powerless to do anything about it.

The Assault Plan (Map 12).—The final plan of the Seventh Army was issued on 29 July. Some of its more important features, in addition to the air plan already discussed, were:

1. The VI Corps was to make an assault landing at H-hour on beaches between Cavalaire and St. Raphael with the initial mission of capturing Le Muy and extending the beachhead to the blue line shown on the map. It would secure airfield sites in the Argens Valley and, after reorganizing, continue the advance to the north and northwest.

2. The 1st Airborne Task Force was to land in the Le Muy area about dawn of D-day and prevent the movement of enemy forces into the assault area from the direction of Le Muy and Le Luc.

3. The 1st Special Service Force, organized into three regiments of about 650 men each, was to assault the islands of Port Cros and Levant during the night of D minus 1 to capture enemy batteries that might sweep the mainland beaches. At the same time the French Commandos would land near Cape Negre to block the coastal

highway from Toulon, and a French demolition party would land near le Trayas to block the roads from Cannes.

4. The French II Corps was to debark in the beachhead after D-day, pass through the left of the VI Corps, capture Toulon, and prepare for further action against Marseilles and to the northwest.

5. The supporting naval vessels were to fire a forty-minute bombardment prior to H-hour and then support the advance of the French troops toward Toulon and Marseilles.

6. H-hour was to be at 0800, 15 August.

The logistical plan called for a twenty-day initial level of supply plus a ten-day working margin—except for ammunition. For Class V items the initial level was ten units of fire. The Seventh Army planned to land about 84,000 troops and 12,000 vehicles on D-day; and under the build-up plan 367,000 men, 56,000 vehicles, and 278,000 tons of supplies were to be put ashore during the first month of operations.

Deceptive operations were carried out during the night of 14–15 August. Naval demonstrations were executed between Marseilles and Toulon and between Cannes and Nice; and five aircraft simulated an airborne assault west of Toulon by dropping 500 dummy paratroopers equipped with noise devices to simulate small-arms fire. Other demonstrations were launched against Genoa.

The Seventh Army also planned to utilize French resistance groups, since there were an estimated 15,000 to 20,000 trained and armed members of the French Forces of the Interior and about 30,000 to 40,000 other mobilized, though unarmed, men in southern France. Two areas in particular, between Aix and the Rhone and east of Grenoble, were considered virtually under control of the resistance groups. Direct command channels were maintained from the Seventh Army to the F.F.I. units.

The VI Corps was to be divided into three assault forces for the landing, each consisting of a reinforced division. These were called Alpha (3d Division), Delta (45th Division), and Camel (36th Division). The shipping assigned to each force included six transports or cargo ships, twenty-two LST's, thirty-eight LCT's, and thirty-eight LCI's. The naval fire-support force, divided into three parts, would include battleships, cruisers, destroyers, and rocket landing craft. In addition, 105-mm. howitzers were to be mounted in DUKW's to add to the supporting fire during the critical period of the landing. All three divisions were to land simultaneously, the 3d and 45th employing two regiments of infantry abreast and the 36th Division landing in a column of regiments.

One combat command of the French 1st Armored Division would accompany the VI Corps and comprise the initial floating reserve. The 1st Airborne Task Force consisted of eight parachute infantry battalions, three parachute artillery battalions, one glider infantry battalion, and two glider artillery battalions, plus miscellaneous units. Pathfinder teams were to be dropped at 0330 hours, 15 August, and the first paratroopers would jump from 0423 to 0509 hours.

This powerful invasion force began loading its heavy equipment on 25 July, and on 9 August the first convoy sailed from Naples. By the night of 14–15 August, while the Overlord forces in north-western France were closing the Falaise–Argentan pocket and driving to the Seine River, the Dragoon assault forces were assembled off the coast of southern France.

SEVENTH ARMY OPERATIONS

The Landings (15–17 August).—A staff officer described the invasion force as follows:

In the late evening of 14 August a slight Mediterranean haze assisted in shielding the convoys from German reconnaissance planes. The tremendous armada sailed at top speed in order that it might be opposite the target area by the appointed hour the next morning.

At first light, 15 August, the Germans at Genoa were at alert for the attack. The Germans along the French Riviera were suddenly smothered with violent naval and aerial bombardment. As the mist lifted from the water, there, farther than the eye could see, were 2,110 cargo and personnel ships, assault ships, and assault craft.

Deployed in and around this great mass was the fire support—five battleships, twenty-one cruisers, thirty-two destroyers, thirty rocket ships, six flak ships, and seven gunboats—belching fire and destruction. Behind them nestled nine escort carriers and four antiaircraft cruisers.

Overhead roared 610 medium and fighter-bombers and following were 3,936 additional planes to harass the Germans on D-day. Off shore were 151,000 troops and 19,400 vehicles, guns, and tanks. Overhead was an airborne division of almost 8,200 men. Within seventy-two hours the Germans would be confronted with seven experienced divisions, superbly led and full of fight.*

During the night the 1st Special Service Force and the French Commandos landed at their assigned beaches and quickly went about their special tasks. By evening of D-day the island of Levant was in our hands, and the last resistance on Port Cros ended when its

* Brig Gen. Reuben E. Jenkins, "Operations 'Dragoon'—Planning and Landing Phase," *Military Review*, August 1946.

fortress fell on the 17th. The Commandos established road blocks on the coastal highway and withstood several counterattacks until relieved by the 3d Division in the afternoon. The seventy men of the French demolition party that landed west of Cannes were not so fortunate because they ran into barbed wire and mines whose demolition alerted the Germans, and most of the men were killed or captured. The airborne operation was launched according to schedule; and by 0430 hours on the 15th 85 per cent of the paratroopers had been landed within or near their drop zones, no aircraft having been lost from enemy action. The largest stray force was a serial of twenty-nine planes that dropped a parachute artillery battalion near St. Tropez. These paratroopers quickly joined with French resistance groups and captured the town. With the exception of the French demolition team, all pre-H-hour activities were successful.

Promptly at 0800 hours the assault waves of the VI Corps, about 12,000 men, hit the beaches. Gaps through the underwater obstacles were soon cleared,* and DD tanks swam ashore to join the infantry. The air bombardment (which had saturated the area with a density of 1,000 pounds of bombs for each ten yards of beach) and the naval gunfire had knocked out several enemy batteries and had kept most of the Germans in their dugouts. They were given no time to recover as their shelters were quickly overrun by the infantry that moved rapidly inland. Obviously the Germans had been surprised. Troops and equipment poured ashore as the infantry divisions assembled their forces to take advantage of the enemy's disorganization. The 1st Airborne Task Force had landed squarely on top of the headquarters of a German corps, which aggravated the enemy's confusion and loss of control. Glider reinforcements came in during the morning; and by evening the airborne force, which had met little resistance, had assembled most of its scattered personnel and had established contact with the 45th Division. A Seventh Army report summarized the D-day activities as follows:

At the close of D-day all the combat elements of the VI Corps had landed, and the exploitation of a weak and confused enemy was in rapid progress. By midnight, 15 August, 2,041 prisoners of war had been taken; and corps casualties had been almost negligible. The enemy could offer only scatter resistance. The German Air Force had been weak and ineffective. Enemy reinforcements never

* Radio-controlled demolition craft, called Apexes, were used to destroy the underwater obstacles; but they did not prove too successful, since some of them "ran wild" and damaged our own landing craft.

arrived in the beach area, and no large-scale counterattacks were launched. The three divisions advanced inland according to plan, already ahead of their time schedule.

By noon of 17 August all three infantry divisions had reached or passed the beachhead line in their zones, and the 1st Airborne Task Force had captured Draguignan. The French reserve combat command had moved into an assembly area; and the French II Corps was coming ashore over the Alpha beaches, a day ahead of schedule. By evening over 86,000 troops, 12,000 vehicles, and 46,000 tons of supplies had been brought in over the beaches; and 7,845 prisoners had been captured. The German division to the east had been cut off from the rest of the Nineteenth Army, and General Wiese's left flank was completely exposed.*

The unexpected breakthrough opened two lines of action to General Truscott: (1) to exploit the breakthrough immediately and attempt to trap the enemy in the Rhone Valley, his only route of escape; or (2) to slow down the advance to the north until Toulon and Marseilles had been opened for follow-up troops and supplies. The first was dangerous in that it involved supply over the beaches and over lines that were steadily increasing in length, without the help of sufficient service forces. The second was safe and in accordance with the army plan, but it would allow the enemy to recover his balance and hold on favorable ground or fight a delaying action. In a prompt and bold decision General Truscott decided to exploit immediately.

The Exploitation (18-28 August).—The 1st Airborne Task Force** turned to the east to protect the corps' rear and to drive toward the Italian frontier to block the passes through the Alps; and a special force (Task Force Butler***) was organized to exploit the breakthrough that the infantry divisions had achieved. The next problem was to decide in which direction to make the exploitation. There were three choices: to the west toward Aix, to the northwest toward

* The commander of the German LXII Corps was captured on the 17th and testified to the surprise achieved by the Allied landings when he said: "We knew when you sailed and observed your convoys as late as 14 August. You were expected to attack Genoa, and I was moving forces to the west to meet a landing near Marseilles."

** The British brigade was returned to Italy; it was replaced by the 1st Special Service Force, which had been relieved on the islands by French units.

*** Commanded by Brigadier General Frederick B. Butler, the task force was organized on the 17th. It consisted of an infantry battalion, a cavalry reconnaissance squadron, an armored field artillery battalion, a tank battalion (less two companies), and a company of tank destroyers.

Noyons, or to the north toward Grenoble. There being indications that the enemy had decided to evacuate southern France, it was decided to take the risk of the boldest move in an attempt to destroy the bulk of the Nineteenth Army. By noon of 18 August Task Force Butler had started toward Grenoble with the mission of trapping the Germans in the Rhone Valley. By evening of the 18th the VI Corps had reached the line shown on the map, and General Truscott's plan was beginning to unfold. The 3d and 45th Divisions would constitute the direct-pressure force, attacking to the west and northwest, while Task Force Butler, followed by the 36th Division, was to be the encircling force.

The enemy now saw that his situation was most unfavorable. A decision to evacuate southern France had been wrung from Hitler on the night of 17-18 August, but Marseilles and Toulon were to have their garrisons reinforced and were to be defended to the last. The Nineteenth Army was to release its two eastern divisions to Army Group Southwest (in Italy) to block the Alpine passes and protect Kesselring's exposed west flank. The rest of Wiese's divisions were to retreat up the Rhone Valley to join Army Group B, which was withdrawing from northwestern France. The problem facing Blaskowitz was recognized by the G-3 of OB West, who said:

The mission of Army Group G was extremely difficult. OB West expected that under the most favorable conditions the advance elements of Army Group G could reach the vicinity of Dijon by early September—provided it was still possible to disengage Nineteenth Army, and provided the Rhone Valley was not blocked by enemy flanking movements through the hills east of the Rhone and by a violent resurgence of the resistance movement.

For the first three days after the landings the German defensive measures had amounted to little more than guerilla warfare; and, with two divisions already lost in the east and two more cut off in the ports of Marseilles and Toulon, the problem was to hold the Allies until they could evacuate the remnants of their other five divisions. The Rhone is a swift river, difficult to cross, and the best roads are on the east bank; so it was along that route that the main military forces would withdraw, although some disorganized units and civilian personnel later straggled up the west bank.

Before discussing the operations of the VI Corps, let us see what the French did during the next ten days. By evening of the 18th the French 1st and 3d Algerian Divisions, and most of the 1st Armored, were assembled in the beachhead; and the fourth unit of the French II Corps, the 9th Colonial Division, was coming ashore. At that time the II Corps was directed to pass through the left of

the VI Corps and capture Toulon. Instead of limiting his major effort to Toulon, de Tassigny directed two divisions against that city and the other two against Marseilles. De Tassigny's strength probably did not justify the decision to divide his forces almost equally in the face of unknown enemy strength, but he relied upon the morale and courage of his troops and the help of resistance forces. He had the boldness to exploit the surprise that had been gained.

The French 1st Division destroyed strong coast-defense detachments near Hyeres on the 21st and then began its attack toward Toulon. At the same time the 3d Algerian and French 1st Armored Divisions broke through on the right and dashed for Marseilles. The 9th Colonial Division followed and encircled western and northern Toulon, where it and the 1st Division were soon heavily engaged by the Germans. The 3d Algerian and 1st Armored Divisions raced to the west and collided with enemy forces east of Marseilles. Swinging to the northwest, past the German flank, the French troops promptly invested the city. By the 22d Marseilles and Toulon were each surrounded by two French divisions, but the encircled Germans fought stubbornly.

The ports contained many defense guns of heavy caliber, still undamaged; and in the hills around the cities were numerous guns in concrete emplacements. However, Allied naval guns and bombers soon reduced the main batteries to rubble. After that it was a house-to-house fight in both cities until the Germans were subdued. The eastern section of Toulon fell on 24 August; but the enemy in the western section fought bitterly until 28 August, when the 9th Colonial Division broke through and completely overran the defenses. Marseilles also fell on the 28th. The French took 34,800 prisoners in the two cities.

Meanwhile the main battle of the campaign was being fought by the VI Corps. At first the 3d Division met resistance from elements of three German divisions trying to counterattack the west flank of our beachhead; but on the 19th Brignoles was captured, and two days later Aix was cleared after a fight. As the Germans began their retreat from the Rhone delta, the 3d Division swung to the north against mounting rear-guard resistance from the 11th Panzer Division. The 45th Division crossed the Durance on the 19th and, slowed by the difficult terrain, reached Apt on the 22d.

To the north, Task Force Butler, assisted by French Forces of the Interior, made rapid progress against scattered resistance. About 1,000 Germans, moving south from Grenoble to threaten the

beachhead, were captured at Gap on the 20th while other elements of the task force pushed on to the north. On the evening of the 20th General Truscott gave fresh directions to General Butler: "You will move at first light 21 August with all possible speed to Montelimar. Block all routes of withdrawal up Rhone Valley in that vicinity. 36th Division follows you." Butler moved to the west, through Die, and by evening of the 21st had reconnaissance patrols in the Rhone Valley north of Montelimar. The 36th Division was following closely behind on the 22d. It sent a battalion to the north, which entered Grenoble in the afternoon, closed one regimental combat team in the vicinity of Marsanne, and by midnight had emplaced two artillery battalions to fire across the Rhone.

During the next six days a full-blown battle was fought in the area Livron-Crest-Charois-Montelimar, where the 36th Division was attempting to cut off the retreat of the Nineteenth Army. Task Force Butler, which now came under the control of the 36th Division, attempted to block the German escape road between Montelimar and Livron with infantry patrols and artillery fire; the 45th Division moved north to relieve elements of the 36th on the long front from Briancon to west of Grenoble; and the 36th Division, with eight battalions of artillery in support, built up a defensive line on the Roubion River. The Germans launched persistent and heavy counterattacks against this line in an attempt to break through to the north and to relieve the congestion on the river road. They actually succeeded in penetrating the line on the 25th, but the 36th Division held on and by the 27th restored its positions. The long communication line that forced our vehicles to make a 470-mile round trip to bring up supplies prevented a maximum expenditure of artillery ammunition, and the confused character of the battle prevented close tactical air support. The enemy managed to cross some units to the west bank of the Rhone and to infiltrate others up the east bank through our artillery fire.

In the meantime the retreating Germans had been able to keep from twelve to eighteen miles ahead of the 3d Division. The Americans passed Avignon on the 25th and Orange the next day; and on the 28th they launched a coordinated attack against Montelimar, where the enemy attempted to hold. The 3d Division cleared the town by evening of the 28th, at the same time that elements of the 36th and 45th Divisions occupied Livron. With those points in our hands the battle was over, but once again skillful rear-guard actions had enabled many Germans to escape. Nevertheless, the battle had cost the enemy 15,000 prisoners and 4,000 vehicles, tanks, and guns.

Only our long supply lines and an acute shortage of trucks had saved the German Nineteenth Army from complete annihilation in the valley of the Rhone.

The Pursuit (29 August–14 September) (Map 11).—The Seventh Army now made a supreme effort to get behind the Germans facing the Third Army, which was south and east of Paris. Unfortunately, logistics, and not Germans, was the most formidable opponent, although the enemy continued to fight stubborn delaying actions. With many trucks yet to arrive and with unit transport hauling supplies on a 600-mile turnaround, which was being lengthened daily, the rate of advance was reduced to approximately the mobility of the foot soldier.

General Patch directed that the VI Corps continue the pursuit to the north and that General de Tassigny place a corps of two divisions west of the Rhone to advance abreast of the VI Corps. De Tassigny was ordered to move the French I Corps, which had just arrived, to the right of the VI Corps to relieve American units that held positions in the Alps north of the 1st Airborne Task Force.* Although all bridges over the Rhone had been destroyed, the French II Corps** crossed by ponton and ferry and was almost abreast of the VI Corps by 31 August, while the 2d Moroccan Division moved into the Alps north of the airborne force.

On 3 September the French II Corps entered Lyon and drove north in an effort to gain contact with the Third Army. The VI Corps moved northeast in a supreme effort to block the enemy's escape through the defile at Belfort. Both corps were meeting stronger and better-organized resistance from new German units and hastily reorganized remnants of the Nineteenth Army. On 10 September the French II Corps captured Dijon while units of the VI Corps took Besancon. The remainder of French Army B was moving up on the right of the VI Corps, sealing the Alps along the Swiss and Italian borders and preparing to participate in any battle to breach the Belfort gap. We have already seen that on 11 September elements of the French II Corps made spotty contact near Dijon with the XV Corps of the Third Army. Vesoul fell to the VI Corps on the 13th, and on 14 September firm contact was established with the Third Army. General Patch ordered the French

* The 1st Airborne Task Force had captured Cannes on 24 August and by the 28th was along the Var River. Nice was cleared on the 30th. The task force organized a long sector along the Alpine frontier, its left flank protected by a group of miscellaneous Seventh Army units in the vicinity of Briancon.

** French 1st Armored and 1st Divisions.

II Corps, which was now pinched out, to mop up in its zone and then cross behind the VI Corps to rejoin the rest of the French Army B.

Throughout the campaign the assistance provided by the French Forces of the Interior was important. Thousands of these troops were used to provide line-of-communication security, to perform intelligence missions, and in some cases to act as combat troops. They cleaned out the area between the Rhone and Loire Rivers and harassed the German garrisons that had withdrawn into the fortresses along the Atlantic coast.

The XII Tactical Air Command had also taken its toll of the retreating Germans. Emergency landing strips were quickly built; and by 23 August six airfields had been established in France, and three American groups and eleven R.A.F. squadrons of fighters were operating from them. During the week of 22-28 August alone the XII Tactical Air Command flew 3,300 sorties and dropped over 1,900 tons of bombs.

By 14 September the Seventh Army had completed in one month more than what had been estimated as a three months' task. The German forces in southern France had been destroyed as a cohesive fighting force. The French Army B had captured 47,717 prisoners and the Americans, 32,211, for a total of almost 80,000. German losses in equipment were extremely heavy.* French casualties were about 1,300 killed and 5,000 wounded and missing. The Americans lost 1,395 killed and 5,879 wounded and missing.

The main battle was fought 175 miles inland from the assault beaches, and it was fought by infantry divisions operating with reduced transportation and with supplies from beach dumps. The campaign involved a little of everything in the way of military operations: airborne and water-borne landings, mixed nationalities, secret agents and underground forces, a war of movement resulting in an enemy encirclement and defeat, strategic and tactical air operations, Navy air and Army air under a single command, radio-controlled weapons and tanks that floated. But primarily the campaign was characterized by sound planning, aggressive leadership, and skillful fighting by battle-hardened officers and troops who had mastered the intricacies of amphibious warfare and were quick to exploit an operation against a demoralized enemy.

As a secondary attack the invasion of southern France had achieved full success. The stage was now set for a new phase in the operations in western Europe.

* The Nineteenth Army lost 1,316 of its 1,481 artillery pieces during its retreat.

OPERATIONS AGAINST THE WEST WALL

(15 September–15 December, 1944)

INTRODUCTION (Map 7)

The campaigns in northern and southern France resulted in the liberation of most of France and Belgium and the junction of the two invasion forces—Overlord and Anvil. In a little over three months the Western Allies had carried their offensives from the beaches to the western borders of Germany; but, as can be seen from the map, during the next three months little, if any, further progress was to be made. Several factors, including weather, terrain, and stiffening German resistance, contributed to the slowing down of the offensive; but logistical support was the predominant consideration during the fall of 1944. The unprecedented speed of their advance had caused the Allied troops to outrun their supplies, and slowly the armies came to a halt. To understand the cause of this stalemate it is necessary to go back a little and reconsider the logistical aspects of the summer campaigns.

Logistical Considerations.—It will be recalled that with the fall of Paris and the arrival of the Allied armies at the Seine about 25 August they were substantially on the line that had been predicted before D-day. In fact, in the long-term estimate of ground operations the Allies were a little ahead of schedule, but in the important field of supply capacity they were far behind. Because almost all of northwestern France had been overrun in the swift movements subsequent to 1 August, the railroads, depots, repair shops, and base installations required for the maintenance of the offensive were still far to the rear of the front lines. Furthermore, the lack of adequate ports was curtailing the landing of sufficient tonnages to support adequately an advance that was consuming supplies at a terrific rate. For example, each division used about 600 to 700 tons of supplies per day of active operations;* losses of ordnance equipment required replacement each month of about 36,000 small arms, 700 mortars, 500 tanks, 2,400 vehicles, and 100 field pieces; artillery and mortar ammunition was consumed at a rate of about 8,000,000 rounds a month;** and 66,400 miles of just one type of field wire was used each month. To supply these demands the logistical problem became one of three parts: to provide adequate

* For fixed-position fighting most of this tonnage was in ammunition; during an advance the bulk consisted of gasoline and lubricants.

** Less than 10,000,000 rounds of artillery and mortar ammunition were expended by the A.E.F. during the entire period of World War I.

port capacity, to establish adequate lines of communication to the front, and to provide means of transport.

The most urgent long-range objectives of SHAEF's pre-invasion logistical planning had been these: to determine the maximum number of divisions and supporting troops that could be moved to the Continent and maintained in combat, to determine the tonnage of supplies required for their support, and to verify that port and beach capacity would equal the tonnage of supplies to be landed. Obviously these results had to balance. The next problem was to determine how far and how fast the Allied forces could advance and still be adequately supported. Out of these studies, along with the general strategic considerations already discussed, came the plans for the advance from the lodgement area, as shown by the phase lines on the map. Actually such phase lines are not an essential feature of tactical plans; but progress predictions are of vital concern to the supply people, who must plan their operations months ahead if they are to have the required supplies at the proper place at the proper time. A comparison of the planned phase lines for D plus 90 and D plus 120 with the actual location of the front on about D plus 100 illustrates how far the armies had outrun their planned logistical support. As can be seen on the map, there were two major divergencies from progress anticipated during August and September. The armies advanced much faster and farther than had been expected, and some of the most important ports resisted capture or took longer to open than anticipated.

