

FROM COBRA TO THE SEINE, AUGUST 1944: A MICROCOSM OF THE OPERATIONAL
ART

BY

Major Scott B. Cottrell

Engineer

School of Advanced Military Studies
U.S. Army Command and General Staff College
Fort Leavenworth, Kansas

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School of Advanced Military Studies

Monograph Approval

Name of Student: MAJ Scott B. Cottrell

Title of Monograph: From COBRA to the Seine, August 1944: A Microcosm
of the Operational Art

Approved by:

Kenneth G. Carlson

-----Monograph Director
(LTC Kenneth G. Carlson, MPA)

Richard Hart Sinnreich

-----Director, School of
(COL Richard Hart Sinnreich, MA) Advanced Military
Studies

Philip J. Brookes

-----Director, Graduate
(Dr. Philip J. Brookes, PhD) Degree Programs

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ABSTRACT

FROM COBRA TO THE SEINE, AUGUST 1944: A MICROCOSM OF THE OPERATIONAL ART, by Major Scott B. Cottrell, USA, 54 pages.

This study is an attempt to provide a contextual example of many of the concepts and terms of the operational art as demonstrated by the Allies in France during August 1944. The action from Operation COBRA to the Seine River crossings is first described, highlighting key operational concepts and terms. Then these concepts are discussed, defined, sketched, mapped and redefined where appropriate, all in an effort to present a more complete understanding of the terms and concepts on which AirLand Battle and FM 100-5 are built.

The following terms and concepts are addressed: Theater Strategic Objectives, Sequenced Activities, Branches and Sequels, Center of Gravity, Culminating Point, Decisive Terrain, Lines of Operation, and Operational Maneuver. The study reveals at least two areas where perhaps FM 100-5 needs more thought. These are center of gravity and defensive culminating point.

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I Introduction

The Army's capstone manual, FM 100-5, Operations (1982) and its revision FM 100-5, Operations (May 1986), put forth many operational concepts and terms which apparently are not yet fully appreciated nor understood by commanders at all levels. Definitions for terms such as "center of gravity" and "culminating point" can give the reader a general idea of the meaning of a concept or term but their precise meaning may be interpreted differently by different readers. Without a common understanding of these terms, confusion may reign as officers try to talk to each other in terms they really don't understand. Examples can help pin down the meaning of these terms and concepts, but when taken out of context they can be misleading. For those who like visual aids, maps and sketches are of great assistance but are insufficient by themselves to completely explain a concept. How then are these operational terms and concepts accurately and precisely transmitted to the Army's officer corps?

Preferably, all Army officers would read detailed accounts of various historical battles coupled with accurate and precise definitions from reliable sources to get a good grasp of these operational concepts. Clausewitz would be carried in every briefcase and found on every nightstand. Regrettably, that won't happen. Lack of time and other circumstances will prevent it. Perhaps a historical survey of major operations highlighting the parts that illustrate these concepts, coupled with definitions, maps, and discussion would better serve the officer population as a whole. To that end, the operations of the Allies in France during August 1944 appear to demonstrate many of the key operational terms and concepts promulgated by the latest revision of FM 100-5 and provide a suitable context for their study. These operations include the post-COBRA exploitation, the taking of Brittany, the Mortain counterattack, the Argentan-Falaise pocket, and the race to the Seine River.

Therefore, this paper will use the scenario of the Allied operations in France during August 1944 to discuss and clarify in a contextual manner many key operational terms and concepts used in FM 100-5, Operations. The method to be used is as follows: First, the

paper will describe the events and decisions that led up to and immediately preceded August 1944. Next, the actions of the Allies from 1-26 August 1944 will be described, referring to but not defining key operational concepts and terms such as, center of gravity, culminating point, lines of operation, decisive terrain, operational maneuver, and others. Third, the operational concepts and terms which the scenario highlights will then be defined, discussed, sketched, and redefined where appropriate. Finally, the conclusion will reiterate some of the key points and discuss the operational art in more general terms.

II Background for the August 1944 Allied Operations

On 12 February 1944 the Combined Chiefs of Staff of the USA and the UK issued the following directive to GEN Eisenhower:

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 to securing an area that will facilitate both ground and air operations against the enemy.¹

The advent of that mission directive set into motion the events which led to the 6 June 1944 invasion of Normandy within the OVERLORD plan. During June, as Montgomery pressed toward Caen with Dempsey's 2nd British Army against stiff opposition, Bradley's 1st US Army cleared the upper Cotentin peninsula and on 27 June took the port of Cherbourg² (see map 1, p34).

During the month of July, the Germans put up terrific resistance against continual pressure from the Allies' attempts to break out of the Cotentin peninsula and their Normandy beachheads. Fortunately for the Allies, Montgomery's attempts to break out, ending with operation GOODWOOD, 18-20 July, had the effect of drawing most of the enemy armor in the area toward Caen, leaving the Americans in the western sector facing only infantry divisions.³ However, a combination of these infantry divisions and Normandy's compartmentalized hedgerow terrain had already held the Americans such that on D+48, they had advanced only to where they had hoped to

be on D+5.* On 25 July, Bradley's 1st Army, spearheaded by MG Collins' VII Corps, launched operation COBRA. Originally intended to be a limited objective advance, this operation resulted in the breakout at St.Lo. Collins took advantage of disorganized German resistance caused by Allied carpet bombing and inserted his armored divisions into the fray to exploit success. MG Middleton's VIII Corps on Collins' right soon joined the exploitation, and by 31 July, the left flank of the German defensive line was ruptured with US forces as far south as Avranches.⁵ The corner into Brittany had been turned. The Allies had broken out of the confines of their Normandy beachhead and the Cotentin peninsula (see map 2, p35).

The mission directive given Eisenhower was broad and imprecise. However, embedded in it were several implied tasks which became part of OVERLORD's general outline of sequenced activities for the upcoming campaign. In general, after seizing a lodgment, the Allies were to build it up, break out of the beachhead, take the Brittany ports for logistics purposes and advance to the Seine where they would pause to regroup prior to entering Germany.⁶ Because OVERLORD was first and foremost a logistically driven plan, the advance to the Seine was planned apparently as a broad push, advancing according to pre-planned phase lines with a scheduled arrival circa D+100. By 1 August 1944, the Allies had succeeded in completing the first 3 phases of their operations and were now ready to turn west into Brittany to seize its ports.

III Allied Operations, 1-26 August 1944

Operation OVERLORD started with Eisenhower as the Supreme Allied Commander, Montgomery as the Ground Force Commander and 1st Army Group (AG) Commander, with two subordinate armies, Dempsey's 2nd British Army and Bradley's 1st US Army (see chart 1, p29). By 1 August, the number of divisions and supplies had built up to the point that two new armies and another army group were formed. LTG Bradley became the Commander, 12 AG effective 1 August 1944, with the 1st US Army under LTG Hodges and the 3rd US Army under LTG Patton. Montgomery remained the 21 AG Commander with GEN Dempsey's 2nd British Army and GEN Crerar's 1st Canadian Army (see chart 2,

p30). Because the Allies had not progressed as far as planned by 1 August, Eisenhower postponed his planned assumption of Ground Force command and left Montgomery in "temporary operational control." In reality, Montgomery had authority to coordinate and settle boundary disputes between army groups.⁷

On 1 August 1944, Patton assumed command of 3rd Army, controlling initially only the VIII Corps. Immediately Patton jumped to his task, sending two armored divisions and two infantry divisions exploiting west into Brittany against limited resistance and with Free French assistance.⁸ This was in consonance with Montgomery's intentions of clearing everything west of the Orne River prior to driving toward the Seine.⁹ This was also in line with the original OVERLORD plan of seizing Breton ports. Though Patton reached Brest and L'Orient on 7 August 1944, Brest did not capitulate until 19 September and L'Orient held out until the end of the war.¹⁰ Fortunately for the Allies, their upcoming rapid advance eastward opened other ports for them, making the Breton ports superfluous (see map 3, p36).

While VIII Corps was sweeping west in Brittany, both Bradley and Patton were concerned about Patton's flank. Each stationed a division in Fougères to cover the Brittany action. When Patton learned of his abundance of forces, he gave those two divisions and one other to MG Haislip's newly formed XV Corps. With Bradley's approval on 3 August, these two infantry and one armored division moved east and southeast, spreading out like a fan and reaching the line of Mayenne-Laval-Château Gontier by 6 August. Simultaneously, another new corps, MG Walker's XX Corps received the mission to guard the right flank of operation OVERLORD (and 3rd US Army) by heading toward Nantes and Angers on the Loire River¹¹ (map 3, p36).

Not only were Bradley and Patton now thinking more offensively, but so was Montgomery. On 4 August, OVERLORD received its first major facelift (sketch 1, p41). Noting the crumbling German resistance in front of Patton's 3rd Army and to some extent Hodges' 1st Army, Montgomery developed a plan for enveloping German Army Group B under Kluge (see chart 3, p31). Crerar's 1st Canadian Army was to attack south toward Falaise not later than 8 August and then

swing east toward Rouen on the Seine. Dempsey's 2nd British Army was to attack southeast toward Argentan while Hodge's 1st US Army drove due east. With three armies pressing in on the 7th German Army and the Fifth Panzer Army of Army Group B, Patton's 3rd US Army would then strike southeast and east, outrunning the Germans to the Seine. The intent then was apparently for Patton to cut down the west side of the Seine towards the Channel. These maneuvers were intended to force Army Group B back against the lower Seine where Allied bombing had taken out many bridges and the width of the Seine prohibited others. The Paris-Orleans gap was to be blocked with airborne units¹². On 6 August Patton asked for permission to continue east with XV Corps toward 7th German Army headquarters in LeMans. Bradley approved, ostensibly because of disorganized German resistance.¹³

During late July and the first few days of August, Hitler decided to counterattack toward Avranches with the idea of reestablishing the Normandy defense and bottling the Allies back up in the Cotentin peninsula. It would have the added benefit of cutting off those American divisions which were already south of Avranches.¹⁴ This counterattack, codenamed LUTTICH, had been planned when the Germans were only 3 km from Avranches but was not launched until they were 33 km away and the Americans already streaming west into Brittany and southeast toward LeMans.¹⁵ Perhaps the Germans were already past their defensive culminating point.

Due to ULTRA intercepts, Eisenhower and Bradley were well aware of LUTTICH. Because of this and Eisenhower's assurances of 2000 tons of supply per day by airlift, Bradley allowed Patton to continue heading east, leaving minimal forces in the vicinity of Mortain, the proposed point of penetration for LUTTICH.¹⁶

At midnight on 6/7 August, the Germans launched their counterattack force, the XLVII Panzer Corps, towards Mortain. Commanded by von Funck, the XLVII Corps consisted of four panzer divisions (Pz Div) and the remnants of a Panzer Grenadier Division.¹⁷ Standing in their path was the 30th Infantry Division (ID) of Collins' VII Corps, 1st Army.¹⁸ Hitler had originally envisaged LUTTICH as a big offensive of several corps to reestablish

the defense, while his theater commander, von Kluge, saw it as a limited counterattack to restore a defensive line long enough to allow the Germans to withdraw back to the Seine.¹⁹ Rather than an operational offensive, it appeared to be a tactical counterattack with operational consequences.

The positions of the US and German corps and divisions at the time of the counterattack are shown on Map 4, p37. Though the counterattack achieved some rapid tactical success, it eventually failed because of the poor synchronization of German assets, the stubborn resistance of the 30 ID and the rapid shifting of units within and to VII Corps. At midnight, the 2nd SS Pz Div struck in the south on both sides of Mortain without an artillery prep, pushing the 30 ID back as they went. They failed, however, to seize Hill 317 just east of Mortain which remained the property of the 2-120 Inf Bn, 30 ID.²⁰

From that vantage point, artillery spotters called down deadly accurate fire on most German columns, forcing them to slow up and disperse. Though completely cut off from the 30 ID, the men of the 2-120 manned their positions from 7-12 August when they were relieved by the 35 ID. They had been a "thorn in the flesh" of the German counterattack;²¹ a linch pin which held, allowing Collins to fight the defensive battle for Mortain while Patton conducted operational maneuvers in the German rear. Hill 317 was decisive terrain.

The 2nd SS Pz Div reached almost to St.Hilaire by noon on 7 August, within 15 km of Avranches. North of Mortain, the 2nd Pz Div, the main effort of the counterattack, got started late in the morning. After obtaining initial surprise, the penetrations north of town were stopped by heavy artillery fire, the fortuitous appearance of 2nd Armored Division (-) (AD) on the way to the front of VII Corps, and the wise positioning of Combat Command B, (CCB) of 3 AD. The 116 Pz Div never attacked. The 1st SS Pz Div was the counterattack's reserve force, ready to exploit success. Unfortunately for the Germans, von Funck committed it behind the 2nd Pz Div north of Mortain, instead of reinforcing the success of the 2nd SS Pz Div near St.Hilaire.²² After helping 9 ID north of

Mortain, the 2 AD(-) swung south of Mortain to plug a gap in VII Corps' lines along with the 35 ID. The 2 AD(-) was chopped to VII Corps from XIX Corps, the 35 ID from 3rd Army.²³ Allied air, in the form of rocket firing British Typhoons and American Thunderbolts, had a field day in the destruction of German columns.²⁴

By noon on 7 August, the counterattack had apparently stalled. The Germans pulled their tanks off the roads, put up camouflage nets, defended their positions and waited for reinforcements.²⁵ Bradley spoke with Hodges on the morning of 8 August and found him holding his ground.²⁶ The attack had spent its momentum and apparently reached its offensive culminating point. For the next four days, Collins would fight a combination offense/defense in the vicinity of Mortain. While the 1 ID tried to maintain contact with XV Corps of Patton's Army, the 30 ID, 4 ID, and CCB, 3 AD defended near Mortain and the 9 ID, 35 ID, and 2 AD(-) attacked into the flanks of the penetration.²⁷ By 12 August Mortain was cleared and VII Corps began preparing to resume the offensive and assist in the Battle of the Argentan-Falaise Pocket.

In early August as Patton headed Haislip's XV Corps east toward Laval, Patton mentioned to him that he should not be surprised if he were suddenly turned north into the rear of the 7th German Army.²⁸

That turn occurred on 8 August. While waiting for LUTTICH to kick off, Bradley and Patton conferred, deciding to stop the 80 ID, 2nd French AD and 35 ID in the St.Hilaire vicinity, just in case. The rest of 3rd Army sped east. By 8 August, Patton's XV Corps was in LeMans while LUTTICH had apparently culminated. The 12 AG G-3 estimated that the four plus divisions in the German counterattack could muster only 250 tanks at most, a little more than the power of one panzer division. That information plus Bradley's belief that the Germans had moved their "center of gravity" too far west, led him to propose a shorter envelopment than Montgomery's trap against the Seine (sketch 2, p42). Bradley, with Eisenhower at his side, called Montgomery to discuss the new plan. Essentially, Bradley proposed turning XV Corps north at LeMans through Alencon, a vital German supply base and on to Argentan. Montgomery's operation TOTALIZE, with the Canadians attacking south toward Falaise on 8

August seemed to fit this plan, except that rather than turning east toward Rouen after reaching Falaise, they would continue south to close the gap at Argentan.²⁹ Montgomery agreed to adapt his plans to Bradley's and the Battle of the Argentan-Falaise pocket began to unfold while the Battle of Mortain was still raging.³⁰

The proposed link-up point of the two army groups (Bradley's 12 AG and Montgomery's 21 AG) was in Argentan, some few miles north of the AG boundary. Montgomery allowed that deviation because he felt Patton could get there in time to seize vital German escape routes.³¹ On 10 August Patton kicked off his maneuver into the German rear with XV Corps heading north from LeMans toward Alencon. At that point Patton realized the developing theater strategic objective: "The purpose of this operation is to surround and destroy the German Army west of the Seine".³² To the Germans, this posed a serious threat. To them, the combined maneuvers of Patton and the Canadian's TOTALIZE seemed coordinated. The loss of Alencon on 10 August increased their apprehension.³³

Hitler had been pressuring von Kluge to renew his counterattack at Mortain with Eberbach as a replacement for von Funck. But the combined effects of TOTALIZE, stiffening pressure at Mortain and Patton's cut north pre-empted a renewal. Instead of attacking west, pressure in the German rear caused them to try to counterattack southeast into XV Corps' flank.³⁴

Sometime between 10 August and XV Corp's arrival in the vicinity of Argentan on 12/13 August, this effort ceased to be an operational maneuver and became part of the Battle of Argentan-Falaise (see map S, p38). On 13 August, Haislip actually pushed past Argentan but Bradley quickly called him back for fear of running into the Canadians who were pushing down from the north.³⁵ Montgomery had previously passed Bradley the order not to allow any of XV Corps north of Argentan.³⁶ So while Patton sat at Argentan on 13 August the Canadians were still north of Falaise pushing south against stiff resistance.³⁷ The 2nd British Army continued to push southeast and 1st US Army pushed east at the nose of the penetration with V and XIX Corps. VII Corps cut northeast, closing a gap that had existed between 1st Army and 3rd Army's XV Corps.³⁸ The Allies

were attacking the Germans from three different directions, operating on exterior lines of operation in their concentric attack. Meanwhile, German elements were streaming east to escape the shrinking pocket.

