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**THE ASSAULT PHASE OF THE
NORMANDY LANDINGS.**

The following Despatch was submitted to the Supreme Commander, Allied Expeditionary Force on the 16th October, 1944, by Admiral Sir Bertram H. Ramsay, K.C.B., M.V.O., Allied Naval Commander-in-Chief, Expeditionary Force.

*Office of Allied Naval Commander-in-Chief,
Expeditionary Force,
London, S.W.1.
16th October, 1944.*

Sir,

I have the honour to forward my report of the opening phase of Operation "Neptune," the period covered being from my appointment as Allied Naval Commander, Expeditionary Force, on 25th October, 1943, to the withdrawal of the Naval Task Force Commanders on 3rd July, 1944. The report is lengthy owing to the need to cover, if only superficially, the very many different aspects of what is acknowledged to be the greatest amphibious operation in history. Because the report is so bulky, I have decided to write this covering letter in a form which will enable those who wish to do so to obtain a bird's eye view of the operation as a whole, including the preparatory period and the build-up, without going into detail.

2. Because, in the event, the movements of over 5,000 ships and craft proceeded smoothly, and to plan, and because, despite bad weather, the Allied armies and air forces were landed and reinforced, if not quite as quickly as the optimum planning figure, at least more quickly than the enemy reinforced his forces by land, it may now appear that the size and complexity of the naval problem was somewhat exaggerated. This was not the case. That

the operation proceeded smoothly and according to plan was the result of the hard work and foresight of the many thousands concerned in its preparation and of the determination and courage of the tens of thousands in the Allied navies and merchant fleets who carried out their orders in accordance with the very highest traditions of the sea.

Magnitude of the Operation and need for Close Control.

3. From the outset of detailed planning it was clear that success would be largely dependent upon the ability to exercise close and continuous control of the thousands of ships and craft taking part. This overall control would have to embrace control of loading of all types of shipping and craft, control of convoy sailing, control of tugs, and control of ship repairs. Without it time would inevitably be lost and the best use could not be made of the great resources given to the operation to establish our forces ashore and then to reinforce them as quickly as possible. As other services and authorities besides the navy were intimately concerned with many of the problems connected with the rapid reinforcement of the Expeditionary Force, it was found necessary during planning to set up new organisations to control various aspects of the operation during the vital first few weeks in which the tempo of the initial assaults had to be maintained at the highest pitch. TURCO, BUCO, COREP and COTUG* accordingly came into being and were instrumental in the success achieved.

4. Because the assaults were to be carried out on a narrow front and because British and

* *Admiralty footnote:*

T.U.R.C.O.—Turn Round Control Organisation;
B.U.C.O.—Build-Up Control Organisation;
C.O.R.E.P.—Control Repair Organisation;
C.O.T.U.G.—Control Tug Organisation.

U.S. forces had to share port facilities in the Islé of Wight area, it was evident that co-ordination of naval plans in some detail would be necessary on my level as the Allied Naval Commander-in-Chief. This was effected smoothly due to the loyal support of both Task Force Commanders, but I am aware that the U.S. naval authorities had to exercise considerable restraint in submitting to a degree of control by superior authority on a level higher than that to which they were accustomed. In their reports the U.S. naval commanders have commented that in their view my orders extended to too much detail. No argument, however, that has been produced since the operation has led me to change my opinion that full co-ordination in detail was necessary on the highest naval level.

Development of the Plan.

5. An outline plan for the operation had been prepared by *C.O.S.S.A.C. in July, 1943, and was approved by the Combined Chiefs of Staff at the Quebec Conference. Its soundness was proved later in detailed planning as in no respect were its fundamentals altered, though its scope and range were extended. On the naval side, as the plan developed so the naval requirements grew, and for some months we were planning without being certain that our full demands would be met. This uncertainty was a constant anxiety to me and was only removed at the eleventh hour.

6. The naval problem that had to be faced can be briefly summarised 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 ten or twelve 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 organisation was as efficient as it could be, as the time factor was all important.

7. The one fundamental question on which there had to be early agreement 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 which was made, to make a daylight landing, was in accord with experience in the Pacific against strong defences, when the assaulting force possessed decisive naval and air superiority, and 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 Commanders-in-Chief of the Expeditionary Force at least two vain efforts were made to change it.

Administrative Planning.

8. Administrative Planning for a major cross-Channel operation had been carried on in the United Kingdom since May, 1942, by a skeleton staff. As a result, preparations were far advanced before the operational plan took shape and the logistic requirements of the latter were able to be fully met.

Enemy Miscalculations.

9. Because the power of manoeuvre at sea was so limited the need for keeping the enemy uncertain as to our precise objectives was paramount. Characteristic wireless traffic accompanying training and movements of assault forces had to be controlled. I understand that the success of the radio measures taken was an important contributory factor in securing surprise. Other measures included the berthing of dummy landing craft in Dover and Nore Commands before D day and the parking of PHOENIX and WHALE Units* at Selsey and Dungeness. Arrangements were also made with the Admiralty for the large number of commercial ships that were destined for the Thames and ships for loading to sail in later "Neptune" convoys to wait in Scottish ports until the operation began. Thus the concentration of shipping automatically spread itself throughout the ports of the United Kingdom and, although most congested on the South Coast, it was not confined to that area.

10. Tactically, a naval diversion employing light craft was carried out in the Straits of Dover to support the air bombardment in this area simultaneously with the main assaults, whilst a similar diversion was made in the neighbourhood of Cap d'Antifer. In both of these and also off Cap Barfleur radio counter-measures were employed by aircraft and by the surface craft taking part to give an appearance to enemy radar similar to that presented by the real forces. We now know that these were very successful and were an instrumental factor in enabling our forces to continue for so long towards the enemy coast before their composition could be determined.

Security.

11. Complete security was maintained, and it is considered that the very highest satisfaction may be felt that, despite the many hundreds who were for months aware of all the details of the plan, so far as is known there was no leakage. Some anxiety was felt on one or two occasions over individual cases in which orders or maps were distributed or opened contrary to the instructions given, but no harm is believed to have come of these isolated incidents and, when the very large number of documents

* Admiralty footnote: C.O.S.S.A.C.—Chief of Staff, Supreme Allied Commander, General Sir Frederick Morgan.

