

BATTLE SUMMARY No. 39

OPERATION
"NEPTUNE"
LANDINGS IN
NORMANDY
JUNE, 1944

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Foreword

1944

An Anthology of Amphibious Invasions

The sheer scale of the invasion of Normandy—Operation *Neptune*—which was the essential precursor of the liberation of north-west Europe (Operation *Overlord*), has tended to overshadow the significance of two other important amphibious assaults of that year, the invasion of the South of France (Operation *Dragoon*) in August 1944 and the seizure of the island of Walcheren (Operation *Infatuate*) in November. This combined volume of official Admiralty “Battle Summaries” not only sets the amphibious contribution in the context of the Allied success but, in the third section, describes the little-known naval activities following the break-out from Normandy and supporting the subsequent advance to, and even over, the Rhine.

The “Battle Summaries” were written relatively soon after the events which they describe (the last was produced in 1952) and are based on official documentary material which did not become available to the public at large until 1968. Like the other works in the Naval Staff Histories series, they were intended for professional use, for planners and commanders who might have to conceive and undertake similar operations, and for Staff Course students, to broaden their education and to lead them on to the possibilities offered by the deeper study of original documents. The text in each is supplemented by appendices giving orders of battle, commanders and large quantities of statistical information and the accompanying maps frequently have more detail than is shown in those prepared for books written for commercial publication. In due course, the volumes became basic reference sources for the authors of the Cabinet Office series of Official Histories of the Second World War.

The policy of the Naval Historical Branch was that the Staff Histories should be detailed narrative accounts, not analyses, and that they should concentrate primarily on maritime aspects, describing air and military plans and activity only in as far as they affected naval operations. The accounts may seem to more sophisticated modern historians to be curiously naïve, for although the operations were frequently undertaken against a background of simmering (and sometimes raging) politico-military controversy, the latter was rigorously eschewed. In exchange,

the reader received, and still receives, a wealth of factual information, set in its correct strategic and tactical context, written by naval officers who were versed in the black art of naval operations but were capable of synthesising the vast quantity of source material to serve up the essentials without resorting to jargon. Inevitably, the three authors (Commander L J Pitcairn-Jones, "Operation *Neptune*", Commander W E H Westall, "Operation *Dragoon*" and Lieutenant Commander J H Lloyd-Owen, "The Campaign in North-West Europe") made minor errors and those are corrected in an errata slip which accompanies this edition.

The combination of straightforward, readable narrative and close attention to detail by authors who understood thoroughly their topics, renders this "amphibious anthology" of real value as a research tool for wider use than has previously been possible.

David Brown

BATTLE SUMMARY No. 39

OPERATION "NEPTUNE"
The Landings in Normandy
6th JUNE, 1944

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Part I

PREPARATION

Naval Operations at the Assault Landings in Normandy

6th JUNE—3rd JULY, 1944

(OPERATION "NEPTUNE")

" 'Twas on a Summer's day—the sixth of June—
I like to be particular in dates,
Not only of the age, and year, but moon ;
They are a sort of posthouse where the Fates
Change horses, making History change its tune,
Then spur away o'er empires and o'er States."

Lord Byron, "Don Juan" Canto 1.

INTRODUCTION

The 6th of June, 1944, witnessed landings by the Assault Forces of the Allied Nations over some 40 miles of the beaches of Normandy. From the narrow foothold secured on that day sprang the pregnant series of events which culminated eleven months later in those forces meeting the Russians in the heart of Germany, and the abject surrender of the Third Reich and all for which it stood.

Operation "Neptune," the name given to the assault phase of Operation "Overlord," the general plan for the liberation of north-west Europe was indeed appropriate—because without in any way detracting from the magnificent work of the sister services, the Navy was necessarily bound to play the major part in the opening stages of convoy and transport.

Like all opposed landings, Operation "Neptune" falls into three well-defined phases, viz. :—

- (1) Preparation. Planning, etc. (May, 1942–June, 1944).
- (2) Execution. The Assault Landings (4th–6th June, 1944).
- (3) Consolidation. The Build-up (7th June–3rd July, 1944¹).

It was, however, unique in two respects. These were : firstly, the proximity to the scene of operations of the United Kingdom with all its resources as a main base, which facilitated the maximum application of the Allied Sea and Air superiority and the rapid turn round of the build-up shipping, besides making possible such novel expedients as the use of pre-fabricated harbours and the supply of oil through submarine pipe lines ; and secondly, the gigantic scale on which the operation was conceived and launched.

This operation involved the landing of five divisions with their stores, motor transport and impedimenta on open beaches heavily defended by every means which modern science could devise ; and after the initial bridgehead had been secured, the rapid build-up of the force to some thirty divisions and their maintenance. No less than 5,000 ships and craft took part in the first four

¹ On this date the last of the Assault Force Commanders withdrew from the Assault Area, and the more permanent naval organizations—by means of which the Armies in France were maintained for the remainder of the year—came into being.

INTRODUCTION

days. The provision of this Armada, the loading and berthing arrangements, co-ordination of movements, measures for security from both enemy interference and stress of weather, disembarkation and the continued flow of reinforcements and supplies, as well as direct support of the Army by bombardment—all these were naval responsibilities calling for most intricate and careful planning on a scale which admittedly surpassed anything ever seen in the history of the world.

The manner in which these vast naval commitments were discharged is described in great detail in the orders and reports of the various officers who took part in the operation ; but, because most of these reports were addressed to recipients who were well aware of the details of the plan, they tend to be cast in the form of commentaries on how the plan worked out in its various aspects, rather than narratives of what actually occurred.

The ensuing Battle Summary aims at giving an overall connected account of the operation. It is by no means exhaustive nor does it deal with technical matters, such as the complex and vital communications organization, but it should serve as a convenient introduction or background to the detailed study of any particular aspect of the operation¹.

¹ A list of sources will be found in Appendix "P."

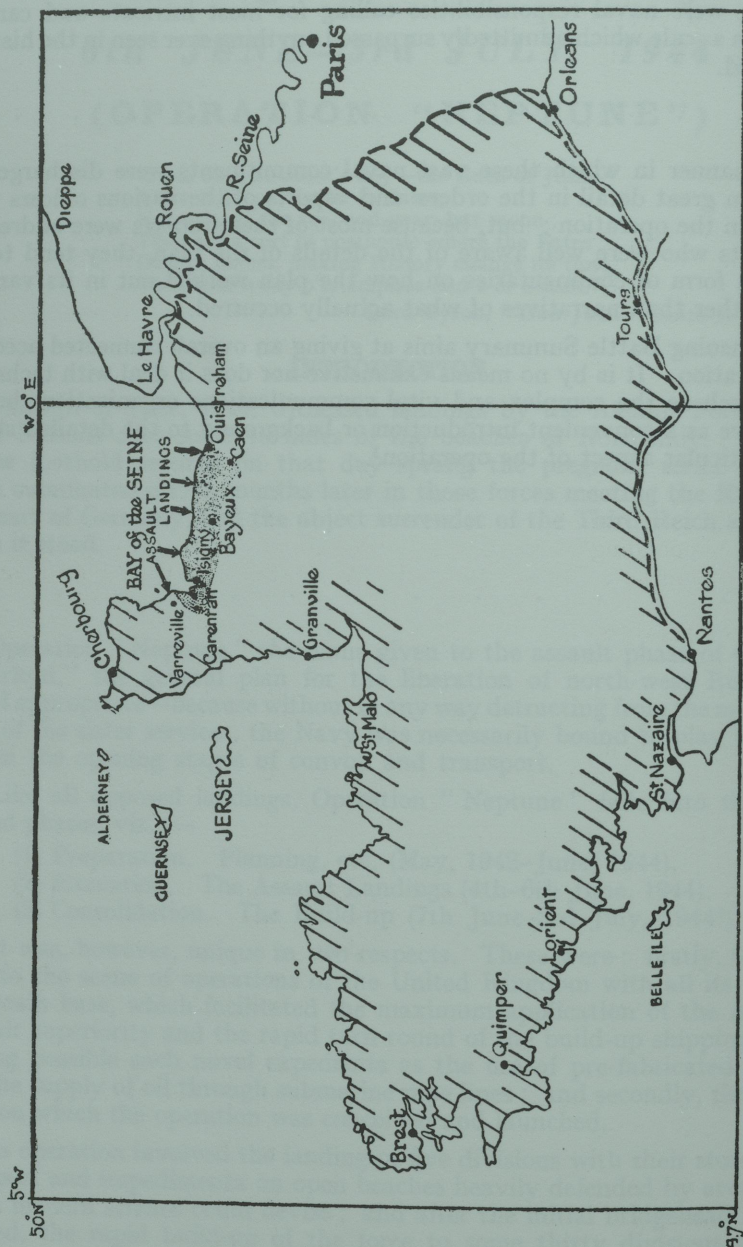


Fig. 1. OPERATION "NEPTUNE"