As Patton stewed because his XV Corps had to hold the shoulder at Argentan, the Canadians continued to have difficulties closing the pocket. Montgomery inexplicably failed to strengthen the TOTALIZE operation but rather beefed up the 2nd British Army which had the effect of pushing Germans out of the pocket rather than closing it.³⁹ On 14 August, Bradley, feeling that most of the German Army had escaped the trap, allowed Patton to head east toward Dreux with two divisions and XV Corps headquarters. The three divisions remaining at Argentan became the elements of the new V Corps when that headquarters assumed control after being pinched out of line elsewhere.⁴⁰

On 16 August, while the Canadians struggled south of Falaise to close the pocket, a vicious German counterattack struck V Corps at Argentan. Bradley and Montgomery realized that significant numbers of Germans remained in the pocket and were trying to get out.⁴¹ Accordingly, Montgomery designated a new link-up at Chambois, allowing the Americans to move northeast. By 19 August, US units and Polish elements of 1st Canadian Army linked tenuously at Chambois. Between 20-21 August another German counterattack broke out some elements at Chambois before the pocket was finally closed for good on 21 August.⁴² While Patton was streaming east, 1st Army, 1st Canadian and 2nd British Armies were cleaning out the pocket.⁴³

On 11 August Montgomery told Bradley that if the Argentan-Falaise trap failed he was to continue again with the wider envelopment to the Seine.⁴⁴ Bradley was therefore following Montgomery's intent when he allowed Patton to send Haislip's XV Corps with the 5AD and 79ID east toward Dreux on 14 August. Patton moved his XX and XII Corps east at the same time.⁴⁵

This continuation of the pursuit was vintage Patton. His philosophy for a turning movement which met stiff opposition was to break off part of the force and send it further to the rear for a wider envelopment.⁴⁶ XV Corps' move to Dreux was exactly that.

Furthermore, XX and XII Corps' pursuit east over a broad front was in step with Patton's realization that "...mass was not the critical asset for success in pursuit; speed was".⁴⁷

While 2nd British, 1st Canadian, and 1st US Armies were closing and mopping up the Argentan-Falaise pocket, a second and wider envelopment in accordance with Montgomery's original scheme was occurring simultaneously as Patton raced toward the Seine. At this point a third, even larger envelopment had also just begun. On 15 August elements of LTG Patch's 7th US Army hit the beaches near Marseilles and Toulon in southern France as part of operation DRAGOON ⁴⁸(map 6, p39).

DRAGOON was developed as a complimentary attack to form part of a gigantic double envelopment with OVERLORD. Lack of landing craft forced its postponement. However, it was to serve other purposes too, such as getting more American divisions into the war sooner, linking up with the French Forces of the Interior, opening more badly needed ports such as Marseilles and finally, assisting in covering the southern flank of the Normandy operations.⁴⁹ The fall of Orleans to XII Corps on 16 August combined with the DRAGOON landings forced the German High Command to give up southwest France.⁵⁰ By the time 7th US Army linked with 3rd US Army in central France on 11 September, over half the German forces in south and southwest France had escaped.⁵¹ As with Argentan-Falaise, the gigantic OVERLORD-DRAGOON envelopment had trouble sealing the trap and destroying the enemy.

As DRAGOON pushed north, Patton wasted no time in pushing his troops eastward. XV Corps pulled out of Argentan on 15 August and took Dreux on 16 August, the same day that XII Corps under its new commander, MG Eddy, took Orleans. On 18 August, Walker's XX Corps took Chartres and the Paris-Orleans gap was closed.⁵² Also on 18 August, 1st Army's XIX Corps was pinched out of action near the nose of the Argentan-Falaise pocket and sent east to extend the front farther to the right. This filled the gap between V Corps closing the pocket and XV Corps heading toward the Seine.⁵³

After taking Dreux, XV Corps was again headed east by Bradley, reaching Mantes-Gassicourt on the Seine by 18 August. Intelligence

sources estimated that some 75000 troops and 250 German tanks were still west of the Seine. Bradley therefore proposed to Montgomery that they truck some British divisions around to Mantes-Gassicourt and let them attack north down the west side of the Seine, cutting behind the remnants of 7th German Army and 5th Panzer Army. Montgomery declined the offer but allowed as how Bradley should try the maneuver with a proposed link up at Elbeuf.⁵⁴ Meanwhile, on 19 August Eisenhower ordered exploitation beyond the Seine ⁵⁵(sketch 3, p43).

On the night of 19 August, 79 ID from XV Corps crossed the Seine at Mantes-Gassicourt and established a bridgehead. They also attacked elements of Army Group B's headquarters. The next day, 3 AD of XV Corps and recently arrived XIX Corps of 1st US Army attacked north toward Elbeuf with the mission of destroying German units still west of the Seine. Concurrently, the British and Canadians were swinging east and northeast toward the Seine. XIX Corps entered Elbeuf on 25 August and linked up with Canadian units there on 26 August, closing yet another pocket. Unfortunately, from Elbeuf to the Channel thousands of Germans again escaped in any improvised fashion they could ⁵⁶(map 7, p40).

Simultaneous with the Elbeuf operation, Patton's XX and XII Corps drove east in accordance with Eisenhower's 19 August directive to exploit beyond the Seine. (Fortunately, the Allies' abundance of forces and the disorganized state of German defenses would allow these divergent lines of operation). Moving as much as 110 km per day, MG Eddy's XII Corps reached Troyes on 25 August and established a bridgehead across the Seine. North of that Walker's XX Corps established three bridgeheads that same day ⁵⁷(map 7, p40). The entry of 2nd French AD into Paris on 25 August was almost anticlimactic for the Allies who continued their operations on the 26th with Patton heading toward the Meuse River.

IV Discussion of Operational Concepts and Terms

A. General (Theater Strategic Objectives, Sequenced Activities, Branches and Sequels)

August 1944 was one of the most startlingly successful months

in the annals of American military history. The Allies gained the initiative on 25 July with the breakout at St. Lo (COBRA) and never lost it. Hitler's counterattack at Mortain (LUTTICH) was a vain attempt to regain the initiative, but it failed because of the determination of the American soldiers at Mortain and the will of the generals who continued with the envelopment at that time.⁵⁸ Patton's cut north at LeMans with XV Corps, Montgomery's Canadian operation TOTALIZE, the DRAGOON landings, XIX and XV Corps' cut north toward Elbeuf, and finally Patton's crossing of the Seine and continuation to the Meuse kept the Germans off balance. They continually reeled under the successive blows struck by the Allies that seemed almost Providentially sequenced.

Was this then operational art at its finest? One must conclude that these major operations were successful even though tactical errors such as short bombings and the failure to move army group boundaries were frequently made. However, the Allies did have an overall campaign plan, such as it was, starting with the mission directive given to Eisenhower. That plan evolved over time and became more distinct in terms of commander's intent, with input from Bradley, Montgomery and Eisenhower. Montgomery's decision to envelop the Germans and pin them against the Seine and Eisenhower's directive to pursue beyond the Seine are indicative. Though perhaps not well thought out initially, (i.e., taking Brittany ports which became useless due to the rapid advance east), the campaign plan as it evolved provided a framework or outline for stringing together tactical successes (and failures) leading to the strategic objective of destroying Army Group B. The plan guided tactical actions (see chart 4-relationships of the operational art, p32).

According to FM 100-5, a good plan takes into consideration branches and sequels. Branches are "...options for changing dispositions, orientation, or direction of movement".⁵⁹ They are frequently expressed as contingency plans to a campaign plan, which help the commander anticipate enemy actions or responses and plan for them in advance.⁶⁰ Sequels are plans for future battles following a preceding battle or effort. Sequels anticipate and plan for future actions after success, defeat or stalemate.⁶¹ The Allies

demonstrated the use of branches and sequels to a limited degree during August. Bradley and Patton at least mentally formulated a branch when they held up a few divisions near St.Hilaire in case the expected German counterattack had unexpected success. Patton already had the genesis of a branch when he told MG Haislip in early August to be prepared to cut north into the flank and rear of the 7th German Army near Argentan. Both of these instances show that the Allies' anticipation of likely enemy actions which would effect their plans enabled them to react successfully. The Allies developed sequels too-plans for future operations. On 11 August, Montgomery told Bradley to continue with the larger envelopment to the Seine if the planned Argentan-Falaise trap failed. This was Montgomery's planned sequel for a failure or defeat. And, in fact, this sequel was implemented when Bradley had Patton break off most of XV Corps and head toward Dreux on 14/15 August. Eisenhower developed a sequel for success when he ordered exploitation beyond the Seine on 19 August. This led directly to Patton's rapid advance and seizure of the Seine bridges south of Paris and the subsequent continuous pursuit towards the Meuse River later in the month.

These examples of branches and sequels do not pretend to demonstrate fully developed contingency plans nor plans for future operations but rather illustrate the concept of branches and sequels with which successful operational commanders (artists) must deal.

FM 100-5 Operations describes operational art as "...the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization and conduct of campaigns and major operations".⁶² It consists of sequencing tactical events to lead to theater strategic objectives or intermediate objectives. Operational art is the link between strategic objectives and tactical events. Without some sort of logical sequence leading to a planned conclusion which attains one's goals, tactical events, even successes, may just be random events that do not produce the desired result.⁶³ Clausewitz saw this connection when he stated that, "Strategy (read operational art) is the use of engagements (tactical events) for the purpose of war (attaining strategic goals)."⁶⁴ The central questions of the

operational art are:⁶⁵

- 1) What military conditions must be produced to achieve the strategic goal (the ends)?
- 2) What sequence of events, if successfully arranged, will most likely result in the desired military condition (the ways)?
- 3) How should resources be applied to produce that sequence of events (the means)?

The ends mentioned above are the goals and objectives of a campaign or major operation, expressed in terms of military conditions. An example might be to have a corps in possession of a river system within 20 days, effectively cutting off supplies to an opposing army. The ways are the plans or campaign plan; the sequencing. The means are the resources and smaller sub-events used to prosecute the plan, such as divisions, corps or close-air support.

Given the definition of operational art and its central questions, were the Allied operations across France in August 1944 a good example? The answer must be yes. The mission directive given Eisenhower established the theater strategic objectives. The Allies followed the pre-ordained but evolving sequence of lodgment, build-up, breakout, pursuit into Brittany, DRAGOON, and attempted trap of German Army Group B against the Seine. They applied their resources in a manner prescribed by their plan. Yes, there were problems and the objectives were not clearly focused when they started, but eventually they settled on the goal of destroying Army Group B, and planned accordingly.

B. Center of Gravity (sketch 4, p44)

According to FM 100-5, the essence of operational art is the "...identification of the enemy's operational center of gravity and the concentration of superior combat power against that point to achieve decisive success."⁶⁶ This is in concert with Clausewitz's assertion that the first step in campaign planning is to determine the enemy's centers of gravity and trace them back to a single one if possible. The second step is to plan the concentration of your forces on that point.⁶⁷

According to Clausewitz, the center of gravity is the "...hub of all power and movement, on which everything depends" and is developed by the characteristics of your enemy.⁶⁸ The FM also recognizes this and refers to Clausewitz quite often. However, where the FM alludes to multiple centers of gravity in an opponent, such as critical fighting units and command and control facilities, Clausewitz felt that at a given level of war (tactical, operational or strategic), centers of gravity could be reduced to a single center of gravity. If two distinct centers of gravity are present at a given level, one might be facing more than one opponent; not an alliance, but two distinct opponents with their own agendas for fighting.⁶⁹ In that case, if one center of gravity is knocked out the other may continue without regard to that loss. In an alliance, the loss of one member can drastically change the resolution of the remaining members. Clausewitz understood that in an allied army, the alliance itself could very well be the center of gravity.⁷⁰ His assertion that it is the "hub" is really more applicable to the strategic realm. The center of gravity of Germany in WW II may have been Hitler. Frederick the Great's center of gravity was his army. The USSR's current center of gravity could be the Politburo, while NATO's center of gravity may be the alliance itself, or its most influential member, the US. Though this center of gravity may fall within the purview of the operational artist, and in fact drive his campaign plan to a strategic objective, within that campaign are major operations, each with their own center of gravity.

In essence, Clausewitz felt that in most cases, the opposing army's center of gravity was the bulk of his combat forces. Today, due to the increase in number, size and sophistication of weaponry, and the different methods of applying combat force, (e.g. airpower, naval gunfire, long-range artillery, armor, and improved command and control) this might be better referred to as the "bulk of his combat power". This combat power is comprised of leadership, maneuver, firepower, and protection.⁷¹ Clausewitz felt that a major battle was the collision between two centers of gravity, and that the more forces concentrated in one, the more effective it would be. To Clausewitz, "...battle was the true center of gravity of the war",

and "...destruction of the enemy forces the overriding principle of war".⁷²

Bradley understood this when on 8 August he realized that because of the LUTTICH counterattack the Germans had moved their "center of gravity" too far west, making them vulnerable. To whom or what was Bradley referring? He might have been referring to the bulk of the 7th German Army and elements of 5th Pz Army then well west of the Orne River. Perhaps he was referring to the counterattack force itself, the XLVII Panzer Corps with less than 250 tanks. Whichever, he was obviously referring to a large combat formation, one that he and Montgomery tried to destroy, first at Argentan-Falaise and then at Elbeuf. Bradley's (and Clausewitz's) concept of center of gravity had a slightly different slant to it than the one in FM 100-5. At the operational level, theirs usually dealt with the preponderance of the enemy's army or combat forces (combat power in today's terms).

The FM discusses many different things that may be considered a center of gravity, such as a large force, a boundary, a command and control center or a logistics facility.⁷³ Here, either the term "center of gravity" is incorrect (perhaps use "source of cohesion" or "glue") or some of the examples given are not really centers of gravity, but merely methods of attack or weaknesses leading to a center of gravity. Attacking down a boundary is not attacking a center of gravity. It may divide a center of gravity in two, making it easier to defeat, but it is not the center of gravity. Taking out a command and control facility is not necessarily destroying a center of gravity. It may leave the center of gravity blind and stumbling, making it easier to defeat, but it is not always a center of gravity or the bulk of combat power.

Combat power consists of leadership, maneuver, firepower, and protection. The destruction of a WW II German corps headquarters would probably not have destroyed that corps' center of gravity because of the decentralized leadership style and mission-order spirit fostered in the German Army. The subordinate divisions would have continued with their missions as they supposed their headquarters wanted. The center of gravity of a German army was down

in its combat forces. On the other hand, the destruction of a WW II Soviet corps or army headquarters could have had ruinous effects on an operation due to the Soviet style of centralized control. In that case, a command and control facility could have housed the bulk of the combat power and be considered a center of gravity.

Clausewitz never finished revising On War and made a point of the fact that his center of gravity was a fuzzy concept.⁷⁴ He used it both as "glue", when he called it the hub of all power, and as the bulk of the enemy's army when he used it in its clearest analogy. The concept is still fuzzy today because we mix center of gravity with methods of attack and "sources of cohesion" or "glue". In today's terms, perhaps one could consider the center of gravity as the bulk of an army's combat power, where combat power is made up of leadership, maneuver, firepower, and protection. One of these will be central or key; thus the prime source of combat power can normally be traced back to a single center of gravity, though there may be a myriad of ways to attack it.

C. Culminating Point (sketch 5, p45)

In early August, when Hitler decided to counterattack toward Avranches, the German Army had already been pushed passed its defensive culminating point. What does that mean? Surprisingly, FM 100-5 is silent on this point, but Clausewitz is not. He stated that the defensive point of culmination "...will necessarily be reached when the defender must make up his mind and act, when the advantages of waiting have been completely exhausted" and "...the effect of the general losses to which the defender has continually exposed himself are finally catching up with him".⁷⁵

When on the defense, time normally favors the defender as the attacker stretches his lines thin and partisan groups attack his lines of communication. However, in Normandy, time was running out for Germany. The eastern front tied down too many of its troops and the Allies were getting close to turning the corner into Brittany, thus breaking out of the Cotentin peninsula and into the rear of Army Group B. The time for LUTTICH was just prior to losing Avranches (or immediately after losing it) when the Germans were

still close enough possibly to succeed. Instead, they attacked at midnight on 6/7 August when they were too far away from Avranches and without enough force. In the words of an AMSP Seminar Leader, the defensive culminating point is "Old Milwaukee Time", i.e., "It just doesn't get any better than this".⁷⁶ As long as the Germans held the Allies in the Cotentin, they produced significant casualties while grudgingly giving ground. However, once the Allies got past Avranches in significant number and widened the gap between Avranches and the Germans, it was too late.