The following table shows the daily average of cargo tonnage discharged during the late summer and fall of 1944:

	<i>August</i>	<i>September</i>	<i>October</i>	<i>November</i>
Beaches	17,300	13,100	6,300	900
Cherbourg	8,500	10,400	11,800	14,000
Normandy and Brittany minor ports....	4,300	5,800	4,400	3,700
Le Havre			2,000	4,800
Rouen			900	4,100
Total cargo discharges				
(daily average)	30,100	29,300	25,400	27,500
Original SHAEF estimate	30,700	37,600	38,600	51,200
Approximate deficit	4,000	9,000	20,000	20,000

So not only did cargo discharges soon fall behind the early estimates of minimum requirements, but the deficit that began to appear in August increased to 20,000 tons per day in October and November. That this was a real deficiency and not a paper one was shown in two ways: First, the accumulation of shipping that awaited discharge in European waters rose to 150 ships on 1 September and

240 on 20 October. Second, the armies in September and October received only about two-thirds of the supply tonnage they required for full-scale operations. It is true that most of the initial shortages were directly caused by deficiencies in the inland transportation system. But the slow unloading of rolling stock and engineer supplies at the ports in turn slowed down the rehabilitation of the transportation system. Lack of port capacity was a bottleneck in the truest sense of the word. The stubborn German defense of the ports in Brittany, which prevented Brest and Quiberon Bay from being developed, each day cost the American forces up to 14,000 long tons of supplies that accumulated offshore in ships that could not be unloaded. Finally, because of the capture of the ports of Rouen, Le Havre, and (later) Antwerp, it was decided to abandon the Quiberon Bay project and to contain the German garrisons in Lorient and St. Nazaire; but the unavoidable delay in opening the new ports to traffic threw an overwhelming load on Cherbourg and the beaches during the fall. By November the opening of Le Havre and Rouen compensated somewhat for the failure to acquire the Brittany ports; but port capacity was still inadequate (the beaches could not now be used), and the War Department was forced to cancel shipping. The opening of Antwerp, the greatest port in Europe, would be the one means of meeting the serious situation.

The following table shows the approximate lengths in miles of the main lines of communication during the fall of 1944:

	<i>From Normandy</i>	<i>From Le Havre</i>	<i>From Antwerp</i>	<i>From Marseilles</i>
21st Army Group	350-400	250	100-150	
12th Army Group				
First Army	500	350-400	125-150	
Third Army	425			
6th Army Group				450-500
The Ruhr	575		175	
Frankfurt	575			650

The importance of Antwerp is summed up in this statement by Communications Zone planners:

Nearly three times the effort is required to support one division by the Cherbourg route as compared with the Antwerp route. Assuming a sustained performance of the rail system and the operation of the Red Ball . . . system at top capacity, a maximum of twenty-one divisions can be supported via Cherbourg. On the other hand, the Antwerp route can support thirty to fifty divisions without difficulty.

General Eisenhower's firm adherence to his plan to make the main Allied effort in the north was certainly supported by logistical con-

siderations. But the approaches to Antwerp were not cleared until late November; and in the meantime the September drives, which furnished so many fine headlines to cheer the Allies, brought hectic days and sleepless nights to a Communications Zone staff that was haunted by thoughts of lengthening lines of communication and inadequate ports.

General Lee had established his Communications Zone headquarters on the Continent on 7 August, and the various base sections* took over supply responsibilities from the Advanced Section as the offensive moved eastward.

The Communications Zone made heroic efforts to keep the armies going. It took over the main highway routes in France and, using most of them for one-way traffic, installed a system of truck transportation known as the Red Ball Highway Express. Trucks were on the road continuously; every vehicle ran at least twenty hours a day; relief drivers were scraped up from every unit that could provide them; and the vehicles were allowed to halt only for necessary loading, unloading, and servicing. Deficiencies in preventive maintenance, the deterioration of the highways, and constant rains that turned roads into rivers of mud brought the Red Ball Express project to a close on 13 November; but in some eleven weeks it carried over 334,000 tons to the front. At its peak the Red Ball Express employed about 7,000 trucks, or 140 truck companies, that moved nearly 8,000 tons of supplies per day. Through strenuous efforts the railroads were gradually restored to operating condition, and the supply tonnage handled over them was increased from 150,000 tons in September to 440,000 in November.** The burden on the railways and highways was relieved to a considerable extent by the use of pipe lines for gasoline and oil.

In spite of all this activity, it was impossible to meet all the demands of the combat forces. As our armies reached the West Wall, artillery ammunition requirements rose sharply; and truck trans-

* The Normandy Base Section, which had been established on 16 August, was the largest base section during the late summer and fall of 1944; it included Cherbourg and Utah and Omaha Beaches. By mid-October there were over 464,000 Communications Zone troops on the Continent; of this total, 61,000 belonged to the Advance Section and 123,000 to the Normandy Base Section.

** Bridges, tracks, and rolling stock had been so well bombed by our airmen that repairs were difficult and slow. The limited port capacity had to be used for the most part for food and ammunition; and, as has been indicated, this delayed the receipt of supplies and equipment needed for the rehabilitation of railroads. Over 900 locomotives and a third of the freight cars used in France had to be shipped in.

port was stretched to the breaking point. General Eisenhower makes this comment in his book:

All along the front we felt increasingly the strangulation on movement imposed by our inadequate lines of communication. . . . Regardless of the extraordinary efforts of the supply system, this remained our most acute difficulty. All along the front the cry was for more gasoline and more ammunition. Every one of our spearheads could have gone farther and faster than they actually did. I believed then and believe now that on Patton's front the city of Metz could have been captured. Nevertheless, we had to supply each force for its basic missions and for basic missions only.*

These logistical difficulties persisted until December and prevented the Western Allies from mounting a sustained offensive. This breathing spell was utilized by the enemy to stiffen his resistance, and as a result the fighting along the 500-mile front from Switzerland to the North Sea turned into the hardest kind of infantry slugging during October and November. Advances were slow and laborious, and gains were usually measured in yards instead of miles.

The West Wall (Map 13).—On 8 September Field Marshal von Rundstedt compared his combat strength to that of the Allies in a report to OKW:

Our forces comprise forty-eight infantry divisions and fifteen panzer divisions; of these only one-fourth are at full combat strength, so that their total effectiveness can be estimated as twenty-seven infantry divisions and six or seven panzer divisions at most. To these are opposed some sixty** enemy units at full battle strength.

In spite of the demoralized condition of his troops, he took advantage of the Allies' critical logistical situation and his strong defensive position to reorganize his armies. Model's Army Group B took over the sector from the mouth of the Schelde to the Moselle with, from right to left, the Fifteenth, First Parachute, Fifth Panzer,*** and Seventh Armies. Blaskowitz' Army Group G held the front from the vicinity of Trier to Switzerland with the First and Nineteenth Armies.

The construction of the West Wall, or "Siegfried Line" (as it came to be called by most Americans), within which Rundstedt was attempting to regroup his forces, had been started in 1936,

* Eisenhower, *Crusade in Europe*.

** Actually the Allies had a total of forty-seven divisions on the Continent on 8 September.

*** By mid-September the Fifth Panzer Army had been moved south for a special operation.

after the reoccupation of the Rhineland. In 1938 work had been pushed feverishly, and by 1939 a formidable defensive barrier had been built. Its general location is shown on the map, from which it can be seen that its depth varied considerably along different parts of the front. In the Saar area, where it was strongest, it had a density of about forty forts per 1,000-yard square; on the upper Rhine it was narrow and lightly fortified; and in the north, between the Maas and Rhine, it tapered off into a series of isolated bunkers and field fortifications.

The West Wall, constructed before the Russians had taught the Germans the principle of an all-around ("hedgehog") defense, consisted for the most part of a large number of concrete pillboxes* for machine guns and antitank guns and concrete shelters for local reserves. It was built on the first natural barriers east of the German border, being designed to increase the defensive potentiality of the frontier terrain. The numerous mutually supporting pillboxes, thickest along the natural avenues of approach, were designed to slow up and tire the enemy so that he could be destroyed by strong counterattacks.

At the time of its completion the West Wall was of great strategic importance, and it was manned by an average of one well-trained division for every twelve kilometers of front. With the fall of France, however, it lost its strategic importance; and from 1941 onward it was cannibalized in favor of the Atlantic Wall. By 1944 the mines and barbed wire, fortress weapons, communication nets, technical furnishings, and trained fortress troops had been removed. Many of the works could not withstand our latest weapons; their development had continued, whereas the development of the West Wall had ceased in 1940. The following comment of the G-3 of OB West is of interest: "In the autumn of 1944 the West Wall was formidable only because of its old reputation and because of propaganda; actually it had no defensive strength."

This was an exaggerated and pessimistic opinion, since later events proved that the Germans could make good use of sections of the West Wall. Undoubtedly it was not as strong in September 1944 as it was in 1940, but it provided the extra defensive strength needed to halt the Allied pursuit; and with the extension of our lines of communication and the immobilization of our armored divisions, it enabled the Germans to gain a breathing spell after the

* The average size of the pillboxes was about twenty-five by forty-five feet, and the height of twenty feet was usually at least half underground. The concrete walls and roof were four to eight feet thick and sometimes steel-plated.

disasters in western France. During the fall it was gradually strengthened until sections of it again became a formidable barrier.

In spite of Hitler's abhorrence of rearward defensive positions, General Jodl had ordered the rearming of the West Wall when the Allies broke out of Normandy at the end of July. Construction troops were sent to renovate the long-disused fortifications; local civilians were impressed into service to construct field fortifications between the permanent forts and in rearward switch positions; air force and naval personnel were given rifles and rushed into the line; and a whole series of new *volksgrenadier* divisions* were organized by scraping the bottom of the man-power barrel.

Surveying the situation in mid-September, Rundstedt decided to establish his main line of resistance along the Maas River in the north, the German border in the center, and the western edge of Lorraine and Alsace in the south. The line ran west of the frontier in the south in order to protect the coal region of the Saar and to keep it in production as long as possible. In this region the front extended generally along the line Thionville-Metz-Nancy-Epinal and thence to the Swiss border. Rundstedt's development of his defensive positions has been described by a Canadian intelligence officer as follows:

Having been given carte blanche to withdraw his forces to the borders of the Reich, the old man set about his task with the coolness and efficiency of a man who knew what he was about. Deciding that the Maas River in the north, the Siegfried Line in the center, and the Moselle and Vosges Mountains in the south offered the most effective geographical barriers, he ordered his armies to take up sectors along these lines as quickly as they could. Immediately behind these positions he set to work filling up and reorganizing the shattered remnants of the divisions beaten in Normandy. As soon as a unit was even a semblance of its former self, it was shoved into the West Wall, where it completed its training and reformation. By the end of September his front line looked neat enough to pass an examination of the General Staff College.**

The Allied Situation.—On 15 September 1944 the Allied forces that had invaded southern France came under SHAEF's control, and the western front assumed the general organization that it retained for the rest of the war. On the left Field Marshal Montgomery held a 150-mile zone with the seventeen divisions of his 21st Army Group, which was also designated the Northern Group

* A *volksgrenadier*, or people's infantry, division numbered only about 8,000 men; but it was strong in automatic weapons, particularly submachine guns.

** Milton Shulman, *Defeat in the West* (New York: E. P. Dutton & Co., Inc., 1948). Copyright, 1948, by the author.

of Armies. In the center Lieutenant General Bradley held a 250-mile front with the twenty-one divisions of his 12th Army Group, or Central Group of Armies. On the right Lieutenant General Jacob L. Devers held a 100-mile zone, not including the Swiss or Franco-Italian frontiers, with ten American and French divisions under his new 6th Army Group,* or Southern Group of Armies.**

The map shows the situation on 15 September, and Appendix 7 gives the Allied order of battle on that date. A total of forty-eight divisions (twenty-five American, twelve British, seven French, three Canadian, and one Polish) were on the Continent, which meant that the Allies could on the average deploy less than one division for each ten miles of front. All of these divisions needed infantry replacements. Practically all British and French forces had already been committed, but six American divisions were staging in the United Kingdom.

In the fall General Eisenhower's air strength in operational units was approximately 4,700 fighters; 6,000 light, medium, and heavy bombers; and 4,000 reconnaissance, transport, and other types of planes. The British Second Tactical Air Force continued to support the 21st Army Group, while the Ninth Air Force supported the 12th Army Group and reinforced the XII Tactical Air Command, which still operated with the Seventh Army.*** In October the Allied Expeditionary Air Force was disbanded; and thereafter the tactical air forces worked directly under the Deputy Supreme Allied Commander, Air Chief Marshal Tedder. The strategic air forces reverted to the control of the Combined Chiefs of Staff in October, although General Eisenhower could still call on them in emergencies.

* The Headquarters, 6th Army Group, originally designated Advance Detachment, Allied Force Headquarters, had been activated on 1 August 1944 under the command of General Devers. Lieutenant General Joseph T. McNarny replaced Devers as Deputy Supreme Allied Commander in the Mediterranean Theater. The 6th Army Group became operational on 15 September, with the Seventh Army and the French Army B under its command. General de Tassigny's army was redesignated the French First Army on 21 September. Although General Devers operated under Eisenhower's direct command, logistical support for the 6th Army Group was provided by the Mediterranean Theater and did not become a direct responsibility of Communications Zone, ETOUSA, until later in the campaign.

** The numerical designations seemed to be preferred by all army group headquarters, and their use on maps and in reports was continued.

*** In October the XII Tactical Air Command temporarily came under command of the Ninth Air Force; and in November a provisional air force, the First Tactical Air Force, was activated to operate with the 6th Army Group and control the XII Tactical Air Command and the French I Air Corps.

We have already discussed the over-all plan of operations of SHAEF. A comment of General Eisenhower's summarizes that plan:

The general plan approved as the outline of the operations we intended to conduct was:

Land on the Normandy coast.

Build up the resources needed for a decisive battle in the Normandy-Brittany region and break out of the enemy's encircling positions. (Land operations in the first two phases were to be under the tactical direction of Montgomery.)

Pursue on a broad front with two army groups, emphasizing the left to gain necessary ports and reach the boundaries of Germany and threaten the Ruhr. On our right we would link up with the forces that were to invade France from the south.

Build up our new base along the western border of Germany, by securing ports in Belgium and in Brittany as well as in the Mediterranean.

While building up our forces for the final battles, keep up an unrelenting offensive to the extent of our means, both to wear down the enemy and to gain advantages for the final fighting.

Complete the destruction of enemy forces west of the Rhine, in the meantime constantly seeking bridgeheads across the river. . . .

This general plan, carefully outlined at staff meetings before D-day, was never abandoned, even momentarily, throughout the campaign.*

Thus in the over-all scheme of operations in western Europe the fighting during the fall of 1944 was characterized as a period of building a base along the western borders of Germany for future offensives while at the same time conducting limited operations to the extent of our means. It is regretted that space limitations permit only a brief account of these operations, which comprised some of the bitterest fighting of the war.

21ST ARMY GROUP OPERATIONS

In mid-September three important tasks faced Field Marshal Montgomery in the north: He had to secure a line far enough to the eastward to cover Antwerp and the roads and railways leading out of it toward the front; he had to reduce the German defenses between Antwerp and the sea; and it was hoped he could thrust forward spearheads across the Rhine to threaten the Ruhr and facilitate subsequent offensives.

Although the opening of Antwerp was the 21st Army Group's primary task, it was decided to take advantage of the enemy's disorganization by committing the Allied airborne forces in an attempt

* Eisenhower, *Crusade in Europe*.

to secure a bridgehead across the Rhine in the Arnhem area.* In any event, the northern flank of the Allied line should be extended to the Rhine, since stopping short of that obstacle would leave the 21st Army Group in an exposed position while it concentrated on clearing the Schelde Estuary.

Accordingly, on 10 September, at a conference in Brussels, General Eisenhower authorized Montgomery to defer the clearing of the Antwerp approaches and made available to him the First Allied Airborne Army** for the purpose of securing the Rhine bridgehead. The target date was set for 17 September.

The Airborne Invasion of Holland.—Montgomery immediately started the planning for Market-Garden,*** which was the code name assigned to the operation. Although the attack toward Arnhem had the disadvantage of additional water obstacles and was directed on an area relatively remote from the Ruhr, he selected that “thrust line” because it satisfied three overriding considerations: It would outflank the West Wall; it would strike on the line least expected by the enemy; and it would permit the airborne forces to operate at the most favorable range from their United Kingdom bases. The ultimate objectives of the operation were to establish an Allied force in the vicinity of Apeldoorn (between Arnhem and the Zuider Zee), thus cutting off the troops in Rotterdam and western Holland from the main German forces, and to secure bridgeheads across the IJssel River, through which an offensive could be launched north of the Ruhr—toward the Münster–Hamm area.

The operation was to be conducted by the British Second Army. Montgomery describes the plan in these words:

The essential feature of the plan was the laying of a carpet of airborne troops across the waterways on the general axis of the main road through Eindhoven to Uden, Grave, Nijmegen, and Arnhem, culminating in a bridgehead force north of Arnhem. . . . Along the corridor established by the airborne carpet XXX Corps was to

* Actually three major water obstacles would have to be crossed: the Maas (Meuse) at Grave, the Waal (Rhine) at Nijmegen, and the Lek (Neder Rijn or Lower Rhine) at Arnhem.

** It had been intended, successively, to employ the First Allied Airborne Army in the Paris–Orleans gap after Patton’s breakthrough, then at the Seine crossings after the Falaise pocket operations, and again to cut off the German Fifteenth Army in the Pas de Calais; but the swift advance of the ground forces made these operations unnecessary.

*** Market was the airborne operation; Garden was the name of the ground offensive. Market was the largest airborne operation ever attempted, requiring the employment on the first two days of 2,800 planes and over 1,600 gliders.

advance to the Arnhem bridgehead, whence it would develop operations to establish a northern flank on the Zuider Zee and an eastern flank on the River IJssel, with bridgeheads beyond it. As XXX Corps advanced north, [British] VIII Corps was to relieve it of responsibility for the right flank of the corridor and was to widen it to the east; on the left flank XII Corps had a similar task, with responsibility for widening the corridor to the west.*

The airborne units included the British I Airborne Corps** headquarters, the 82d, 101st, and British 1st Airborne Divisions, and the Polish Parachute Brigade. The 101st was to capture the bridges and defiles on the XXX Corps' axis of advance between Eindhoven and Grave; the 82d was to seize the bridges at Grave and Nijmegen; and the British 1st Airborne Division and the Polish Brigade were to capture the Arnhem bridges.*** The XXX Corps was to launch its drive out of the Meuse-Escaut Canal bridgehead with the Guards Armored Division, followed by two infantry divisions. Upon reaching Arnhem and capturing airfields in that vicinity, another British infantry division was to be flown in to reinforce the armored spearhead and the British airborne troops. Because the drop zones were beyond friendly artillery range, most of the fire support for the airborne forces would have to be provided by the strategic and tactical air forces.

Little time was available to plan and prepare for such a complicated operation,† but the attack was launched as scheduled—on the 17th. The airborne troops began landing at 1400 hours, the initial drops being completed in one and a half hours. The drops and glider landings were good, the planes of the IX Troop Carrier Command flying low to put their troops, with few exceptions, in the prescribed zones. Complete surprise being achieved, the initial enemy opposition was light. The 101st quickly organized in the vicinity of Son and seized several bridges on the road to Uden. The 82d captured the Maas bridge at Grave intact, but initial efforts to reach the Nijmegen bridges were unsuccessful. News from the British 1st Airborne Division was scarce on the 17th. At 1425 hours the Guards Armored Division began its northward attack but ran into strong enemy positions that held the XXX Corps to gains of only six miles the first day.

* Montgomery, *Normandy to the Baltic*.

** Lieutenant General F. A. M. Browning, commanding.

***A shortage of transport aircraft prevented dropping all of the airborne forces in one day. The operation, including aerial resupply, was scheduled for four days.

† Montgomery issued his orders to the British Second Army on 14 September.

When the attack was resumed the next morning, the armor broke through to Eindhoven, which was strongly defended. However, paratroopers of the 101st entered the town from the north; and at 1700 hours on the 18th an attack by the Guards Armored Division broke the last enemy resistance. North of Eindhoven the 101st strengthened its hold on the key points on the road to Grave. The 82d continued its attempts to get to the Nijmegen bridges, but increasing enemy resistance prevented their capture; and the first of a series of German counterattacks was launched from the Reichswald Forest (northwest of Goch) against the paratroopers. At Arnhem elements of the British 1st Airborne Division reached the northern approach to the bridge but found the city held by a strong garrison that included tanks and self-propelled guns. Efforts to resupply the British paratroopers failed because of poor visibility and heavy flak.

At 0615 on the 19th the Guards Armored Division drove through Son and by 0900 had gained contact with the 82d Airborne Division at Grave. By evening the Allies held a narrow corridor from Eindhoven to Nijmegen, but even the British armor had been unable to capture the Nijmegen bridges. The airborne troops at Arnhem were being forced back into an area west of the city. Bad weather on the 19th not only prevented effective reinforcement* and resupply of the airborne troops but restricted the operations of the air forces in support of the ground units. The British XII and VIII Corps made only slight gains on the flanks, and extreme congestion on the main road was making it difficult to reinforce the XXX Corps troops that were trying to break through to Arnhem. Montgomery comments as follows in his book:

The progress of the two flank corps was thus depressingly slow; apart from the enemy resistance, the difficult nature of the country, which was flat and intersected by a great number of minor water lines, greatly impeded progress; we were not strong enough to accelerate further these operations, and as a result the flanks of the long XXX Corps salient were thinly held and lay open to attack by the enemy battle groups assembling against us.**

The situation at Arnhem became acute as the British paratroopers were forced back into a small perimeter north of the Lek and were subjected to concentrated artillery and mortar fire from all sides. To the rear the 101st Airborne Division had its hands full holding the road open against mounting attacks around Son, which had

* The Polish Parachute Brigade could not be flown in to support the British, as had been planned.

** Montgomery, *Normandy to the Baltic*.

temporarily stopped the flow of traffic to the north. But the most spectacular action on the 20th occurred at Nijmegen. The Germans had reinforced their troops in that area during the night; so it was decided to force a crossing of the Waal with a part of the 82d Airborne Division rather than to prolong the struggle for the bridges. Montgomery describes the operation as follows:

American troops received some rapid instruction in the use of British assault boats preparatory to forcing a crossing of the river west of the bridge; and while these preparations were in hand, there was heavy fighting on the east flank, where the enemy launched a series of counterattacks. At 1500 hours the assault across the Waal started, about one mile west of the town. The operation was in full view of the enemy, and there were only sufficient boats to carry one battalion at a time; on the north bank the assault had to be carried across several hundred yards of flat open country in order to capture an old fort surrounded by a moat. Subsequently the attack was to be swung in on the northern exits of the main road and railway bridges. Fire support was limited, and in the event smoke cover proved ineffective on account of the weather. In spite of these difficulties the American troops carried out a magnificent operation; although they suffered considerable casualties, they pressed on desperately and by 1845 hours had secured the northern end of the railway bridge and soon afterwards the exit from the road bridge. On the south side of the river the Guards were having a hard fight near the southern ends of the bridges; the sight of the United States flag on the northern end of the railway bridge was the signal for the Guards' tanks to launch a head-on attack which carried the defenses and enabled leading elements to cross the river and join up with the Americans. Considerable mopping up was necessary in the bridge areas, while the demolition charges were removed and the last defenders eliminated.*

During the next few days every effort was made to relieve the Arnhem bridgehead forces, but adverse weather continued to restrict air operations. Part of the Polish Brigade was dropped between Arnhem and Nijmegen on the 21st, and the next day XXX Corps troops joined them and reached the Lek; but it was impossible to reinforce the paratroopers across the river, who were running short of supplies and ammunition. Finally, on the night of 25-26 September, the remnants of the British 1st Airborne Division were evacuated in assault boats. Only about 2,200 men of the division were rescued.**

In the meantime enemy counterattacks against the flanks of the Allied corridor had closed the road between Eindhoven and Uden

* Montgomery, *Normandy to the Baltic*.

** The British 1st Airborne Division suffered some 7,000 casualties in this operation.

from the afternoon of the 24th until the 26th. Other counter-attacks, including 600 sorties by German aircraft on the 27th, were launched around Nijmegen in a desperate German attempt to recapture or destroy the bridges; but the Allies held their Waal bridgehead.* The flank corps succeeded in widening the corridor somewhat, and by the end of the month the British Second Army held the dotted line shown on the map.