AREA OF IMMEDIATE OBJECTIVES : LODGEMENT AREA AS PLANNED APPROXIMATELY DAY D+30 TO 40

I. PLANNING AND PREPARATIONS

1. Object and Intentions

Operation "Neptune" was a combined British and United States undertaking by all services of both nations.

Its object was defined as "to carry out an operation from the United Kingdom to secure a lodgement on the continent from which further offensive operations can be developed. This lodgement area must contain sufficient port facilities to maintain a force of 26 to 30 divisions and to enable this force to be augmented by follow-up formations at the rate of from three to five divisions a month."¹

The plan finally adopted consisted of an assault on a five-divisional (eight brigades up) front in landing ships and landing craft on the beaches between Ouistreham and Varreville in the Bay of the Seine, follow-up formations being landed on the second tide of the same day (D-day). The remainder of the follow-up formations, as well as other formations from mechanized transport ships were to land on the next day (D+1), after which the forces were to be built up at the average rate of one and one third divisions a day.

Initial objectives were the towns of Caen, Bayeux, Isigny and Carentan, with the neighbouring airfields and the port of Cherbourg. The lodgement area was then to be completed by the capture of the Brittany ports as far south as (and including) Nantes—a phase which was expected to last some five or six weeks. Depending on the progress of events, the capture of Paris and the liberation of southern France was to be the next aim of the Allied Armies.

2. Enemy Preparations

Intelligence for Operation "Neptune" was the outcome of years of research with unequalled resources by large and specialized inter-service bodies. Hence it was comprehensive and extremely detailed. It by no means minimized the difficulty of the undertaking, for the whole of the northern coast of France had been fortified by every means modern science could suggest, adapted to local physical peculiarities.

Coastal batteries—heavy, medium and light—covered most of the seaward approaches²; minefields, underwater obstacles, wire, anti-tank defences abounded; concrete strong points were spaced along the coast at frequent intervals; exits from beaches were mined and obstructed, and full advantage was taken of inland areas suitable for flooding. Flame throwers, machine guns, howitzers and field guns—usually in casemates—covered all possible landing places³. Naturally, particular attention was paid to the neighbourhood of ports.

The weak spot lay in the quality of the troops manning the defences. They were believed to be of a not very high standard; but it was known that the enemy had ample first rate troops available in France for concentration at the threatened point once the invading forces were committed.

German naval forces immediately available consisted of five destroyers, nine to 11 torpedo boats (including "Elbings"), 50 to 60 E-Boats, 50 to 60 R-Boats, 25 to 30 "M"-class minesweepers, and about 60 miscellaneous local

¹ O.N.1, p. 1.

² See Sec. 25, *postea*.

³ See Plan 8 for details of the coast defences and Plan 1A for details of coastal batteries. The event proved the intelligence to be accurate in the main (*see* Sec 13, *postea*).

small craft. A further six destroyers and 10 torpedo boats might be sent from the Baltic or Heligoland Bight, but this would deprive their heavy ships—all of which were in Norwegian or Baltic waters—of a screen should they wish to put to sea¹. As regards submarines, there were 130 operating from the Biscay ports; these might be reinforced to a total of about 200 within a fortnight of the invasion. In addition, up to 25 short-range U-Boats (300 tons or less) could be sent from the Baltic to operate off the east and south-east coasts of England².

As regards the air, the strain to which the Luftwaffe had been subjected for the previous five years had reduced it to a position of hopeless numerical inferiority, but it could safely be reckoned that it would give all possible support to the Wehrmacht³.

3. The Air Situation

The Allied air contribution to the operation was to be on an overwhelming scale. Exclusive of fighter reconnaissance and photographic aircraft, and of aircraft of Coastal, Troop Carrier and Transport Commands and the Naval Air Arm, it was estimated that there would be 5,886 aircraft of the Allied Air Forces available in the United Kingdom on 1st June, 1944⁴.

¹ The German main units consisted of:—

- (1) Two capital ships, *Tirpitz* (8—15", 12—5·9"), *Gneisenau* (9—11", 12—5·9")—both seriously damaged.
- (2) Two pocket battleships, *Admiral Scheer*, *Lützow* (6—11", 8—5·9").
- (3) One aircraft carrier, *Graf Zeppelin*—unfinished.
- (4) Two heavy cruisers, *Prinz Eugen*, *Admiral Hipper* (8—8" each).
- (5) Four light cruisers, *Nürnberg*, *Leipzig*, *Köln* (9—5·9" each), *Emden* (8—5·9").
- (6) Approximately 37 destroyers and 83 torpedo boats.

² See Appendix "E." Disposition of Enemy Naval Forces, between the Bight and the Bay of Biscay, March, 1944.

³ The relative strengths of the German and Allied available Air Forces are considered in section 4, *postea*.

⁴ Estimate of Allied Air Forces available in the United Kingdom, 1st June, 1944:—

Type of Squadron.	Approximate number of A/C per Squadron.	Estimated number of Squadrons.	Estimated number of Aircraft.
UNITED STATES			
<i>Eighth Air Force—</i>			
Day Bomber (Heavy)	8	165	1,320
Day Fighter	16	45	720
<i>Ninth Air Force—</i>			
Bomber (Medium)	12	32	384
Bomber (Light)	12	12	144
Fighter (Day)	16	63	1,008
Fighter (Night)	12	3	36
BRITISH			
Night Bomber (Heavy)	12	72½	870
Bomber (Light)	12	18	216
Fighter (Day)	12	59	708
Fighter (Bomber)	12	18	216
Fighter (Night)	12	22	264
Grand Total	—	509½	5,886

These figures do not include aircraft required for normal operations, such as Air Defence of Great Britain.

Against this, the German Air Force first line strength on their Western Front (from south of Trondheim in Norway to Rochefort in the Bay of Biscay) was reckoned to be about 1,515 aircraft, of which not more than 590¹ were likely to be available for close support of operations in the "Neptune" area². Prior to the assault landings the general air offensive was directed towards the destruction of the enemy's air forces, particularly fighters, and the interruption of his communications. At the same time Air and Naval anti-U-Boat and anti-E-Boat operations were intensified in the English Channel and the Bay of Biscay, and air bombardment of the enemy bases accompanied by offensive minelaying was carried out. Particular attention was paid to the enemy radar stations from Ostend to the Channel Islands, with the result that during the whole night preceding the assault only 18 out of a normal 92 were operating in the "Neptune" area. This air offensive reached its climax immediately before the assaults and culminated in a heavy air bombardment of the beach area and defences just before the landings.

The role of the air forces as far as it affected the naval operations will be referred to later.