When LUTTICH finally was launched on 6/7 August with the objective of cutting off the twelve divisions that had passed through the gap and reestablishing a defensive line, it struck with less than five divisions in lieu of the planned two or three tank corps. It became a tactical counterattack with operational designs and consequences. As a result, LUTTICH reached its offensive culminating point in less than a day.

What is an offensive culminating point; how does one see it coming and why is it so important? FM 100-5 describes it as, "a point where the strength of the attacker no longer significantly exceeds that of the defender and beyond which continued operations risk overextension, counterattack and defeat". The FM continues, "...at that point, the attacker either halts or goes on, risking becoming weaker than the defender".⁷⁷ These definitions are derived from Clausewitz, but he went on to say more simply, it is the "...point where remaining strength is just enough to maintain a defense".⁷⁸

Why is this concept important? Because the goal of attack is to reach one's objective prior to one's culminating point while the goal of the defense is to bring on the enemy's culmination as early as possible, recognize it as such and counterattack.⁷⁹ Reaching one's objective before culminating implies that one should be able to determine a culminating point in advance. If so, there must be several indicators of an impending culminating point. Both Clausewitz and the FM agree that there are. The key may be recognition of the contributors to the culmination.

Perhaps the biggest contributor to culminating is what the

opposing force does. Whereas a virtually unopposed attack into a distant country might eventually culminate due to overextended supply lines and partisan activity, the action of the opposing army can certainly hasten culmination. Weather and terrain can certainly contribute, such as the advent of winter snow and ice or the change from rolling steppes to urban sprawl. Subjective factors such as troop morale may also contribute.

Contributors must be kept in mind when planning an attack or a defense. During actual operations, one should keep eyes open for factors that indicate approaching culmination. This is important to the attacker to insure he does not go past his culminating point without either stopping or slowing for a build-up, or without realizing the risks he takes in proceeding. Sometimes it may be worth the risk to leap past one's culminating point to pursue a routed enemy, if that pursuit logically leads to a theater strategic or intermediate objective. It is important to the defender to realize when his opponent is approaching his culminating point in order to prepare his counterattack, unsheathing his "flashing sword of vengeance".⁸⁰ Indicators of an impending culminating point might be increased battle losses, more POW's, less ground lost/day, maintenance problems, increased desertions, shortages in fuel, etc.

When planning an offensive, especially at the operational level, it is important to estimate where the offensive culminating point may be. If it is beyond the objective, well and good, but if it is short of it, then one must plan for an operational pause or halt short of or at the culminating point (permitting the maintenance of a successful defense) while strength is rebuilt. This then requires phasing of operations. The Allies had planned an operational pause at the Seine, but due to their overwhelming superiority and key operational maneuver, they were able to accept the risk, seizing bridgeheads on the Seine and continuing the pursuit without a pause. It is difficult in advance to pin down a culminating point on a map and say that the Army or Army Group will culminate there, thus requiring a pause. However, the commander must be able to at least estimate when and where he will culminate and plan accordingly. This might be expressed as, "We will plan a

two day pause 10-14 days after D-Day, in the vicinity of 100-120 km north of the Doe River". In other words, the culminating point might be expressed in terms of ranges.

A tactical offensive culminating point is very often quickly reached because of the speed at which things occur at the tactical level and the relatively small distances covered. However, the concept is still useful. In planning a tactical offense, relative combat power, terrain and weather become key factors contributing to a culminating point, whereas overextended LOC's might be less important. Indicators of a tactical culminating point for the attacker or defender might be slackening fire, decreased vehicular traffic, and relaxed pressure on the front lines.

The Allies recognized the advent of LUTTICH's culmination on 7 August when they saw Panzer units pulling off the roads, installing camouflage nets and digging in. Tactically, the Germans were probably just at their culminating point, for they held their ground against the forces of VII Corps for two or three days. Operationally, when VII Corps was strengthened by the attachments of 35 ID and 2 AD(-), XLVII Panzer Corps could not hold its ground and ultimately had to yield.

D. Decisive Terrain (sketch 6, p46)

FM 100-5 defines key terrain as a feature, locality or area which gives a distinct advantage to the side that controls it. Decisive terrain is described as terrain which must be seized or held to accomplish the mission. Furthermore, the commander should designate decisive terrain as such prior to the conduct of the mission, if at all possible.⁸¹ Basically, if one can lose the terrain and still accomplish the mission, it is not decisive terrain.

Shortly after 1 ID from VII Corps moved into Mortain on 3 August, MG Collins told MG Huebner, Commander of 1 ID, to insure he took Hill 317; it appeared to dominate the entire area. Huebner replied that he had already taken it.⁸² In essence, Collins pointed out decisive terrain to his subordinate prior to the LUTTICH counterattack. (Although Collins was not privy to ULTRA intercepts

and information about LUTTICH, he could see the conditions were ripe for a German counterattack.) Hill 317 and its occupants played a major and decisive role in stopping LUTTICH. Although other factors certainly contributed to slowing the counterattack, the dominant position afforded by Hill 317 allowed the artillery forward observers of the 2-120 to see the entire counterattack area, 25 km east to Domfront and 32 km west to Avranches. They could see all columns of the 2nd SS Pz Div in the vicinity of Mortain, which was LUTTICH's only bit of success.⁴³ The artillery fire called down from Hill 317 was so devastating that the Germans themselves described the hill as a "thorn in the flesh".

So Hill 317 was tactically decisive terrain. Without it 30 ID could not have held close to Mortain and VII Corps would have had to take actions other than it did. But was it operationally decisive? Operationally key terrain is normally thought of features like road or rail nets, mountain ranges or river systems. Operationally decisive terrain might be a rail net running laterally behind friendly lines allowing rapid shifting of forces to counterattack or reinforce success. If an operation depends on the terrain for success and will fail without it, then it is decisive. In the case of Hill 317, a strong argument can be made that it was operationally as well as tactically decisive. Had Hill 317 not held, not only would VII Corps have been put in an untenable position but so would have Patton's 3rd Army, at least in Bradley's mind. Bradley allowed Patton to proceed because he knew that Collins had positioned his 4 ID and CCB, 3 AD in good locations to blunt a counterattack and that 2 AD(-) was uncommitted and headed in Collins' direction.⁴⁴ Additionally, Bradley had the foresight to meet with Patton to stop the 35 ID near St. Hilaire just in case. Had Hill 317 fallen, St. Hilaire might have fallen prior to the 35 ID's arrival and Bradley might have stopped Patton altogether. Operationally decisive terrain is then that terrain which must be seized or retained if proposed operational maneuvers are to be conducted.

E. Lines of Operation (sketch 7, p47)

FM 100-5 defines lines of operation as "...directional

orientation of a force in relation to the enemy". These lines connect the base or bases of operation with the objective. Normally a campaign or major operation will have a single line of operation, though multiple lines are not uncommon. A single line of operation is easier to coordinate and best used when resources are short. Multiple lines are best used from a position of strength, forcing the enemy to disperse and making him even weaker. Multiple lines are more difficult to coordinate.⁴⁵ When the Allies landed at Normandy they were operating on a single line of operation; straight ahead to establish a beachhead, although there were certainly multiple routes within that line leading from the base of operation in southern England to Omaha, Utah, Gold, Sword and Juno beaches. By mid-August, they were operating on multiple lines, with Montgomery's 21 AG driving south towards Falaise and Bradley's 12 AG driving east, northeast and north with 1st Army and XV Corps, and further east with the rest of 3rd Army. The Allies had the attendant problems of synchronization.

A related historical concept is that of interior and exterior lines. Interior lines diverge from a central point and are usually used by the weaker force to shift forces laterally between separate parts of the enemy. When on interior lines, one's force is usually closer to a part of the enemy than the latter is to its other parts.⁴⁶ Baron de Jomini, a contemporary of Clausewitz, first promoted the idea of operating on interior lines and the inherent advantage of central position.⁴⁷ Jackson operated on interior lines during his Shenandoah campaign. The Germans operated on interior lines during August as the Allies enveloped and trapped them. Operating on interior lines often means shifting a single concentrated force from one location to another, using a single line of operation. On a larger scale, although Germany had interior position in WW II, it fought on multiple lines of operation against the Russians in the east and the Allies in the west.

Exterior lines converge on the enemy from more than one direction. This usually requires a stronger force and offers the opportunity to encircle and destroy an opposing force.⁴⁸ The Allies were operating on exterior lines during the Battle of the

Argentan-Falaise pocket and again during the Elbeuf operation. On a larger scale, they were operating on exterior lines when the DRAGOON forces attacked north from Marseilles, while the OVERLORD forces were attacking east toward the Seine. By their very nature, exterior lines imply multiple lines of operation, yielding the concomitant difficulties of coordination.

Clausewitz saw this relationship between single and multiple lines of operation and interior and exterior lines of operation. He expressed it as two pairs of opposites. The first pair was: outflanking the enemy (exterior lines) or operating on interior lines. The second pair was then either: concentrating forces (single line of operation; forces are often concentrated on interior lines) or extending them over numerous posts (multiple lines of operation; forces on exterior lines always use this in some fashion).⁴⁹ In other words, interior lines may yield single or multiple lines of operation but the chances of outflanking an enemy are nil. Exterior lines always yield multiple lines of operation and potential synchronization problems, but they also offer the opportunity to outflank the enemy.

When planning a campaign or major operation one must take into consideration probable lines of operation and relative strengths. A plan requiring a significantly inferior force to divide itself and attempt to attack the enemy from two directions (exterior and multiple lines) should be suspect. However, lines of operation must not be overemphasized. Jackson and Lee divided their forces in the face of Hooker's overwhelming numerical superiority at Chancellorsville, falling on the Union flank to cause grievous damage. On the other hand, during the Battle of the Argentan-Falaise pocket, the Allies, on exterior lines from a position of strength, reaped only a partial victory (thousands of Germans escaped the pocket) due to lack of coordination and fierce German breakout measures. Lines of operation are a way of describing one's position and orientation in relation to the enemy, inherent in which are certain advantages and disadvantages.

F. Operational Maneuver (sketch 8, p48)

Closely related to lines of operation is the concept of maneuver. This is the actual movement of forces over those lines of operation. Clausewitz defined maneuver as "...a play of balanced forces whose aim is to bring about favorable conditions for success and then to use them to gain an advantage over the enemy."¹⁰ The FM is very close to Clausewitz when it calls maneuver the "...movement of forces in relation to the enemy to secure or retain positional advantage."¹¹

According to the FM, operational maneuver "...seeks a decisive impact on the conduct of a campaign (or major operation). It attempts to gain advantage of position before battle and to exploit tactical successes to achieve operational results."¹² The distinction between maneuver and operational maneuver is not totally clear.

The Allied operations of late July and August 1944 give several examples of operational maneuver. COBRA, launched on 25 July, was initially tactical in nature as the Allies sought limited objectives in attempting to penetrate the German defensive lines. But the effects of the Allied carpet bombing so disrupted and disorganized the front line German units and command and control that MG Collins was able to expand the effort into an operational maneuver. In this case, firepower permitted the maneuver. By inserting his armored formations into the gap created by the bombing and his first echelon infantry divisions, Collins was able to get deep behind German lines, making positions on their left flank untenable. Collins' maneuver set up the next planned tactical events, the taking of the Brittany ports. It also set up much more. It allowed Patton's 3rd Army to escape the Cotentin Peninsula, into the soft rear of 7th German Army, disrupting command and control and logistics facilities as they went. In some respects, 3rd Army resembled an Operational Maneuver Group of the modern Soviet Army.

When the Germans counterattacked at midnight 6/7 August, Haislip's XV Corps did not stop to help in the Battle of Mortain. Instead Bradley and Patton took advantage of the situation presented and turned Haislip north into the flank and rear of the 7th German Army. XV Corps' maneuver transcended the current battle at Mortain,

and instead set up the conditions for the next battle, that of the Argentan-Falaise pocket. It was the link between Mortain and Argentan-Falaise. One of the evolving theater strategic intermediate objectives at that time was the destruction of the 7th Army. XV Corp's move north set up the conditions that would have permitted firepower to exploit the maneuver to do just that, had it been properly coordinated.

When the DRAGOON landings occurred on 15 August they were the beginnings of a large scale operational maneuver in conjunction with the continuing eastward thrust of the OVERLORD forces. The threatened envelopment of 1st and 19th German Armies in south and southwest France by the giant double pincer caused their evacuation. This maneuver was not in itself concerned with the actions at Falaise or Argentan but looked beyond that battle to the entrapment and destruction of two German armies. Unfortunately, although it caused the German's withdrawal, a large portion of those armies escaped. One must be careful here. Clausewitz disdained the use of maneuver for maneuver's sake. He felt that eventually one must close with and destroy the opposing army. Even though the DRAGOON landings put much of the 1st and 19th German Armies in unsound positions and they withdrew toward the Seine without a fight, the Allies still had to be prepared to close with and engage the enemy. Part of 19th Army held the way open while much of the rest of it and the 1st Army escaped in August and early September.²²

On 14 August, Bradley gave Patton permission to break off part of XV Corps from the engagement at Argentan and send it towards Dreux. This was the beginning of another operational maneuver as Haislip's XV Corps began setting the stage for the next battle at Elbeuf while the Battle of Argentan-Falaise still raged. This maneuver resulted in the combination of XIX and XV Corps cutting north behind the escaping Germans near the Seine while the British and Canadians pressed in on them from the west.

Even while the action was developing near Elbeuf, another operational maneuver occurred as Patton sent XX and XII Corps streaming east, seizing four bridgeheads on the Seine south of Paris on 25 August. This maneuver looked well beyond the unfolded and

unfolding battles of Mortain, Argentan-Falaise and Elbeuf and sought to allow the continued pursuit across the Seine. It set up further pursuit.

A quick glance at what some call operational maneuver would lead one to believe that its essence lies in attacking an opponent's flank or rear. Not so! Had Collins merely rolled up the flank of the XLVII Panzer Corps during the LUTTICH counterattack, that would have been merely a tactical maneuver for it considered only the immediate engagement. Haislip's flanking movement and cut north to Argentan looked beyond the Battle of Mortain and set the stage for the next battle, that of Argentan-Falaise. It was the direct link between the two. "Streaming deep" with no purpose is not operational maneuver either. A raid deep in enemy territory, even if conducted by large forces, avails nothing if it does not lead to the next battle or event in the sequence of events that leads to the strategic objective.

What then is operational maneuver? Where operational art is the link between tactics and strategy, operational maneuver is the vehicle which the operational artist rides from tactical events to strategic objectives. Operational maneuvers transcend current battles, looking beyond them to the next sequenced activity. Operational maneuver links tactical events and sets them up in the sequence that leads to the theater strategic objective or intermediate objective.

V Conclusions

As mentioned earlier, the Allied operations in France during 1-26 August 1944 provide a good contextual example of the operational art. In a paper of this length it would be impossible adequately to note and discuss all the concepts and terms relevant to the operational art as outlined in FM 100-5. Nevertheless, the Allied operations provide good examples of several key concepts and terms integral to the operational art to include: theater strategic objectives, sequenced activities, branches and sequels, center of gravity, culminating point, decisive terrain, lines of operation and operational maneuver.

Two notes of caution: first, during the operations of August 1944, the Allies had virtual air supremacy. Much of what they were able to accomplish was greatly assisted by this fact. Second, the organization of the US armies, corps, divisions, regiments and armored combat commands was such that they were inherently flexible. The corps had virtually no logistical responsibilities, whereas the armies pushed supplies forward through the divisions to the regiments and combat commands who in turn were responsible for final delivery. This allowed rapid shifting of units between headquarters and rapid shifts in missions and directions. Neither of these two conditions are likely to exist if war were to break out in Europe anytime soon. August 1944 operations are used to demonstrate and clarify operational concepts and terms, not to illustrate "how to do it next time". However, there are some obvious lessons.

The discussion of these concepts indicates that perhaps definitions as used in FM 100-5, Operations are not always complete. Both Clausewitz and the FM are a little fuzzy on the concept of center of gravity. Clausewitz used it to mean either the "glue", cohesion or "hub" (source of all power) in one sense, but then also used it to mean the bulk of the enemy's forces in another. The FM generally supports Clausewitz's concept of the "hub", i.e. the cohesion or "glue" around which everything revolves, but unfortunately then mixes methods of attack into the concept (i.e. boundaries, command and control facilities, etc.). This concept needs refinement. A center of gravity is the point at which the bulk of combat power is most concentrated. There is usually one center of gravity though there may be several ways to affect it.

The Allied operations in August 1944 demonstrated both the concept of defensive point of culmination and the culminating point of an attack. Clausewitz discussed both of these concepts in On War, yet the FM is silent on the matter of defensive culminating points. This key concept deserves inclusion.