During the entire operation 5,582 planeloads and 2,557 gliderloads of men and matériel were dispatched to Holland. There were dropped or landed 20,000 troops by parachute and 14,000 by glider, 1,927 vehicles, 568 artillery pieces, and 5,230 tons of supplies. Total casualties in the airborne army during the period of thirty days from 17 September were 13,216; 1,265 killed, 4,281 wounded, and 7,670 missing. The battle emphasized the importance of the weather on aerial reinforcement and resupply and the difficulty of defending a long, narrow corridor against an aggressive enemy.

In his account Field Marshal Montgomery summarizes the operation as follows:

The Battle of Arnhem was ninety per cent successful. . . . Full success was denied us for two reasons:** First, the weather prevented the build-up of our airborne forces in the battle area; second, the enemy managed to effect a surprisingly rapid concentration of forces to oppose us. In face of this resistance the British Group of Armies in the north was not strong enough to retrieve the situation created by the weather by intensifying the speed of operations on the ground. We could not widen the corridor sufficiently quickly to reinforce Arnhem by road.***

General Eisenhower comments as follows on the airborne invasion of Holland:

The progress of the battle gripped the attention of everyone in the theater. We were inordinately proud of our airborne units, but the interest in that battle had its roots in something deeper than pride. We felt it would prove whether or not the Germans could succeed in establishing renewed and effective resistance—on the battle's outcome we would form an estimate of the severity of the fighting still ahead of us. A general impression grew up that the battle was really a full-out attempt to begin, immediately, a drive into the heart of Germany. This gave a great added interest to a battle in which the circumstances were unusually dramatic.

* The German troops were told that the Nijmegen bridges were the "gateway to the fatherland" and that their destruction was essential to avert defeat. Between 19 September and 4 October twelve attacks of divisional or greater strength were launched against the Eindhoven-Arnhem salient.

** Montgomery's chief of staff lists as a third reason for the failure of the operation the lack of sufficient aircraft to carry the whole force in one lift.

*** Montgomery, *Normandy to the Baltic*.

When, in spite of heroic effort, the airborne forces and their supporting ground forces were stopped in their tracks, we had ample evidence that much bitter campaigning was still to come.*

The Battle of the Schelde Estuary.—While the British Second Army was fighting for the Arnhem bridgehead, General Crerar's Canadian First Army had continued clearing the Channel coast. By the end of the month his forces had reached the line shown on the map. Boulogne had fallen on 22 September** (with 9,500 prisoners) after a six-day battle, and on the 30th Calais with its garrison of 10,000 men was captured. The Czech Armored Brigade was left behind to invest the 10,000 Germans in the fortress of Dunkirk.

By the end of the first week of October Montgomery realized that his plan for an offensive north of the Ruhr must be delayed. There were about twenty weak German divisions or battle groups, including four panzer divisions, on the 21st Army Group front from Roermond to Breskens. Their lack of armor and mobility was offset by the nature of the country, where the attacker would have to fight for every water crossing. So Montgomery now turned his attention to the clearing of the Schelde Estuary and the opening of the port of Antwerp, an operation that could no longer be postponed. At the moment his forces were badly scattered, but the 82d and 101st Airborne Divisions were retained in a ground role; and two other American divisions*** were made available so that he could concentrate for the Schelde operation.

The clearing of the Schelde Estuary involved the capture of three areas: the tip of mainland between the Leopold Canal and Breskens, the peninsula of South Beveland, and Walcheren Island. During the latter part of September remnants of the German Fifteenth Army† had been withdrawing into these areas, where their artillery dominated the approaches to Antwerp. General Crerar was to employ the Canadian II Corps to clean out the Breskens area and the British I Corps to clear the eastern approach to South Beveland. Dempsey's XII Corps was to clear the enemy from its zone (south of the Maas and west of the Arnhem corridor) in order to secure the British Second Army's left flank.

* Eisenhower, *Crusade in Europe*.

** During this fighting British batteries near Dover had engaged German coastal batteries near Calais and had scored a direct hit on one of them at a range of 42,000 yards.

*** The 7th Armored Division was attached to the British VIII Corps and the 104th Division to the British I Corps.

† At that time the Fifteenth Army consisted of the equivalent of four regular German divisions.

At dawn on 6 October the Canadians attacked across the Leopold Canal at a point about twelve miles east of Bruges. Two days later an amphibious assault was launched along the south shore of the Schelde Estuary, in the enemy's rear. The troops for this landing embarked at Ghent, from where they were transported to the estuary via a canal. They quickly established a beachhead and later made contact with the troops attacking from the south. The Germans resisted strongly, but by 3 November the Breskens area had been cleared.

In the meantime other Canadian troops crossed the Antwerp-Turnhout Canal on 1 October and by the 16th had reached the base of the South Beveland Isthmus. The Canadian II Corps then undertook the task of capturing South Beveland and Walcheren Island, an operation requiring joint naval, air, and ground action. Since the only land approach to South Beveland is via the isthmus, plans were worked out for an attack westward along that narrow piece of ground in conjunction with an amphibious assault from the south. After three days of fighting in waist-deep water the Canadians reached the west end of the isthmus on 27 October. A British division that had just landed on the south shore of the peninsula joined in a converging attack that ended on the 31st with South Beveland entirely in our possession. In four weeks of as fierce fighting as had yet been experienced in northwestern Europe the Canadian First Army had captured 12,500 prisoners.

The next problem was the capture of Walcheren Island. Since the terrain was not suitable for an airborne attack, it was decided that the most effective way to capture the island quickly would be to "sink" it by breaching the sea dykes on its circumference. This would flood some of the enemy's artillery positions, restrict the movement of his troops, and permit the assaulting forces to proceed inland in their amphibious vehicles and take the defenses in the rear. By the end of October the Bomber Command had so effectively breached the dykes that Walcheren Island resembled a saucer filled with water.

The attack began on 1 November with landings on the western tip of the island and at Flushing and an assault across the causeway from South Beveland. Three British battleships and various other types of support craft joined in the attack and were responsible for the amphibious-assault troops reaching the island with comparatively few losses, although the naval vessels themselves suffered heavily. Flushing was captured on the 2d; and final mopping-up was completed on the 8th, about 8,000 prisoners being taken.

The cost of these operations was high, British and Canadian casualties totalling over 27,000. Sicily with its garrison of 350,000 had been overrun at a cost of less than 25,000 Allied casualties. The comparison indicates the fierceness of the fighting at the mouth of the Schelde Estuary.

Meanwhile on 4 November one of the most difficult minesweeping operations of the war began. For three weeks one hundred craft were employed in clearing the seventy-mile channel to Antwerp, which had to be swept sixteen times. On 28 November* the first Allied convoy was safely berthed at Antwerp, and the port began handling the long-awaited supplies for the Allied armies.

During the operations in the Schelde Estuary the British I and XII Corps, handicapped by adverse flying weather, had fought a bitter battle in the area south of the Maas and west of the line Antwerp-Turnhout-Tilburg-Hertogenbosch; but by the time Walcheren Island was captured, these troops had reached the Maas or the sea and had eliminated a German bridgehead at Moerdijk.

On 14 November Montgomery launched an offensive to the east with the British Second Army. Although winter conditions slowed the attack, by 4 December he had cleared out the last German pocket west of the Maas.

12TH ARMY GROUP OPERATIONS (Map 14a)

While the 21st Army Group was attempting to cross the Rhine with the airborne troops during the last two weeks of September, General Bradley's American divisions, handicapped by the supply situation, were closing up against the West Wall as best they could. On 25 September a 12th Army Group directive assigned new missions to the armies. The First Army was to protect the right flank of the 21st Army Group and, when in General Hodges' opinion sufficient forces and supplies were available, drive vigorously to the Rhine in the vicinity of Bonn and Cologne; the Third Army was to hold its present positions pending the improvement of the supply situation; and the Ninth Army was to come up from Brittany and take up a defensive position in the Ardennes between the First and Third Armies, leaving one reinforced division** under army group control to contain the enemy forces in Brittany.

Far to the rear the battle for Brest finally ended on 18 September when the Americans captured the inner fortress of the city that had resisted the VIII Corps' final assaults for ten days. The

* The port was opened on the 26th and became operational on the 27th.

** The 94th Division.

last enemy resistance in Brittany, except for the Atlantic ports of Lorient and St. Nazaire (which were to be contained), ended two days later. At that time over 80,000 American troops were in Brittany.* Ironically, Brest, for which the six-week campaign had been fought, was so completely demolished that it proved valueless as an Allied port throughout the rest of the war.

From 4 to 22 October General Simpson held the sector between the First and Third Armies with the VIII Corps.** In general, the Ninth Army's operations in the Luxembourg area, as well as those of the opposing German forces, consisted of patrolling and small-scale raids supported by limited mortar and artillery fire. No appreciable advance was effected anywhere in the zone, and the several small German counterattacks launched during the period were easily repulsed, usually by artillery fire alone.

The Aachen Offensive.—The last two weeks in September were spent by the First Army in developing the enemy's defenses along the frontier. Probing attacks revealed no special weakness except in certain stretches of bad terrain where the difficulties of movement would prevent exploiting a penetration. The army lacked the ammunition, gasoline, and other supplies to maintain the speed of its earlier advances; but it was decided to attempt a limited objective attack on Aachen, which was already threatened by the VII Corps, to secure a "bridgehead" through the West Wall. Boundaries were readjusted and reinforcements moved up (from Brittany).

General Hodges' plan called for a coordinated attack by the XIX Corps north of Aachen to gain contact with the VII Corps, which would continue its attack south of the city. After enveloping Aachen, the VII Corps would be prepared to advance to the Rhine in the vicinity of Cologne. The V Corps was to protect the army's right flank. The First Army had ten divisions*** at this time.

On 2 October the XIX Corps launched its attack across the border about eight miles north of Aachen. Progress was slow as the troops fought their way through six miles of West Wall fortifications during the next two weeks. The Germans in Aachen refused a surrender ultimatum on the 11th; so during the next three days the

* The Ninth Army had taken 28,000 prisoners and had killed an additional 4,000 Germans, according to an estimate made at the time.

** VIII Corps: 9th Armored, 2d, 83d Divisions.

*** V Corps: 5th Armored, 4th, 28th Divisions.

VII Corps: 3d Armored, 1st, 9th Divisions.

XIX Corps: 2d Armored, 7th Armored, 29th, 30th Divisions.

IX Tactical Air Command dropped 172 tons of bombs on the city, and in six days twelve battalions of artillery from the XIX and VII Corps saturated it with 169 tons of ammunition. It was hard fighting through mud and rain; and the enemy, in a determined attempt to block the penetration, reinforced the already strongly garrisoned area with armor drawn from his flanks. The two American corps made contact northeast of Aachen on the 16th to complete the double envelopment of the city. Successive attempts were made by elements of twelve enemy divisions to relieve the garrison; but there was no coordinated large-scale effort, and the piecemeal counter-attacks were repulsed by the troops of the VII and XIX Corps.

Infantry from the VII Corps* entered Aachen on the 13th and, after fierce house-to-house fighting, had almost completely occupied the city by the 20th. To reduce the buildings that the Germans had turned into strong points, 155-mm. guns and tank destroyers were brought in and used at point-blank range.** On 21 October the garrison surrendered, making Aachen the first German city to fall to the Western Allies. Over 2,500 prisoners were taken in the ruins of the city during the last week of the battle, but during the offensive (2-21 October) the First Army had suffered almost 10,000 casualties. After the capture of Aachen General Hodges began preparation for a power drive to the Rhine when reinforcements and supplies should become available.

Forcing the Line of the Moselle.—General Bradley's directive of 25 September, which had assigned a holding mission to the Third Army pending an improvement in the logistical situation, marked the beginning of a campaign that General Patton called "Forcing the Line of the Moselle." The ensuing period (25 September to 7 November) was the most unproductive phase of the Third Army's operations on the Continent. It was characterized by probing attacks designed to hold the maximum enemy forces on the Moselle front and to improve the Third Army's positions pending a resumption of the offensive. During the last two weeks of September Third Army troops closed up to the Moselle north of Thionville and consolidated their positions east of Nancy, while the Seventh Army captured Epinal to secure Patton's right flank. On 29 September the XV Corps, with two divisions,** was transferred in place to the

* The 1st Division.

** The German commander of the Aachen garrison later ruefully observed, "When the Americans start using 155's as sniper weapons, it is time to give up!"

*** The French 2d Armored and the 79th Divisions.

Seventh Army. This left General Patton the XII and XX Corps to conduct his operations along the Moselle.*

The enemy's operations in Lorraine during September consisted of an abortive attempt to launch a major counteroffensive. When Field Marshal Rundstedt resumed command of OB West on 5 September, Hitler directed him to stop the Allied advances as far to the west as possible, to hold the part of Belgium north of the Schelde and all of the Netherlands, and to take the offensive in the Nancy-Neufchateau sector by launching a counteroffensive toward Reims. This German counterstroke, in which the reorganized Fifth Panzer Army** would be used, was to be the most ambitious since Mortain. The target date given to Army Group G, which was to conduct the operation, was 12 September. The initial objective was to wipe out the XII Corps forces in the vicinity of Luneville and Nancy and then restore the Moselle line to the north. The same difficulties that had plagued German operations since the Normandy landings made it difficult to assemble the Fifth Panzer Army, and some of the panzer divisions had to be committed prematurely to hold the line in the south.

Finally, on 18 September, the Fifth Panzer Army launched a counterattack near Luneville; but the Germans ran into the limited-objective attacks of the XII and XV Corps and were stopped in their tracks. Heavy fighting developed in the XII Corps zone,*** and another German counterattack on 22 September was stopped by the XIX Tactical Air Command and Third Army armor. The failure of these German operations caused Hitler to replace Blaskowitz

* XII Corps: 4th Armored, 6th Armored, 35th, 80th Divisions.

XX Corps: 5th, 90th Divisions.

On 10 October the III Corps was assigned to the Third Army, but it did not become operational until December.

** As the situation stabilized in the north in early September, the panzer divisions were withdrawn from the line and collected in Holland preparatory to being sent south. On 9 September the headquarters of the Fifth Panzer Army arrived in Strasbourg.

*** General Patton's comment on his operations at this time is of interest (*War As I Knew It*):

The 19th, instead of being the day I had hoped it would be, was bad. The 35th Division had been pushed off a hill northeast of Nancy, so the enemy had observation and could fire into the town. The 4th Armored was being heavily attacked, and the XV Corps had not yet reached Luneville. To cheer . . . up, I told him two stories: first, that Grant once said, "In every battle there comes a time when both sides consider themselves beaten; then he who continues the attack wins"; second, what Lee is supposed to have said at Chancellorsville, "I was too weak to defend, so I attacked." As a result . . . retook the hill at once.

with General Balck as commander of Army Group G. On the 24th the German First Army, which had been reorganized and strengthened after its hasty retreat from south of Paris, launched an attack west of Chateau Salins to help the Fifth Panzer Army pinch off the XII Corps' salient. But General Eddy's troops held fast, and by the 29th Balck's counteroffensive was broken. Failing in a final effort to break through the XII Corps on 30 September, the Germans began to withdraw on the night of 1-2 October.

Hitler then decided to switch the few available reserves on the western front to the north to counterattack the British Second Army, which was then trying to cut off the Fifteenth Army in western Holland. General Balck therefore had to resume the defensive in the south, and the Fifth Panzer Army was returned to Army Group B in October. The Germans' inability to build up a strong striking force, the superiority of our air forces, artillery, and armor, and the fighting qualities of our infantry had again prevented the enemy from gaining any success.

To the north the XX Corps, after probing the German defenses around Metz, launched an attack on 3 October that was designed to capture Fort Driant, one of the city's key fortifications. This strong point, on the west bank of the Moselle and about five miles southwest of Metz, interfered with an envelopment of the city from the south. Infantry supported by tanks entered the fort, where fierce fighting developed. We held the upper parts of the works, but the enemy clung stubbornly to a network of underground passageways and cellars. After ten days, during which the Germans subjected Fort Driant to an almost continuous artillery bombardment, the Third Army troops withdrew.

On 7 October the XII Corps launched an attack, supported by twenty-three battalions of field artillery, to clear the northern half of the corps zone. By the 10th this mission had been accomplished. General Patton explained that the operation was planned "as an inexpensive method of straightening the line and maintaining the offensive spirit of the troops." Since the ammunition situation had become very precarious in the Third Army* and the gasoline received was insufficient even to replace daily expenditures, further offensive operations were temporarily abandoned. From 25 September to 7 November the Third Army captured about 7,400 German prisoners; it suffered 7,621 battle casualties.

* The Third Army was limited to about seven rounds per day for the 155-mm. weapons and fifteen rounds per day for the 105's.

General Patton's efforts were then directed to planning for an offensive to the Rhine. His book contains this explanation:

I contended . . . that we were fighting three enemies. One was the Germans, the second was the weather, and the third was time. Of these three I conceived the weather to be the most important because at that moment our sick rate for the first time equaled our battle casualty rate, and the weather was not improving. As to time, every day's delay meant more defenses to attack. I further stated there was not enough ammunition to supply all the armies, but there was enough to supply one army, and that the Third Army could attack twenty-four hours after getting the signal from then on.*

With a slight improvement in the logistical situation in October, the Supreme Commander decided to resume the advance to the east early in November (Map 14b). Detailed plans for operations to the Rhine had been prepared by SHAEF and approved by the Combined Chiefs of Staff. General Eisenhower explained the objectives of the first phase of these attacks:

Our two immediate objectives during this period were, first, to advance east to the Rhine and north to the Maas and, second, to use the space between our front and the Rhine as a "killing ground" in which to engage the enemy either in a large decisive battle or so to maul him that when the Rhine had been reached he would have little left with which to resist our crossings and prevent a breakthrough leading to mobile warfare.

However, the Allied offensives in November and early December were not to achieve the success originally anticipated. In spite of the heavy losses suffered by the Germans in France, they continued to put up a strong resistance and battled with Teutonic stubbornness and fury to protect their homeland. The Allied logistical situation, coupled with the fact that the terrain favored the defense, aided the enemy. The rains that fell in November were the worst known on the Continent in many years. They created flood conditions along the whole front, reducing many roads to quagmires and impeding tank operations and vehicular movements.

On 21 October General Bradley published a directive to govern his armies' part in the new Allied offensive. The Ninth Army was shifted to the 12th Army Group's left flank. It was given Hodges' left corps, the XIX, and was assigned the mission of supporting the First Army's attack through the West Wall. The First Army, taking over the defensive sector of the Ardennes and the VIII Corps, was directed to launch an attack to the Rhine in the Bonn-Cologne area. The Third Army was ordered to attack to the Rhine in the

* Patton, *War As I Knew It*.

Worms—Mainz area. Both the First and Third Armies were to seize bridgeheads over the Rhine if possible; otherwise they were first to clear the enemy from the area west of the river. Since the First Army offensive was postponed to coincide with Montgomery's attack to the Maas, the first blow was struck by the Third Army in Lorraine.

The Capture of Metz and the Saar Campaign.—For two months the Third Army had been stalled in the vicinity of Metz, the fortress that would have to be captured before any substantial advance eastward could be made. Metz dominates three of the classic invasion routes between France and Germany: the valley of the Moselle, leading northeast through Trier to Coblenz; the Kaiserlautern pass, leading northeast through Saarbrücken to Mainz and Worms; and the route through the Saverne gap, leading east from Sarrebourg to Strasbourg and the Rhine. Metz was thus of great strategic importance and a very essential tactical objective of the Third Army. Only once in modern times had the fortress fallen to an attacking army—in 1871, when Marshal Bazaine surrendered it after a fifty-four-day investment by the Prussians.

General Patton's plan was to attack both north and south of Metz in a double penetration that was to be followed by a close-in double envelopment, and he was prepared to execute a deeper double envelopment if necessary. Under this plan the XX Corps would carry out the close-in double envelopment of the city and simultaneously cross the Moselle in the vicinity of Thionville for the purpose of securing a bridgehead and jump-off position for the northern arm of a deeper double envelopment. The XII Corps would attack to the northeast. It would furnish protection for the XX Corps and provide the southern arm of a deeper envelopment. During October the Third Army had been reinforced by the arrival of an armored and two infantry divisions; so it had nine divisions available for the attack.* It was opposed by the German First Army.

In spite of bad weather that cancelled the heavy air support that had been planned, the attack was launched on the morning of 8 November with only artillery support.** The attack of the XII Corps

* XII Corps: 4th Armored, 6th Armored, 26th, 35th, 80th Divisions.

XX Corps: 10th Armored, 5th, 90th, 95th Divisions.

Part of the VIII Corps artillery and the 83d Division, on the right flank of the First Army, were to support the XX Corps' attack.

** On the afternoon of 7 November it was raining so hard that a corps and a division commander asked General Patton to postpone the attack. He recorded his reply: "I asked them whom they wished to name as their successors because the attack was to go off as scheduled. They immediately assented and, as usual, did great work."

was launched along a twenty-mile front northeast of Nancy and made good progress, the three infantry divisions reaching their initial objectives by evening. The next day the attack in the northern zone commenced as the XX Corps crossed the Moselle near Thionville and six miles north of Metz. These assault crossings achieved surprise, but the river rose sharply immediately after the leading waves had crossed. Repeated bridging attempts were broken up by the raging flood or by enemy artillery fire, and the bridgehead forces had to be supplied and reinforced by ferry for five days. On the 9th the weather cleared long enough for the Eighth Air Force to launch a heavy-bomber attack on Metz; but the rains soon returned, and by evening every Third Army bridge on the Moselle except one at Pont a Mousson was out and the Seille River had increased from 200 to 500 feet in width.

Despite the adverse weather conditions that made continued air support impracticable, the attacks of both corps made progress during the next week of extremely heavy fighting. By evening of the 17th the XX Corps bridgehead north of Metz and the bridgehead at Thionville had been joined into one and extended to the southeast, and south of Metz the enveloping arm had pushed out to the northeast so that the escape gap open to the Metz garrison was only four miles wide. Last-ditch fighting by the Germans held this corridor open until the 18th. Street fighting broke out in Metz on the 19th as XX Corps troops entered the city, but by the 22d all pockets of resistance in the city itself had been mopped up.

While the ring of forts around Metz was being reduced by the new III Corps,* both wings of the Third Army made further progress. The left wing, pacing the advance, moved across the frontier toward the Saar River, which it reached on the 30th near Merzig and Saarlautern. The advancing troops then came under fire from the guns of the West Wall. By 5 December the XX Corps had established several small bridgeheads across the Saar between Merzig and Saarlautern.

On the right the XII Corps' attack carried through to within five miles of the western outskirts of Saarbrücken, the great industrial center of the Saar Valley, and to Sarreguemines, which our troops entered on 6 December. Penetrations were made into the West Wall defenses, and the bridgeheads across the Saar were extended; but enemy reaction to these operations was severe, numerous counter-

* The last Metz fort fell to the III Corps, commanded by Major General John Millikin, on 13 December.

attacks being made to limit further progress. The Third Army was now up against one of the strongest sections of the West Wall; and since its reduction would require a vast amount of heavy-artillery ammunition, the attacks were suspended until additional logistical support could be provided. During the Metz and Saar campaigns the Third Army had suffered about 29,000 battle casualties and had captured 37,000 prisoners.