4. The Naval Problem

"The Naval problem that had to be faced can be briefly summarized as, first, the breaking of the strong initial crust of the coast defences by assault, together with the landing of the fighting army formations; and, secondly, to commence, and continue without a pause for five or six weeks, their reinforcement at as high a rate as possible. The first required the co-ordination of the movement of thousands of ships and landing craft and aircraft, and then of their fire power; the second the co-ordination of the activities of hundreds of thousands of men and women of all services, both in the United Kingdom and off the French coast, marshalling, loading, sailing, unloading and returning at least eight ship convoys a day, in addition to 10 or 12 landing craft groups. Considerations of time and space did not permit the use of any unexpected manoeuvre to confuse the enemy; we had simply to drive ahead in great strength and to ensure that the organization was as efficient as it could be, as the time factor was all important³."

5. High Command

The system of command finally adopted for the assault was as follows. General Dwight D. Eisenhower, U.S.A., was appointed Supreme Allied Com-

¹ According to a captured German document dated 6th August, 1944, a total of 319 aircraft only could be operated in the "Neptune" Area on D-day.

² Estimate of German aircraft available for operations in the "Neptune" area:—

Long Range Bombers.	Recon-naissance.	Fighter Bombers.	Twin Engined Fighters.	Single Engined Fighters.	Total.
320*	10	65	75	120	590

* Includes about 90 anti-shipping aircraft, fitted for torpedo, glider or FX—radio controlled bombs. These might be augmented by a further 60 at a later date.

³ A.N.C.X.F. Report, Vol. 1, p. 5.

mander, with Air Chief Marshal Sir Arthur Tedder¹ as his deputy. Under him and exercising their commands jointly were three commanders² :—

- Naval* .. Allied Naval Commander-in-Chief Expeditionary Force (A.N.C.X.F.), Admiral Sir Bertram Ramsay³.
- Army* .. Commander-in-Chief, 21st Army Group (C.-in-C., 21 A.G.), General Sir Bernard Montgomery⁴.
- Air* .. Air Commander-in-Chief, Expeditionary Force (A.E.A.F.), Air Chief Marshal Sir Trafford Leigh-Mallory⁵.

6. Decision for a Daylight Landing

The one fundamental question on which there had to be early agreement between the three services was whether to assault during darkness so as to obtain the greatest measure of surprise on the beaches, or whether to assault after daylight and to rely on the greatly increased accuracy of air and naval bombardment under these conditions. The decision arrived at was in favour of a daylight landing. This was in accordance with experience in the Pacific in cases when the assaulting force possessed decisive naval and air superiority⁶ and in the event was entirely justified in Operation "Neptune."

Bearing in mind the foregoing salient features of the combined plan actually carried out, it is proposed to examine the plan and its evolution in some detail, particularly as regards its naval aspects.

7. Early Planning

The inception of the naval plan dates from May, 1942, when a planning staff (known as the "Round Up" Staff) was formed to study the administrative problems in connection with a major cross-Channel operation.

Far off, indeed, to these pioneers of invasion must the day have seemed when their plans were to come to fruition. Already (1946) it requires an effort of memory to recall the grim world situation which confronted the Allied Nations in May, 1942. Except for the Iberian Peninsula, Switzerland, Sweden and Turkey the whole of Europe from the Pyrenees to the North Cape was under Axis domination, though the Vichy Government was still enacting the farce of administering Southern France. The great Russian winter campaign of 1941-42 was dying down, and the German drive which was to carry them to the gates of Stalingrad was about to be unleashed. The Anglo-Soviet Treaty was signed in London on 26th May and on the same day the German General Rommel launched the offensive in Libya which in five weeks brought

¹ Air Chief Marshal Sir Arthur Tedder, G.C.B.

² By a melancholy coincidence, two of the Commanders-in-Chief, Admiral Ramsay and Air Chief Marshal Leigh-Mallory, lost their lives in air accidents less than nine months after the operation.

³ Admiral Sir Bertram H. Ramsay, K.C.B., K.B.E., M.V.O. For scope and principles of the Naval Command, see Sec. 14, *postea*.

⁴ General Sir Bernard Montgomery, K.C.B., D.S.O.

⁵ Air Chief Marshal Sir Trafford Leigh-Mallory, K.C.B., D.S.O.

⁶ Admiral Ramsay subsequently remarked "I am convinced that this is the correct answer under these conditions. When the decision was made there were no beach obstructions in place on the "Neptune" beaches. Their later appearance would almost certainly have caused the decision to be revised had it been originally made in favour of darkness, and it was very fortunate that no change was necessary, as all training and, to some extent, development of weapons was affected. It should, however, be noted that there was by no means general agreement as to a daylight attack, and that even after the initial decision had been agreed between the three Cs.-in-C. of the Expeditionary Force at least two vain efforts were made to change it." A.N.C.X.F. Report, Vol. 1, p. 6.

him to within 80 miles of Alexandria. In the Far East, Allied fortunes were at their lowest ebb. With the fall of Corregidor on 6th May, the Japanese were in possession of the Philippines, Borneo, Malaya, the Dutch East Indies and parts of New Guinea, and controlled the whole of the immense area north of the equator from the 180th meridian to the coasts of China. Attacks had commenced on the northern Solomons and grave concern was felt alike for India and Australia.

The early days of this month of May, 1942, however, saw one British success which was a portent of things to come—the capture and occupation of Diego Suarez, an exploit which may be regarded as the prototype of the great series of amphibious operations which found its culmination in the gigantic undertaking of which the "Round-Up" staff was the germ.

The "Round-Up" staff did not function long without interruption; about three months after its formation the greater part of it was transferred to the planning and subsequent execution of the North African landings, but a small skeleton staff remained in being which busied itself with the provision of long term facilities of all kinds from the Wash to Lands End. These included headquarters at Portsmouth and Plymouth, as well as landing craft bases, loading hards and repair slips.

In May, 1943, the Commander-in-Chief, Portsmouth¹, was appointed Naval Commander-in-Chief (designate) for "the invasion of the continent of Europe from the United Kingdom, and charged with the preparation of the naval portion of the plan which was being produced²," in accordance with the terms of a directive of the British and U.S. Combined Chiefs of Staff, by Lieutenant-General F. E. Morgan³, who had been nominated Chief of Staff to the Supreme Allied Commander (designate) (C.O.S.S.A.C.). Commodore J. Hughes-Hallett⁴ was appointed Chief of Staff (X) to the Commander-in-Chief, Portsmouth, and the naval planning staff working at Norfolk House, London, was placed under his charge⁵.

At the end of June, 1943, a conference (known as Operation "Rattle") was held under the chairmanship of Vice-Admiral Lord Louis Mountbatten—then chief of Combined Operations—at which definite conclusions as to the provision of equipment, future training and planning were reached⁶.

¹ Admiral Sir Charles J. C. Little, G.B.E., K.C.B.

² Report on Operation "Overlord"—Portsmouth Command, Part 1, para. 10.

³ Lieut.-General F. E. Morgan, C.B.

⁴ Commodore J. Hughes-Hallett, D.S.O.
Commodore Hughes-Hallett was relieved by Rear-Admiral G. E. Creasy, C.B.E., D.S.O., M.V.O., in August, 1943.

⁵ Admiral Ramsay subsequently remarked that since a large share of the administrative burden of the invasion inevitably fell on the staff of the Portsmouth Command, this early and close association of the Planning Staff was of great value.

⁶ This Conference was attended by :—

Vice-Admiral Lord Louis Mountbatten	..	C.C.O. (Chairman).
Admiral Sir Charles Little	..	C.-in-C. (designate).
General Sir Bernard Paget	..	G.O.C., 21st Army Group.
Air Chief Marshal Sir T. Leigh-Mallory	..	A.O.C.-in-C., Fighter Command.
Lt.-General F. E. Morgan	..	C.O.S.S.A.C.
Lt.-General J. L. Devers	..	U.S. Army.
Lt.-General A. G. L. MacNaughton	..	Canadian Army.
And Staff Officers.		