* Admiralty footnote: PHOENIX and WHALE Units were components of the artificial (MULBERRY) harbours.

is considered, it is perhaps remarkable that so few grounds for anxiety existed before full briefing commenced.

MULBERRY Project.

12. The suggestion that artificial harbours should be constructed in the assault area was, it is believed, first made by Commodore J. Hughes-Hallett, when serving as Chief of Staff (X) to Commander-in-Chief, Portsmouth, who suggested the use of sunken ships for this purpose. The original designs for such harbours, which were, however, to be constructed of sunken concrete caissons, were prepared by the War Office. It was apparent soon after taking up my appointment that much greater naval supervision of the preparations and an experienced naval staff to conduct the operation were necessary and I asked the Admiralty to appoint Rear-Admiral W. G. Tennant, to take charge of this matter. From the outset Admiral Tennant was uncertain of the ability of the concrete PHOENIX Units to withstand even a moderate gale; and their placing had been estimated under the most favourable conditions to take at least 14 days. It was on his suggestion that 70 obsolete ships were prepared as block ships, which could be placed in two or three days and thereby speedily provide some shelter over the 40 miles of beaches before the PHOENIX breakwaters could be built. His foresight was proved in the gale that blew from 19th to 22nd June, as these blockships alone gave some shelter to the hundreds of landing craft and barges on a lee shore and greatly reduced the number that was damaged, as well as making it possible to continue unloading on a small scale.

13. The construction of the units for the MULBERRIES was an undertaking of considerable magnitude and coming at a time when all efforts were already centred on the preparations for "Neptune" proved difficult to complete to schedule. As the completion fell behind, the difficulties were accentuated by the shortage of tugs, as a regular phased programme was essential if all units were to be moved into their assembly positions before D day. Vigorous and continued representations for more and more tugs for "Neptune" were made, both in the United Kingdom and to the U.S.A., and, although there was still not a sufficiency to meet the full towing programme, by D day the MULBERRY units were in the main ready and in their assembly areas, thanks to the initiative and resource displayed by Admiral Tennant and his staff. A full report of the operations of the construction of the MULBERRIES and GOOSEBERRIES (craft shelters) has been compiled and has been forwarded under separate cover. In conception and execution these harbour shelters were unique. The damage wrought by the June gale to MULBERRY A, which necessitated the abandonment of the completion of this harbour, does not detract in any way from the value of the idea, for, had it been constructed similarly to MULBERRY B, there is reason to suppose that it might have survived to the same extent.

Pre-D Day Reconnaissance.

14. During planning it was necessary to carry out certain reconnaissances in the "Neptune" area to check the depths of water, both over

drying rocks and also in the MULBERRY sites, and to examine the nature of the beaches, as geological estimate had reported unfavourably regarding the latter. This reconnaissance was carried out between November, 1943, and January, 1944, being confined to the dark moon period in each month. Combined Operations Pilotage Parties were employed, using first L.C.P. (Sy)*, which were towed towards the French coast by M.L.s, and later X-craft†. Their missions were carried out successfully and skilfully, and, so far as is known, only on one occasion was a party sighted by the enemy. As diversions for these reconnaissances, operations were carried out between the Channel Island and the Pas de Calais (both inclusive). Initially these operations consisted of small scale raids, but were later replaced by offshore reconnaissance by L.C.P.(L)‡, similar to the "Neptune" reconnaissance. The diversion operations were planned by Combined Operations Headquarters and executed by the appropriate Home Naval Commands.

Administration of Ferry Craft.

15. Previous operations have shown the great difficulties in administering the craft of the ferry service during the first few weeks before naval shore facilities are properly established. The problem in "Neptune" was greater than ever before, 1,500 craft and barges and 15,000 personnel having to be provided for, but, although there were individual failures and resulting hardship, reports show that in general the measures taken proved successful in maintaining the morale and efficiency of officers and men who perforce had to work long hours for days on end.

Salvage, Repair and Fuelling Organisations off beaches.

16. As the plan envisaged the use of the beaches for a period of three months it was evident that provision would have to be made on a scale hitherto unknown for the salvage, repair, fuelling and watering of the great number of ships and craft that would be damaged or that would require fuel or water off the enemy coast. A considerable salvage fleet had to be assembled and special ships and landing barges were fitted for repair work and others to carry fuel and water. Naval parties were trained to assist in craft repairs ashore and were attached to the Assault Forces. Owing to the widespread damage caused by the four days' gale the salvage repair organisation was tested far beyond anything contemplated and, although it seemed at one time that it would be unable to compete, yet in the end it may be said to have triumphed, assisted as it had to be by additional resources from the United Kingdom.

Training and Rehearsals.

17. The training facilities and assault firing areas were originally provided for a three-divisional assault, and the extension of the plan to include five assaulting divisions introduced some difficulties in providing adequate facilities for the two new divisions. But due to the great co-operation shown by all concerned, to the

Admiralty footnotes:

* L.C.P.(Sy)—Small personnel landing craft fitted for survey duties.

† X-craft—2-men submarines.

‡ L.C.P.(L)—Landing Craft Personnel (Large).

unselfishness of the Commanders whose divisions were already nearly trained, and to the initiative and drive of the Commanders of the new divisions who had to fit a six months' programme into three, all difficulties were overcome, and on the day Forces G and U* carried out their assaults with the precision of yet another rehearsal.

18. It had always been felt that the enemy might react when large scale exercises were carried out in the Channel. He did not do so until exercise "Tiger," which was the final rehearsal for Force U, when during the night of 27th/28th April three groups of E-Boats penetrated the patrols covering Lyme Bay and delivered a successful attack on the last convoy to sail to the exercise consisting of eight L.S.T.† Two L.S.T. were sunk and one was damaged, and there was a regrettably high loss of life. Naval defensive measures on this occasion were undoubtedly on the weak side and this incident underlined the need for every available warship and craft to take part in the opening phases of "Neptune" when the enemy must be expected to attack our convoys with everything at his disposal.

19. The final rehearsals for the other four assault forces took place on 4th May under the code name of "Fabius". Opportunity was taken to exercise the simultaneous sailing from the Isle of Wight area of the three forces based there and also to try out the arrangements whereby A.N.C.X.F.‡ would assume control of all operations in the Channel. So far as the naval assault forces were concerned the exercises were satisfactory, but a freshening south-westerly wind in the afternoon of the first day caused the full programme to be curtailed to avoid damage to landing craft. Enemy reaction to "Fabius" was negligible, being confined to an aircraft attack on a destroyer in one of the covering forces. That it was not greater, and indeed that our naval preparations proceeded with so little interruption, must be largely attributed to the very high degree of air superiority achieved in the months before D day. Enemy air reconnaissance was slight and infrequent.