The Drive to the Roer River.—After the capture of Aachen our forces in the north reorganized and prepared for their next offensive. The Ninth Army was strengthened by the arrival of the new XIII Corps, commanded by Major General Alvan C. Gillem, which became operational on 8 November. It will be recalled that after clearing the Schelde Estuary British forces were shifted to the east to join the general Allied offensive toward the Rhine and that their attack was launched west of the Maas on 14 November. In conjunction with this attack on the left and that of the Third Army on the right, the First and Ninth Armies were to launch the most powerful offensive of all.

The main effort was again to be made by General Collins' VII Corps, which would attack east of Aachen with the initial objective of capturing bridgeheads over the Roer River in the vicinity of Düren. On Collins' right the V Corps would continue its offensive to the east, and the VIII Corps would hold its defensive positions in the Ardennes. General Collins' left flank would be protected by the Ninth Army, whose XIX Corps would launch an attack toward the Roer River town of Jülich. Fourteen divisions at first,* and eventually seventeen, were to be employed in the Aachen zone of the First and Ninth Armies; and at the height of the offensive no fewer than ten divisions were to be in line on a twenty-four-mile front, this being the maximum that it was practicable to deploy. The attack was to be supported by Operation Q, the largest close-support effort yet made by the Allied air forces. The First Army's heavy artillery was positioned to support the VII Corps.

* Left to right:

Ninth Army

XIII Corps: 84th, 102d, 7th Armored Divisions.

XIX Corps: 2d Armored, 29th, 30th Divisions.

First Army

VII Corps: 104th, 3d Armored, 1st, 4th Divisions.

V Corps: 28th, 9th, 99th, 5th Armored Divisions.

VIII Corps: 2d, 8th, 9th Armored, 83d Divisions.

After a four-day delay the weather cleared about noon on 16 November, and the air attack commenced. Over 9,300 tons of bombs were dropped on fortified positions and communication centers in the attack zone by 1,204 Eighth Air Force and 1,188 R.A.F. heavy bombers. Several towns, including Jülich and Düren, were reduced to rubble. Medium bombers of the Ninth Air Force joined the attack, and fighter-bombers of the IX and XXIX Tactical Air Commands provided the close air support for the assaulting troops. With the difficult logistical situation placing artillery ammunition at a premium, the heavy bombers were an economical means of delivering a large quantity of high explosives to the target area, since they carried their bombs direct from the well-stocked dumps in the United Kingdom. The results of the bombardment were noteworthy, not only because of the devastating effect upon the enemy and his fortifications, but also because of the demonstration of improved technique in close-support mass bombing.*

In spite of all the elaborate preparations and the great concentration of combat power, progress was extremely slow when the ground attack began at 1245 hours, the troops coming up against improvised defensive works that had been constructed since the original breaching of the West Wall in September. Each of the many towns in the closely woven network had been converted into an organized strong point, and each had to be reduced house by house and block by block. Every yard of Allied advance was made against determined resistance. Each foot of muddy ground was defended until all hope of holding it was gone, and then the enemy would counterattack in an attempt to recover what he had lost.

The attack plowed determinedly eastward in the mud and cold. The Ninth Army reached the Roer on 3 December, and the First Army came up slowly on the right. General Bradley considered it imprudent to cross the Roer while the dams near Schmidt, which controlled the level of the river, remained in enemy hands. The

* In order not to repeat the mistake of the great carpet bombing at St. Lo, when bombs were dropped on our own troops, special means were used to mark the front line. The line of approach of the bombers was marked by large white panels from near Liège to Aachen. Orange or cerise panels, each thirty-six by seven feet, were placed 500 yards behind the front line, four being used per mile of front. Eleven captive balloons, spaced 300 yards apart and flown at an altitude of 2,000 feet, were placed 4,000 yards in rear of the front line and perpendicular to the direction of approach. Four batteries of 90-mm. antiaircraft guns maintained a line of red shell bursts above the balloons, eight simultaneous bursts being fired every fifteen seconds.

offensive was therefore suspended pending the capture of these important objectives.

The V Corps had been battering its way toward Schmidt since September in one of the most bitterly contested actions of the war. Its zone of operations included an area known as the Hürtgen Forest, which covered roughly the triangle Aachen-Düren-Monschau and constituted one of the major obstacles to the First Army's advance. The Germans had strengthened this natural barrier by the clever use of wire, pillboxes, and mines; and our infantry, restricted by the rough wooded terrain, was forced for the most part to fight without effective artillery or air support.* On 13 December the V Corps renewed its attack on the dams, but the going was still slow.

In its drive to the Roer from 16 November to 15 December the Ninth Army had advanced eight to twelve miles on an eleven-mile front, but the advance had been costly—10,000 casualties. During the same period the First Army's total battle casualties had been more than twice as great—21,650.

6TH ARMY GROUP OPERATIONS

Static Warfare in the Vosges Mountains (Map 14a).—During the later half of September the 6th Army Group's positions were consolidated, boundaries were adjusted, and divisions were shifted into their proper zones. The Seventh Army, which had been operating with one American corps (VI) of three divisions, was reinforced by the assignment of the XV Corps; and the French First Army moved its I and II Corps up into the line. General Devers' scheme of maneuver was designed to carry both his armies to the Rhine in diverging attacks that would breach the easily defended Vosges Mountains at two key terrain points, the Saverne and Belfort gaps. The Seventh Army would advance on the axis Epinal-Saverne-Strasbourg and the French First Army on the axis Belfort-Mulhouse. The two armies would then join in the Rhine plain to isolate the enemy's Vosges positions.

Heavy fighting developed along the entire front, with the right wing of the French First Army being completely stopped. Small gains were made on the rest of the front as the Germans fought desperately for every foot of ground to gain time to strengthen

* A measure of the severity of the fighting in the Hürtgen Forest is given by the casualty reports of the three American divisions that bore the brunt of the fighting:

9th Division (13 September-26 October).....	3,836
28th Division (27 October-20 November).....	3,611
4th Division (6 November-8 December).....	5,260

their positions. Short of artillery and ammunition, the 6th Army Group troops slugged it out with the enemy over difficult terrain and in increasingly bad weather, with the infantry carrying almost the entire burden.

General Devers attempted to keep the offensive rolling throughout October, but fighting grew fiercer as the days passed and the enemy had time to strengthen his new positions. Although the supply situation improved after a time, as rail lines were extended from Marseilles, a G-3 report of the 6th Army Group shows how the shortage of supplies affected operations during the fall:

Fighting during the period 15 September-1 November had been a continuation of the pursuit of a defeated enemy who was falling back on his bases, reserves, and prepared positions, while our pursuing forces were outrunning their supply lines. During the later part of October German defenses had begun to crystalize as a result of the necessary slackening of the Allied pace due to the supply situation. After reaching the Moselle River it had been necessary for Allied forces to slacken their speed due to the distance they had advanced from their supply bases. It was not until mid-October that supply points moved into the army areas and the 900-mile turn-around with truck transportation was partially eliminated. While from a purely tactical standpoint the rapid advances could have been maintained, the supply situation did not permit it, due to destroyed railroads and limited truck transport. Thus it was emphatically brought out that any offensive force can advance only as rapidly as its supply situation permits and that a retreating enemy, given any breathing spell, can marshal his forces and quickly organize a defensive position that will require months of hard fighting to break.

Battle casualties in the 6th Army Group from 15 September to 1 November numbered about 7,000 for the French First Army and 12,849 for the Seventh Army. The French took 11,700 prisoners, while the Americans captured 12,300.

Forcing the Belfort and Saverne Gaps (Map 14b).—In General Eisenhower's over-all plan for the resumption of the offensive in November the 6th Army Group was to advance to the Rhine in its zone. General Devers' troops continued to make limited objective attacks to secure good jump-off positions for his new drive, which was to follow the attack of the Third Army by a few days. The Seventh Army, which had been built up to eight divisions,* was to

* VI Corps: 3d, 36th, 100th, 103d Divisions. (Major General Edward H. Brooks had assumed command of the VI Corps when General Truscott was transferred back to Italy to command the Fifth Army.)

XV Corps: French 2d Armored, 44th, 79th Divisions.

Army reserve: 45th Division.

make the army group's main effort with the XV Corps, on the axis Sarrebourg-Strasbourg. In the south the French First Army of six divisions was to drive through the Belfort gap, with the French I Corps making the main effort. As time for the attack approached, the weather grew progressively worse. Blinding rain or snowstorms raged through the whole area. In the Vosges Mountains roads were clogged by snow drifts, and the temperature dropped below freezing. Streams overflowed their banks.

The Seventh Army launched its attack on the morning of 13 November in a snowstorm, after an all-night artillery preparation; and at noon the next day the French First Army jumped off. Despite snow, boggy terrain, and enemy obstacles, the attacks progressed rapidly. On the 16th the French broke through the Belfort defenses on a twenty-seven-mile front and, pushing on rapidly, reached the Rhine on the 20th. Two French armored divisions then turned north in pursuit of the disorganized Germans but became ensnared in a traffic jam that gave the enemy time to establish a hasty defensive line. However, Mulhouse was captured on the 22d.

Meanwhile in the Seventh Army zone the XV Corps captured Sarrebourg on the 20th, and its armor rushed through the hole thus opened to exploit to the east. It outflanked the German defenses in the Saverne gap and captured Saverne on the 22d. After swinging back to the west to clear the gap, it sped eastward to Strasbourg, which was entered on the 23d, although the enemy still held the outer ring of forts. The Germans launched a strong counterattack against the city the next day, but it was repelled; and by the 27th the outer ring of forts had fallen. The VI Corps forced crossings of the Meurthe River and captured St. Die on the 22d. By the 25th the enemy positions in the northern Vosges had collapsed.

On 27 November, in view of the strategic opportunity for an attack into the Saar Basin, General Eisenhower directed the Seventh Army to attack northward to breach the West Wall west of the Rhine and thus to assist Patton's attack. The VI Corps captured Selestat on 3 December and then advanced northward parallel to the Rhine while the XV Corps drove toward Bitche. By mid-December the Seventh Army had crossed the German frontier on a twenty-two-mile front, and the VI Corps had penetrated well into the West Wall defenses northeast of Wissembourg.

In the meantime the enemy forces driven from the Vosges maintained their Rhine bridgehead in the Colmar area, which the French First Army, weakened by its recent offensive operations and short

of trained infantry replacements, was unable to liquidate. This bridgehead area, which was to become known as the Colmar pocket, exerted an adverse effect on Allied operations until it was finally eliminated. During the period 1 November-15 December the Seventh Army captured 25,000 prisoners and suffered 18,178 casualties, while the French First Army had 14,881 casualties and took 9,700 prisoners.

This phase of the operations, from 8 November to 15 December, was one of the most difficult of the war in western Europe. It was to end abruptly on 16 December, when the enemy finally attempted to retaliate for the staggering blows that he had been receiving since June.

APPENDIX 1

DIRECTIVE

TO SUPREME COMMANDER ALLIED EXPEDITIONARY FORCE

(Issued 12 February 1944)

1. You are hereby designated as Supreme Allied Commander of the forces placed under your orders for operations for the liberation of Europe from the Germans. Your title will be Supreme Commander, Allied Expeditionary Force.

2. *Task.*—You will enter the continent of Europe and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces. The date for entering the Continent is the month of May 1944. After adequate Channel ports have been secured, exploitation will be directed toward securing an area that will facilitate both ground and air operations against the enemy.

3. Notwithstanding the target date above, you will be prepared at any time to take immediate advantage of favorable circumstances, such as withdrawal by the enemy on your front, to effect a re-entry into the Continent with such forces as you have available at the time; a general plan for this operation when approved will be furnished for your assistance.

4. *Command.*—You are responsible to the Combined Chiefs of Staff and will exercise command generally in accordance with the diagram [below]. . . . Direct communication with the United States and British Chiefs of Staff is authorized in the interest of facilitating your operations and for arranging necessary logistic support.

5. *Logistics.*—In the United Kingdom the responsibility for logistics organization, concentration, movement, and supply of forces to meet the requirements of your plan will rest with British Service Ministries so far as British forces are concerned. So far as United States forces are concerned, this responsibility will rest with the United States War and Navy Departments. You will be responsible for the coordination of logistical arrangements on the Continent. You will also be responsible for coordinating the requirements of British and United States forces under your command.

6. *Coordination of Operations of Other Forces and Agencies.*—In preparation for your assault on enemy occupied Europe, sea and air forces, agencies of sabotage, subversion, and propaganda, acting under a variety of authorities, are now in action. You may recommend any variation in these activities which may seem to you desirable.

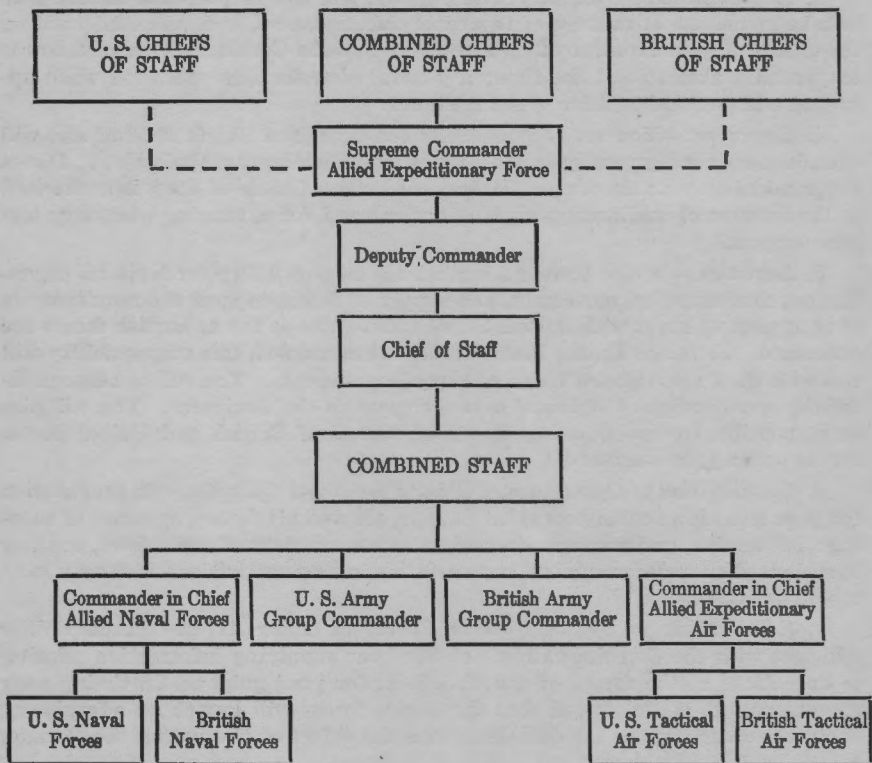
7. *Relationship to United Nations Forces in Other Areas.*—Responsibility will rest with the Combined Chiefs of Staff for supplying information relating to operations of the forces of the U. S. S. R. for your guidance in timing your operations. It is understood that the Soviet forces will launch an offensive at about the same time as OVERLORD with the object of preventing the German

APPENDIX 1

forces from transferring from the eastern to the western front. The Allied Commander in Chief, Mediterranean Theater, will conduct operations designed to assist your operation, including the launching of an attack against the south of France at about the same time as OVERLORD. The scope and timing of his operations will be decided by the Combined Chiefs of Staff. You will establish contact with him and submit to the Combined Chiefs of Staff your views and recommendations regarding operations from the Mediterranean in support of your attack from the United Kingdom. The Combined Chiefs of Staff will place under your command the forces operating in southern France as soon as you are in a position to assume such command. You will submit timely recommendations compatible with this regard.

8. *Relationship With Allied Governments—the Re-establishment of Civil Governments and Liberated Allied Territories and the Administration of Enemy Territories.*—Further instructions will be issued to you on these subjects at a later date.

CHAIN OF COMMAND



..... Liaison

APPENDIX 2

IMPORTANT DATES IN THE WAR IN WESTERN EUROPE

(6 June–15 December 1944)

- 6 June—Airborne and seaborne forces of First and British Second Armies invaded the Normandy coast of France.
- 26 June—Garrison of Cherbourg surrendered to First Army.
- 8 July—British Second Army entered Caen.
- 25 July—First Army launched the St. Lo breakthrough.
- 1 August—12th Army Group and Third Army became operational; Third Army broke out of the Normandy peninsula at Avranches.
- 7 August—Germans launched a panzer counteroffensive at Mortain.
- 13 August—Third Army reached Argentan, threatening to encircle Germans in Normandy.
- 15 August—Seventh Army invaded the coast of southern France.
- 19 August—First and Canadian First Armies linked up at Chambois, closing the Falaise–Argentan pocket; Third Army seized a bridgehead over the Seine near Mantes.
- 25 August—Paris liberated by First Army.
- 28 August—Marseilles liberated by French Army B.
- 4 September—British Second Army seized Antwerp.
- 5 September—Third Army secured bridgeheads over Moselle River in the Metz–Nancy area; Ninth Army became operational in Brittany.
- 11 September—Allied troops first entered Germany in First Army zone; Third and Seventh Armies made contact near Dijon.
- 12 September—Le Havre fell to Canadian First Army.
- 15 September—6th Army Group became operational and came under control of SHAEF.
- 17 September—21st Army Group launched a combined airborne-ground attack to secure a bridgehead over the Rhine in Holland.
- 18 September—Ninth Army captured Brest.
- 21 October—First Army captured Aachen.
- 8 November—Third Army assaulted the Moselle River line, resuming its advance toward the Rhine; Canadian First Army cleared the Schelde Estuary area, opening the water approaches to Antwerp.
- 13 November—6th Army Group launched an offensive to break through the Vosges passes and close to the Rhine.

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- 14 November—British Second Army launched an offensive to close to the Maas River.
- 16 November—First and Ninth Armies launched offensives to close to the Rhine in vicinity of Cologne.
- 20 November—French First Army reached Rhine above Mulhouse.
- 22 November—Metz garrison surrendered to Third Army.
- 27 November—Port of Antwerp became operational; Seventh Army captured forts around Strasbourg, securing the city.
- 30 November—Third Army reached Saar River and West Wall.
- 3 December—Ninth Army reached Roer River.
- 4 December—British Second Army cleared the west bank of the Maas River.

APPENDIX 3

MAJOR CONFERENCES AND MILITARY DECISIONS, 1941-1945

DECEMBER 1941—WASHINGTON

Decisions:

1. Defeat Germany first by closing and tightening the ring; wearing down and undermining resistance by air bombardment, blockade, and subversive activities; and continuous development of offensive action.
2. Hold Japan by maintaining such positions as will safeguard our vital interests and by denying her access to raw materials vital to her continuous war effort.
3. Maintain the security of main areas of war industry—the United Kingdom and the United States.
4. Maintain essential lines of communication.

APRIL 1942—LONDON

Decisions:

1. Keep Russia in the war.
2. Western Europe is the most suitable theater.
3. Prepare plans for major operations on the Continent in 1943 (Roundup).
4. As an emergency measure, launch a diversionary landing on the French coast (Sledgehammer) if necessary to save Russia.
5. Limit resources committed against Japan to those required to hold present areas in the Pacific.
6. The organization was perfected for the strategic direction of the war.

JUNE 1942—WASHINGTON

Decisions (confirmed at a conference in London in July 1942):

1. Sledgehammer is unacceptable.
2. Execute Torch (North Africa) in November 1942.
3. Postpone Roundup from 1943.

JANUARY 1943—CASABLANCA

Decisions:

1. Intensify measures for the security of sea communications, particularly the antisubmarine war in the Atlantic.
2. Assist Russia.
3. Attack Sicily in July 1943 (Husky).
4. Continue the build-up for Roundup (Overlord).

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5. Intensify the strategic bombing of Germany with priority as follows: submarine construction yards, aircraft industries, transportation, oil plants, and other industries.

MAY 1943—WASHINGTON

Decisions:

1. Take all possible measures, both air and surface, for convoy protection in the U-boat war.

2. Continue the bomber offensive from the United Kingdom to accomplish the progressive disruption and dislocation of the German industrial and economic situation and the undermining of the morale of the German people; this to be accomplished by 1 April 1944.

3. Concentrate in the United Kingdom sufficient forces (initially twenty-nine divisions) to secure a lodgement across the English Channel; target date to be 1 May 1944.

4. Operations in the Mediterranean: eliminate Italy from the war; execute Husky (Sicily) in July 1943; after Husky plan operations with twenty-seven divisions against Sardinia or Italy; bomb the Ploesti oil fields.

5. Operations in Burma and China: increase the capacity of the air route to China to 10,000 tons per month; launch land operations from Assam into Burma as an essential step toward opening the Burma Road; capture Akyab.

6. Operations in the Pacific: eject the Japanese from the Aleutians; seize the Marshalls and Carolines; seize the Solomons, Bismarks, and Japanese-held New Guinea.

AUGUST 1943—QUEBEC

Basic undertakings:

1. To secure the war-making capacity of the Western Hemisphere and the British Isles.

2. To secure the war-making capacity of our forces in all areas.

3. To secure our oversea lines of communication.

4. To disrupt Axis sea communications.

5. To intensify the air offensive against the European Axis.

6. To concentrate maximum resources in a selected area in order to conduct the decisive invasion of western Europe.

7. To aid Russia.

8. To aid China.

9. To equip French forces in Africa.

Decisions:

1. Intensify operations against the U-boats.

2. Invade Italy (Avalanche) in early September 1943.

3. Accept the surrender of Italy; seize Sardinia and Sicily; establish air bases in the Rome area; maintain unrelenting pressure on the Germans in northern Italy; coordinate plans with Overlord.

APPENDIX 3

4. Undertake offensive operations (Anvil) to secure a lodgement in southern France and exploit northward to create a diversion in connection with Overlord.

5. Operations in the Pacific, 1943-1944: seize the Gilberts, Marshalls, and Ponape (preparatory to Truk).

6. Operations in the Southwest Pacific: seize New Guinea as far west as Wewak, the Admiralties, and the Bismarks to neutralize Rabaul; continue the advance along the northern coast of New Guinea.

7. The Southeast Asia Theater (Mountbatten) was established and directed to (1) capture upper Burma in February 1944 so as to establish land communications with China and (2) to increase the capacity of the "Hump" air route.

NOVEMBER 1943—CAIRO-TEHERAN

Decisions:

1. Launch Overlord, in conjunction with Anvil, in May 1944. Undertake nothing elsewhere that will jeopardize these two operations.

2. Continue the advance in Italy to Pisa.

3. Make these concurrent advances in the Pacific: New Guinea-Netherlands East Indies offensive to reach the Philippine Islands in October 1944; Marshalls in January 1944; Marianas in October 1944.

4. Capture upper Burma in the spring of 1944.

5. Establish B-29 bases in China by 1 May 1944.

SEPTEMBER 1944—QUEBEC

Decisions:

1. Operations in northwestern Europe: break the West Wall; seize crossings over the Rhine; occupy the Ruhr; secure the ports of Antwerp and Rotterdam.

2. Operations in Italy: continue the offensive; plan for an attack on the Istrian Peninsula.

3. Operations in the Pacific: capture the Philippines and open the sea route to China; establish long-range bomber bases in the Marianas for the strategic bombardment of Japan.

4. Operations in Southeast Asia: recapture the whole of Burma.

5. Make combined studies for redeployment of forces against Japan after the end of the war in Europe.

FEBRUARY 1945—MALTA

The Combined Chiefs of Staff discussed and approved General Eisenhower's plans as follows:

1. Closing to the Rhine.

2. Destruction of enemy forces west of the Rhine.

3. Seizure of bridgeheads across the Rhine in the north and south.

4. Coordinated drives into the heart of Germany.

APPENDIX 3

FEBRUARY 1945—YALTA

Decisions:

1. Approved specific measures to counteract the threat of a renewed submarine menace in the North Atlantic.
2. Approved General Eisenhower's plan of campaign in Germany.
3. Contain the German forces in Italy while transferring five divisions and sizeable air forces to reinforce General Eisenhower.
4. Operations in the Pacific: continue operations in the Philippines; capture Iwo Jima; capture Okinawa.
5. Operations in Southeast Asia: complete the recapture of Burma.