8. The C.O.S.S.A.C. Plan¹

Six weeks later (August, 1943) the Québec Conference took place and the combined plan put forward by General Morgan—known as the C.O.S.S.A.C. plan—received the general approval of the Combined British and American Chiefs of Staff. This plan entailed assaulting on a three divisional front (six brigades) in landing ships and landing craft, with two divisions following up. A high degree of close support fire from landing craft was provided and the supporting divisions were also to be very well equipped with supporting arms. The assault area was in the Bay of the Seine between the River Orne and the River Vire, a sector which had been chosen provisionally in January, 1943.

The planning carried out by C.O.S.S.A.C., whilst confirming the choice of this section of the coast unprovided with a major port, had also stressed the need of guarding against delay in capturing such a port and of insuring against the complete stoppage of landing operations through bad weather by the construction of two artificial ports²—known as "Mulberries"—off the beaches³. This extraordinary expedient was devised to reconcile the conflicting requirements of the assault landings with those of the build-up (the principal naval commitment) of the Allied Armies. The enemy, of course, was fully alive to the paramount importance of port facilities and had largely based his plan of defence on his ability to deny them. Well nigh impregnable defences had been constructed in the vicinity of all major ports⁴, and on the Allied side it had been early appreciated that an assault in any such area would have little chance of success—a view tested and confirmed by the raid on Dieppe in August, 1942. The build-up, on the other hand, over open beaches, would have equally little chance of achieving the minimum acceptable rate and might well be brought to a complete stoppage by bad weather.

It was therefore decided that the assault landings must be closely followed by the arrival of pre-fabricated harbours, capable of erection within a few days and of sufficient capacity to maintain the build-up at the required rate for at least three months.

9. Start of Detailed Planning

Combined planning on the basis of the C.O.S.S.A.C. plan commenced at 21st Army Group Headquarters on 15th December, 1943. As the naval implications of the operation became clearer, the Admiralty had decided that a separate Naval Commander-in-Chief would be necessary, especially in view of the heavy extra burden which must fall on the Portsmouth Command from its geographical position, and Admiral Sir Bertram Ramsay had been appointed

¹ C.O.S. (43) 416 (O) Operation "Overlord"

² The suggestion that artificial harbours should be constructed in the assault area was, it is believed, first made by Commodore Hughes-Hallett when serving as Chief of Staff (X) to the C.-in-C., Portsmouth, who suggested that sunken ships should be used for this purpose.

³ The soundness of this outline plan was proved later in the detailed planning, as in no respects were its fundamentals altered, though its scope and range were extended when General Montgomery assumed command of the 21st Army Group.

⁴ Apart from very strong fixed defences, all the major ports were garrisoned by picked troops, with orders to hold out to the last man. In the event, with the exception of Cherbourg, the ports held out as isolated pockets long after the Allied Armies had overrun the hinterland. In addition, typically thorough demolition schemes had been prepared for each port in case its loss should prove unavoidable.

as Allied Naval Commander-in-Chief, Expeditionary Force (A.N.C.X.F.) in October. Air Chief Marshal Sir Trafford Leigh-Mallory had been appointed Air Commander-in-Chief, Allied Expeditionary Force, in November, but no Army Commander had as yet been nominated and initial responsibility for all land operations was assigned to General Sir Bernard Paget¹, then Commander-in-Chief of the 21st Army Group. Nor had a Supreme Commander as yet been designated and the planning situation was thus far from satisfactory, as these two appointments might well involve a major change of plan.

The appointment of General Sir Bernard Montgomery as Commander-in-Chief, 21st Army Group, was announced on Christmas Day, 1943. General Montgomery arrived in London on 3rd January, 1944, and was not slow in stating his objections to the "Neptune" plan as it then stood. In brief, these were that the assaults were not being made on a wide enough front, or with a sufficiency of force, and that it was necessary to extend them, both in order to introduce a greater number of formations on D-day and to accelerate the capture of Cherbourg. The General had already discussed the plan very briefly with General Eisenhower, who in the meanwhile had been appointed Supreme Commander, and on the assumption that the final approval of the latter would be forthcoming it was agreed to continue planning on the basis that half the landing ships and landing craft previously allotted to Operation "Anvil"² in the Mediterranean would be available for "Neptune" and that the target date for the latter would be postponed for one month³.

10. General Eisenhower's System of Command

This course of action was facilitated by General Eisenhower's method of exercising the Supreme Command which was familiar to the Commanders-in-Chief from former experience in the Mediterranean. Having satisfied himself of the feasibility of a project, he gave them a free hand in working out the plans, before they were finally submitted to him for approval. They were then directed to carry out the execution as agreed upon. At the same time S.H.A.E.F. provided a common meeting ground where the joint and combined planning, already outlined by C.O.S.S.A.C. could be put into final shape for execution. In cases of difference of opinion, the Supreme Commander would give his decision, and when requested to do so, would deal with other authorities on the highest level on behalf of his Commanders-in-Chief.

Joint planning on the new basis re-started between the Commanders-in-Chief on 14th January, 1944, and the initial joint plan was issued on 1st February.

To put this plan into effect, under Supreme Headquarters, the inter-service chain of command was integrated as shown in Fig. 2 on page 18.

¹ General Sir Bernard Paget, K.C.B., D.S.O.

² Operation "Anvil," a diversionary threat against Toulon by two divisions, had been planned originally to take place simultaneously with operation "Neptune." It was designed to tie down German mobile reserves and air forces in the South of France during the critical stages of the battle for a lodgement in Normandy. It was, however, found necessary to cancel this operation.

³ At the time the C.O.S.S.A.C. plan was worked out, the strength and scope of the assault were dictated by the limited amount of landing craft and shipping available.

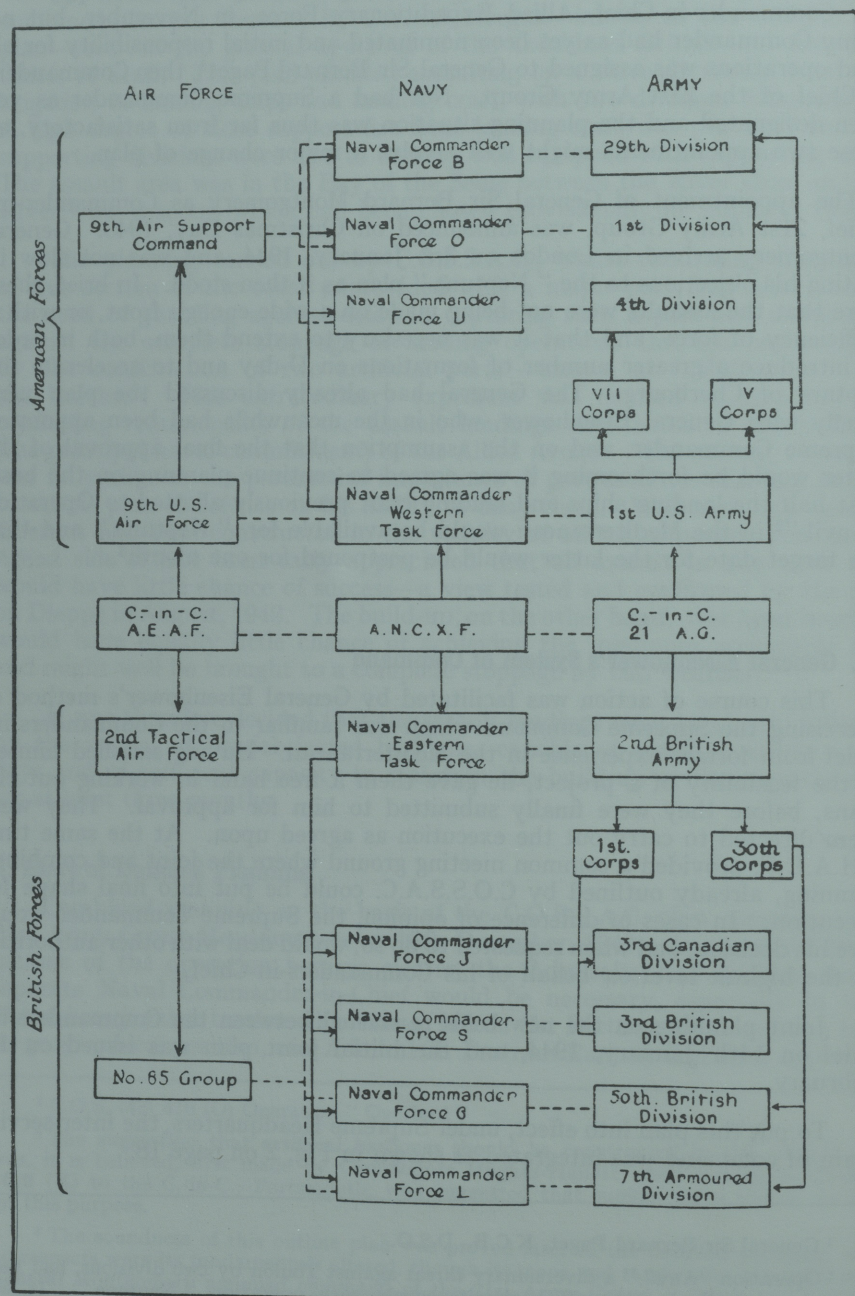


Fig. 2. Inter-Service Chain of Command.