Mining.

20. Sea mining is carried on continuously by the Admiralty and by Bomber Command, but for some months before "Neptune" the mining programme was planned to afford direct assistance to the operation both as regards location and timing of each lay. Considerable success is known to have been achieved by mines laid during this period under plan "Maple," which was really an integral part of operation "Neptune."

Meteorological.

21. Early in planning it was appreciated that the decision which you 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. Not only was good weather necessary for the assaults, but also for the period immediately following them, to ensure a good start for the build-up. The meteorologists were doubtful of their ability to forecast the weather more than 48 hours ahead for certain, which was barely sufficient to cover the hour of the assaults, as Force U from Devonshire had to sail 36 hours before H hour.* To assist the forecasts, two additional U.S. and two British warships were stationed in the Atlantic to transmit weather reports for some days before D day. For security this procedure was also adopted before exercise "Fabius" and this, in addition, served to practise the meteorological team concerned in making their deductions.

Availability of Landing Ships and Craft.

22. During planning there were frequent discussions as to what percentage availability of landing ships and craft should be taken for the operation. The original planning figures of 90 per cent. for L.S.T. and 85 per cent. for L.C.T. and L.C.I. (L)† were challenged by Washington who held that the U.S. Navy could achieve a higher standard of maintenance.

Admiralty footnotes:

* H hour—The hour at which the first flight of landing craft "touch down" on the beach in an assault. Formerly known as zero hour.

† L.C.I. (L)—Landing Craft, Infantry (Large).

Admiralty footnotes:

* The organisation of the Expeditionary Force was as follows:—

Force	Assembly Ports	Assault Area
	<i>Western Task Force (American)</i>	
Assault Force U †	Torbay, Brixham, Dartmouth and Salcombe	Western flank of U.S. area (UTAH beach)
„ „ O	Weymouth, Portland and Poole	Eastern flank of U.S. area (OMAHA beach)
Follow-up Force B	Plymouth, Falmouth, Helford River and Fowey	U.S. area
First Build-up Divisions	Bristol Channel ports	—
	<i>Eastern Task Force (British)</i>	
Assault Force G †	Southampton, Solent and Spithead	Western flank of British area (GOLD beach)
„ „ J	Southampton, Solent and Spithead	Centre of British area (JUNO beach)
„ „ S	Portsmouth, Spithead, Newhaven and Shoreham	Eastern flank of British area (SWORD beach)
Follow-up Force L	The Nore and Harwich	British area
First Build-up Divisions	Thames	—

† These forces were additional to the original plan.

† L.S.T.—Landing Ship, Tanks.

‡ A.N.C.X.F.—Allied Naval Commander-in-Chief, Expeditionary Force.

British Admiralty opinion, on the other hand, supported these estimates in view of the extremely heavy burden that would be thrown on all the repair facilities on the south coast shortly before the operation. Experience in the Mediterranean had shown that a greater number of ships and craft always offered for loading for an assault than had been expected, as the incentive of action had a clearly salutary effect on repairs previously deemed essential. While I therefore really expected the planning figures to be exceeded I was very loath to gamble on this and I only accepted higher figures for U.S. L.S.T. of 95 per cent. after Rear-Admiral A. G. Kirk, U.S.N. (Naval Commander, Western Task Force) had agreed them. In the event, due to the splendid efforts of COMLANCRAB-ELEVENTHPHIB* (Rear-Admiral J. Wilkes, U.S.N.), and his staff, the record overall figure of 99.3 per cent. for all types of U.S. landing ships and landing craft was attained. The similar British figure was 97.6 per cent., and, in my opinion, the very highest credit is due to all concerned in the maintenance and repair organisations of both countries for this achievement, which is the more outstanding when it is remembered that the majority of the assault ships and craft had to be used continuously during months of training before the operation.

Increasing Enemy Naval Activity.

23. Although the enemy were slow to react to our much publicised invasion preparations from the end of April onwards, enemy naval activity in the Channel did increase. On 29th April in an engagement between two Canadian destroyers, who were covering a minelaying operation off Ile de Bas, and two Elbing class, one of our destroyers and one of the enemy's were sunk. Throughout the month of May enemy E-Boat activity in the Central Channel increased, and it was apparent that more E-Boats were being moved to Cherbourg and Havre. Our destroyers and light coastal forces operated by Commanders-in-Chief, Portsmouth and Plymouth, were, however, able to keep the enemy in check and to inflict casualties on him.

24. The first enemy U-Boat was reported in the Western Channel on 20th May, which necessitated a change in the dispositions of our covering forces. The Admiralty had some weeks earlier announced their intention of allotting four A/U Support Groups to Commander-in-Chief, Plymouth, to operate in the Western Channel and to co-operate with Coastal Command in sealing this approach to the "Neptune" convoy routes. The Air Officer Commanding-in-Chief, Coastal Command, had similarly made new dispositions to be effective some weeks before D day in anticipation of the movement of the U-Boat battle to the Channel. Coastal Command threw themselves into the preparations for "Neptune" with as much enthusiasm as any unit in the Allied Expeditionary Force, and I personally and the whole Naval Expeditionary Force are deeply indebted to them for the efficiency of the measures they adopted, which was reflected by the very small scale of U-Boat attack that eventuated.

* *Admiralty footnote:*
COMLANCRABELEVANTHPHIB — Commander Landing Craft and Bases, 11th Amphibious Force.

25. No weapon that the enemy might have employed before D day against our forces caused me more anxiety than the potentialities of minelaying. Mines were employed defensively on a considerable scale in the Bay of the Seine during the months prior to D day and caused the naval plan largely to be framed round the requirements for sweeping our forces through the enemy's minefields. In the six weeks before D day the enemy also considerably intensified his minelaying off the south coast of England, using aircraft on a scale which had not been attempted for over two years and introducing two new types of mine. This minelaying was confined to moonless periods. Had D day been in such a period it is doubtful whether the Portsmouth channels could have been cleared in time. As it was, no interruption was caused to the rehearsals nor to the assembly of our forces and it is considered that the enemy missed a great opportunity in not still further extending this form of attack. That he did not attempt more was yet another result of the air superiority we achieved before D day. Towards the end of May some aircraft minelaying was combined with night air bombing attacks on a light scale on south coast ports, but very few casualties were caused to ships and personnel.