As the FM states concerning decisive terrain, often a battle or major operation will have none. At the tactical level, Hill 317 was a good example of decisive terrain. It is conceivable that it was operationally decisive also. However, when one thinks of operational

✓ terrain, one normally thinks of large features such as mountain ranges, river systems or vast rail networks.

The Allied operations provide excellent examples of lines of operations, both the current concept of single and multiple lines and the historical concept of interior and exterior lines. Surprisingly, the FM does not discuss the interrelationship of the current and historical concepts of lines of operation. Though related, the concepts are different, a fact Clausewitz apparently understood. The FM is quick to point out that the importance of lines of operation should not be overstressed.

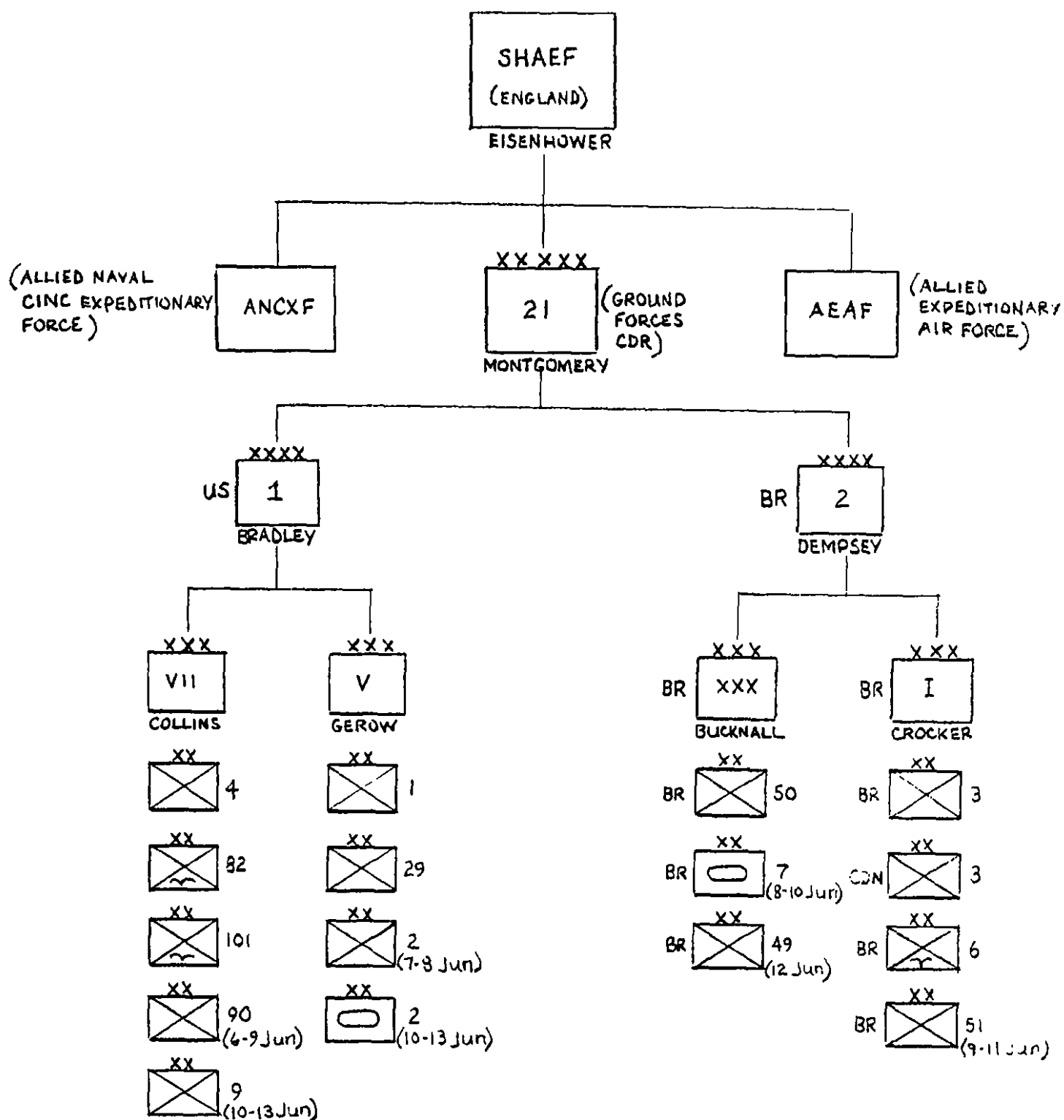
The FM provides a fair definition of operational maneuver, but until one sees it on the ground (or in this case reads about it with maps and sketches) one might not have the complete picture. The Allied operations from 25 July to 26 August provide five examples of operational maneuver, demonstrating how it appears and what purpose it serves.

What then is the operational art? The FM gives some very good definitions, already stated. Realizing that both the Allies and the Germans practiced operational art during August 1944 to varying degrees, a look at just those operations in isolation might create the following definition:

The planning for and execution of the movement of large armed forces to and between tactical events and the sequencing of those events to lead logically to a theater strategic or intermediate strategic objective.

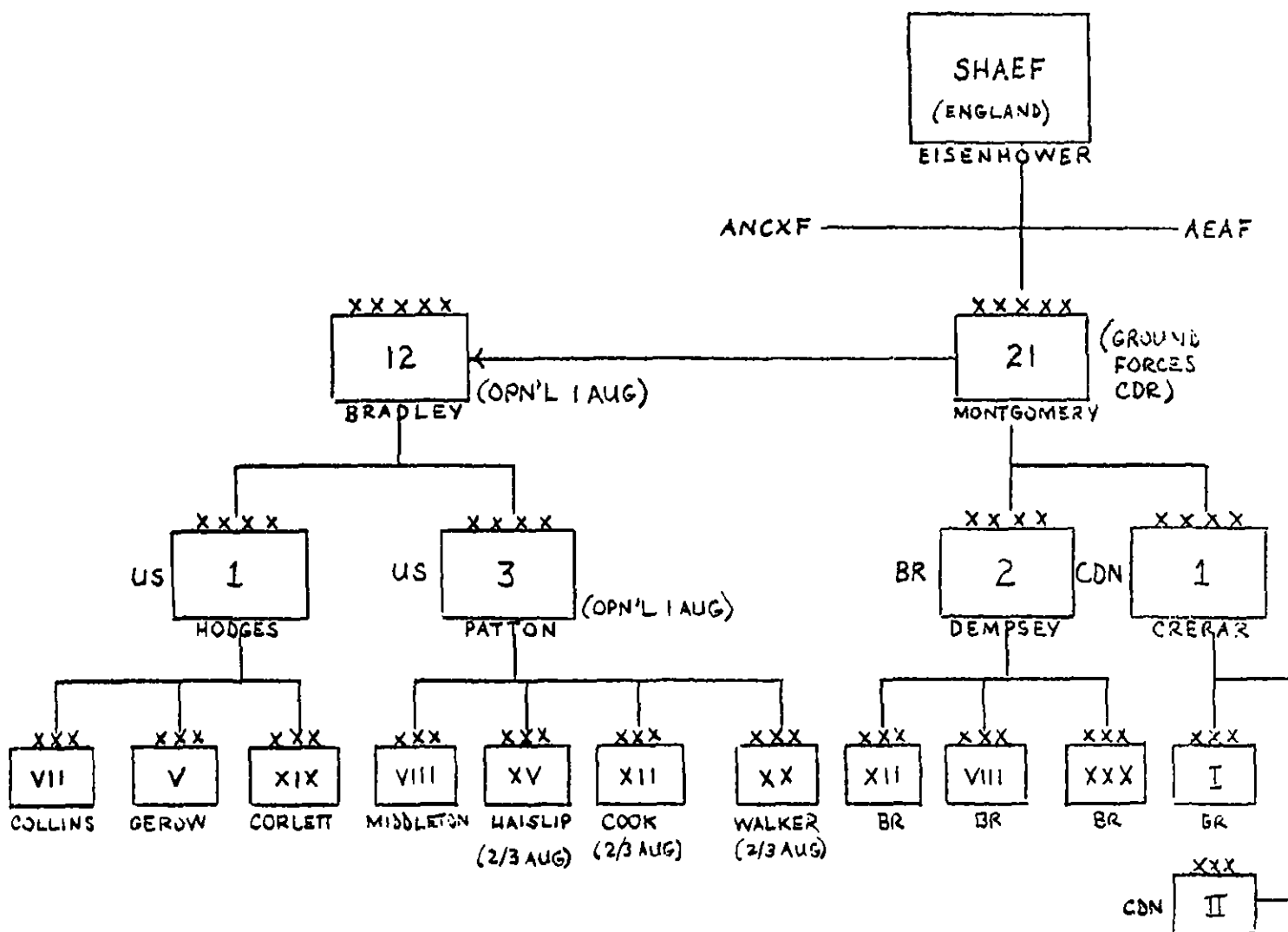
As with all definitions, this one lacks perfection. The best definition will always reside with the understanding of the concepts involved through diligent historical study, one which is very difficult to put into words. Just as a construction superintendent sequences the activities of various subcontractors when building a large edifice, while fighting off the effects of union strikes and weather, so does the operational artist superintend his campaign or major operation.²² If this paper helps the American Army officer understand the nature and components of this task, it has fully served its purpose.

CHART 1: ALLIED ORGANIZATION D-DAY, 6 JUNE 1944 96



(Dates in parentheses show when that unit came ashore if not 6 Jun)

CHART 2: ALLIED ORGANIZATION 1 AUGUST 1944⁹⁷



(Divisions, especially in American corps, were cut back and forth between corps with impunity. For example, on 1 Aug, VII consisted of 1 ID, 4 ID, 9 ID, 2 ADG and 3 AD. Between 7-12 Aug it consisted of those 5 divisions plus the 30 ID and 35 ID. On 1 Aug, V Corps comprised 2 ID, 5 ID and 35 ID but by 17 Aug comprised 90 ID, 80 ID and 2 Fr. AD at Argentan. Similarly, XV Corps went from 79 ID, 90 ID, 2 Fr. AD and 5 AD on 8 Aug to 79 ID and 5 AD on 15 Aug.)

CHART 3: GERMAN ORDER OF BATTLE, 6 AUGUST 1944⁹⁸

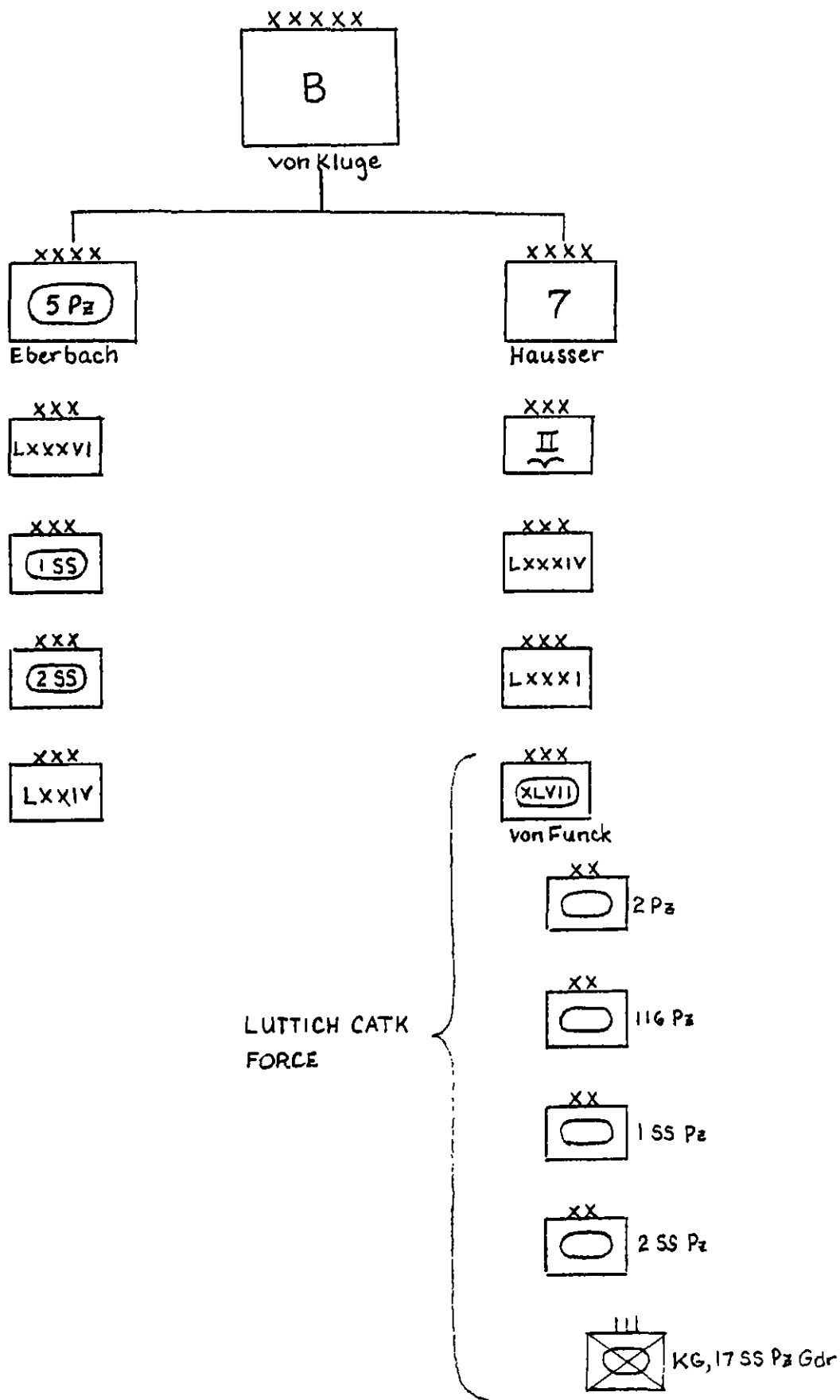
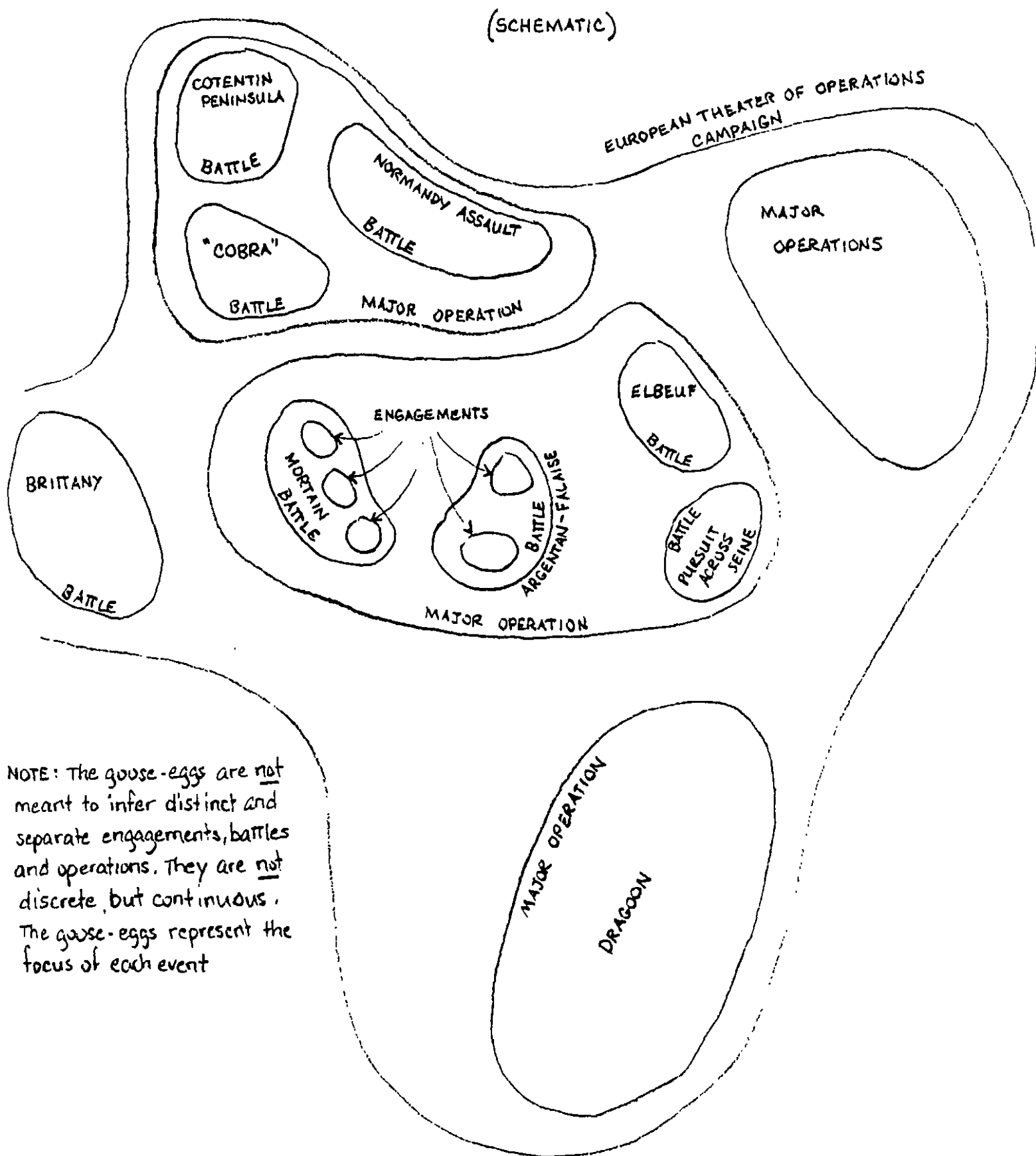
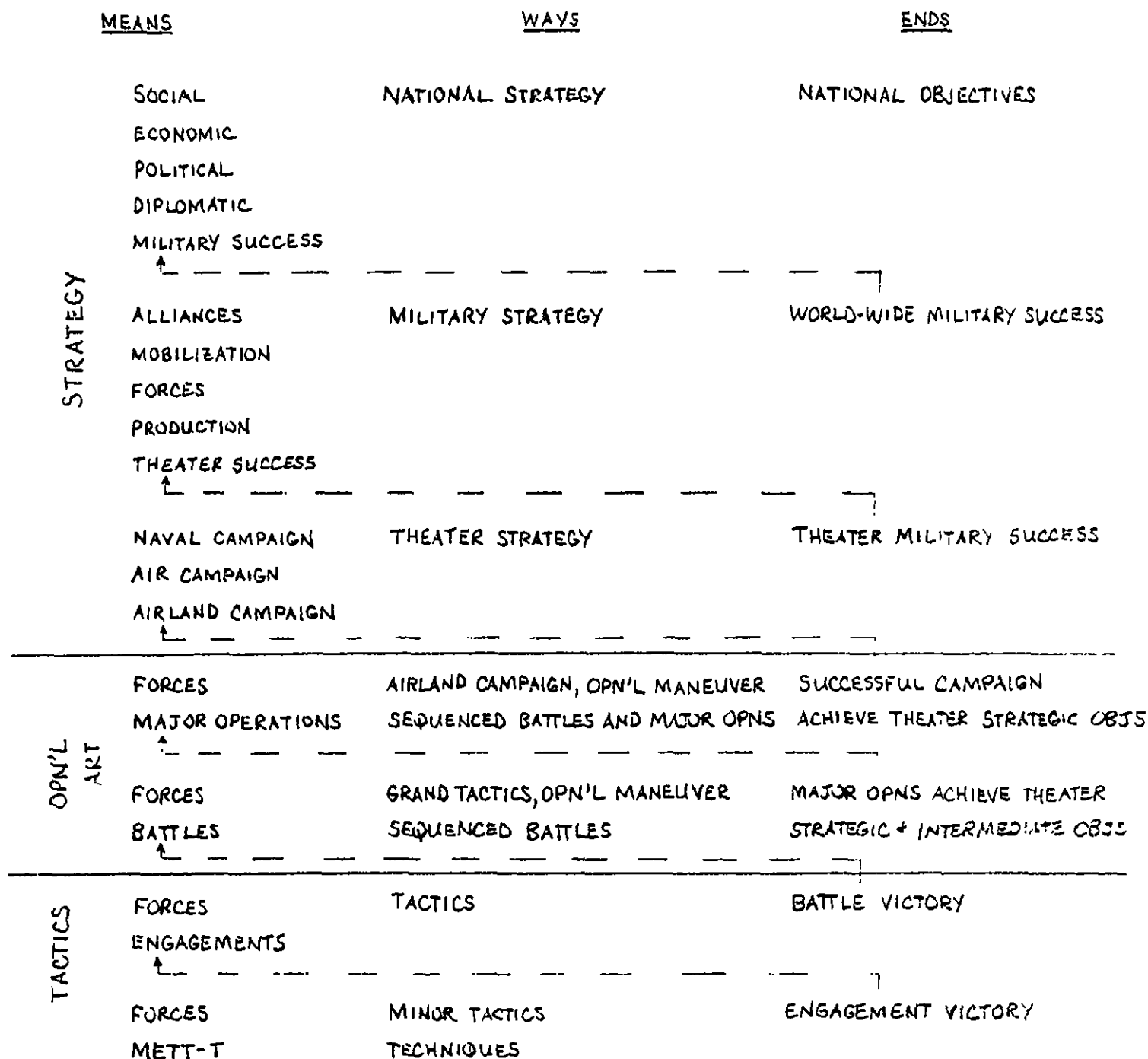