JULY 1945—BERLIN (POTSDAM)

Decisions:

1. Direct efforts toward earliest possible defeat of Japan; increase British and other Allied participation.
2. Russia will attack Japan through Manchuria.
3. Drop the atomic bomb on Japan.

APPENDIX 4

THE NORMANDY CAMPAIGN

(6 June-24 July 1944)

Allied Order of Battle, 12 June 1944

(Changes during the period 12 June-31 July are shown in italics. New units are listed with the headquarters under which they first entered combat. Changes in assignments of American divisions only are shown.)

SUPREME HEADQUARTERS, ALLIED

EXPEDITIONARY FORCE (SHAEP)General D. D. Eisenhower

21ST ARMY GROUPGeneral B. L. Montgomery

*British 79th Armored Division,**

4 July

British Second ArmyLt. Gen. M. C. Dempsey

British I CorpsLt. Gen. J. T. Crocker

(Canadian First Army, 23 July)

British 3d Division

Canadian 3d Division

British 6th Airborne Division

British 15th Division, 17 June

British XXX CorpsLt. Gen. G. C. Bucknall

British 50th Division

British 7th Armored Division

British 49th Division

British 51st Division

British VIII Corps, 16 JuneLt. Gen. R. N. O'Connor

British 11th Armored Division,

16 June

British XII Corps, 21 JuneLt. Gen. N. M. Ritchie

Guards Armored Division, 4 July

British 43d Division, 22 June

British 53d Division, 1 July

British 59th Division, 1 July

Canadian II Corps, 4 JulyLt. Gen. G. G. Simonds

(Canadian First Army, 31 July)

Canadian 4th Armored Division,

24 July

Canadian 2d Division, 8 July

* The British 79th Armored Division was a unit that developed and employed special types of armored equipment such as the DD tanks, armored bulldozers, flail tanks, etc. It operated under the direct control of the 21st Army Group.

APPENDIX 4

Canadian First Army	Lt. Gen. H. D. G. Crerar
(Operational, 23 July)	
First Army	Lt. Gen. O. N. Bradley
V Corps	Maj. Gen. L. T. Gerow
2d Armored Division	Maj. Gen. E. H. Brooks
(VII Corps, 18 July)	
1st Division	Maj. Gen. C. R. Huebner
(VII Corps, 15 July)	
2d Division	Maj. Gen. W. M. Robertson
29th Division	Maj. Gen. C. H. Gerhardt
(XIX Corps, 14 June)	
5th Division	Maj. Gen. S. L. Irwin
(Arrived 9 July; combat, 16 July)	
VII Corps	Maj. Gen. J. L. Collins
4th Division	Maj. Gen. R. O. Barton
(VIII Corps, 16 July; VII Corps, 19 July)	
9th Division	Maj. Gen. M. S. Eddy
82d Airborne Division	Maj. Gen. M. B. Ridgway
(VIII Corps, 19 June; returned to U.K., 13 July)	
90th Division	Brig. Gen. J. W. McKelvie
(VIII Corps, 19 June)	(13 June) Maj. Gen. E. M. Landrum
	(30 June) Brig. Gen. R. S. McLain
101st Airborne Division	Maj. Gen. M. D. Taylor
(VIII Corps, 15 June; returned to U.K., 15 July)	
79th Division	Maj. Gen. I. T. Wyche
(Arrived 14 June; combat, 19 June; VIII Corps, 1 July)	
VIII Corps	Maj. Gen. T. H. Middleton
(Operational, 15 June)	
4th Armored Division	Maj. Gen. J. Wood
(Arrived 13 July; combat, 28 July)	
6th Armored Division	Maj. Gen. R. W. Grow
(Arrived 18 July; combat, 28 July)	
8th Division	Maj. Gen. W. C. McMahon
	(12 July) Brig. Gen. D. A. Stroh
(Arrived 4 July; combat, 8 July)	
83d Division	Maj. Gen. R. C. Macon
(Arrived 19 June; combat, 27 June; VII Corps, 1 July; VIII Corps, 15 July)	
XIX Corps	Maj. Gen. C. H. Corlett
(Operational, 14 June)	
3d Armored Division	Maj. Gen. L. H. Watson
(Arrived 24 June; combat, 9 July; VII Corps, 15 July)	

APPENDIX 4

28th Division Maj. Gen. L. D. Brown
 (Arrived 24 July; combat, 27 July)
 30th Division Maj. Gen. L. S. Hobbs
 (Arrived 14 June; combat, 15 June;
 VII Corps, 15 July; XIX Corps,
 28 July)
 35th Division Maj. Gen. P. W. Baade
 (Arrived 8 July; combat, 11 July;
 V Corps, 27 July)

ALLIED EXPEDITIONARY

AIR FORCE (AEAF) Air Chief Marshal Leigh-Mallory
 British Second Tactical Air Force Air Marshal Coningham
 Ninth Air Force Lt. Gen. L. H. Brereton
 9th Bombardment Division (Medium)..... Brig. Gen. S. E. Anderson
 IX Tactical Air Command Maj. Gen. E. R. Quesada
 IX Troop Carrier Command Brig. Gen. P. L. Williams

UNITED STATES STRATEGIC

AIR FORCES (USSAF) Lt. Gen. C. Spaatz
 Eighth Air Force Lt. Gen. J. H. Doolittle
 1st Air Division Maj. Gen. R. B. Williams
 2d Air Division Maj. Gen. J. P. Hodges
 3d Air Division Maj. Gen. E. E. Partridge
 Fifteenth Air Force (Italy) Maj. Gen. N. F. Twining

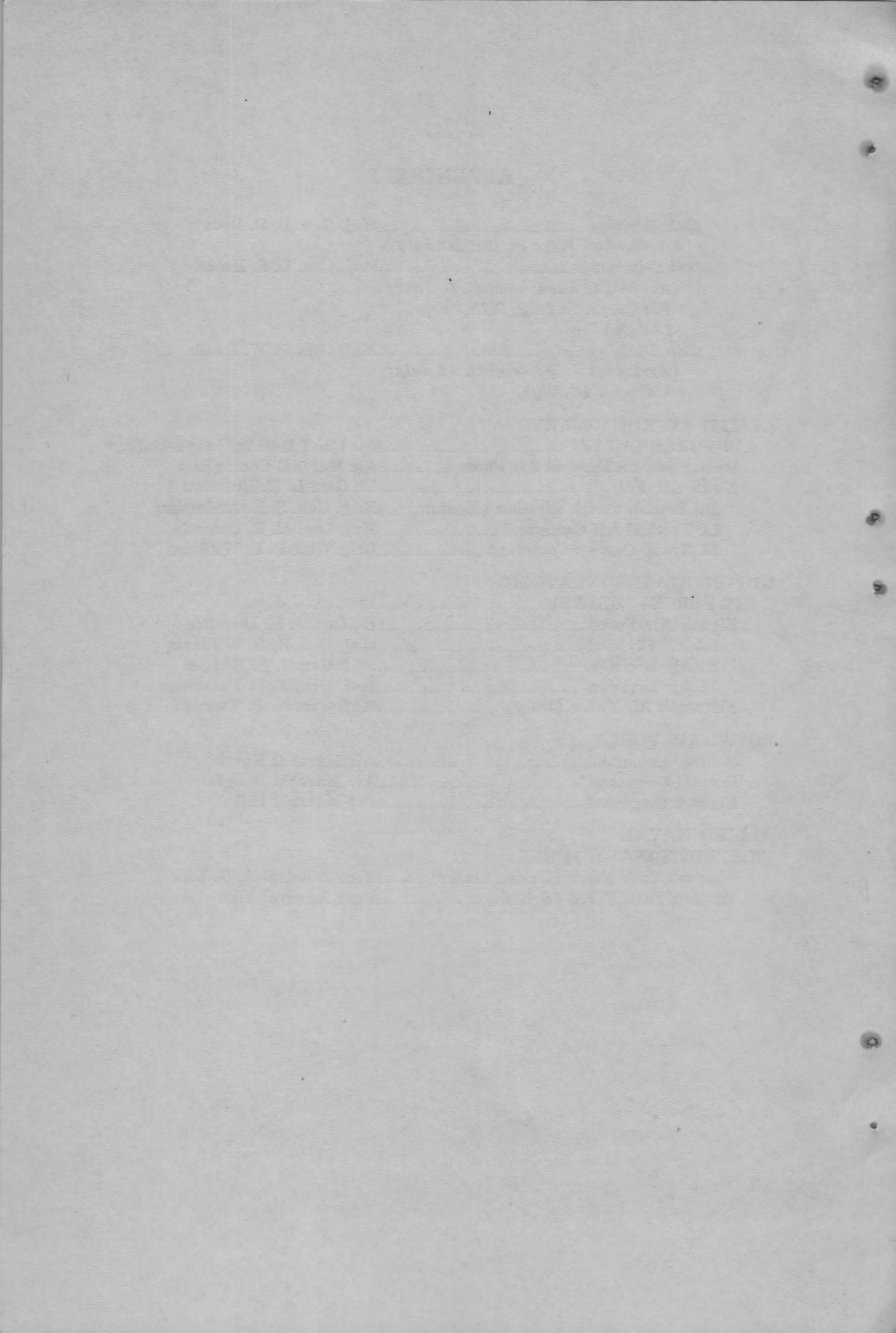
ROYAL AIR FORCE

Bomber Command Air Marshal Harris
 Coastal Command Air Marshal Douglas
 Fighter Command Air Marshal Hill

ALLIED NAVAL

EXPEDITIONARY FORCE

Western Task Force (United States) Rear Admiral A. G. Kirk
 Eastern Task Force (British) Rear Admiral Vian



ABBREVIATED GERMAN ORDER OF BATTLE,
WESTERN FRONT. 6 JUNE 1944

SUPREME COMMAND OF THE

ARMED FORCES (OKW) **Führer Adolph Hitler**

COMMANDER IN CHIEF WEST* **Field Marshal von Rundstedt**
 (3 July) Field Marshal von Kluge
 (17 Aug.) Field Marshal Model
 (5 Sept.) Field Marshal von Rundstedt

Army Group B** **Field Marshal Rommel**
 (17 July) Field Marshal von Kluge
 (17 Aug.) Field Marshal Model

Seventh Army **General Dollmann**
 (29 June) General Hausser
 (24 Aug.) Lt. Gen. Eberbach
 (1 Sept.) Lt. Gen. Brandenberger

Fifteenth Army **General Salmuth**
(Army Group H, 11 Nov.; (28 Aug.) Lt. Gen. Zangen
Army Group B, 14 Nov.)

Fifth Panzer Army **Lt. Gen. Eberbach**
(Organized from "Panzer (8 Aug.) General Dietrich
Group West," 5 Aug.; (10 Sept.) Lt. Gen. Manteuffel
Army Group G, 11 Sept.;
Army Group B, 16 Oct.)

First Parachute Army **General Student**
(Organized 4 Sept.; (11 Nov.) Lt. Gen. Schlemm
Army Group H, 11 Nov.)

Army Group G*** **General Blaskowitz**
 (21 Sept.) Lt. Gen. Balck

First Army **Lt. Gen. Chevallierie**
(Army Group B, 10 Aug.; (6 Sept.) Lt. Gen. Knobelsdorff
Army Group G, 8 Sept.) (1 Dec.) Lt. Gen. Obstfelder

*** Map 12 shows the locations of the nine divisions in southern France on 15 August 1944.

APPENDIX 5

Nineteenth ArmyLt. Gen. Sodenstern
(Army Group Oberrhein, (30 June) Lt. Gen. Wiese
7 Dec.)
Army Group HGeneral Student
(Organized 10 Nov.)
ARMY GROUP OBERRHEINReichsführer-SS Himmler
(Organized Nov.;
directly under OKW)

APPENDIX 6

THE CAMPAIGN IN NORTHERN FRANCE

(25 July-14 September 1944)

Allied Order of Battle, 1 August 1944

(Changes during the period 1 August-14 September are shown in italics. New units are listed with the headquarters under which they first entered combat. Changes in assignments of American divisions only are shown.)

SUPREME HEADQUARTERS, ALLIED

EXPEDITIONARY FORCE (SHAEP) General D. D. Eisenhower

First Allied Airborne Army Lt. Gen. L. H. Brereton
(Activated 8 Aug.)

XVIII Airborne Corps Maj. Gen. M. B. Ridgway
(Activated 12 Aug.)

21ST ARMY GROUP General B. L. Montgomery

British 79th Armored Division

Canadian First Army Lt. Gen. H. D. G. Crerar

Canadian II Corps Lt. Gen. G. G. Simonds

Canadian 4th Armored Division

Canadian 2d Division

Canadian 3d Division

British 51st Division

Polish 1st Armored Division, 5 Aug.

British I Corps Lt. Gen. J. T. Crocker

British 3d Division

British 6th Airborne Division

British 49th Division

British Second Army Lt. Gen. M. C. Dempsey

British VIII Corps Lt. Gen. R. N. O'Connor

British Guards Armored Division

British 11th Armored Division

British 15th Division

British XII Corps Lt. Gen. N. M. Ritchie

British 53d Division

British 59th Division

(Nonoperational, 1 Sept.)

British XXX Corps Lt. Gen. G. C. Bucknall

(10 Aug.) Lt. Gen. B. G. Horrocks

British 7th Armored Division

British 43d Division

British 50th Division

APPENDIX 6

12TH ARMY GROUP	Lt. Gen. O. N. Bradley
(Arrived 23 July; operational, 1 Aug.)	
First Army	Lt. Gen. C. H. Hodges
V Corps	Maj. Gen. L. T. Gerow
2d Division	Maj. Gen. W. M. Robertson
(VIII Corps, 18 Aug.)	
5th Division	Maj. Gen. S. L. Irwin
(XX Corps, 4 Aug.)	
35th Division	Maj. Gen. P. W. Baade
(XX Corps, 6 Aug.; VII Corps, 9 Aug.; XII Corps, 13 Aug.)	
VII Corps	Maj. Gen. J. L. Collins
2d Armored Division	Maj. Gen. E. H. Brooks
(XIX Corps, 2 Aug.; (12 Sept.) Maj. Gen. E. N. Harmon VII Corps, 7 Aug; XIX Corps, 13 Aug.)	
3d Armored Division	Maj. Gen. L. H. Watson
(7 Aug.) Maj. Gen. M. Rose	
1st Division	Maj. Gen. C. R. Huebner
4th Division	Maj. Gen. R. O. Barton
(V Corps, 22 Aug.)	
9th Division	Maj. Gen. M. S. Eddy
(19 Aug.) Maj. Gen. L. A. Craig	
XIX Corps	Maj. Gen. C. H. Corlett
28th Division	Maj. Gen. L. D. Brown
(V Corps, 28 Aug.) (14 Aug.) Brig. Gen. N. D. Cota	
29th Division	Maj. Gen. C. H. Gerhardt
(V Corps, 12 Aug.; VIII Corps, 19 Aug.)	
30th Division	Maj. Gen. L. S. Hobbs
(VII Corps, 5 Aug.; XIX Corps, 13 Aug.)	
Third Army	Lt. Gen. G. S. Patton
(Arrived 5 July; operational, 1 Aug.)	
VIII Corps	Maj. Gen. T. H. Middleton
(Ninth Army, 5 Sept.)	
4th Armored Division	Maj. Gen. J. Wood
(XII Corps, 13 Aug.)	
6th Armored Division	Maj. Gen. R. W. Grow
(Third Army, 16 Sept.)	
8th Division	Maj. Gen. D. A. Stroh

APPENDIX 6

79th Division	Maj. Gen. I. T. Wyche
(XV Corps, 3 Aug.; XIX Corps, 29 Aug.; XV Corps, 7 Sept.)	
XV Corps	Maj. Gen. W. H. Haislip
(Arrived 15 July; operational, 1 Aug.; First Army, 24 Aug.; Third Army, 29 Aug.)	
83d Division	Maj. Gen. R. C. Macon
(VIII Corps, 3 Aug.)	
90th Division	Maj. Gen. R. S. McLain
(V Corps, 17 Aug.; XX Corps, 26 Aug.)	
5th Armored Division	Maj. Gen. L. E. Oliver
(Arrived 25 July; combat, 2 Aug.; V Corps, 29 Aug.)	
XII Corps	Maj. Gen. G. R. Cook
(Arrived 29 July; (19 Aug.) Maj. Gen. M. S. Eddy operational, 12 Aug.)	
XX Corps	Maj. Gen. W. H. Walker
(Arrived 24 July; operational, 7 Aug.)	
French 2d Armored Division, 4 Aug.....	Maj. Gen. Le Clerc
(XV Corps, 8 Aug.; V Corps, 17 Aug.; XV Corps, 8 Sept.)	
7th Armored Division	Maj. Gen. L. M. Silvester
(Arrived 10 Aug.; combat, 14 Aug.)	
80th Division	Maj. Gen. H. L. McBride
(Arrived 3 Aug.; combat, 8 Aug.; V Corps, 17 Aug.; XII Corps, 26 Aug.)	
Ninth Army	Lt. Gen. W. H. Simpson
(Arrived 29 Aug.; operational, 5 Sept.)	

ALLIED EXPEDITIONARY

AIR FORCE (AEAF)	Air Chief Marshal Leigh-Mallory
British Second Tactical Air Force	Air Marshal Coningham
Ninth Air Force	Lt. Gen. L. H. Brereton
(8 Aug.) Maj. Gen. H. S. Vandenberg	
9th Bombardment Division (Medium).....	Maj. Gen. S. E. Anderson
IX Tactical Air Command	Maj. Gen. E. R. Quesada
XIX Tactical Air Command	Brig. Gen. O. P. Weyland
IX Troop Carrier Command	Maj. Gen. P. L. Wilson
(First Allied Airborne Army, Aug.)	

APPENDIX 6

UNITED STATES STRATEGIC

AIR FORCES (USSAF)	Lt. Gen. C. Spaatz
Eighth Air Force	Lt. Gen. J. H. Doolittle
1st Air Division	Maj. Gen. R. B. Williams
2d Air Division	Maj. Gen. W. E. Kemper
3d Air Division	Maj. Gen. E. E. Partridge
Fifteenth Air Force (Italy)	Maj. Gen. N. F. Twining

ROYAL AIR FORCE

Bomber Command	Air Marshal Harris
Coastal Command	Air Marshal Douglas
Fighter Command	Air Marshal Hill

APPENDIX 7

OPERATIONS AGAINST THE WEST WALL

(15 September–15 December 1944)

Allied Order of Battle, 15 September 1944

(Changes during the period 15 September–15 December are shown in italics. New units are listed with the headquarters under which they first entered combat. Changes in assignments of American divisions only are shown.)

SUPREME HEADQUARTERS, ALLIED

EXPEDITIONARY FORCE (SHAEF)General D. D. Eisenhower

First Allied Airborne ArmyLt. Gen. L. H. Brereton

IX Troop Carrier CommandMaj. Gen. P. L. Williams

XVIII Airborne CorpsMaj. Gen. M. B. Ridgway

British I Airborne CorpsLt. Gen. F. A. M. Browning

(*Operational, 17 Sept.*)

British 1st Airborne Division

(*Nonoperational, 28 Sept.*)

82d Airborne DivisionMaj. Gen. J. M. Gavin

(*British XXX Corps, 9 Oct.;*

Canadian II Corps, 9 Nov.)

101st Airborne DivisionMaj. Gen. M. D. Taylor

(*British XXX Corps, 18 Sept.;*

British I Airborne Corps, 21 Sept.;

British VIII Corps, 23 Sept.;

British XII Corps, 28 Sept.;

Canadian II Corps, 9 Nov.)

21st ARMY GROUPField Marshal B. L. Montgomery

British 79th Armored Division

British 6th Airborne Division

(*Nonoperational, 18 Sept.*)

Canadian First ArmyGeneral H. D. G. Crerar

British I CorpsLt. Gen. J. T. Crocker

British 49th Division

British 51st Division

104th DivisionMaj. Gen. T. Allen

(*Arrived 7 Sept.; combat, 24 Oct.;*

VII Corps, 8 Nov.)

APPENDIX 7

Canadian II Corps	Lt. Gen. G. G. Simonds
Polish 1st Armored Division	
Canadian 4th Armored Division	
Canadian 2d Division	
Canadian 3d Division	
<i>British 52d Division, 27 Oct.</i>	
British Second Army	Lt. Gen. M. C. Dempsey
British VIII Corps	Lt. Gen. R. N. O'Connor
<i>(11 Dec.) Lt. Gen. Barker</i>	
British 11th Armored Division	
British 3d Division	
British XII Corps	Lt. Gen. N. M. Ritchie
British 7th Armored Division	
British 15th Division	
British 53d Division	
British XXX Corps	Lt. Gen. B. G. Horrocks
British Guards Armored Division	
British 43d Division	
British 50th Division	
<i>(Nonoperational, 7 Dec.)</i>	
84th Division	Brig. Gen. A. R. Bolling
<i>(Arrived 1 Nov.; combat, 18 Nov.;</i>	
<i>XIII Corps, 23 Nov.)</i>	
12TH ARMY GROUP	Lt. Gen. O. N. Bradley
First Army	Lt. Gen. C. H. Hodges
V Corps	Maj. Gen. L. T. Gerow
5th Armored Division	Maj. Gen. L. E. Oliver
<i>(VII Corps, 29 Nov.)</i>	
4th Division	Brig. Gen. H. W. Blakeley
<i>(VII Corps, 8 Nov.;</i>	<i>(21 Sept.) Maj. Gen. H. R. Bull</i>
<i>VIII Corps, 7 Dec.)</i>	<i>(30 Sept.) Brig. Gen. J. A. Van Fleet</i>
	<i>(5 Oct.) Maj. Gen. R. O. Barton</i>
28th Division	Maj. Gen. N. D. Cota
<i>(VIII Corps, 19 Nov.)</i>	
99th Division	Maj. Gen. W. E. Lauer
<i>(Arrived 6 Nov.; combat, 9 Nov.)</i>	
78th Division	Maj. Gen. E. P. Parker
<i>(Arrived 27 Nov.; combat, 13 Dec.)</i>	
VII Corps	Maj. Gen. J. L. Collins
3d Armored Division	Maj. Gen. M. Rose
1st Division	Maj. Gen. C. R. Huebner
	<i>(11 Dec.) Brig. Gen. C. Andrus</i>
9th Division	Maj. Gen. L. A. Craig
<i>(V Corps, 26 Oct.;</i>	
<i>VII Corps, 6 Dec.)</i>	

APPENDIX 7

XIX Corps	Maj. Gen. C. H. Corlett
(Ninth Army, 22 Oct.) (17 Oct.)	Maj. Gen. R. S. McLain
2d Armored Division	Maj. Gen. E. N. Harmon
30th Division	Maj. Gen. L. S. Hobbs
Third Army	Lt. Gen. G. S. Patton
6th Armored Division	Maj. Gen. R. W. Grow
(XII Corps, 20 Sept.;	
III Corps, 11 Dec.)	
XII Corps	Maj. Gen. M. S. Eddy
4th Armored Division	Maj. Gen. J. Wood
(3 Dec.)	Maj. Gen. H. J. Gaffey
35th Division	Maj. Gen. P. W. Baade
80th Division	Maj. Gen. H. L. McBride
26th Division	Maj. Gen. W. S. Paul
(Arrived 19 Sept.; combat, 12 Oct.;	
III Corps, 12 Dec.)	
87th Division	Brig. Gen. F. L. Culin
(Arrived 3 Dec.; combat, 13 Dec.)	
XV Corps	Brig. Gen. W. H. Haislip
(Seventh Army, 29 Sept.)	
French 2d Armored Division	Maj. Gen. Le Clerc
(VI Corps, 27 Nov.;	
French First Army, 5 Dec.)	
79th Division	Maj. Gen. I. T. Wyche
(VI Corps, 5 Dec.)	
44th Division	Maj. Gen. R. L. Spragins
(Arrived 15 Sept.; combat, 24 Oct.)	
12th Armored Division	Maj. Gen. R. R. Allen
(Arrived 9 Nov.; combat, 7 Dec.)	
XX Corps	Maj. Gen. W. H. Walker
7th Armored Division	Maj. Gen. L. M. Silvester
(XIX Corps, 25 Sept.;	(1 Nov.) Brig. Gen. R. W. Hasbrouck
British VIII Corps, 8 Oct.;	
XIII Corps, 9 Nov.)	
5th Division	Maj. Gen. S. L. Irwin
90th Division	Maj. Gen. R. S. McLain
(15 Oct.)	Maj. Gen. J. A. Van Fleet
95th Division	Maj. Gen. H. L. Twaddle
(Arrived 19 Sept.; combat, 20 Oct.)	
10th Armored Division	Maj. Gen. W. H. H. Morris
(Arrived 23 Sept.; combat, 2 Nov.)	
III Corps	Maj. Gen. J. Millikin
(Arrived 15 Sept.;	
operational, 8 Dec.)	