D Day and H Hour.

26. No single question was more often discussed during planning than that of H hour. As H hour was linked to tidal conditions, D day was dependent on it. Until obstructions appeared on the assault beaches, the argument was largely confined to the determination of the ideal balance between a sufficiency of light for aimed air and naval bombardment and the minimum daylight approach, taking into consideration the number of days to which postponement in the case of bad weather would be acceptable in view of the different tidal conditions on later days. But as beach obstructions in some numbers were erected on the beaches, the need to deal with these dryshod, and therefore to land below them, overcame all previous arguments and H hour and D day were finally largely determined by the position of these obstacles.

27. As on the western (U.S.) beaches the obstructions were known to be in place further down the beach than on the eastern (British) beaches and as in Force J's sector near low water there were some rocks which would be a danger to the assault craft, it was finally necessary to select five different H hours, ranging over a period of one hour and twenty-five minutes. Anxiety was felt on two counts, first that the earlier H hours in the U.S. Sector, coupled with their requirements to arrive in the transport area earlier relative to H hour than the British, might prejudice surprise in the west before it was lost in the east, and second, that so many H hours might confuse some or many of the ships and craft taking part. In the event the lack of alertness of the enemy obviated the first and good briefing prevented the second.

28. Owing to the need to take account of the latest photographic reconnaissance showing the exact positions of the obstacles, the final decision as to D day and H hour was not made until 17th May when 5th June was selected,

with postponement acceptable to 6th and 7th June.

Weather immediately before D Day. 24-hour Postponement.

29. You held the first meeting to discuss the weather forecast for D day a.m. on 1st June. The outlook was not very good and it deteriorated further during the next three days. At the meeting held p.m. 3rd June you decided to allow the movements of the Forces to commence, despite the unfavourable outlook, in view of the many advantages in launching the operation on the first possible day. But at the next meeting at 0415 on 4th June it was clear that conditions the next day would not be acceptable and a postponement of 24 hours was ordered. By this time all of Force U from Devonshire and a proportion of Force O from Portland were at sea, and ships and craft had to reverse their course and return to harbour. Instructions for this eventuality were included in the Operation Orders and worked smoothly, except in the case of Force U2A,* who failed to receive the signal ordering the postponement. By 0900 this Force was about 25 miles south of St. Catherine's Point and still steering south. Two destroyers and a Walrus aircraft had to be sent at full speed to turn it round. Had this not been done it is possible that the Force would shortly have been detected by the enemy's radar and this would undoubtedly have resulted in his increased vigilance for the next few days.

30. The craft of Force U had a bad time punching into a head sea on their return westwards and, although the whole Force was ordered into Weymouth Bay, a number of craft never managed to enter it. Considerable anxiety was felt throughout 4th June both as to the need of a further postponement with all its resulting loss of efficiency of craft and assault troops, and whether Force U would be in a fit state to go forward again early the next morning should the decision be made to go on with the operation. At one time it was thought that Force U would have to return to Devonshire to re-form, but, when it was pointed out that this would almost certainly result in the postponement of the operation to the next moon period, Rear-Admiral Kirk, with characteristic verve, announced his readiness to proceed.

The Passage.

31. When the assault forces again sailed early on 5th June the weather was still largely unfavourable for landing craft, but more suitable conditions had been forecast for the early hours of 6th June. Wind was W.S.W.† Force 5 veering to W.N.W. decreasing in force at times but with strong gusts; waves were five to six feet in mid-Channel. These conditions made the passage difficult, and considerable discomfort was experienced by the troops embarked in L.C.T.‡ and L.C.I.(L). Although some of the minor landing craft which were due to arrive p.m. on D day had to put back to harbour and others were delayed, the assault forces all drove on and almost without excep-

Admiralty footnotes:

* Force U2A, which was a large and slow assault convoy of Force U, was composed of 128 L.C.T. with their escort.

† Force 5—Fresh breeze (16-20 m.p.h. at sea level).

‡ L.C.T.—Landing Craft, Tanks.

tion arrived off their beaches to time. The performance of the leading groups of Force U was particularly praiseworthy, since, as has been stated, some of these failed to enter harbour on the postponement, and by H hour their Commanding Officers had been on their bridges continuously for about 70 hours. Out of the 128 L.C.T. in Group U2A only seven failed to take part in the assault, and this figure took account of engine failures as well as the stress of the weather.

32. To ensure the correct positioning of the northern ends of the 10 approach channels that were to be swept across the known enemy minefields 10 F.H. 830 buoys had been laid by three H.D.M.L. of Force J during the night 31st May/1st June. The buoys were timed to transmit between the hours of 1400 and 2200 on six successive days, commencing on 4th June. At 1800 on 5th June, 10 H.D.M.L. took up position to point these buoys for the Assault Forces, and all reports show that this method was wholly satisfactory. A large number of ships was fitted with receivers to obtain positions from the Gee (Q.H.) and Decca (Q.M.) radio navigational systems, both of which worked fully according to expectations, and navigation was never regarded as a serious problem. The above additional measures were taken to guard against effective jamming by the enemy p.m. on D-1 should surprise have been lost.

Achievement of surprise.

33. There was an air of unreality during the passage of the assault forces across the Channel curiously similar to that on D-1 in "Husky" as our forces approached Sicily. The achievement of strategical surprise was always hoped for in "Neptune" but was by no means certain, whereas that of tactical surprise had always seemed extremely unlikely. As our forces approached the French coast without a murmur from the enemy or from their own radio, the realisation that once again almost complete tactical surprise had been achieved slowly dawned. This astonishing feat cannot be explained by any single factor and must be attributed in part to all of the following: the miscalculations of the enemy; the high degree of air superiority attained by our Air Forces, which drastically reduced the enemy's air reconnaissance; the bad weather which caused the enemy to withdraw his E-Boat patrols to Cherbourg; and finally the radio counter-measures employed by our forces, which, coupled with the diversions against the Pas de Calais and Cap d'Antifer, left the enemy in doubt as to the points at which we would land even when he had become aware that the invasion was in progress. Although the unfavourable weather caused difficulties and damage to craft off the beaches later, the advantages gained by surprise were so striking that your decision to go on despite the weather was amply justified. A postponement of one more day, e.g. till 7th June, would, in the event, have proved disastrous owing to the conditions of sea off the beaches. The problems arising out of a postponement of 12 to 14 days to the next suitable period are too appalling even to contemplate.