CHART 4: RELATIONSHIP OF ENGAGEMENTS, BATTLES, MAJOR OPERATIONS AND CAMPAIGNS TO TACTICS, OPERATIONAL ART AND STRATEGY ⁹⁹

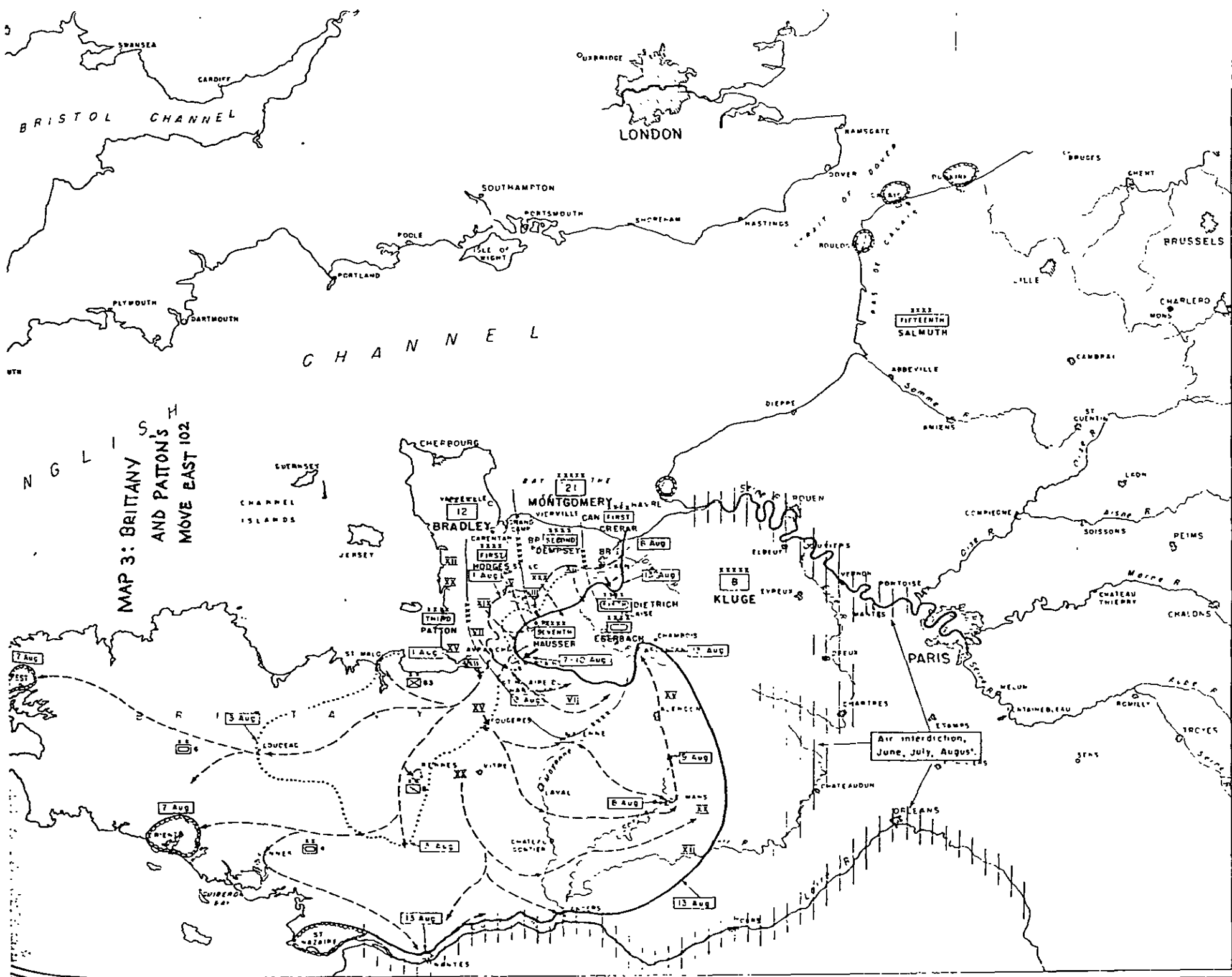


NOTE: The gouse-eggs are not meant to infer distinct and separate engagements, battles and operations. They are not discrete, but continuous. The gouse-eggs represent the focus of each event

CHART 4: CONTINUED



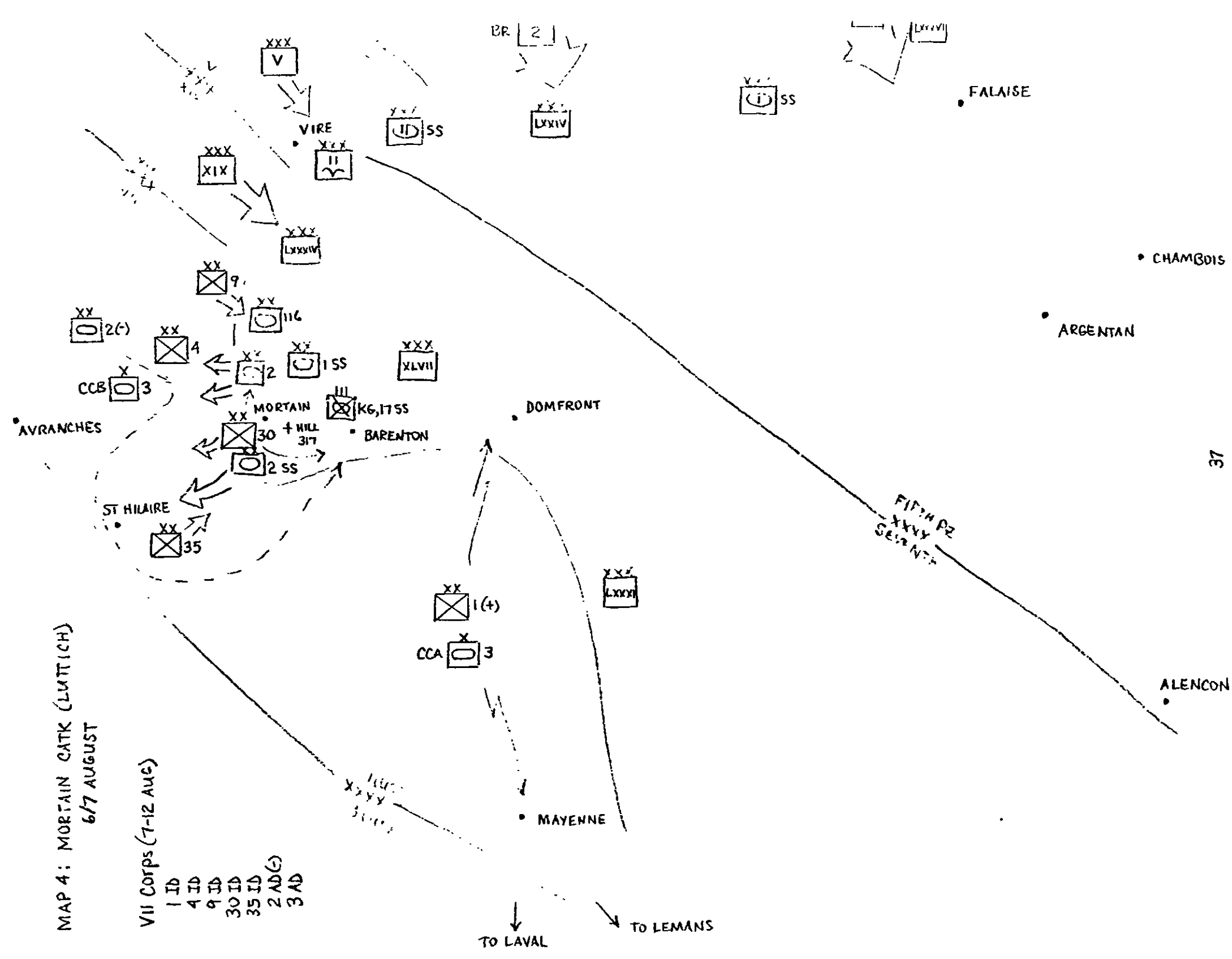




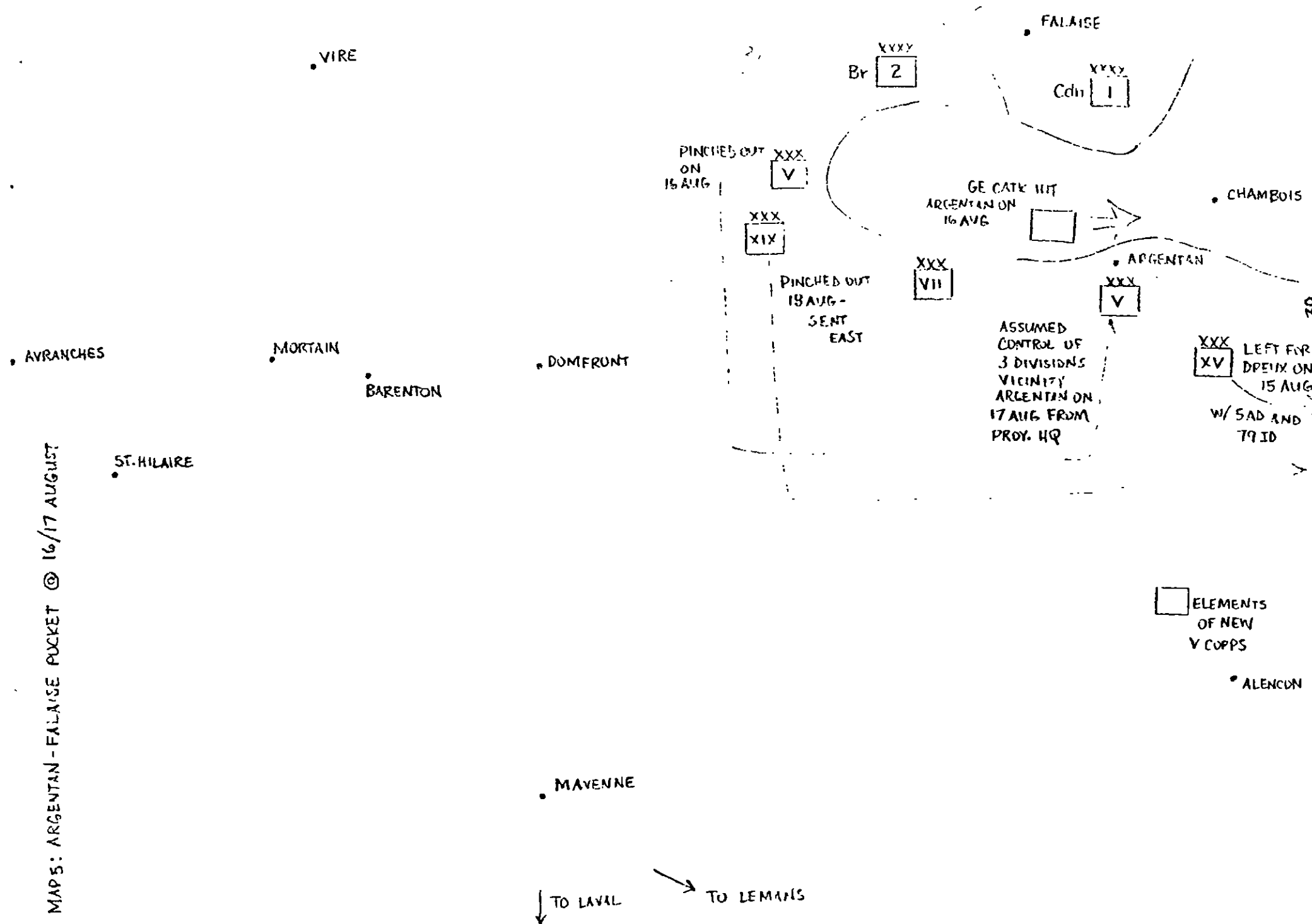
MAP 4: MORTAIN CATK (LUTTICH)
6/7 AUGUST