11. Outline of Joint Plan.

(Plan 1)

The assault area was defined as being bounded on the north by the parallel of Lat. 49° 40' N., and on the west, south and east by the shores of the Bay of the Seine. This area was divided into two Task Force areas, the boundary between them running from the root of the Port en Bessin western breakwater in an 025° direction to the meridian of Long. 0° 40' W. and thence along this meridian to Lat. 49° 40' N.

The 1st United States Army, commanded by Lt.-General O. M. Bradley, was to operate in the Western Task Force area, of which Rear-Admiral A. G. Kirk, U.S.N., was the Naval Commander, and the 2nd British Army, commanded by Lt.-General M. C. Dempsey¹, in the Eastern Task Force area, with Rear-Admiral Sir Philip Vian as Naval Commander.

The Western Task Force area was divided into two assault force areas—"Utah" area covering the east coast of the Cotentin Peninsula to the River Vire and "Omaha" area from thence to the British area. Two Naval Assault Forces, "U" and "O" respectively, were responsible for all naval operations in these areas.

The Eastern Task Force area was divided into three assault force areas—"Gold" area, from Port en Bessin to Ver, "Juno" area thence to west of Langrune, and "Sword" area thence to Ouistreham—served by Naval Assault Forces "G," "J" and "S" respectively.

The assault force areas were sub-divided into lettered sectors as shown in plan 1, the beaches in each sector being known as "Red," "Green" or "White" beaches.

The immediate army tasks were:—

U.S. 1st Army

- To assault with two divisions, one of the VII Corps commanded by Major-General Lawton-Collins east of St. Martin de Varville, the other of the V Corps commanded by Major-General Gerow between Isigny and Port en Bessin.
- To capture Cherbourg as quickly as possible, and to develop the Vierville-Sur-Mer—Colleville-Sur-Mer beach head southward towards St. Lo in conformity with the advance of the British 2nd Army.

British 2nd Army

- To assault with three divisions, two of the 1st Corps commanded by Lt.-General C. J. Crocker, and one of the 30th Corps, commanded by Lt.-General G. C. Bucknall between Port en Bessin and the River Orne.
- To secure and develop a bridgehead south of a line Caumont—Caen and south-east of Caen in order to secure airfield sites and to protect the flank of the 1st U.S. Army.

¹ Lt.-Gen. Miles C. Dempsey, C.B., D.S.O., M.C.

Landings in the various areas were planned as follows¹ (see plan 1C):—

WESTERN TASK FORCE

"Utah" area .. 4th U.S. Division (Major-General R. O. Barton).
Initial assaults by 1st Bn. 8th Infantry on "Tare" Green and by 2nd Bn. 8th Infantry on "Uncle" Red beaches (east of St. Martin de Varreville).

Rangers capture St. Marcouf Islands.

"Omaha" area .. 1st U.S. Division (Major-General Huebner).
Initial assaults north of St. Laurent by 116th Regimental Combat Team on "Dog" Green, White, Red, and "Easy" Green beaches, and by 16th R.C.T. on "Easy" Red and "Fox" Green beaches.

Three Ranger Companies at Pointe du Hoe in sector "Charlie" to capture 6.1-in. battery located there.

Troops of the 82nd and 101st Airborne Division were to be landed and dropped from 932 aircraft and 110 gliders in the Cotentin Peninsula during the night before the assault, with the object of assisting in the capture of the Peninsula, and preventing the movement by land of enemy reinforcements into the 1st Army sectors.

EASTERN TASK FORCE

"Gold" area .. 50th (Northumberland) Division (Major-General D. E. H. Graham). Initial assaults by 231st Infantry Brigade (Brigadier Sir A. Stanier, Bt.), on "Jig" Green beach (east of Asnelles) and by 69th Infantry Brigade (Brigadier F. V. C. Knox) on "King" Green and Red beaches (north of Ver).

47th Commando of 4th S.S. Brigade to land with 231st Infantry Brigade and capture Port en Bessin.

"Juno" area .. 3rd Canadian Division (Brig.-General R. F. L. Keller). Initial assaults by 7th Canadian Infantry Brigade (Brigadier H. W. Foster), on "Mike" Green and Red, and "Nan" Green beaches (north of Courseulles) and by 8th Canadian Infantry Brigade (Brigadier K. G. Blackader), on "Nan" White and Red beaches.

48th Commando of 4th S.S. Brigade to land with 8th Canadian Infantry Brigade to clear the area to the eastward between the assault beaches.

¹ It had originally been intended that these assaults should be made simultaneously but the individual peculiarities of the various landing places compelled them to take place over a period of about an hour and a half. See Sec. 12 *postea*.