Minesweeping during the Approach.

34. The sweeping of 10 approach channels for the assault forces represented the largest single

minesweeping operation that had yet been undertaken in war. The provision of the necessary minesweeping flotillas had only been achieved by drawing upon some which had little opportunity for practice, and, when my operation orders were written, it was realised that the successful completion of the minesweeping tasks would demand a high degree of skill from all concerned. Subsequently the late appearance of beach obstacles on the assault beaches further complicated the problem, as the alteration in the time of H hour relative to high water that resulted meant that it would now be necessary for all flotillas to change sweeps during passage to avoid sweeping with an unfavourable tide. Some flotillas had no opportunity to rehearse this manoeuvre at all, as it was not decided on until after exercise "Fabius," and the fact that all successfully achieved it is considered most satisfactory.

35. Sweeping was carried out in all cases according to plan, despite stronger tidal streams than had been allowed for and the unfavourable weather, which made very difficult the operation of the Mark 5 sweeps by M.L.s, and the minesweepers approached the French coast without interference. The early arrival of the Western Task Force flotillas had been a cause of some anxiety during planning but, because surprise was in the event achieved, it had no unfortunate result. The senior officers of the flotillas concerned expressed surprise in their reports that although the enemy coast at Cape Barfleur was sighted as early as 2000 on 5th June no batteries opened fire at them and the operation proceeded unopposed; in this connection it may be noted that minesweepers switched on R.C.M.* at 2130.

Naval Bombardment.

36. It had been planned that ships should be ready to open fire at their pre-arranged targets either from the time when the assault convoys came within range of them or from the time when it was light enough for the enemy to spot his fall of shot visually, whichever was the later; but that, if possible, fire should be withheld until it was light enough for air observation. In the event, this proved possible with the exception of one or two ships in the Western Task Force, who found it necessary to open blind fire against certain batteries whose fire was more accurate than was the general case.

37. As Bombarding Force D arrived in position on the Eastern Flank at 0515, a half-hearted attack was made by four enemy E-Boats and some armed trawlers which had come out of Havre. The enemy were seen indistinctly against the land and were almost immediately obscured by the pre-arranged smoke screen laid by our aircraft, from behind which they fired torpedoes. The heavy ships managed to comb the torpedo tracks but the Norwegian destroyer SVENNER was hit and sunk. One enemy trawler was sunk and one damaged, and the attack was not renewed. The danger to friendly forces of smoke laid to a pre-arranged plan was plainly exemplified.

38. The fire from enemy batteries, which was never severe, was directed initially against bombarding ships only, and was largely ineffective.

* *Admiralty footnote:* R.C.M.—Radio Counter-Measures.

This is considered to have been due to the combined success of the pre-D day bombing programme, the heavy air bombardment in the early hours of D day, and the measures taken to prevent the enemy from ranging and spotting; and it demonstrates that duels between ships and coastal batteries are in certain eventualities feasible provided such precautions are taken. It must be remembered, however, that the scale of coast defence in the assault area was the lowest on this part of the coast and the results would have been very different, for instance, in the Pas de Calais. Much of the success of naval bombardment must be attributed to the work of the single-seater fighter spotters, who carried out their tasks tirelessly and gallantly. Communications between bombarding ships and spotting aircraft suffered a number of failures at the start owing mainly to the novel nature of the technique, but they improved rapidly with successive waves of aircraft.

39. Warships and gun support craft took part in the drenching of beach defences immediately prior to the assault. This fire appeared accurate, and was of sufficient weight to neutralise and demoralise the defenders, except on OMAHA Beach where the total failure of the day heavy bombers, due to low cloud base, contributed to the much stiffer opposition than was found elsewhere. Of the support craft the L.C.G.(L)* deserves special mention. This craft, which achieved only partial success in the Mediterranean due to lack of training and shortcomings in its equipment, was particularly effective and further demonstrated the value in assault of high velocity guns at close range. Since D day it has continued to provide effective direct and indirect fire support.

The Assaults.

40. The choice of the "lowering positions" (U.S. "transport areas")† had been a matter of considerable discussion, the conflicting factors of being outside the range of the enemy's shore batteries and south of the known mined area having to be balanced. The Eastern Task Force (British) finally chose their "lowering positions" about 7 to 8 miles off shore, whilst the Western Task Force (U.S.A.) decided to place them further to seaward, 10 to 11½ miles out. In the rough weather that obtained when the assault forces arrived in the "lowering positions," the longer passage inshore for the assault craft from the Western Task Force appeared to add appreciably to their difficulties.

41. To mark the approaches to the beaches for Forces S and J two X-craft were employed as it was very important that Force S should not be too far to the eastward, and the coast in Force J's sector was not distinctive in outline. These craft had sailed on the night of 2nd/3rd June, being towed for part of the passage. Each submarine received at 0100 5th June a message that the assault had been postponed 24 hours, and, in spite of the difficulties of navigation for a craft of very slow

Admiralty footnotes:

* L.C.G.(L)—Landing Craft Gun (Large), a type of "support craft" not actually used for landing men or material.

† These positions or areas are those in which the ships carrying assaulting troops and craft stop to lower these craft and disembark the troops into them.

diving speed in a cross tidal stream, had maintained their positions off the enemy coast until daylight on the 6th June when they flashed lights to seaward from the surface in their correct positions as a guide to the oncoming assault craft. It is considered that great skill and endurance was shown by the crews of X.20 and X.23. Their reports of proceedings, which were a masterpiece of understatement, read like the deck log of a surface ship in peacetime, and not of a very small and vulnerable submarine carrying out a hazardous operation in time of war.

42. Weather conditions off the assault beaches immediately before H hour were as follows:—

Wind—Westnorthwest—force 4.*

Sea.—Moderate—waves 3/4 feet.

Sky.—Fair to cloudy with cloud increasing.

These unfavourable conditions interfered to some extent with the release of the assault craft and also with the launching of D.D. tanks,† but nevertheless the majority of the leading waves of the assaults touched down at the right place and at approximately the right time throughout the length of the front. The following is a brief summary of how each Assault Force fared.