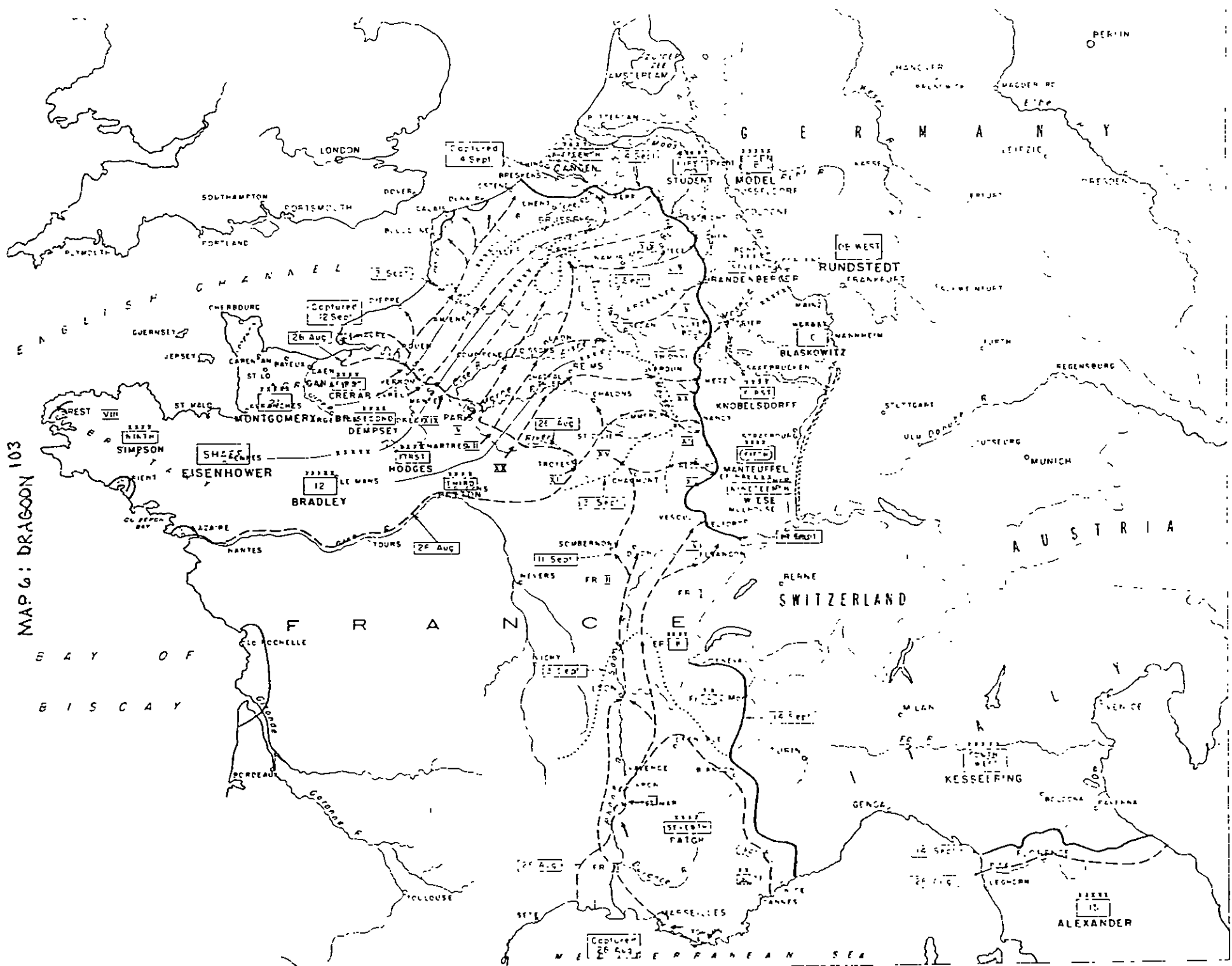
VII Corps (7-12 Aug)

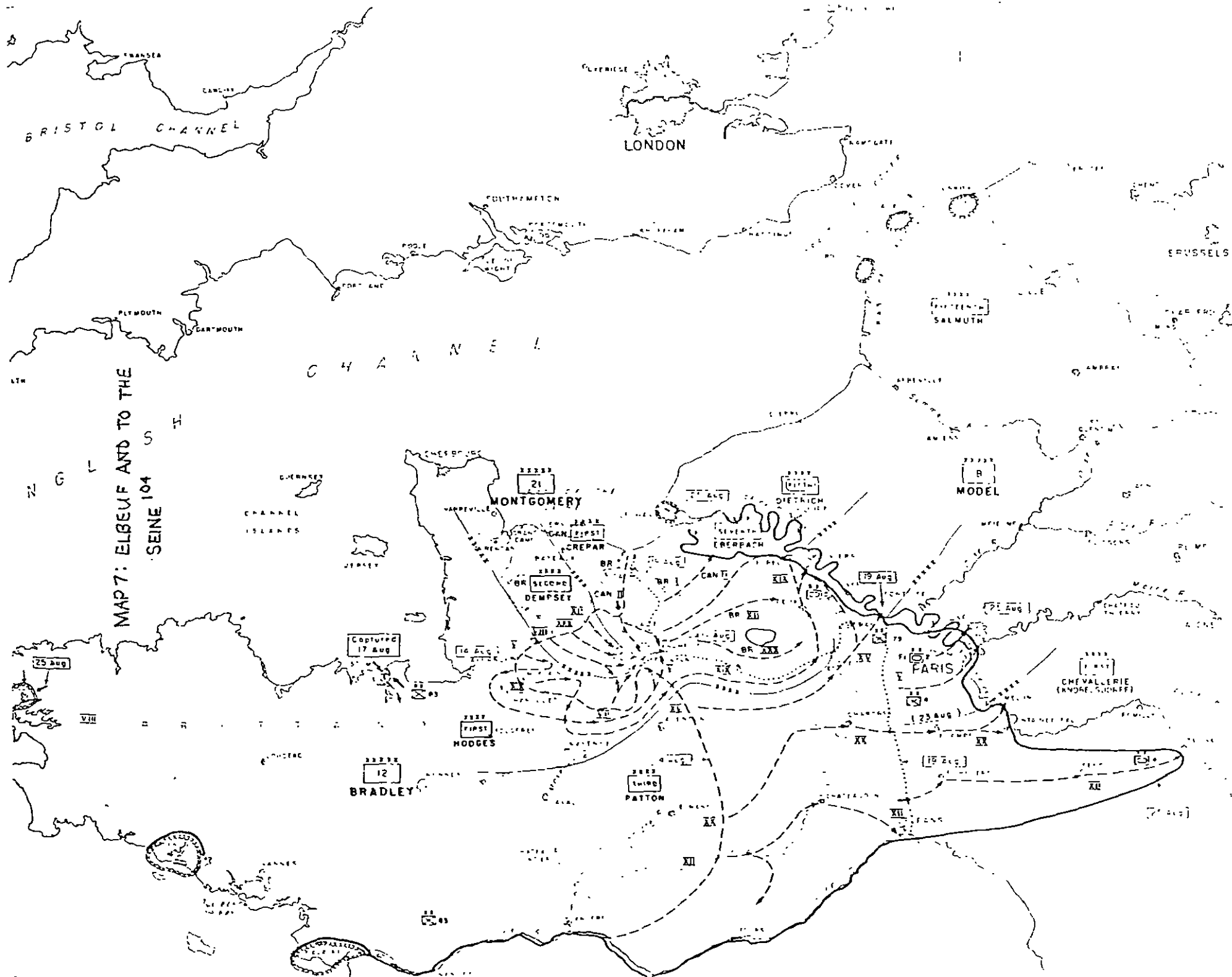
- 1 ID
- 4 ID
- 9 ID
- 30 ID
- 35 ID
- 2 ADG
- 3 AD



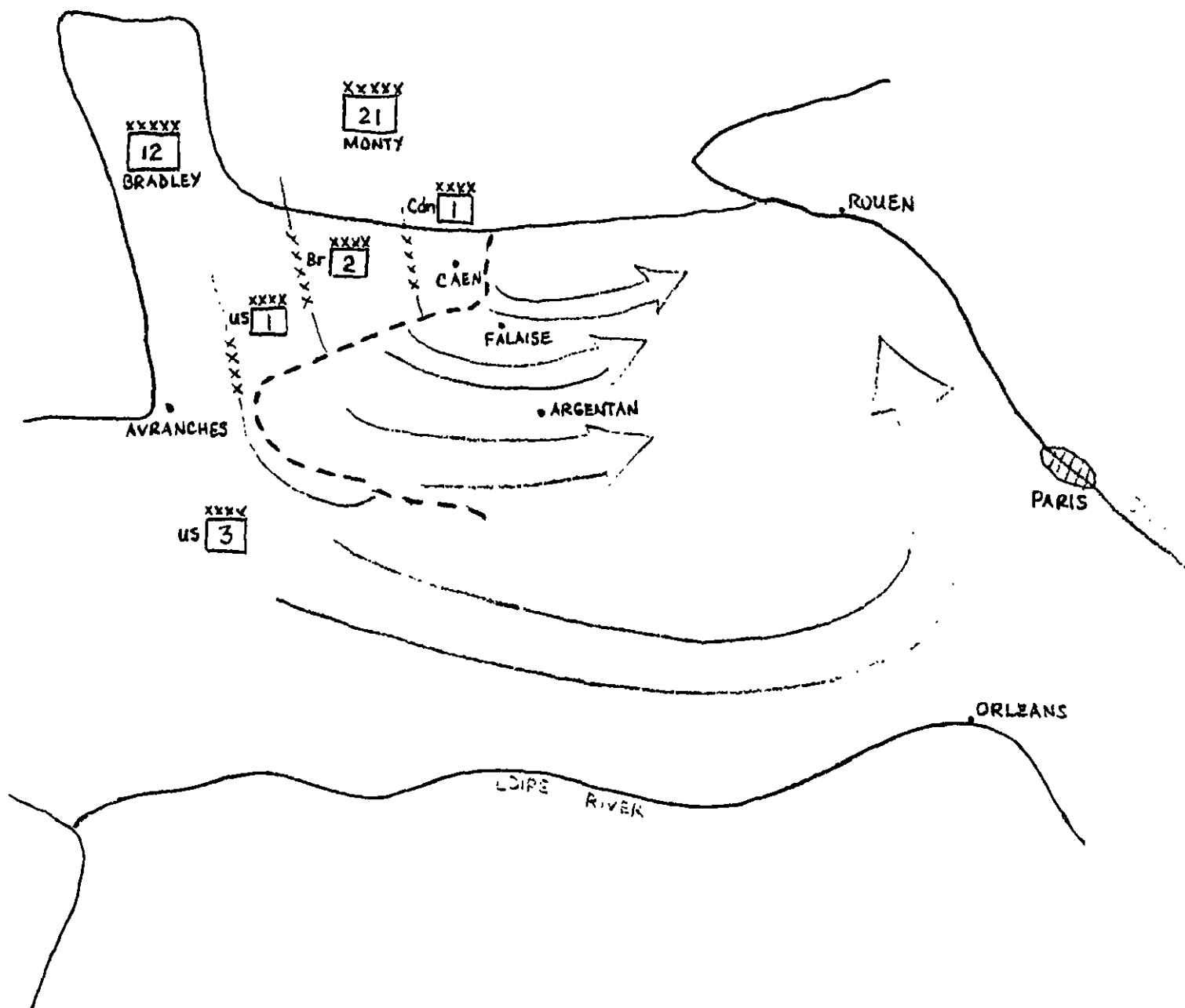
MAP 5: ARGENTAN - FALAISE POKET @ 16/17 AUGUST



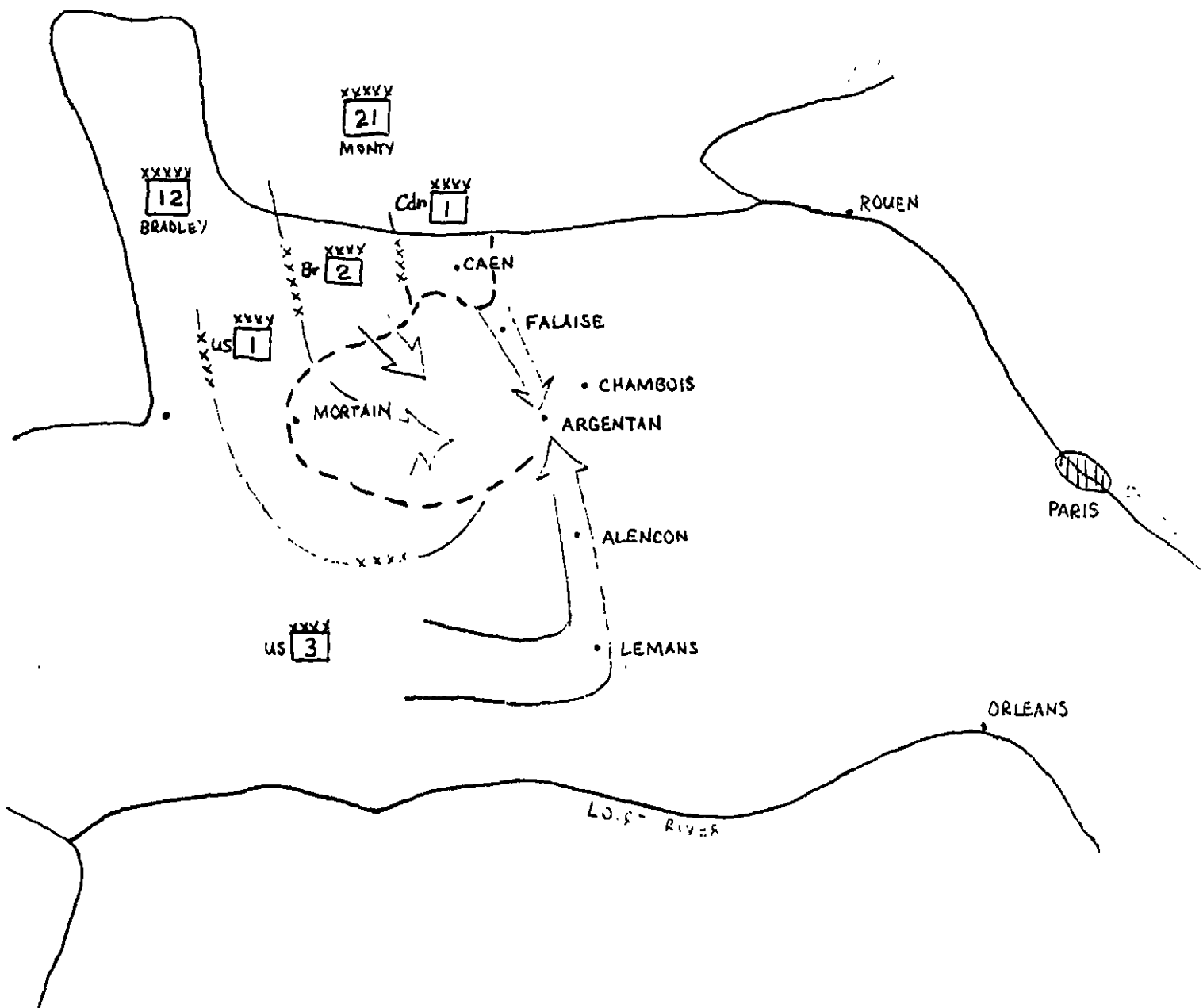




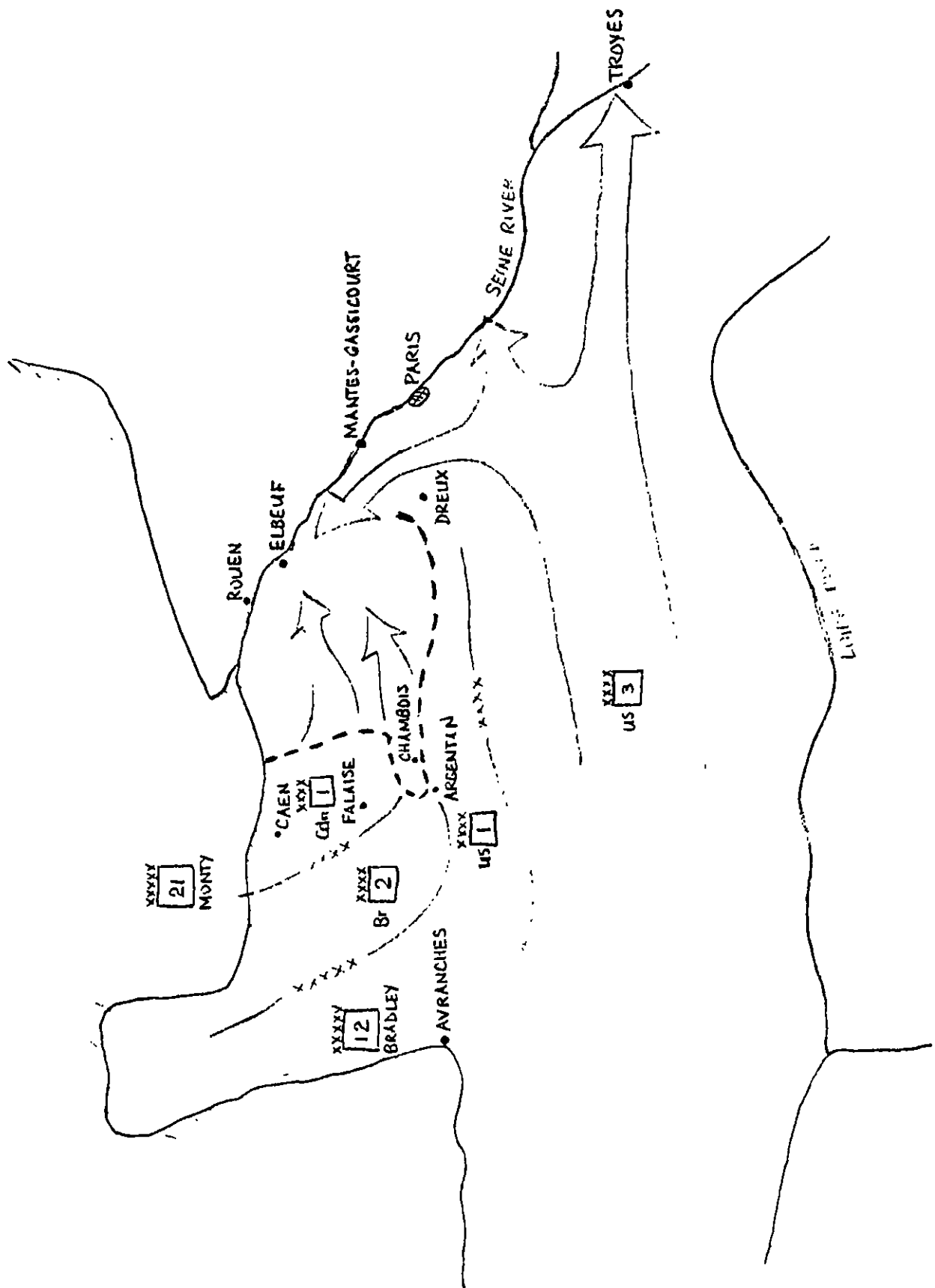
SKETCH 1: FIRST FACELIFT FOR OVERLORD - PROPOSED DEEP ENVELOPMENT (@ 4 AUGUST)