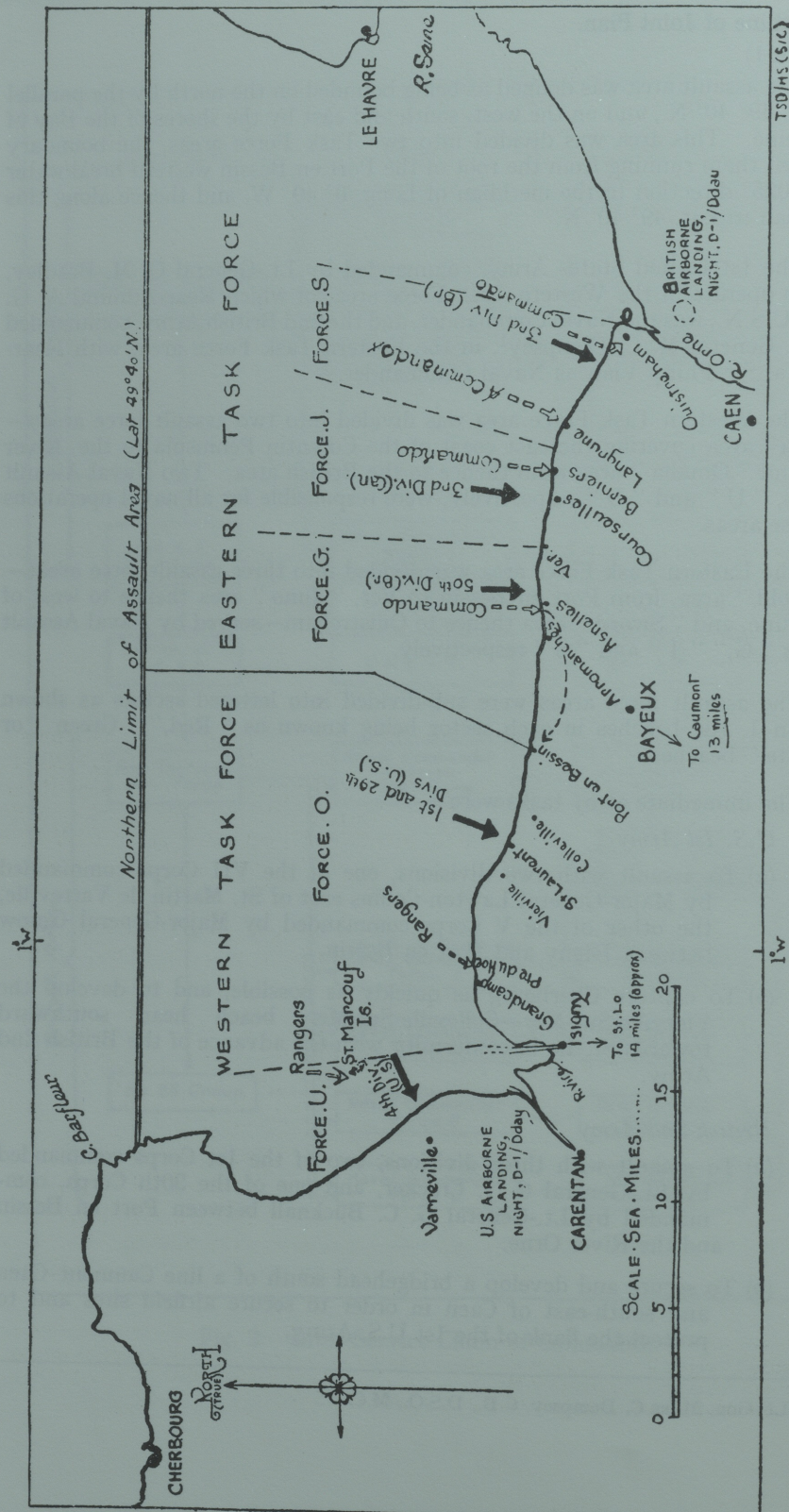


Fig. 3. Assault Area, showing Initial Main Assaults.

"Sword" area .. 3rd British Division (Major-General R. G. Rennie). Initial assaults by 8th Infantry Brigade (Brigadier E. E. Cass) on "Queen" White and Red beaches north of Ouistreham.

41st Commando of 4th S.S. Brigade to land with 8th Infantry Brigade to clear the area to the westward between the assault beaches, and the 4th Commando of 1st S.S. Brigade to clear up Ouistreham.

During the night prior to the main assault the 6th Airborne Division (less 5th Parachute Brigade) was to land in the area east of Caen and astride the crossings of the River Orne to assist in securing the left flank.

Resulting from these movements it was intended that the 2nd Army line should run southwest from Cabourg along the line of the River Dives from D-day onwards (see Plan 14).

In broad terms the assaults were to be conducted in three phases :—

Phase 1 .. Pre-H-hour naval and air bombardment to "soften" the beach defences and knock the spirit out of the defenders.

Phase 2 .. The break through at H-hour of the static beach defences with the object of developing lanes through the beaches and opening up exits for the vehicles. In this phase, tank landing craft (L.S.T.) with tanks specially equipped for moving beach obstacles (A.V.R.E.), preceded by assault landing craft fitted to project 60-lb. bombs (L.C.A.(H.R.)) intended to blast a lane through wire and anti-personnel mines, were to beach at H-hour, followed immediately by a wave of assault infantry and obstacle clearance teams. The whole were to be supported by close range fire from gun craft, warships and "DD" ("swimming") tanks.

Phase 3 .. The landing of reserve battalions and supporting arms in infantry and tank landing craft (L.C.I.(L) and L.C.T.).

An assault in daylight called for a variety of types of landing craft in each assault force. Many new weapons, too, were used operationally for the first time, which greatly complicated the whole technique from the naval point of view. In particular, the timing of the approach of the assault waves and the deployment from the "cruising" to the "assaulting" formations called for a degree of efficiency and seamanship unique in the history of landing craft.

For ease of reference a typical chronological sequence of events from H-2 to H+2 hours for an assault force is given in the following table :—

Time.	Movements and Order of Landing.	Fire Support and Bombardment.	Remarks.
H-120 mins.	Group one L.C.T. with DD tanks pass lowering position.		
H-115 mins.	L.S.I. reach lowering position.		
H-110 mins. to H-95 mins.	L.C.T. groups with L.C.T.(A) and L.C.T. A.V.R.E. pass lowering position.		
H-80 mins. to H-60 mins.	Launch DD tanks and DD tanks form up.		At 5,000-6,000 yards from beach.
H-60 mins. or Sunrise-30 mins.		Bombarding ships open fire with air observation. Destroyers and L.C.G.(L) open fire on beach targets.	
H-35 mins.		S.P. artillery opens fire	At range 11,000 yards approx.
H-30 mins.		Heavy day bombing of beach defences starts.	
H-10 mins.		1st Group L.C.T.(R) opens fire.	At 3,500 yards from beach.
H-7½ mins.	DD tanks touch down		
H-5 mins.		S.P. artillery fire lifts to back of beach.	
H-4 mins.		2nd Group L.C.T.(R) open fire.	
H hour	L.C.T. A.V.R.E. touch down followed by L.C.A. with assaulting infantry.	L.C.A.(H.R.) fire. S.P. artillery check fire.	L.C.A.(H.R.) precede A.V.R.E. L.C.T. and fire just before they touch down.
H+20 mins. to H+30 mins.	L.C.A. with reserve infantry companies, L.C.O.C.U. (obstacle clearance units), etc., touch down.		
H+45 mins.	L.C.T. with 1st priority vehicles touch down.		
H+60 mins.	L.C.I.(L) and L.C.A. with reserve battalions touch down.		
H+75 mins. to H+105 mins.	L.C.T. with S.P. artillery touch down.		

Note.—(1) No mention is made of air bombardment before daylight.
(2) Order of landing subsequent to H+105 followed orthodox lines.

12. D-day and H-hour

"No single question was more often discussed during planning than that of H-hour"¹—the time at which the first landing craft should hit the beaches—and it is therefore proposed to examine the factors affecting it in some detail. All three services were vitally interested in the problem, but since tidal conditions were the prime consideration, its solution was ultimately a naval responsibility.

The main considerations affecting the choice of H-hour were as follows:—

- (a) It was desirable to have as many hours as possible of rising tide upon which to land the supporting arms, so that landing craft could "retract"; at the same time it was necessary to spare the infantry too long a run over exposed beaches.
- (b) An adequate period of daylight for the pre-H-hour observed bombardment was required; on the other hand, it was important to leave as many hours of daylight as possible for the landing of the "follow-up," and to have the second high water before nightfall. It was also considered that the earlier H-hour was, the greater was the hope of obtaining tactical surprise.

Balancing these factors, it seemed that the best conditions would obtain between three and four hours before high water and about 40 minutes after the start of nautical twilight².

But about a month before D-day a further complication arose. Reconnaissance revealed that the enemy was busily placing underwater obstacles on the beaches. This compelled the modification of H-hour so that the first waves would touch down short of the obstacles and thus allow of their clearance dry shod. This, however, brought other factors into play; the army naturally desired the assaults to be simultaneous, but whereas the U.S. requirements for their area favoured a time as near low water as possible, one of the British assault forces (Force "J") had to negotiate rocky shoals to seaward of one of the beaches, over which there was barely sufficient water below half tide. A compromise was eventually reached, and for the day ultimately chosen the planned time of H-hour varied from 0630³ as the earliest on the Western Task Force front to 0745 for the latest group of Force "J."

These many requirements of H-hour restricted the choice of D-day to three days every fortnight, and these three days were of course subject to the over-riding considerations of weather⁴. The absence of fog was essential for the air operations and reasonably quiet weather for the start of the build-up in the period immediately following D-day was as important as for the passage and the assault.

A special meteorological organization was set up, but it could not guarantee accurate forecasts for more than 48 hours ahead, which was barely sufficient to cover the hour of the assaults, as the convoys from the more distant west country ports had to sail 36 hours before H-hour.