Force S (British).

43. The leading groups passed through the "lowering positions" and approached the beaches generally on time. Enemy opposition was restricted to shell fire at craft off the beaches from light batteries ashore. D.D. tanks were successfully launched but were overtaken by the L.C.T.(A.V.R.E.)‡ which touched down at the right time and place. Beach obstacles presented some difficulty but landing craft were, when necessary, driven through them relentlessly. Opposition ashore was initially only moderate, and for some hours the chief difficulty in this sector was that of congestion on the beaches, as only two exits could be brought into use.

Force J (British).

44. The first touch down was from 10 to 15 minutes later than planned, and moderate opposition was experienced on landing. On account of the weather D.D. tanks were not launched but were discharged directly on to the beach. By 1000, however, all beach objectives had been gained and the Army were advancing steadily, if slowly, inshore against opposition. Several major landing craft were damaged in this sector by beach obstacles and TELLER mines.

Force G (British).

45. The assaults landed dead on time but the left group of L.C.T.(A.V.R.E.) touched down slightly to the eastward. D.D. tanks were not launched here on account of the weather but were later beached inshore. Considerable difficulty was experienced in developing JIG beach on the left, which was enfiladed from the

outset by two strong points, and it was not until 1600 that the situation became stabilised on that beach. Here also a large number of major landing craft were damaged by TELLER mines and beach obstacles.

Force O (U.S.A.).

46. Considerable difficulty was experienced in this sector due to the state of the sea. Assault craft on their way inshore had a bad time, a number of craft were swamped and the assaulting infantry in the remainder in general arrived on the beach in rather poor shape. D.D. tanks were launched three miles offshore as planned on the left flank but regrettably all but two or three foundered. Thus the initial attack here had to be carried out with little tank support. On the right flank D.D. tanks were landed directly and successfully on to the beach, but were quickly put out of action by enemy fire. Enemy opposition at the beach exits was severe. The first waves of the assault touched down five minutes late at 0635, but due to the weather, the loss of the D.D. tanks and the failure of some L.C.T.(A)* to keep their position the order of landing was somewhat mixed. Due to the heavy surf, the difficulty in clearing the beach obstacles, and the persistent enemy fire directed on the beaches, the programme of landing troops and vehicles quickly fell behind in time. For about two hours assault troops were pinned to the beaches. During the rest of the morning penetrations were made inland but only slowly and by relatively small groups. All naval personnel who witnessed the battle were unanimous in paying tribute to their determination and gallantry. The supporting destroyers and gun support craft stood in close inshore during the period of fiercest fighting on the beach and rendered great support to the troops. At one time it was considered that it might be necessary to land part of Force O through the Force G beaches, but this proved unnecessary, as the First U.S. Division fought its way off the beach towards the end of the forenoon and the beach exits could then be developed. A considerable number of craft were sunk or damaged in this sector due to enemy action and the weather. Beach obstacles and mines proved particularly troublesome. The Assault Force Commander has reported that the preliminary air bombardment planned for this area had struck too far inland to affect the beach defences. Its absence was severely felt when the landing commenced and fierce opposition was met.

Force U (U.S.A.).

47. Almost complete surprise appeared to be achieved in this sector. Despite the late arrival of some groups in the transport area, due to the weather, assault waves were generally landed on time and against only slight enemy opposition. Due to the early loss of two control vessels the landing was made 2,000 yards to the south-east of the planned position. This proved fortunate, as the obstacles and defences there were found to be less formidable than those farther north. D.D. tanks were launched and landed successfully, but did not arrive until H + 20 minutes. Beach obstacles were relatively

Admiralty footnotes:

* Force 4—Moderate breeze (11-15 m.p.h. at sea level).

† D.D. tanks are tanks fitted with flotation gear to enable them to swim ashore when disembarked outside their wading depth.

‡ L.C.T.(A.V.R.E.)—Landing Craft carrying tanks fitted with special obstacle clearing equipment used by R.E.

* *Admiralty footnote:* L.C.T.(A)—Tank Landing Craft strengthened to allow the self-propelled artillery which they carried to fire whilst still embarked, thus providing an addition to the naval close support fire.

easily dealt with. There was less sea at UTAH than elsewhere and very good progress was made in landing troops and vehicles throughout the day.

General Remarks on D Day.

48. The outstanding fact from the naval point of view was that, despite the unfavourable weather, in every main essential the plan was carried out as written. Tactical surprise, which had not been expected, was achieved and greatly eased the problem of getting ashore in every sector except at OMAHA. Losses of ships and landing craft of all types were much lower than had been expected, but damage to L.C.T. and smaller craft, aggravated by rough weather conditions, was higher than had been allowed for. Only one or two minor air attacks were made on our shipping and on our landing beaches during the day. This was a remarkable demonstration of the degree of air superiority that had been attained before D day. By the end of D day immediate anxiety was felt on only one count—whether the weather would improve sufficiently quickly to enable the build-up to start as planned.

Commencement of the Build-up.

49. The build-up was planned to commence immediately on D+1 with the arrival of eight ship convoys on that day. The convoys all arrived to time but unloading was severely restricted due to the unfavourable weather, wind being force 5 from the north at midday. Anxiety had been felt regarding the passage through the Straits of Dover, p.m. on D day, of convoy E.T.P.1, consisting of nine large personnel ships from the Thames. They were the first large ships to pass the Strait for four years, and arrangements were made with Coastal Command for F.A.A. aircraft to assist M.L.s in laying smoke screens for this and subsequent convoys. The enemy batteries opened fire on an M.T. ship convoy that was preceding it and sank one ship. I decided, however, that the risk of a daylight passage must be accepted and convoy E.T.P.1, then ahead of time, was accordingly turned back until the smoke screening M.L.s had had time to replenish. A most effective smoke screen complementary to the shore-based R.C.M. cover was finally laid and convoy E.T.P.1 passed through the Straits at 1700, 6th June, without any enemy interference. This was the only personnel ship convoy to be sailed from the Thames during the build-up.

Arrival of blockships.

50. The first convoy of 45 blockships arrived in the assault area at 1230 on 7th June and the sinking of these ships was commenced at once according to plan. All five GOOSEBERRY shelters were completed quickly and conformed broadly to the planned design. The early completion of this project was later found to be of the greatest benefit to the ferry craft off the beaches and the skilful manner in which this operation was conducted reflected great credit on all concerned.