SKETCH 2: PROPOSED SHORT ENVELOPMENT (8 AUGUST 1944)

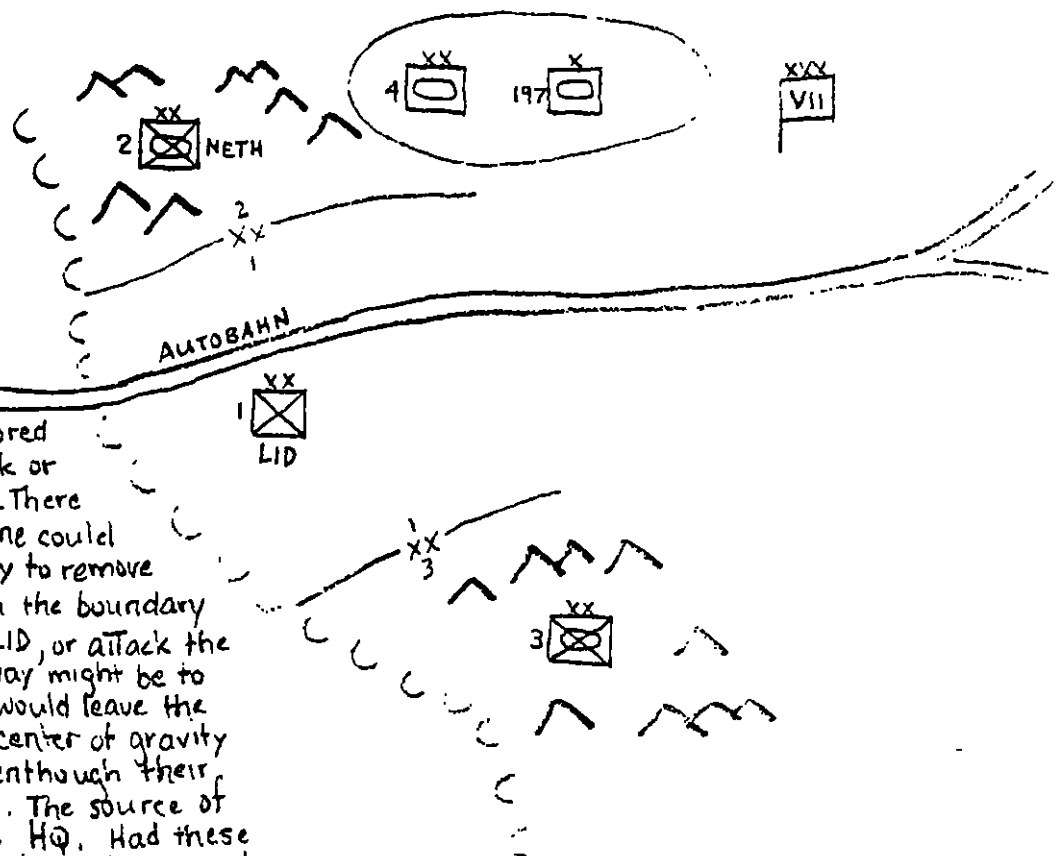
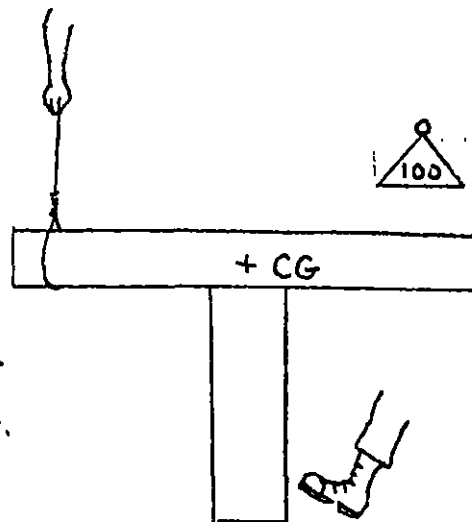


SKETCH 3: PROPOSED ELBEUF OPERATION AND EXPLOITATION OVER THE SEINE



SKETCH 4: CENTER OF GRAVITY

The center of gravity of the horizontal bar is marked with a (+). There are several ways to affect it: pull up on the left end with the rope; drop a weight on the right end; or kick the support out from underneath it. However, there is still only one center of gravity.

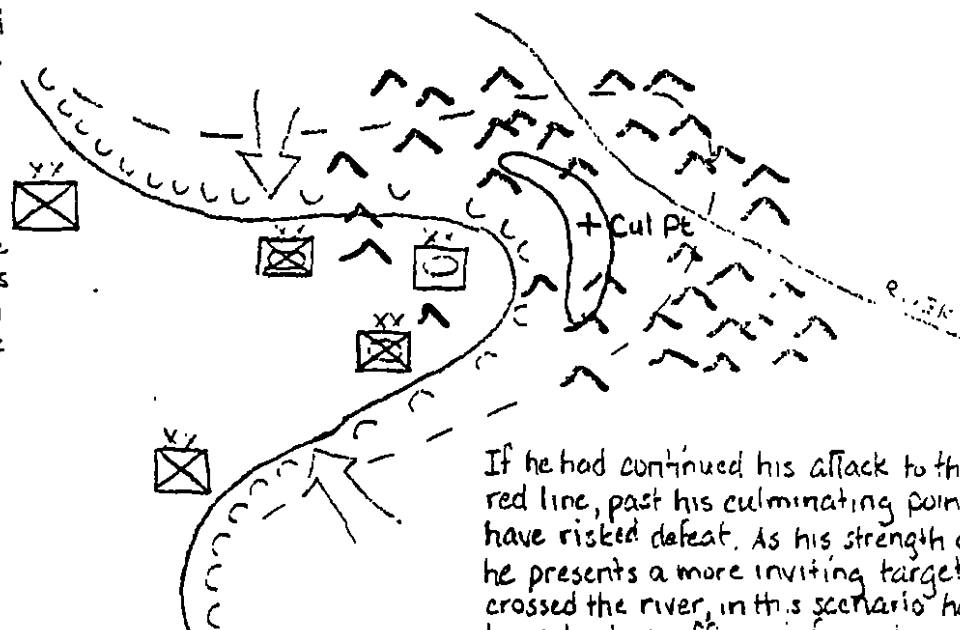


The center of gravity in this sketch is probably the armored forces in the assembly area (bulk or concentration of combat power). There are several ways to get at it. One could attack through the Dutch and try to remove them from the alliance, or down the boundary between the 2 NETH div and 1 LID, or attack the malpositioned 1 LID. A better way might be to attack the VII Corps HQ which would leave the forces headless. However, the center of gravity is still the armored forces, even though their effectiveness may be degraded. The source of cohesion is probably the Corps HQ. Had these been Soviet units, perhaps the HQ would indeed have been the center of gravity because the leadership portion of Soviet combat power is very centralized.

SKETCH 5: CULMINATING POINTS

OFFENSIVE

In this case, the attack stopped short of the culminating point. The combined effects of flank attacks, lengthening LOC's and mountainous terrain caused this. However, the attacking CDR had enough strength to stop and go over to the defense without having to retire. Thus he could wait for the follow-on forces or the next phase of the operation.

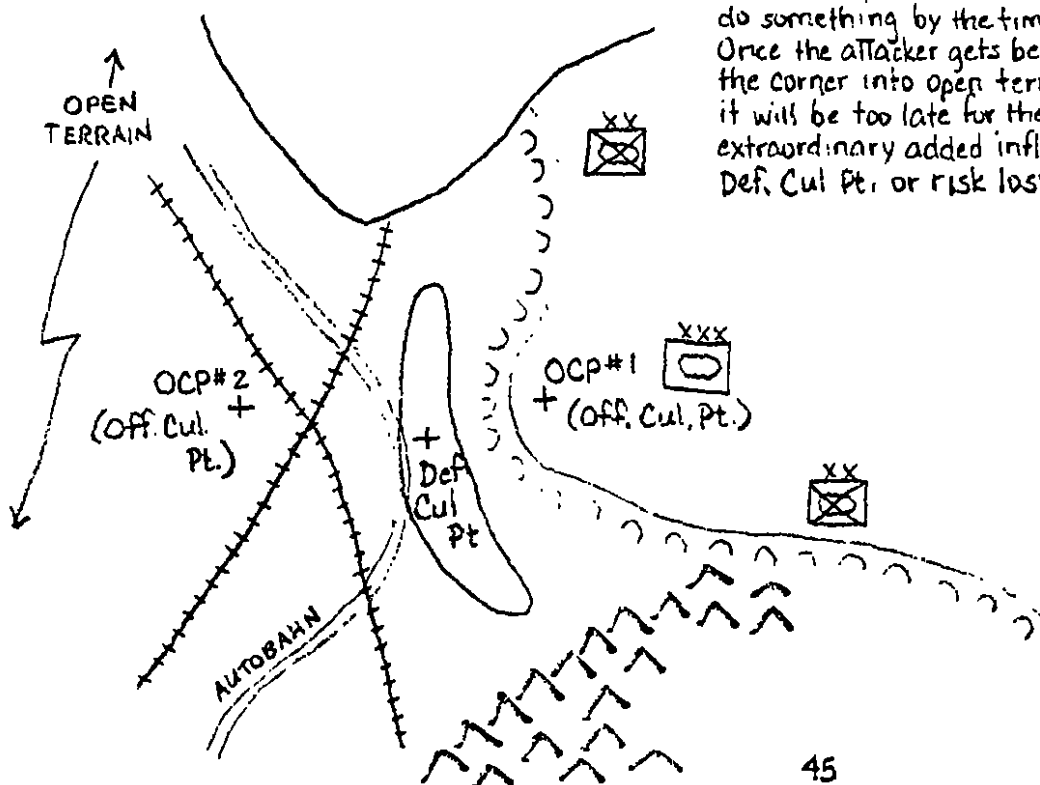


If he had continued his attack to the dashed red line, past his culminating point, he would have risked defeat. As his strength dwindles, he presents a more inviting target. Had he crossed the river, in this scenario he would have had insufficient force to conduct the river crossing plus defend the beachhead.

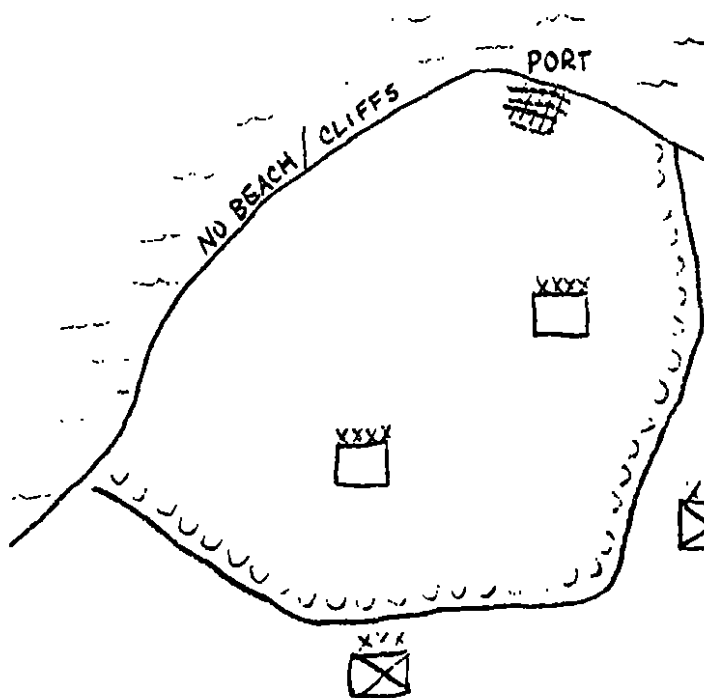
DEFENSIVE

In this case if the attacker's Cul.Pt. is OCP #1, then the defender can still maintain his defense and time still favors him. In fact, he may be strong enough to attack, especially if the attacker has gone past his CP.

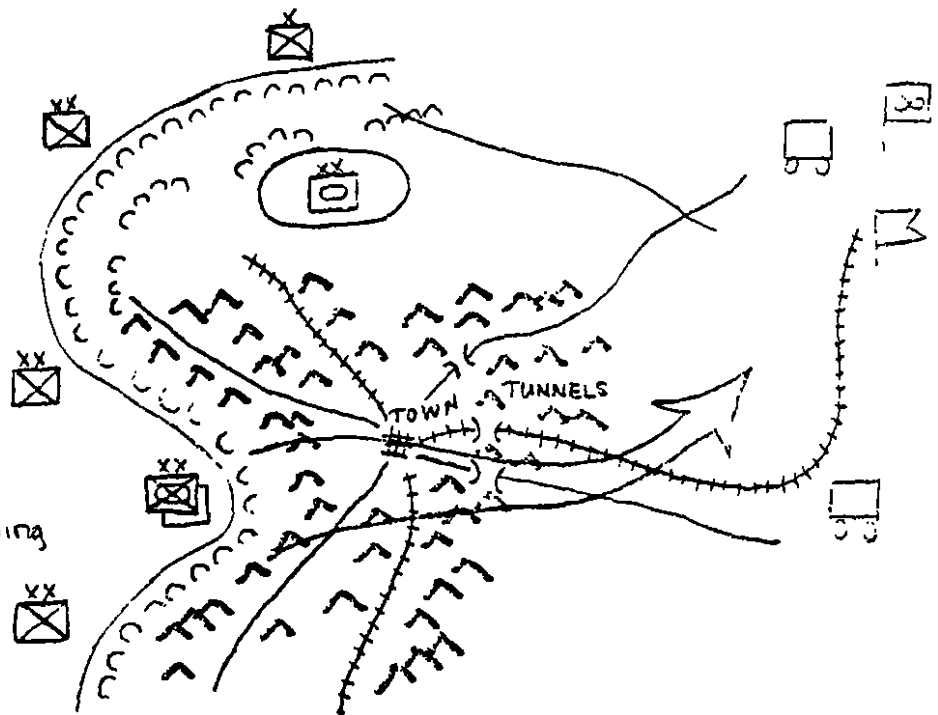
If the attacker's Cul.Pt. is OCP #2 - then the defender must do something by the time he is pushed back as far as his DCP. Once the attacker gets beyond the DCP, and in this case turns the corner into open terrain and gains transportation nets, it will be too late for the defender to recover, without some extraordinary added influence. He must act prior to his Def. Cul Pt. or risk losing all.