It was realized very early in the planning that the decision which General Eisenhower as Supreme Commander would have to make to launch the operation would be one of the most difficult and far-reaching of the whole war.

¹ A.N.C.X.F.'s Report, Vol. 1, p. 9.

² Sun 12° below horizon. (On 6th June, 1944, 0406 M.S.T.)

³ Time is given in Zone minus 2 (M.S.T.) throughout the narrative.

⁴ In order to assist the forecasts two United States and two British warships were stationed in the Atlantic to transmit weather reports for some days before D-day.

13. Intelligence

At this stage it will be convenient to consider briefly the Allied intelligence arrangements, on the efficacy of which the planning and success of the operation largely depended.

A body known as the Theatre Intelligence Section (T.I.S.), consisting of a large number of military officers, with a small party of naval officers representing N.I.D., had been formed under G.H.Q. Home Forces as early as 1941 for the study of intelligence in western Europe. Later this staff was expanded to include U.S. officers and incorporated in S.H.A.E.F. "The T.I.S. thus became the one final authority which both nations and all forces accepted and in consequence there was no division of opinion on matters for which it was responsible."¹

As already mentioned (Sec. 2) the intelligence available for Operation "Neptune" was complete, detailed and in the main accurate². From the naval point of view the main problem which confronted A.N.C.X.F.'s Intelligence Staff was not so much the provision of intelligence as the selection and dissemination to the thousands of ships and craft involved of the information necessary to their functions. No less than 15,000 annexes, each one a small book in itself, had to be distributed without the recipients being on the one hand overburdened, or on the other under-informed. It was also necessary to cater for the slightly different American requirements and procedure, while ensuring that the intelligence used by both nations was identical.

Admiral Ramsay's Intelligence Staff was organized as shown in Fig. 4. "This organization in general proved satisfactory, but could have been improved had it been formed earlier, and had the various officers all had the benefit of general intelligence training, so that they would have been more interchangeable."³ Some of the officers (shown in italics in the diagram) only joined shortly before, or immediately after, D-day.

After the operation had been launched, general intelligence received from the forces was promulgated by situation intelligence reports. Intelligence of concern to the naval forces was sent out in "A.N.C.X.F. Intelligence Reports."

¹ A.N.C.X.F. Report, Vol. 1, p. 51.

Admiral Ramsay recommended that basic intelligence of inter-service interest should always in future be provided by some such body as the T.I.S. He considered, however, that the Naval representatives on it should be solely responsible to the Naval Commander concerned. In "Neptune" this was not at first the case, and difficulties arose, since they had divided responsibility.

² This was proved by the event, the outstanding exception being the inability to recognize from photographs the fact that a large portion of the German pillboxes on the beaches were sited purely for enfilade fire, their seaward side being blind and thus invulnerable to direct fire from positions at sea immediately opposite to them.

³ A.N.C.X.F. Report, Vol. 1, p. 50.

Admiral Ramsay subsequently stressed the importance of photographic reconnaissance and its rapid interpretation. "One of the striking intelligence lessons of the operation was that no Staff is complete without the services of a photographic interpreter. Photographic interpretation plays a major part in intelligence concerning enemy defences, and to be dependent for this information upon interpreters situated at a considerable distance in space and time is not acceptable. It is considered, in fact, that all Intelligence Officers should in future have at least some training in this most important subject, and that a specialist should be attached to every operational staff. . . . At the last moment the services of a Photographic Interpretation Officer were lent to A.N.C.X.F. and his work proved invaluable."—A.N.C.X.F., Vol. 1, p. 51.

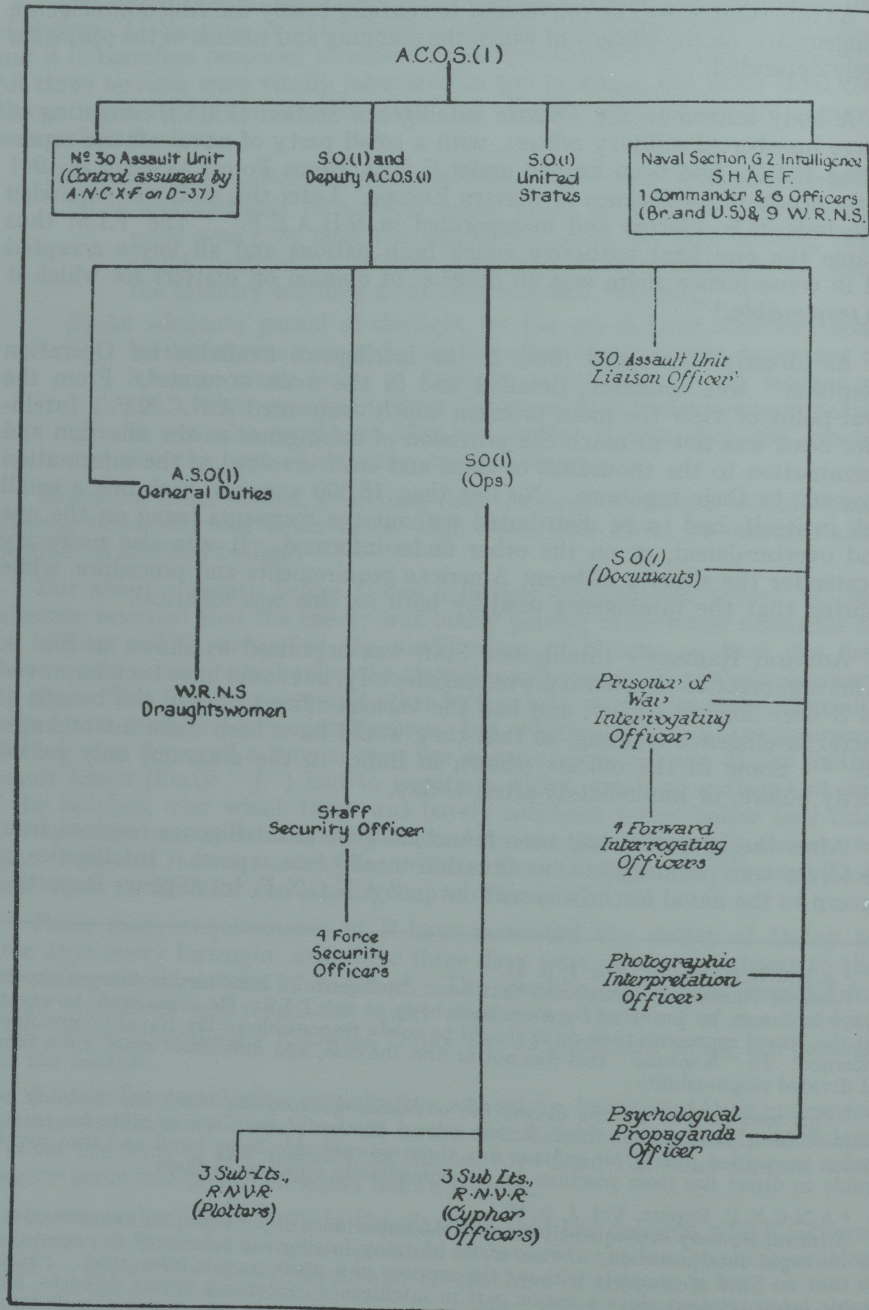


Fig. 4. Intelligence Organization : A.N.C.X.F. Staff.

As regards operational intelligence, continuous watch involving a Cypher and Plotting Staff was kept at A.N.C.X.F. headquarters from D-5 day, and current plots were maintained of enemy surface force dispositions, U-Boat movements and mining activities.

Provision was also made for the capture and utilization of enemy documents and secret equipment in the assault area. For this purpose No. 30 Assault Unit—a joint R.N. and R.M. Commando—was trained for the seizure of intelligence objectives and placed under the operational control of A.N.C.X.F.¹ This unit subsequently proved its worth by the large number of documents and equipment of very high grade intelligence value which it secured and despatched to the United Kingdom², though its work was hampered by the ruthless way in which captured equipment was looted for souvenirs or mishandled from sheer destructiveness.