Air Attacks.

51. Air attacks on the beaches and the shipping lying off them were carried out during the night of 7th-8th June. The attacks were not serious and only minor damage and casualties were caused, but, unfortunately, one of the

early attacks soon after midnight coincided with the arrival of some of our troop-carrying aircraft with airborne reinforcements. These Dakota aircraft were fired on by ships of the Eastern Task Force and at least one of them was shot down. This most unfortunate incident, which was a repetition, though happily on a small scale, of our experiences in Operation "Husky", emphasises the danger of routing our own aircraft over our own naval forces. This had been pointed out repeatedly during the planning but the naval objections had to give way to the demands of the Air Force plan.

First Enemy Light Craft Attacks.

52. During the night of 6th-7th June, enemy R-Boats came out from Havre and E-Boats from Cherbourg. Both were intercepted by our coastal forces and the enemy were forced to retire after suffering damage. Similar sorties were made almost nightly from Havre and Cherbourg during the next few weeks but the measures taken by the Task Force Commanders nearly always prevented the enemy from penetrating the protecting screen. By inflicting casualties on the enemy forces on most nights that they came out, their offensive spirit was blunted and the potential threat from them thereby reduced.

Casualties due to Mines.

53. The enemy scored a measure of success with his mines on D+1 when a number of ships were sunk or damaged. In some cases this resulted from ships either not following, or being forced out of, the swept channels; and showed clearly that the policy of sailing ships in convoy, which I had insisted upon, was very necessary during the opening phases of the operation.

Prevention of U-Boat Attack.

54. The concentration of effective U-Boats in the Biscay ports that had been made before D day showed that it was the enemy's intention to launch a full scale submarine offensive against our invasion shipping as soon as we had become committed to a major landing. The plan of the Admiralty and Headquarters Coastal Command was accordingly to flood the western approaches to the Channel with aircraft in order to keep the U-Boats submerged for as long as possible and also to operate a number of A/U Support Groups in this area. Initially four of these groups worked under the command of Commander-in-Chief, Plymouth, while five more took part in operation "C.A." under the orders of Commander-in-Chief, Western Approaches, in conjunction with escort aircraft carriers. A/S conditions were generally poor in the Channel area but a number of promising attacks were made by these Support Groups during the first four weeks of "Neptune", including some kills. Coastal Command also increased their offensive patrols in the "northern transit area" off the Norwegian coast prior to D day. From 16th May until 3rd July, there were 44 sightings in this area, 38 of which were attacked and 13 probably sunk. These operations were of direct value to the anti-U-Boat operations in the Channel and were a material factor in the defeat that the enemy undoubtedly suffered here during the opening weeks of "Neptune".

55. The first move by the enemy was when it was reported that five U-Boats had sailed from Brest on the 6th June. On this night there were no less than 11 U-Boat sightings by Coastal Command aircraft, six of which were attacked. The next night there were 10 more sightings, seven being attacked. After this vigorous action the enemy tried to approach the assault area with submarines using Schnorkel but it was some days before U-Boats penetrated into the area of the cross-Channel convoy routes.

56. Within the period of this report the success achieved by U-Boats in the Channel was extremely slight. This was primarily due to the offensive operations of Coastal Command and of the A/U Support Groups covering our convoy routes. Between the 1st June and 3rd July, 1944, Coastal Command aircraft had 96 sightings in the Bay of Biscay and the Channel and its approaches, 59 attacks were made, six U-Boats were known to be sunk, and many other attacks were promising.

Build-up Improvement in Better Weather.

57. From p.m. D+1 until D+8 better weather enabled the rate of build-up to be progressed, despite some shortage of ferry craft due to casualties from the first two days. Convoys sailed from the U.K. and arrived in France on time. As had been anticipated, some difficulties naturally arose initially in the assault area with regard to the great volume of shipping that had to be unloaded and sailed back to England. This resulted in a slower turn round than had been planned, and for a period there was some shortage of ships to be reloaded in the U.K. When the conditions which obtained at the outset on the French coast are further considered, however, it is thought that what was achieved by the Task Force Commanders and their subordinates was in fact very creditable.

Increased Enemy Action.

58. Once it was apparent that our landings constituted invasion on a major scale, it was to be expected that the enemy would attempt to interfere with our build-up convoys and with the shipping off the beaches with all means available to him. Increased enemy shelling of the beaches, particularly on the eastern flank, was experienced from D+2 onwards, but no great success was achieved by the enemy, although unloading in the SWORD sector was retarded. Our bombarding forces were kept busy countering enemy shelling of the beaches and also in assisting the army ashore. It was evident that the enemy was reinforcing his E-Boats in Havre and E-Boat sorties were made nightly from Havre and from Cherbourg. Indications of the enemy's intentions to lay mines in the assault area first became apparent on 9th June when Naval Commander Western Task Force reported attempts to restrict the movements of his bombarding ships by laying a mine barrier on his northern flank. During the first week, Task Force, Assault Force and Assault Group Commanders were fully occupied in combating the various forms of attack which the enemy tried to bring against the assault area, whilst at the same time developing their organisations, first afloat and later ashore, in order to speed up the unloading and turn round of shipping and craft. Enemy attacks were

very largely beaten off, except in the case of air mine-laying which later proved almost impossible to prevent. The similarity of the defence plans for both Task Force Areas, which was the result of close co-operation between the Task Force Commanders during planning, was an important factor in ensuring the overall security of the anchorages.

Destroyer Action off Ile de Bas.

59. In the early morning of 9th June, Force 26, consisting of eight destroyers operating under the orders of Commander-in-Chief, Plymouth, made contact with four enemy destroyers 20 miles north-west of the Ile de Bas. A spirited action followed, which resulted in two of the enemy being destroyed and the other two being damaged. This action virtually ended the threat to "Neptune" convoys from attack by enemy destroyers.

Construction of MULBERRIES.

60. MULBERRY tows commenced sailing on D day so that the first PHOENIX, WHALE and BOMBARDON units arrived on the Far Shore early on 8th June (D+2). The laying of the BOMBARDON moorings and the sinking of the PHOENIX breakwaters began at once. The construction of the MULBERRIES proceeded as quickly as had been expected, and in general all units were accurately placed. The weather was on the whole not favourable for cross-Channel tows, and a number of WHALE roadway tows was lost on passage, the total losses being in the region of 40 per cent. of these units, including damage sustained on the Far Shore. On a number of occasions WHALE roadway units having sailed in reasonable conditions were overtaken by bad weather half-way across. By D+5 the CORNCOB breakwaters in both harbours were completed and by D+8 the PHOENIX detached breakwaters were half completed.