SKETCH 6: OPERATIONALLY DECISIVE TERRAIN

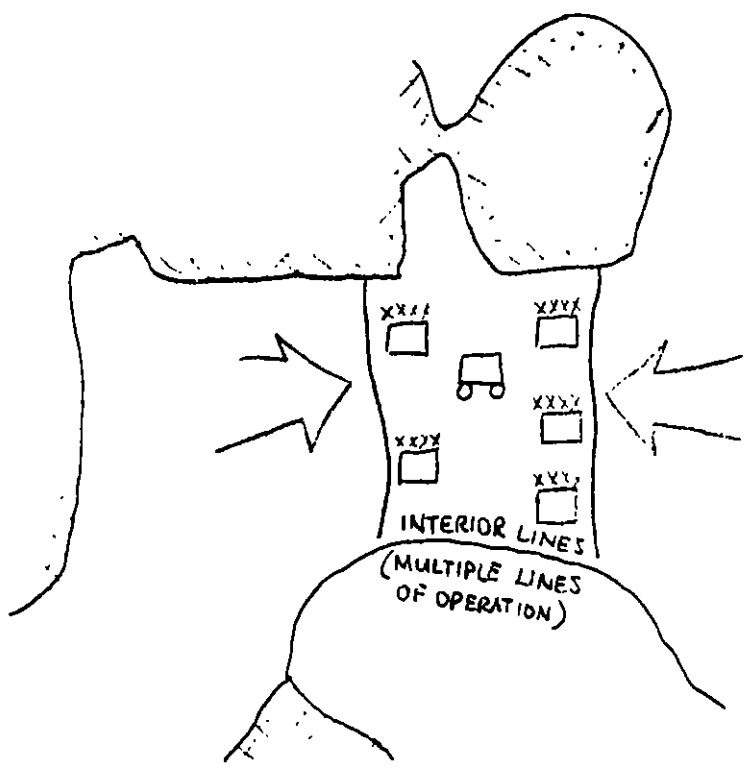
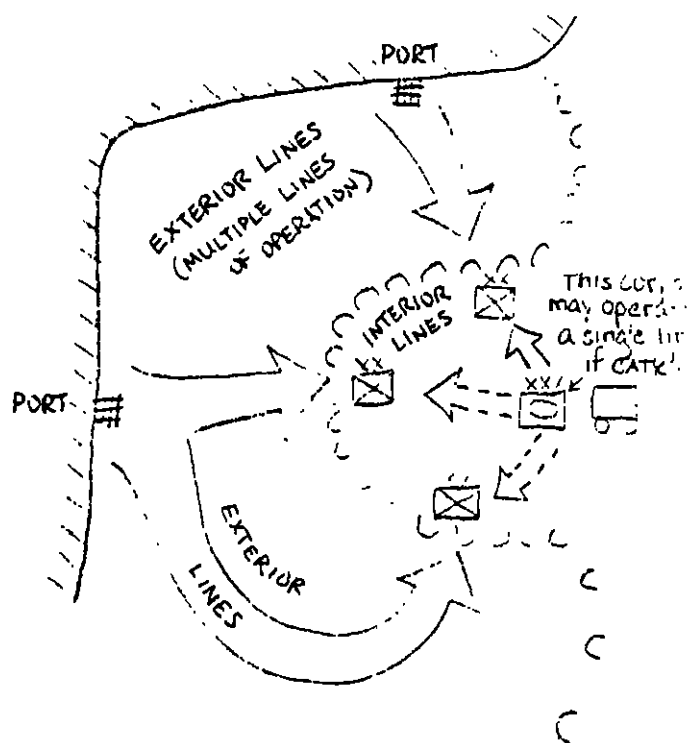
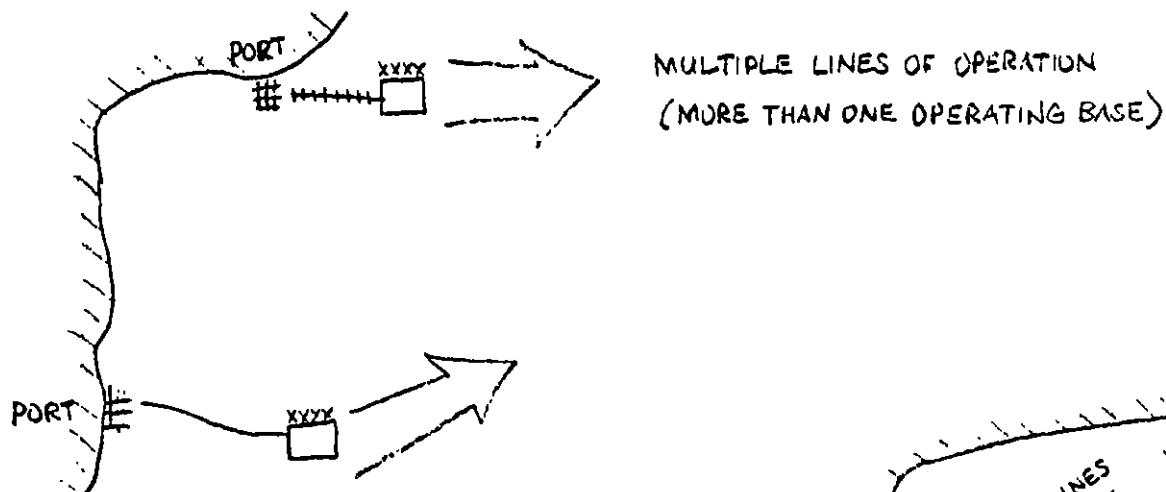
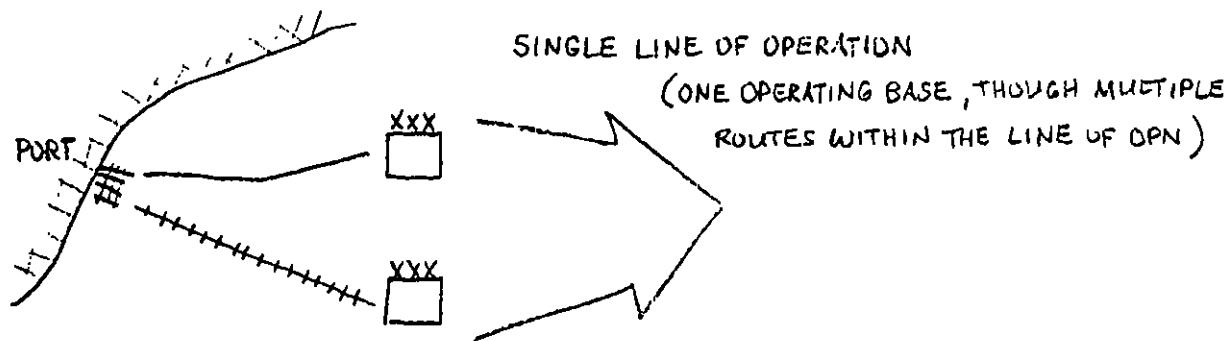


In this case, the port is probably operationally decisive. Its loss would not render the forward armies tactically incapable, but over a period of time would render them operationally incapable. Airlift might allow a lodgement to hang on, but without an operating base operational maneuver consuming great quantities of supply and POL would be virtually impossible.



In this case the town may be operationally decisive because it affords lateral movement and resupply for the defender, and is the only way through the mountains for the attacker to conduct his operational maneuver, i.e., transcending the battle north of town, setting up the next battle which will be for HQ and LOG facilities.

SKETCH 7: LINES OF OPERATION



(SEQUENTIAL AND SIMULTANEOUS ACTIVITIES)



LEGEND:

- ① — VII Corps attacks; breaks out at St. Lo and exploits (operational) (25-31 July)
Other units continue tactical attacks (25-31 July)
- ② — VII Corps conducts defense at Mortain (tactical) (7-12 August)
VIII Corps clears Brittany (useless) (1-25 August)
XV Corps cuts north toward Argentan (operational) (8-13 August)
1 Cdn Army attacks south; operation TOTALIZE (tactical) (8-16 August)
- ③ — XV Corps breaks off at Argentan and heads toward Dreux (operational) (15-16 August)
XX and XII Corps continue pursuit east toward Chartres and Orleans (14-18 August)
7th US Army lands at Marseilles (operational) (15 August)
- ④ — V Corps Hq assumes control of divisions on shoulder at Argentan, links with Canadians at Chambois (tactical) (17-21 August)
1 Cdn Army attacks southeast and links with Americans at Chambois (tactical) (17-21 Aug)
XIX Corps pinched out east of Mortain, moves to fill gap between V Corps and
XV Corps (admin/tactical) (18, 19 Aug)
XV Corps takes bridgehead at Mortes-Gassicourt (tactical/operational) (17-19 Aug)
- ⑤ — XV and XIX Corps cut north behind escaping German units (operational) (20-26 Aug)
1 Cdn and 2 Br Armies push east against German units, linking with XIX Corps
at Elbeuf on 26 August. (tactical) (21-26 August)
XX and XII Corps seize 4 bridgeheads across the Seine and continue pursuit
(operational) (20-25 August)

ENDNOTES

- 1 Forrest C. Pogue, The Supreme Command (Washington, D.C.:Office of the Chief of Military History, 1954), p.53.
- 2 Vincent J. Esposito, The West Point Atlas of American Wars, Vol.II: 1900-1953 (New York:Praeger Publishers, 1972),map 50.
- 3 Ibid., maps 50,51.
- 4 Ibid., map 52.
- 5 Ibid., map 53.
- 6 Omar N. Bradley, A Soldier's Story (New York: Henry Holt and Company, 1951), p. 365.
- 7 Ibid., p. 352.
- 8 Ibid., pp. 362-365.
- 9 Martin Blumenson, Breakout and Pursuit (Washington, D.C.: Office of the Chief of Military History, 1961), p.454.
- 10 Bradley, p. 366.
- 11 Russell F. Weigley, Eisenhower's Lieutenants (Bloomington, Ind.: Indiana University Press, 1981), pp. 189,190.
- 12 Esposito, map 54.
- 13 Weigley, p. 190.
- 14 Bradley, pp. 369,370.
- 15 Staff Group 9D, Mortain-August 1944: The Great Defensive Battle, Fort Leavenworth, Kansas: CGSC Battle Analysis, 1985, p. 14.
- 16 Richard Rohmer, Patton's Gap (New York: Beaufort Books, Inc.,1981), p. 179.
- 17 Blumenson, p. 461.
- 18 Bradley, p. 371.
- 19 Blumenson, p. 459.
- 20 J. Lawton Collins, Lightning Joe (Baton Rouge: Louisiana State University Press, 1979), pp. 251,253.
- 21 Ibid., p. 255.
- 22 Weigley, pp. 196-198.
- 23 Collins, p. 253.
- 24 Weigley, p. 198.
- 25 Blumenson, p. 475.
- 26 Bradley, p. 374.
- 27 Collins, p. 253.
- 28 Weigley, p. 192.
- 29 Ibid., pp. 195,199.
- 30 Rohmer, p. 180.

- 31 Weigley, p. 199.
- 32 Ibid.
- 33 Blumenson, pp. 484,485.
- 34 Ibid., pp. 483,484.
- 35 Weigley, p. 206.
- 36 Rohmer, pp. 226,227.
- 37 Weigley, p. 204.
- 38 Blumenson, p. 510.
- 39 Bradley, p. 377.
- 40 Weigley, pp. 209,211.
- 41 Blumenson, p. 205.
- 42 Ibid., p. 541.
- 43 Collins, p. 258.
- 44 Esposito, map 55.
- 45 Ibid.
- 46 MAJ George A. Higgins, The Operational Tenets of Generals Heinz Guderian and George S. Patton, Jr. (MMAS Thesis, Ft. Leavenworth, Kansas, 1985), p. 107.
- 47 Ibid., p. 118.
- 48 Esposito, map 57.
- 49 Weigley, pp. 218,219.
- 50 Blumenson, pp. 566,567.
- 51 Esposito, maps 56,57.
- 52 Ibid., map 55.
- 53 Elbridge Colby, The First Army in Europe (Washington, D.C.: US Government Printing Office, 1969), pp. 80,81.
- 54 Weigley, p. 241.
- 55 Esposito, map 55.
- 56 Weigley, pp. 242,243,246.
- 57 Ibid.,p. 247.
- 58 Ibid., p. 197.
- 59 US Army, FM 100-5, Operations (1986), p. 31.
- 60 FM 100-5, p. 140.
- 61 Ibid.
- 62 US Army, Briefing Slides, "AirLand Battle", USACGSC(SAMS), Ft. Leavenworth, Kansas, (1985), comments, slide 6.
- 63 Ibid., comments, slides 7,8.
- 64 Karl von Clausewitz, On War, Edited and Translated by Michael Howard and Peter Paret, (Princeton, New Jersey: Princeton University

Press, 1976), p. 177.

65 Briefing Slides, slide 9.

66 FM 100-5, p. 10.

67 Clausewitz, p. 619.

68 Ibid., pp. 595,596.

69 Ibid., pp. 487,597.

70 Ibid., p. 486.

71 FM 100-5, pp. 12,13.

72 Ibid., pp. 248,258,485,489.

73 FM 100-5, pp. 179,180.

74 Clausewitz, p. 486.

75 Ibid., p. 383.

76 LTC Kenneth Carlson, Classroom discussions, Seminar 1, CGSC(SAMS), Ft. Leavenworth, Kansas, July 1985-March 1986.

77 FM 100-5, pp. 109,181,182.

78 Clausewitz, p. 528.

79 FM 100-5, p. 181.

80 Clausewitz, p. 370.

81 FM 100-5, p. 80.

82 Collins, p. 250.

83 Weigley, p. 196.

84 Ibid., p. 197.

85 FM 100-5, p. 180.

86 Ibid., p. C-3.

87 Baron de Jomini, The Art of War, Translated by CPT G.H. Mendell and LT W.P. Craighill, (Westport, Conn.: Greenwood Press, Publishers, 1862), p. 93.

88 FM 100-5, p. 181.

89 Clausewitz, p. 541.

90 Ibid.

91 Briefing Slides, slide 46.

92 FM 100-5, p. 12.

93 Esposito, map 57.

94 MAJ Glenn M. Harned, The Principles of Tactical Organization and Their Impact on Force Design in the US Army, (MMAS Monograph, Ft. Leavenworth, Kansas, 1985), pp. 34,35.

95 MAJ Marion Cain, Discussions during NATOEX-86, CGSC(SAMS), Ft. Leavenworth, Kansas, 19-28 February 1986.

96 Information for this chart came from several sources including Breakout and Pursuit by Martin Blumenson and Soldier's Story by Omar

Bradley.

97 Ibid.

98 Information for this chart came from Breakout and Pursuit by Martin Blumenson.

99 . Information on this chart was developed during classroom discussions headed by LTC Kenneth Carlson, Seminar 1, CGSC(SAMS), July 1985-March 1986.

100 Esposito, map 50.

101 Ibid., map 53.

102 Ibid., map 54.

103 Ibid., map 56.

104 Ibid., map 55.

BIBLIOGRAPHY

BOOKS

- Blumenson, Martin. Breakout and Pursuit. Washington, D.C.: Office of the Chief of Military History, 1961.
- Bradley, Omar N. A Soldier's Story. New York: Henry Holt and Company, 1951.
- Clausewitz, Karl von. On War. Edited and Translated by Michael Howard and Peter Paret. Princeton, New Jersey: Princeton University Press, 1976.
- Colby, Elbridge. The First Army in Europe. Washington, D.C.: US Government Printing Office, 1969.
- Collins, J. Lawton. Lightning Joe. Baton Rouge: Louisiana State University Press, 1979.
- Esposito, Vincent J. The West Point Atlas of American Wars, Vol. II: 1900-1953. New York: Praeger Publishers, 1972.
- Jomini, Baron de. The Art of War. Translated by CPT G.H. Mendell and LT W.P. Craighill. Westport, Conn.: Greenwood Press, Publishers, 1862.
- Pogue, Forrest C. The Supreme Command. Washington, D.C.: Office of the Chief of Military History, 1954.
- Rohmer, Richard. Patton's Gap. New York: Beaufort Books, Inc., 1981.
- Weigley, Russell F. Eisenhower's Lieutenants. Bloomington, Ind.: Indiana University Press, 1981.

GOVERNMENT DOCUMENTS

- US Army. Briefing Slides, "AirLand Battle". USACGSC (SAMS). Ft. Leavenworth, Kansas, 1985.
- US Army. Field Manual 100-5, Operations. Washington, D.C.: US Government Printing Office, May 1986.

THESES, STUDIES AND OTHER PAPERS

- Harned, Glenn M. MAJ. The Principles of Tactical Organization and Their Impact on Force Design in the US Army. Ft. Leavenworth, Kansas: MMAS Monograph, 1985.
- Higgins, George A. MAJ. The Operational Tenets of Generals Heinz Guderian and George S. Patton, Jr. Ft. Leavenworth, Kansas: MMAS Thesis, 1985.
- Staff Group 9D. Mortain-August 1944: The Great Defensive Battle. Ft. Leavenworth, Kansas: CGSC Battle Analysis, 1985.

MISCELLANEOUS

- Cain, Marion MAJ. Discussions during NATOEX-86, CGSC (SAMS). Ft. Leavenworth, Kansas, 19-28 February 1986.
- Carlson, Kenneth LTC. Classroom discussions, Seminar 1, CGSC (SAMS). Ft. Leavenworth, Kansas, July 1985-March 1986.