¹ Initially two main objectives were assigned to No. 30 Assault Unit, viz., (a) the radar station at Douvres and (b) the naval headquarters and arsenal at Cherbourg. Subsidiary tasks were the prevention of demolitions at Port en Bessin, Ouistreham and Coursuelles and examination of radar stations at Arromanches and Englerqueville (west-south-west of Bayeux.) For these purposes the Assault Unit was divided into two forces, the one landing early on D-day in "Juno" area, the other on D+4 in "Utah" area.

Since the operations of No. 30 Assault Unit were of a military rather than a naval character, little mention is made of its activities in this narrative. As things turned out, the capture of Douvres was considerably delayed, and though a section of the unit was present at its fall on 17th June (D+11), the main body concentrated on flying bomb sites in the Carentan Peninsula, subsequently assisting in the capture of N.H.Q., Cherbourg on 26th June.

"Throughout the operations, No. 30 Assault Unit displayed the greatest determination, gallantry and efficiency in carrying out the tasks ordered. Further operations, such as the examination of explosives, mining depots, etc., imposed extremely hazardous and arduous conditions on both officers and men."—A.N.C.X.F. Report, Vol. 1, p. 53.

² Documents of special interest included charts showing the enemy's swept channels, certain cypher and code books, and detailed radar information. Amongst the many important items of equipment were infra-red signalling apparatus, miniature tanks, a night gunsight, a W/T van, vital parts of radar installations and samples of a new German mine.

II. NAVAL PLAN AND OPERATION ORDERS

14. Naval System of Command

Admiral Sir Bertram Ramsay's first concern after his appointment as Allied Naval Commander-in-Chief was to modify the chain of command for the operation so that he could exercise the necessary overall control whilst ensuring that full use was made of the existing organizations of the Home Commands¹, whose Commanders-in-Chief would continue to perform their normal functions². As the general scope and picture of the plan took form a considerable expansion of the Home Command Staffs—particularly that at Portsmouth—became necessary to cope with the heavy additional burdens thrown on them.

The principles of the naval command as finally exercised were as follows:—

- (a) The Allied Naval Commander-in-Chief exercised general command and control over all naval forces other than those providing distant cover and over all naval operations forming a part of the general plan. He exercised direct command within the assault area off the French coast.
- (b) The Commanders-in-Chief, Home Commands, continued to exercise their normal functions and control, except within the assault area, subject to the necessity to give effect to the plan of the Allied Naval Commander-in-Chief. This applied particularly to all movements in or near ports of their commands and in the vicinity of the English coast.
- (c) The Naval Task and Assault Force Commanders initially exercised command of their own forces as regards training, passage, etc., and later exercised operational control within the assault area.

It was also apparent that it would be necessary to place all U.S. Forces taking part under a U.S. Flag Officer, superior to the U.S. Assault and Follow-up Commanders, who would deal direct with the Commander, U.S. Naval Forces in Europe (ComnavEu)³, for administrative purposes, but who would be subordinate to Admiral Ramsay operationally. To this post Rear-Admiral A. G. Kirk, U.S.N., was appointed with the title of Naval Commander, Western Task Force (N.C.W.T.F.)⁴.

¹ See App. "N."

² The introduction of a Flag Officer as Allied Naval C-in-C. to conduct an operation of the nature and extent of "Neptune" naturally called for a careful consideration of the system of command and division of responsibilities as between him and the respective Home C.s-in-C. in whose stations he was called upon to plan and operate. From the outset it was Admiral Ramsay's policy to employ existing organizations, where they existed, rather than to institute new ones—a policy which worked admirably. Admiral Ramsay subsequently remarked that "some resentment might well have been felt by the C.s-in-C., Home Commands, in the Channel, at receiving directions from an authority other than the Admiralty, especially as all three were senior to me. I cannot speak too highly, however, of the unselfish manner in which they accepted the situation. . . . During the operation, the co-ordination between the commands was perfect, and the intricate machine worked as if it had been running for years."

³ Admiral H. Stark, U.S.N.

⁴ Rear-Admiral Kirk was responsible to three higher authorities, viz.:—

- (a) For planning, training and active operations to A.N.C.X.F.
- (b) For administration and logistics to Commander, U.S. Twelfth Fleet.
- (c) For operational matters of interest, to C-in-C., U.S. Fleet (Fleet-Ad. King).

In addition, when U.S. Forces were operating within the limits of a British Home Command, those forces were under the operational control of the C-in-C. of that Home Command. Rear-Admiral Kirk made "no comment as to what other organization might have been possible" but remarked that "the success of a command based on co-operation does not change the old rule that naval operations are most effective when controlled through a simple and direct chain of command."

Admiral Ramsay took over the "X" Staff of the Commander-in-Chief, Portsmouth, with Rear-Admiral G. E. Creasy as Chief of Staff, but it was soon found necessary to increase it very considerably, particularly with regard to the build-up organization, the Mulberry operations and the engineering and technical departments. Rear-Admiral J. W. Rivett-Carnac was appointed as Chief Naval Administration Officer (C.N.A.O.) and Rear-Admiral W. G. Tennant for duties in connection with the "Mulberry/Pluto" organizations (R.A.M.P.). A small United States section was formed to assist in co-ordination with the U.S. Forces taking part¹.

The command of the Assault and Follow-up Forces under Admiral Ramsay, who had his headquarters on shore, was as follows:—

- Western Task Force.* Rear-Admiral A. G. Kirk, U.S.N., Naval Commander, Western Task Force (N.C.W.T.F.). Flag in U.S.S. *Augusta*.
 Force "O" Rear-Admiral J. L. Hall, Jr., U.S.N., Flag in U.S.S. *Ancon*.
 Force "U" Rear-Admiral D. P. Moon, U.S.N., Flag in U.S.S. *Bayfield*.
 Follow-up Force "B" Commodore C. D. Edgar, U.S.N., Broad Pendant in U.S.S. *Maloy*.
- Eastern Task Force.* Rear-Admiral Sir Philip L. Vian, Naval Commander, Eastern Task Force (N.C.E.T.F.). Flag in H.M.S. *Scylla*.
 Force "S" Rear-Admiral A. G. Talbot, Flag in H.M.S. *Largs*.
 Force "G" Commodore C. E. Douglas-Pennant, Broad Pendant in H.M.S. *Bulolo*.
 Force "J" Commodore G. N. Oliver, Broad Pendant in H.M.S. *Hilary*.
 Follow-up Force "L" Rear-Admiral W. E. Parry.

Until the army was firmly established ashore the command of each Naval Task and Assault Force and of the military formations embarked was exercised by their respective naval commanders.

Rear-Admiral F. H. Dalrymple-Hamilton (C.S. 10) and Rear-Admiral W. R. Patterson (C.S. 2), whose squadrons formed part of the bombarding forces of the Eastern Task Force, waived their seniority while in the assault area and acted under the instructions of the Task and Assault Force Commanders. In the American area, Rear-Admirals M. L. Deyo and C. F. Bryant, U.S.N., acted in a similar capacity. Shortly before the start of the operation Rear-Admiral Jaujard hoisted his flag in the *Georges Leygues*. At that late date it might have caused confusion to include him in the chain of command of the Western Task Force, and she acted as a private ship, except as regards administration of the Free French ships.

¹ The formation of a fully integrated British/U.S. Naval Staff was considered, but shortage of U.S. Officers prevented this being done. Nearly every outside naval command and agency that had to be dealt with was British, and in the event the small U.S. Section of the Staff proved adequate to give the necessary advice and explanation with regard to differing U.S. and British practice.

In May, 1944, Rear-Admiral Bieri, U.S.N., arrived from Washington to be attached to A.N.C.X.F.'s Staff; but by then there was no operational requirement for such an appointment, and he was attached to the Future Planning Section of A.N.C.X.F.'s Staff at Supreme Headquarters as Deputy C.O.S. (U.S.).