APPENDIX 7

Ninth Army	Lt. Gen. W. H. Simpson
24th Division	Maj. Gen. H. J. Maloney
(Arrived 5 Sept.; combat, 17 Sept.; 12 Army Group, 9 Oct.)	
VIII Corps	Maj. Gen. T. H. Middleton
(First Army, 22 Oct.)	
2d Division	Maj. Gen. W. M. Robertson
(V Corps, 11 Dec.)	
8th Division	Maj. Gen. D. A. Stroh
(V Corps, 19 Nov.)	
29th Division	Maj. Gen. C. H. Gerhardt
(XIX Corps, 21 Sept.)	
83d Division	Maj. Gen. R. C. Macon
(XX Corps, 21 Sept.; VIII Corps, 11 Oct.; VII Corps, 7 Dec.)	
9th Armored Division	Maj. Gen. J. W. Leonard
(Arrived 25 Sept.; combat, 10 Dec.)	
106th Division	Maj. Gen. A. W. Jones
(Arrived 26 Nov.; combat, 10 Dec.)	
XIII Corps	Maj. Gen. A. C. Gillem
(Arrived 30 Sept.; operational, 8 Nov.)	
XVI Corps	Maj. Gen. J. B. Anderson
(Arrived 20 Oct.; operational, 28 Oct.)	
102d Division	Brig. Gen. F. A. Keating
(Arrived 23 Sept.; combat, 26 Oct.; XIX Corps, 3 Nov.; XIII Corps, 7 Nov.)	
6TH ARMY GROUP	Lt. Gen. J. L. Devers
Seventh Army	Lt. Gen. A. M. Patch
1st Airborne Task Force	Maj. Gen. R. T. Frederick
(Disbanded 11 Dec.)	
14th Armored Division	Brig. Gen. A. C. Smith
(Arrived 29 Oct.; combat, 20 Nov.; XV Corps, 29 Nov.; VI Corps, 5 Dec.)	
VI Corps	Lt. Gen. L. K. Truscott
(25 Oct.)	Maj. Gen. E. H. Brooks
3d Division	Maj. Gen. J. W. O'Daniel
36th Division	Maj. Gen. J. E. Dahlquist
45th Division	Maj. Gen. W. W. Eagles
(XV Corps, 22 Nov.) (3 Dec.)	Maj. Gen. R. T. Frederick
100th Division	Maj. Gen. W. A. Burress
(Arrived 20 Oct.; combat, 9 Nov.; XV Corps, 27 Nov.)	

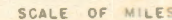
APPENDIX 7

103d Division	Maj. Gen. C. C. Haffner
(Arrived 20 Oct.; combat, 11 Nov.)	
French Army B	General de Lattre de Tassigny
(Redesignated French First Army, 21 Sept.)	
French 5th Armored Division, 1 Oct.	
French I Corps	Lt. Gen. Bethouart
French 2d Moroccan Division	
French 3d Algerian Division	
French 4th Mountain Division	
French 9th Colonial Division	
French II Corps	Lt. Gen. de Larminat
(25 Sept.)	Maj. Gen. de Montsabert
French 1st Armored Division	
French 1st Division	
ALLIED EXPEDITIONARY	
AIR FORCE (AEAF)	Air Chief Marshal Leigh-Mallory
(Disbanded 15 Oct.)	
British Second Tactical Air Force.....	Air Marshal Coningham
Ninth Air Force	Maj. Gen. H. S. Vandenberg
9th Bombardment Division (Medium).....	Maj. Gen. S. E. Anderson
IX Tactical Air Command	Maj. Gen. E. R. Quesada
XIX Tactical Air Command	Brig. Gen. O. P. Weyland
XXIX Tactical Air Command	Brig. Gen. R. E. Nugent
(Activated 14 Sept.)	
XII Tactical Air Command	Brig. Gen. G. P. Saville
(Came under control of Ninth Air Force, 12 Oct.; First Tactical Air Force (Prov.), 15 Nov.)	
First Tactical Air Force (Provisional).....	Maj. Gen. R. Royce
(Activated 1 Nov.)	
French I Air Corps	Brig. Gen. Geradot
(Operational, 1 Nov.)	
UNITED STATES STRATEGIC	
AIR FORCES (USSAF)	Lt. Gen. C. Spaatz
Eighth Air Force	Lt. Gen. J. H. Doolittle
1st Air Division	Maj. Gen. R. B. Williams
(Oct.)	Brig. Gen. H. McC. Turner
2d Air Division	Brig. Gen. W. E. Kemper
3d Air Division	Maj. Gen. E. E. Partridge
Fifteenth Air Force (Italy)	Maj. Gen. N. F. Twining
ROYAL AIR FORCE	
Bomber Command	Air Marshal Harris
Coastal Command	Air Marshal Douglas
Fighter Command	Air Marshal Hill

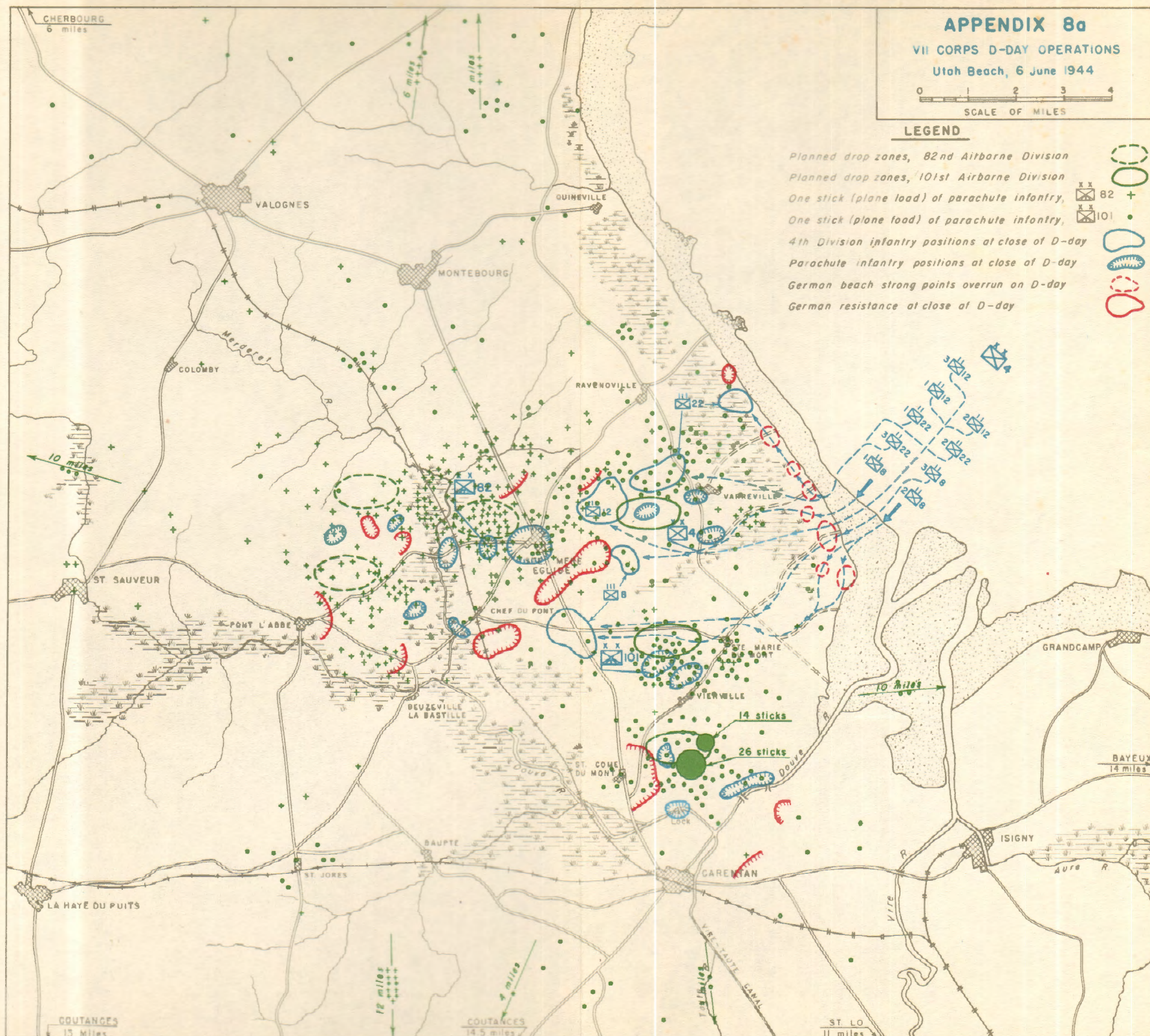
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RESTRICTED—Security Information

Utah Beach, 6 June 1944



Planned drop zones, 82nd Airborne Division
Planned drop zones, 101st Airborne Division
One stick (plane load) of parachute infantry,
One stick (plane load) of parachute infantry,
4th Division infantry positions at close of D-day
Parachute infantry positions at close of D-day
German beach strong points overrun on D-day
German resistance at close of D-day



APPENDIX 8b

V CORPS D-DAY OPERATIONS

Omaha Beach, 6 June 1944

0 500 1000

SCALE OF YARDS

LEGEND

First gaps in obstacles

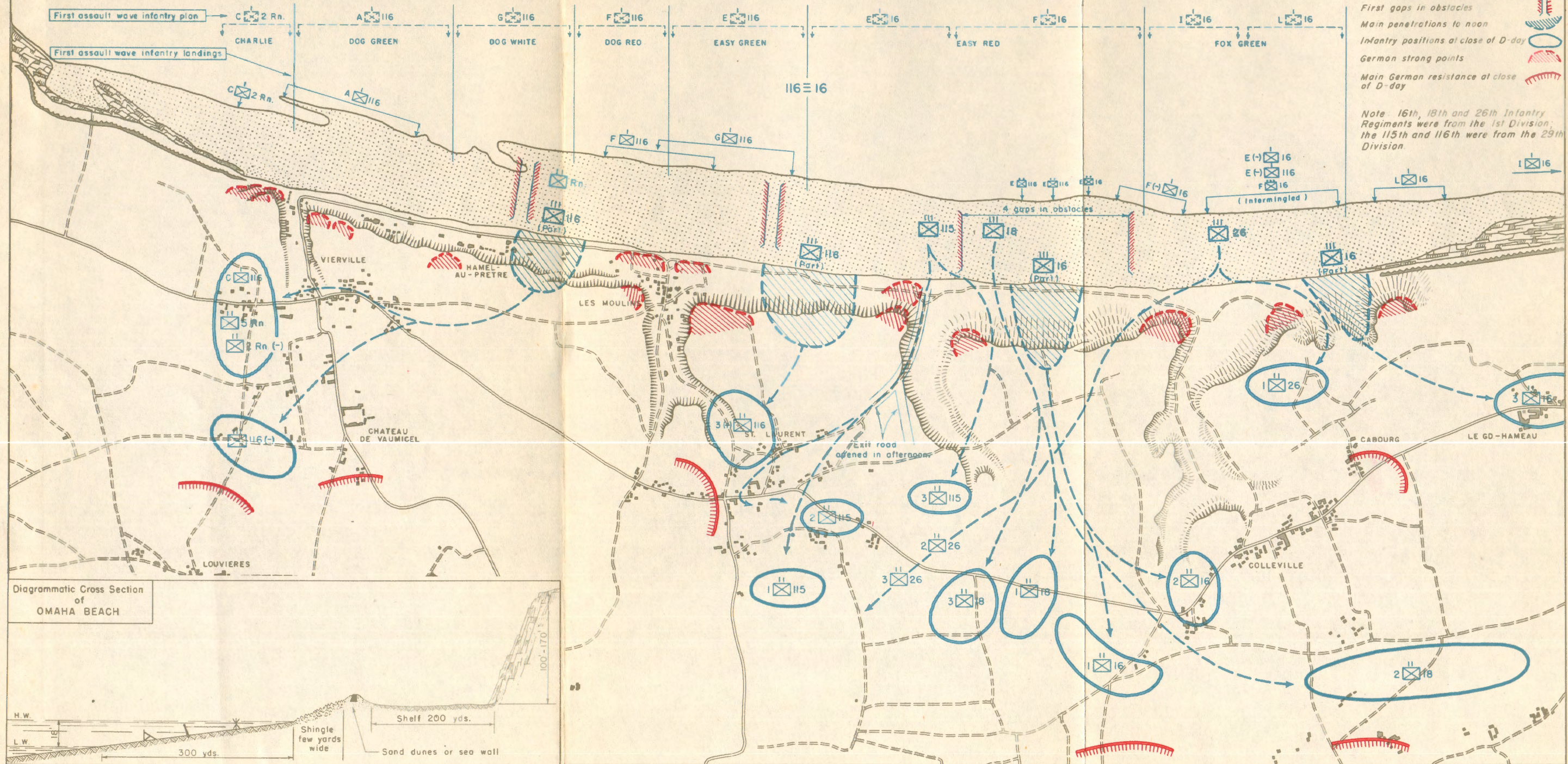
Main penetrations to noon

Infantry positions at close of D-day

German strong points

Main German resistance at close of D-day

Note: 16th, 18th and 26th Infantry Regiments were from the 1st Division; the 115th and 116th were from the 29th Division.



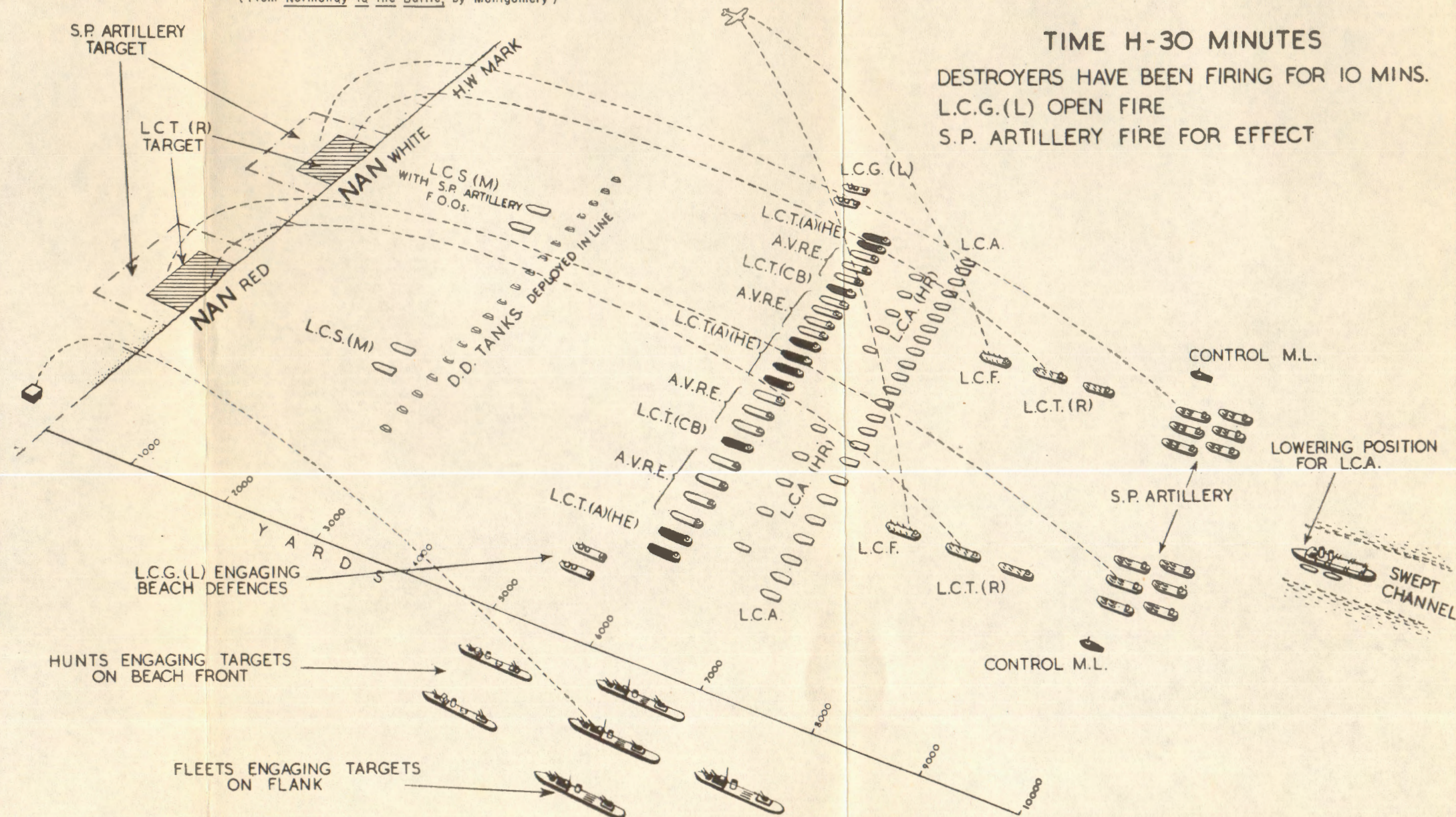
THE ASSAULT TECHNIQUE

DIAGRAM SHOWING ESSENTIAL ELEMENTS OF ONE BRIGADE GROUP APPROACHING THE BEACH

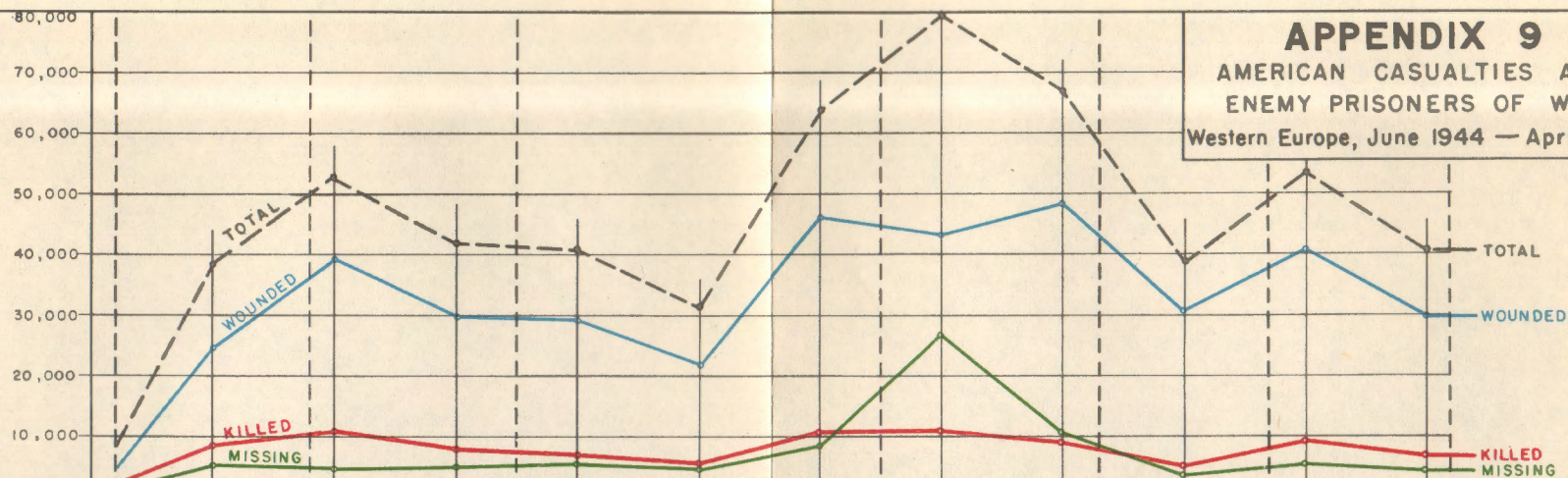
(From Normandy to the Baltic, by Montgomery)

GLOSSARY

FLEETS	— Class of Destroyer
HUNTS	— Class of Destroyer
L.C.A.	— Landing Craft, Assault
M.L.	— Motor Launch
L.C.T.(R)	— Landing Craft, Tank (Rocket)
L.C.F.	— Landing Craft, Flak
L.C.A.(HR)	— Landing Craft, Assault (Hedgerow) used to explode enemy minefields
L.C.T.(A)(HE)	— Landing Craft, Tank (Armoured) (High Explosive)
A.V.R.E.	— Assault Vehicle, Royal Engineers
L.C.T.(CB)	— Landing Craft, Tank (Concrete Buster)
D.D. Tanks	— Duplex Drive Tanks, fitted with Flotation device
L.C.S.(M)	— Landing Craft, Support (Medium)
L.C.G.(L)	— Landing Craft, Gun (Large)

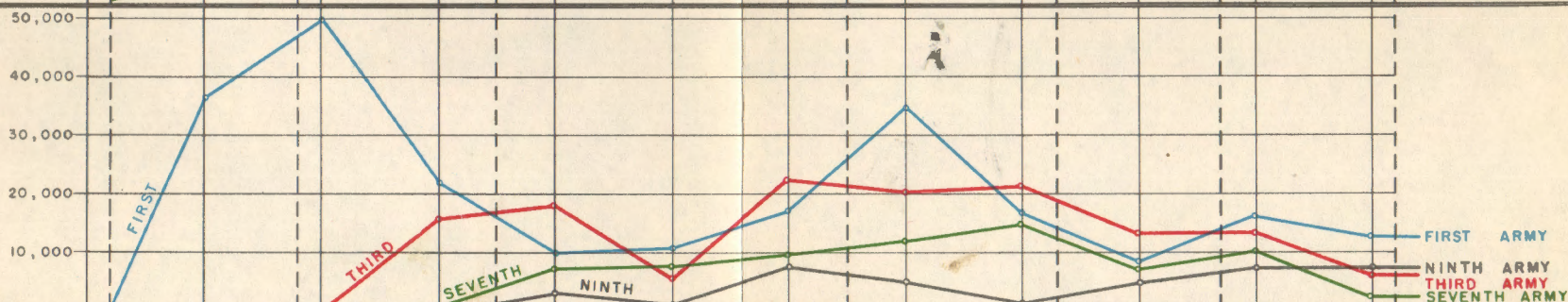


TOTAL AMERICAN BATTLE CASUALTIES (By Type)

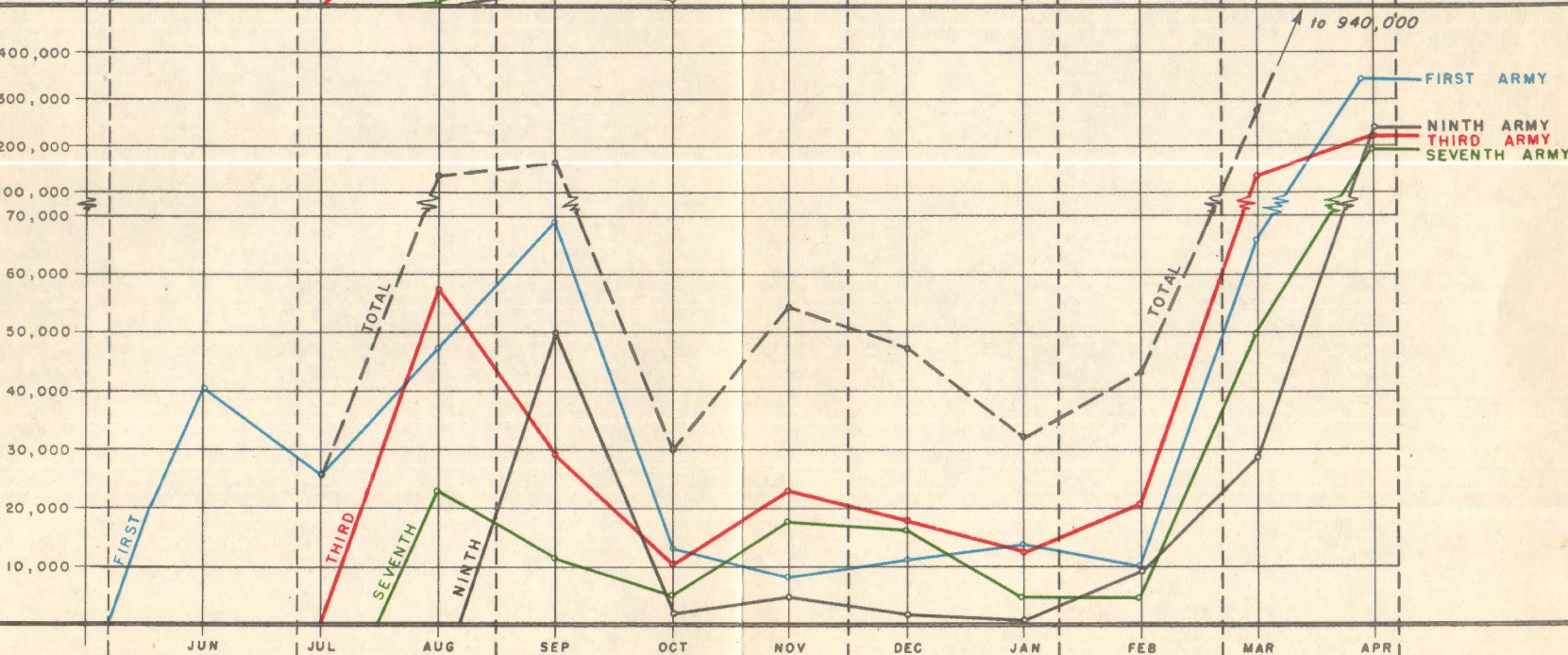


APPENDIX 9 **AMERICAN CASUALTIES AND ENEMY PRISONERS OF WAR** Western Europe, June 1944 — April 1945

BATTLE CASUALTIES OF U.S. ARMIES

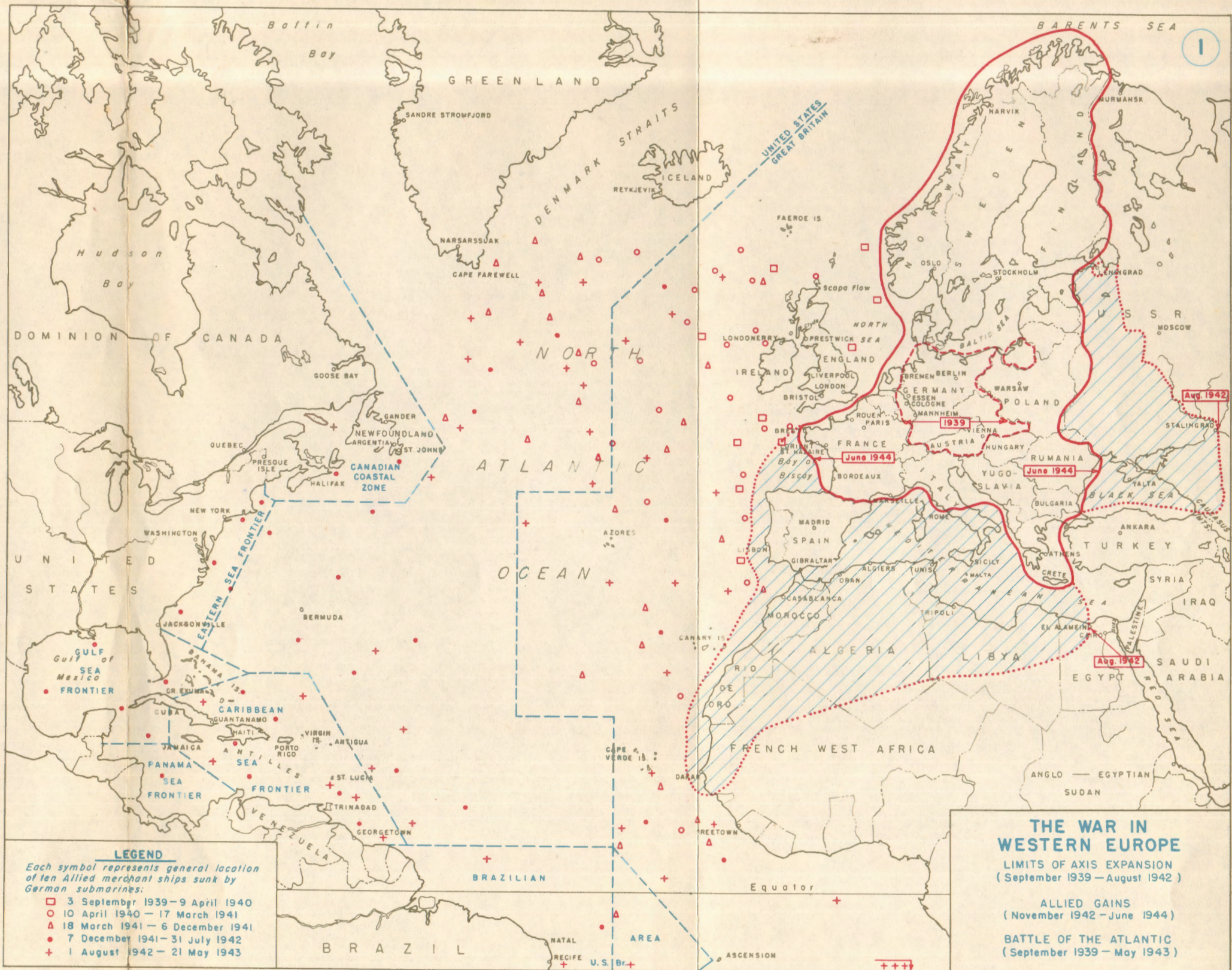


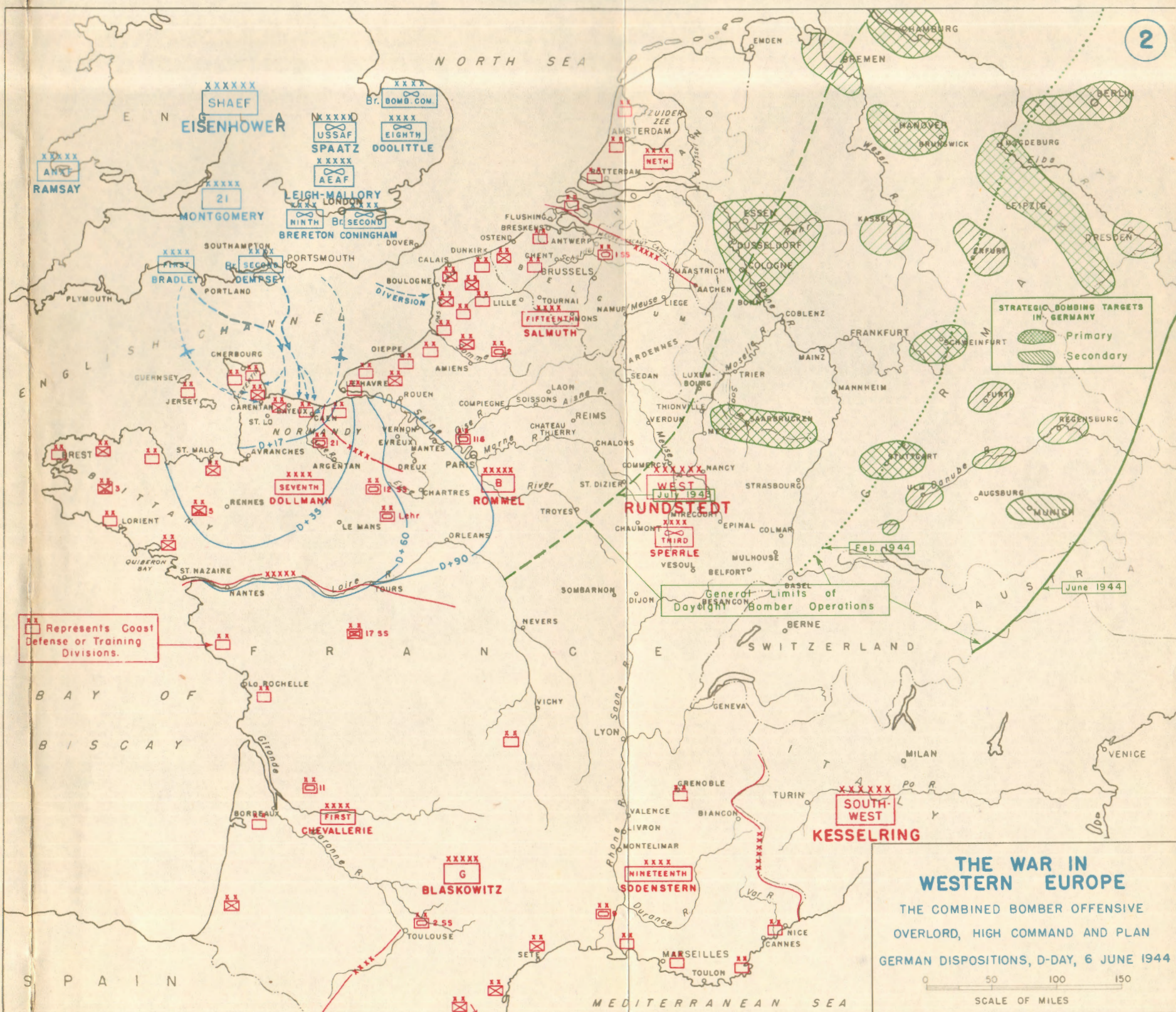
ENEMY PRISONERS OF WAR EVACUATED THROUGH U.S. ARMY ENCLOSURES

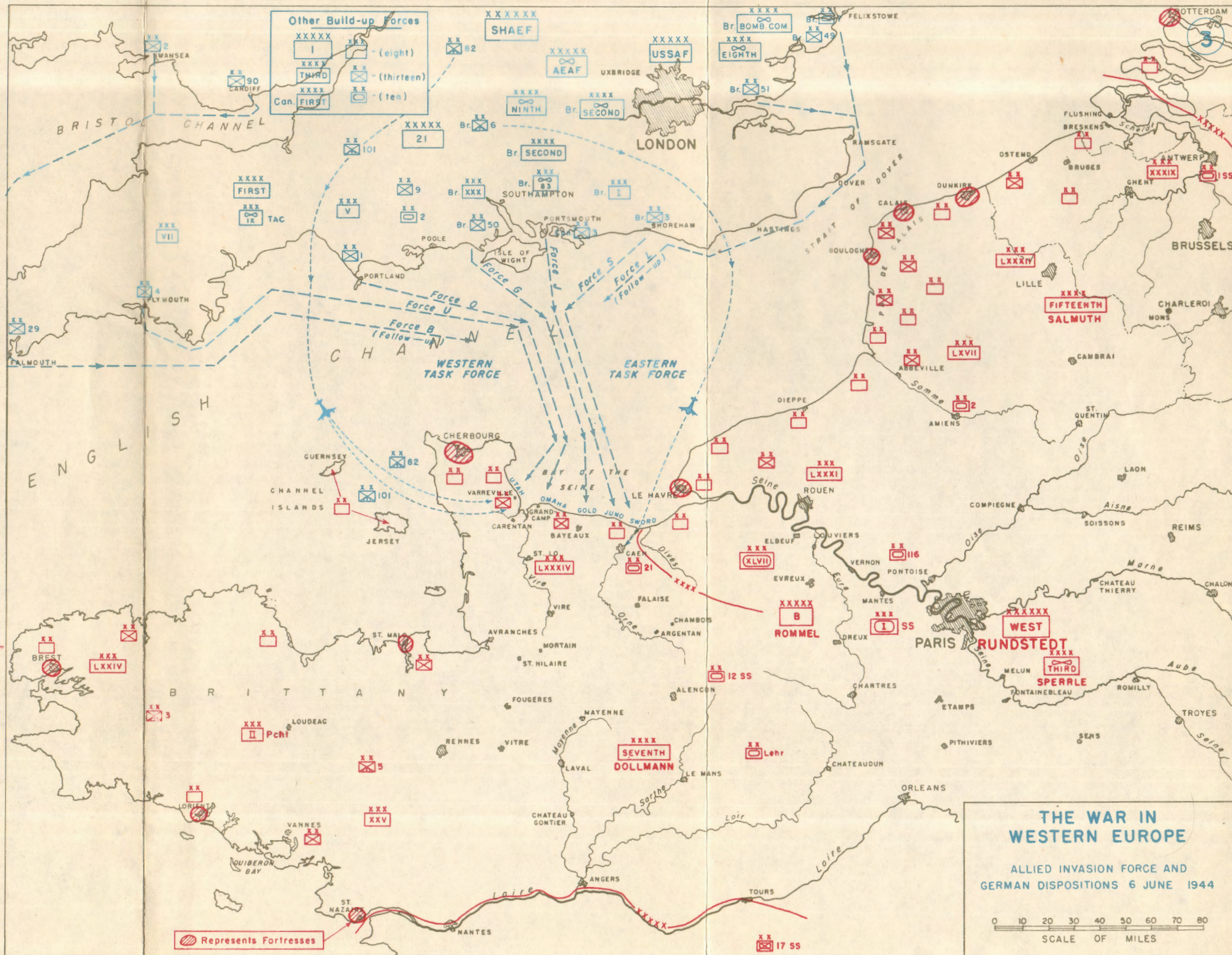


CAMPAIGNS:

NORMANDY — NORTHERN AND SOUTHERN FRANCE — OPERATIONS AGAINST WEST WALL — ARDENNES — RHINELAND — CENTRAL EUROPE

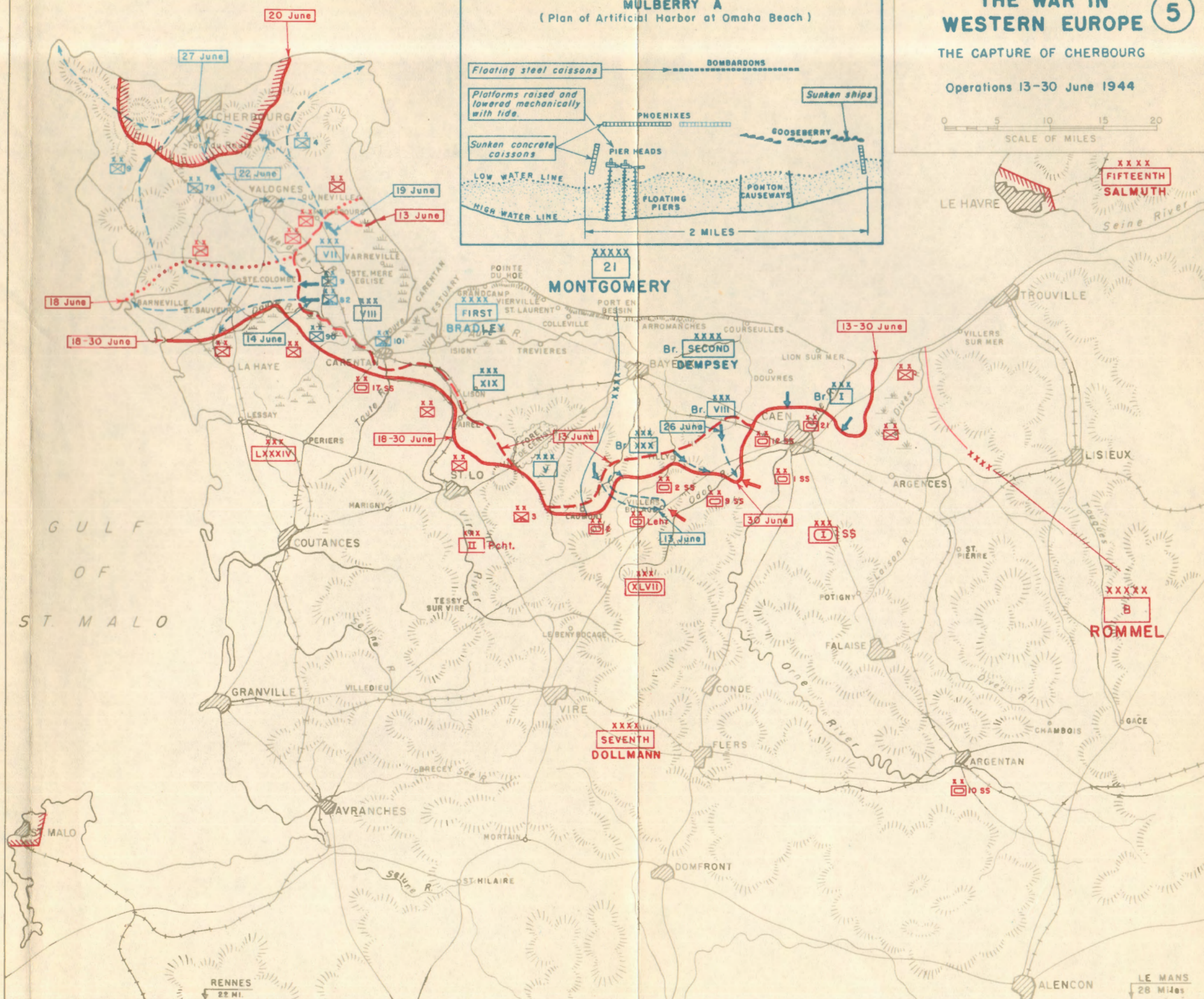
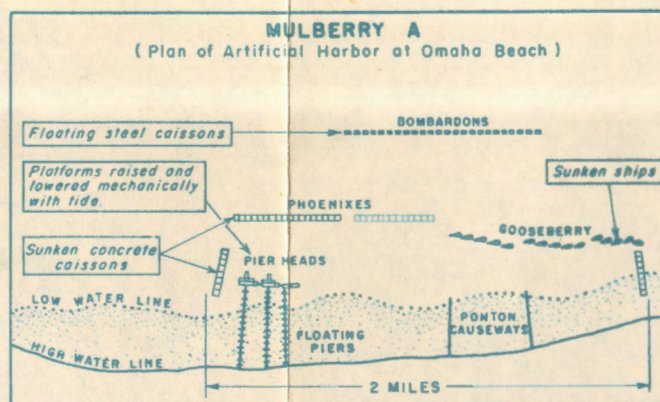
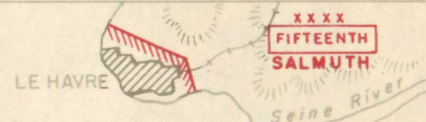






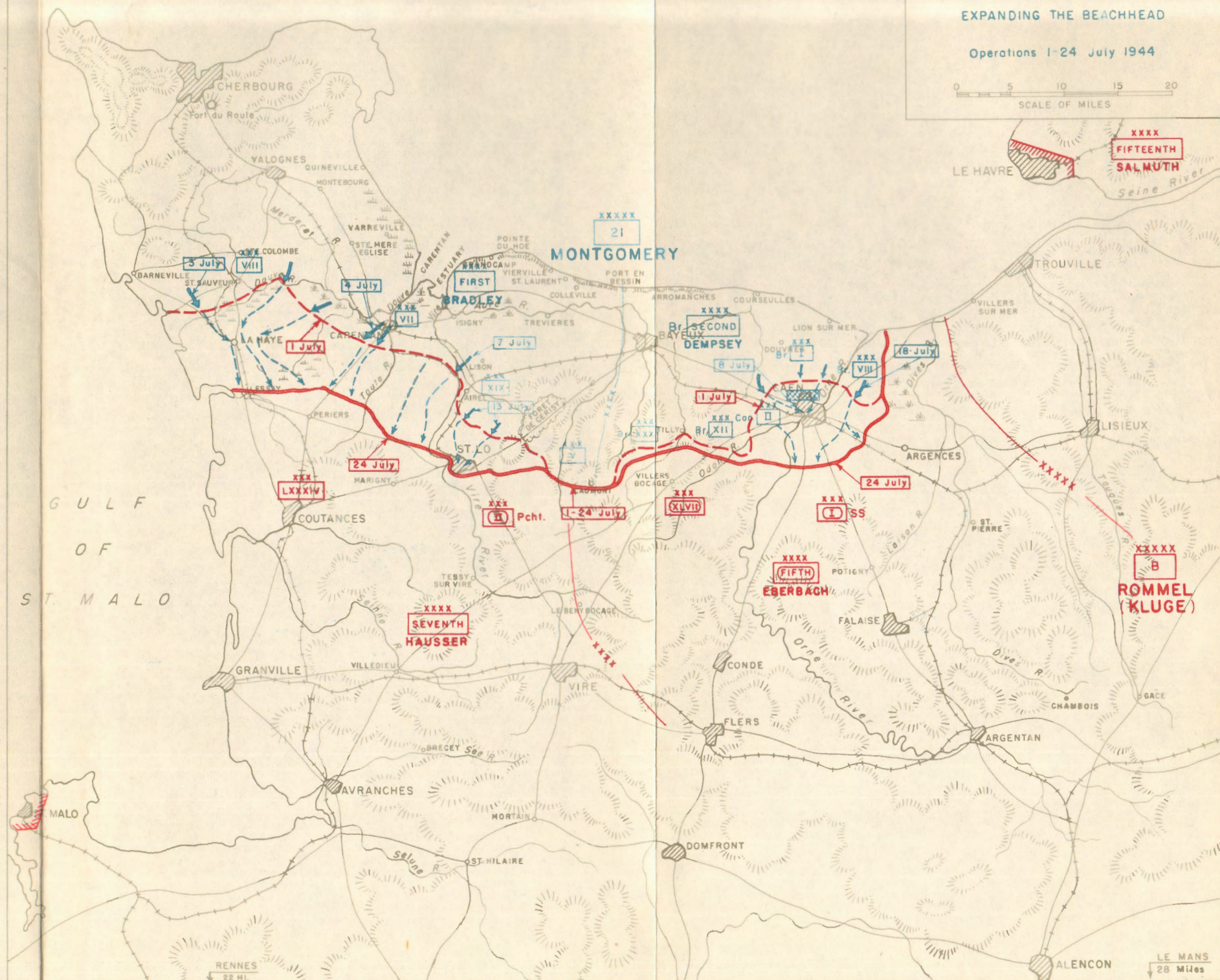
5

Operations 13-30 June 1944



6

Operations 1-24 July 1944



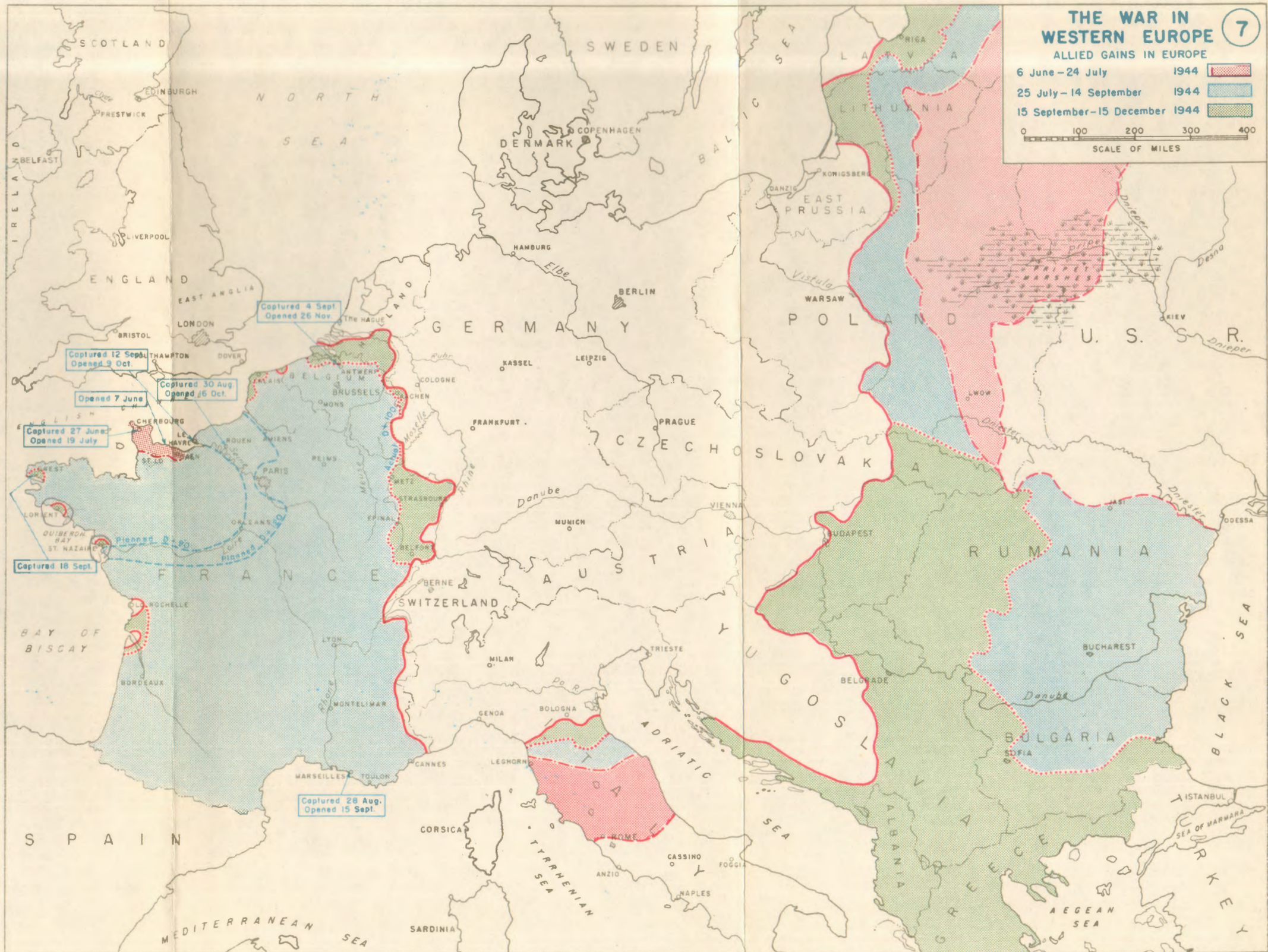
THE WAR IN WESTERN EUROPE

7

ALLIED GAINS IN EUROPE

6 June - 24 July	1944	
25 July - 14 September	1944	
15 September - 15 December	1944	

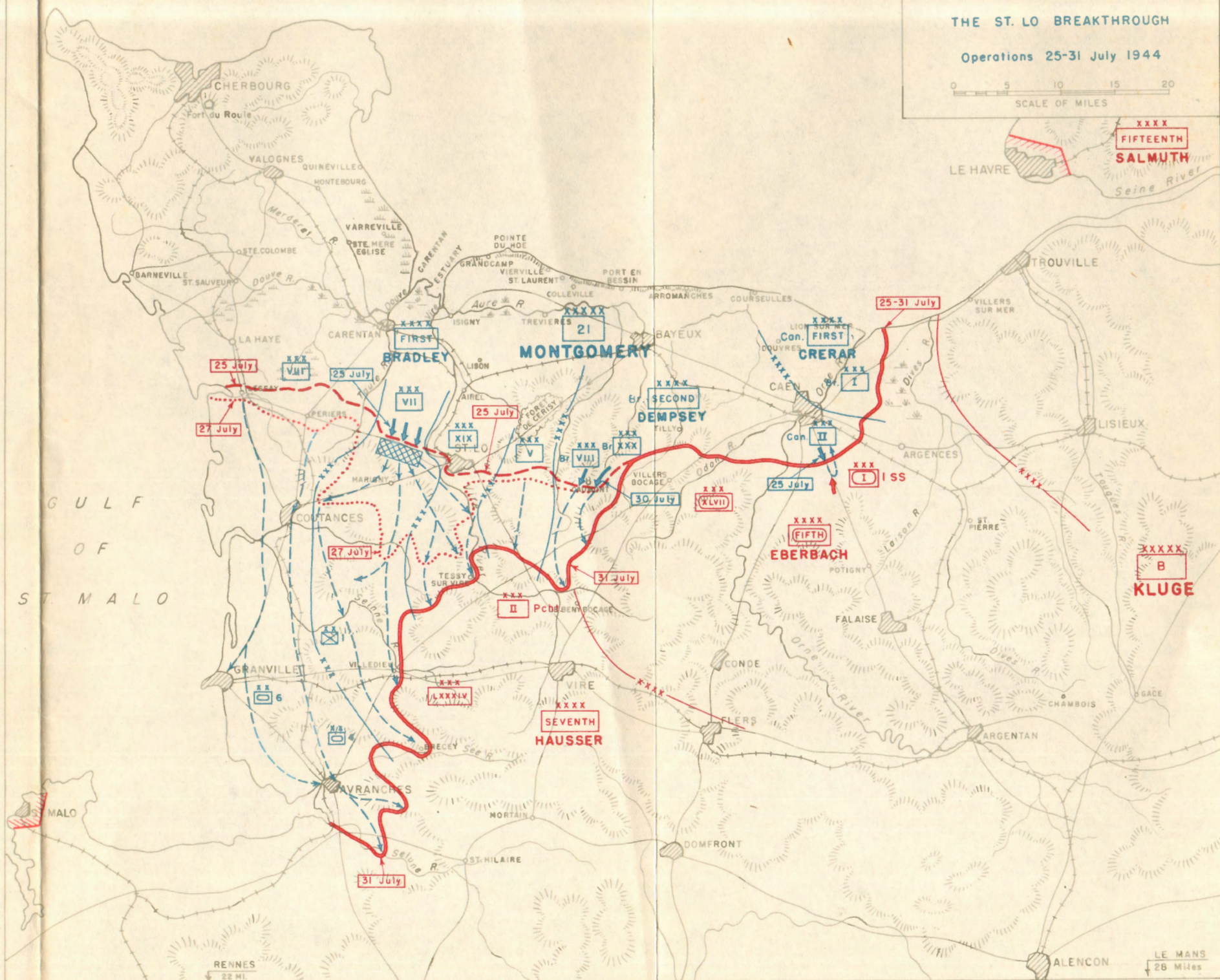
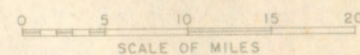
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SCALE OF MILES



THE WAR IN WESTERN EUROPE 8

THE ST. LO BREAKTHROUGH

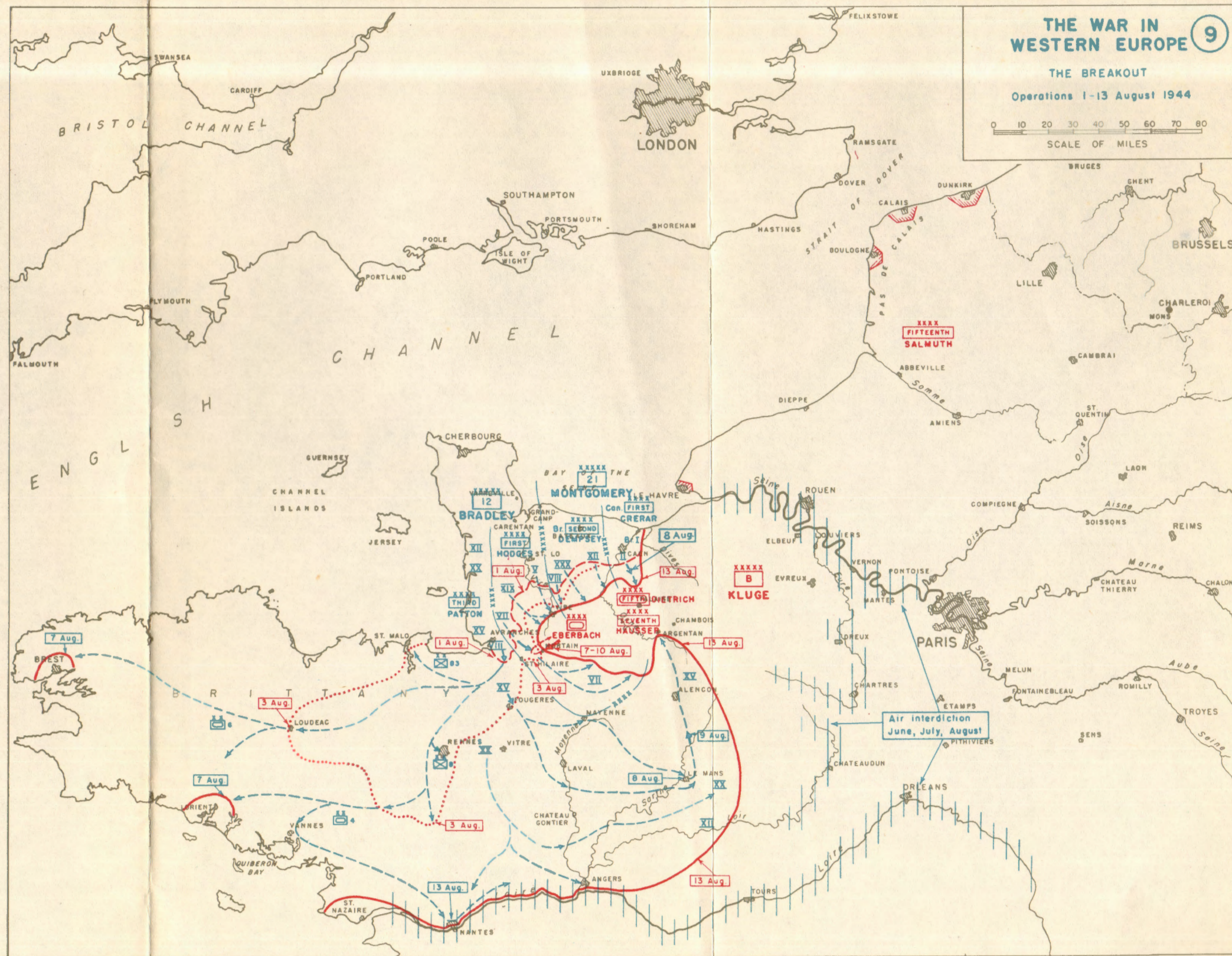
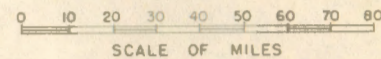
Operations 25-31 July 1944



THE WAR IN WESTERN EUROPE 9

THE BREAKOUT

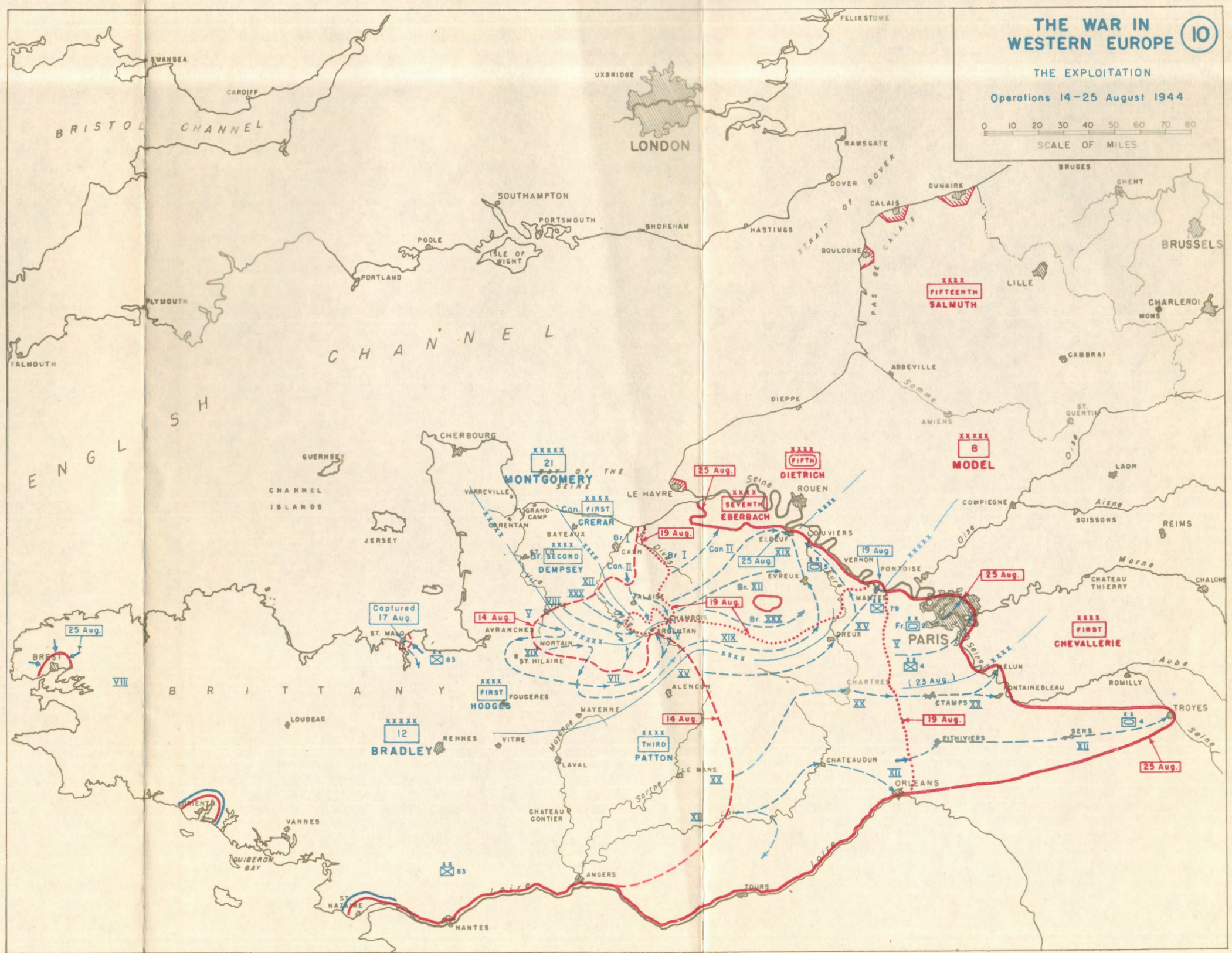
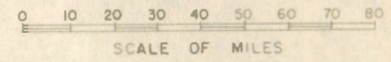
Operations 1-13 August 1944

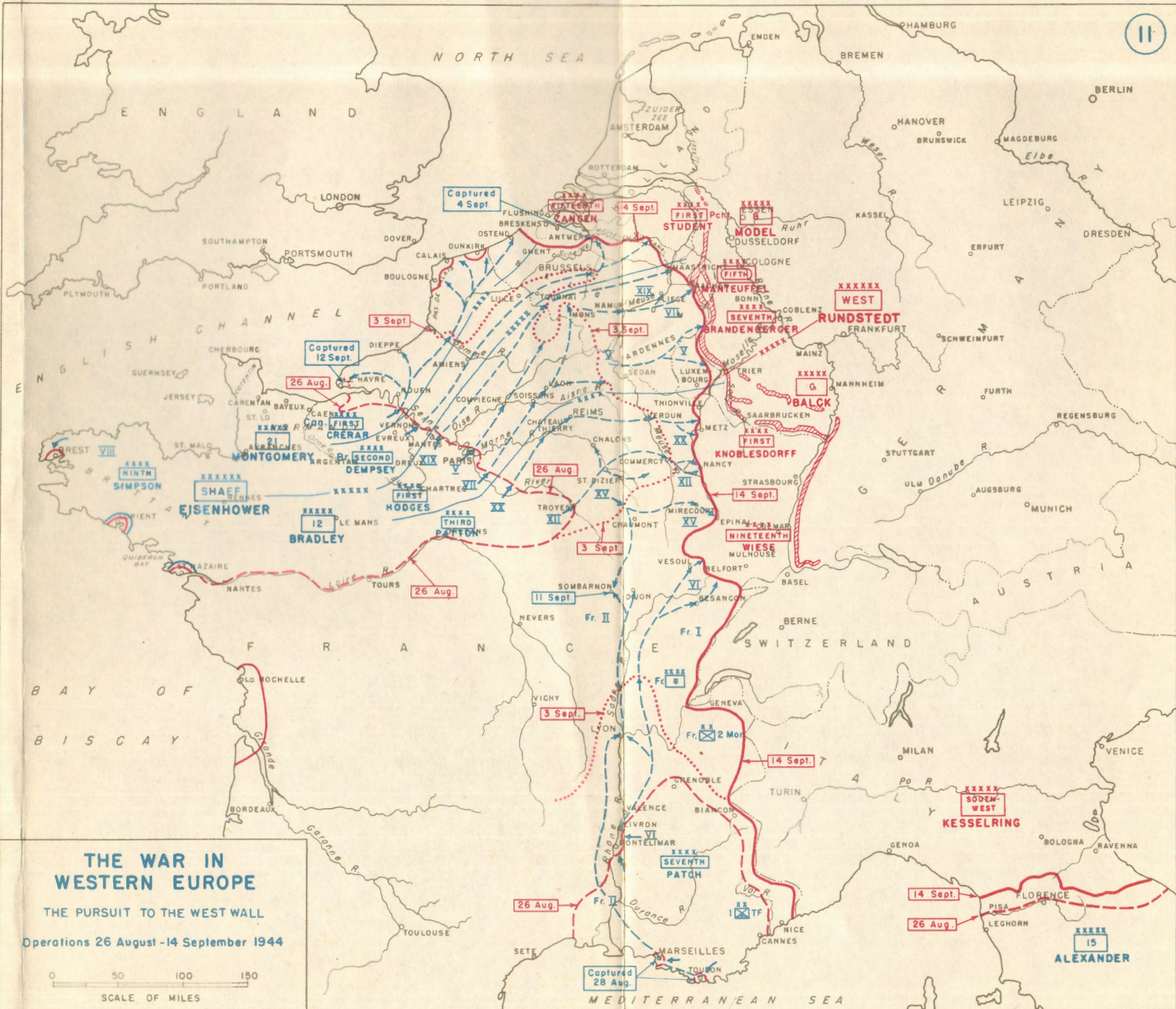


THE WAR IN WESTERN EUROPE 10

THE EXPLOITATION

Operations 14-25 August 1944

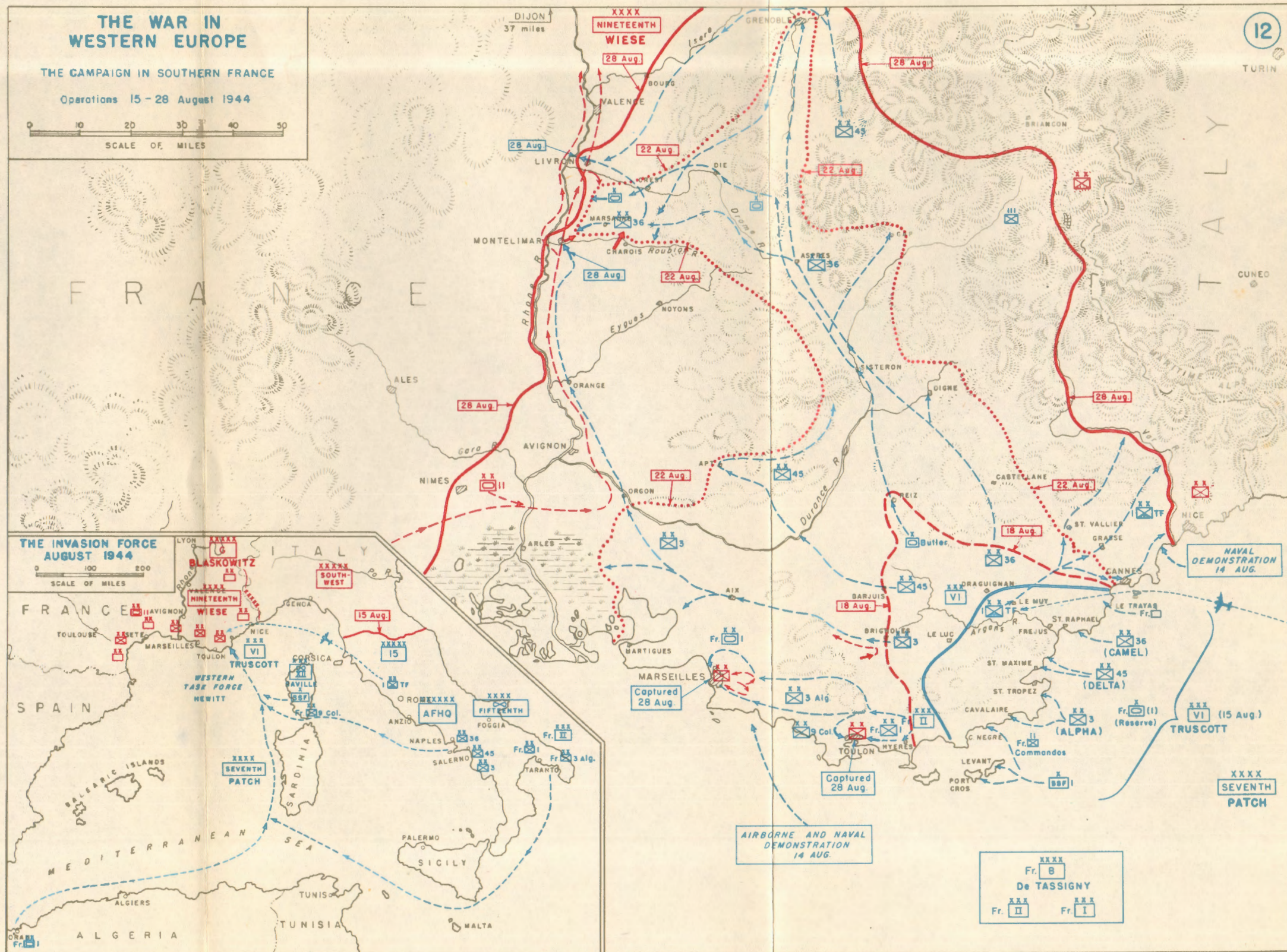




0 10 20 30 40 50

SCALE OF MILES

TURIN



GENERAL SITUATION, 15 SEPTEMBER 1944

0 10 20 30 40 50 60 70

SCALE OF MILES