Increased Enemy Mining.

61. It was soon apparent that the most serious threat to our shipping in the assault area would be enemy minelaying, as this was carried out at night by both E-Boats and aircraft. Defence against the latter proved extremely difficult as had been expected, as low-flying aircraft were not picked up in sufficient time by radar and so avoided our night fighters. The enemy introduced two new types of mine, both of which were actuated by the reduction of pressure caused by a ship passing over them. One of these could not be swept under any conditions and the other only in certain weather conditions, and a number of casualties was early sustained amongst ships and craft of all types. The problem of sweeping ground mines in the congested anchorages off the beaches proved very difficult as the tails were continually liable to foul other ships and craft. The uncertainty of the distance from the sweeper that an acoustic mine would detonate also proved a constant menace to neighbouring ships.

Bombardment Support of the Land Advance.

62. From D Day onwards, Battleships, Monitors, Cruisers, Destroyers and L.C.G.(L) engaged enemy targets ashore until our armies had advanced beyond the range of their guns. Ships and craft on both flanks engaged coast

defence batteries when these fired on our shipping or at the beaches. A large but carefully controlled amount of ammunition of all types was expended; replenishment at the home ports was carried out rapidly, due to the excellent provision made at the ports concerned, and to the efficient organisation evolved by the Admiralty departments responsible for planning and executing the very complicated arrangements for supply of ammunition and exchange of ships' guns. Spotting by fighter spotters, Air O.P.s, S.F.C.P.s, and F.O.s.B.*, was very successful, though there were some failures in communication between F.O.s.B. and ships, particularly in the early stages. Improvement in F.O.B. communications is still required, but failures were in part due to the natural tendency to land F.O.B. parties too early in the assault, which caused damage to their equipment and also a high percentage of F.O.B. casualties. By common consent shooting was uniformly good and it is considered that the initial advances inland of our armies were helped in no small measure by the naval supporting fire.

Build-up Difficulties and Delays.

63. As mentioned in paragraph 57 above, delays in the turn round of ships and craft occurred initially in the assault area due to the abnormal conditions obtaining there. There were also difficulties in the United Kingdom, particularly in the Isle of Wight area and in the port of Southampton, due to the large amount of shipping to be handled in a congested area. The initial congestion in the Isle of Wight anchorage, which was caused by a variety of reasons, led to ships that should not have been there staying there for two or three days, and there were also some naval delays in getting ships up to Southampton to reload. The problem in the Isle of Wight area was far more difficult than anywhere else due to the physical characteristics of the anchorage, and it is not considered that the delays which occurred, although irritating to the army, were in any respects unreasonable. Energetic measures were taken to clear the Isle of Wight anchorage, and after the first ten days or so, there were no major delays in the United Kingdom. The figures of the rate of build-up show the great quantity of shipping that was sailed to France each day. When these are examined any serious adverse criticism of the naval organisation, either in the United Kingdom or in France, would seem unwarranted.

Wide scope of the Operation.

64. It is extremely difficult in a letter of reasonable length to deal with any completeness with the many aspects of the operation as it progressed from day to day. On the majority of the early days there were perhaps three or four incidents that in any previous operation would have been considered of outstanding interest, and it is only possible here to give my general impression of the naval operations as they developed. With 16 convoys and about the same number of landing craft groups at any one time at sea in the Channel, exposed to attack by enemy mines, E-Boats, aircraft and U-Boats, with the enemy

active on both flanks with his light naval forces and his shore guns, with nightly air minelaying and sometimes air bombing, it was obvious that each day a number of actions of different types would be fought against the enemy forces and that our ships would suffer casualties and damage. The salient fact, however, was that no matter how the enemy attempted to sink our ships, he was fought, and generally with success. The casualties that we sustained were relatively light when the very large number of ships taking part is considered. The build-up proceeded quickly. By D+9 half a million men had been landed in France and 77,000 vehicles. The millionth man was landed on D+28, one day after the end of the period covered by this report.

Operations by our Coastal Forces.

65. Our coastal forces operating both from the United Kingdom and from the assault area had many successful encounters with enemy E-Boats. Because it was appreciated that it would not be possible to provide shore radar cover for the cross-Channel convoy route and the covering patrols on its flanks, Commander-in-Chief, Portsmouth, decided to extend the radar cover by using frigates fitted with American S.L. search radar to control units of M.T.B.s attached to them. Four frigates were allocated for this duty and proved very successful in controlling interceptions in over 30 actions. Great spirit was shown by all the Coastal Force Commanding Officers concerned, the majority of whom it should be noted were civilians a few years ago.

Difficulties of Aircraft Recognition.

66. The S.H.A.E.F.* rules for restrictions to flying and to A.A. fire are considered to have worked well, but unfortunately casualties to our own aircraft were caused by naval gunfire in the early stages of the operation, particularly in the U.S. Sector. Fire discipline and aircraft recognition in such a diverse fleet of ships and craft as was at any one time in the assault area was obviously extremely difficult to achieve; and the situation was much aggravated by the extremely low cloud base which prevailed on most days, and which, by forcing aircraft to fly very low, gave the minimum of time for their recognition. It is strongly recommended that in other theatres of war where cloud base may normally be expected to be much higher than in the Channel operations, the restricted height for aircraft should be such as to keep them outside the effective range of close range weapons. The appointment of Royal Observer Corps personnel to merchant ships to assist in aircraft recognition, which was a novel experiment, proved most successful and undoubtedly did something towards helping in this matter.

Buoyming and Minesweeping of Channels.

67. Minesweeping was carried out continuously from D+1 and during the first few days of the operation channels were widened and permanently established from England to France and along the French coast in the assault area. A very large number of light buoys had to be laid to mark the channels as quickly as possible and this was expeditiously carried out by the Trinity House vessels.

* Admiralty footnote:

Air O.P.s.—Air Observation Posts.

S.F.C.P.—Shore Fire Control Party.

F.O.B.—Forward Observer, Bombardment.

* Admiralty footnote: S.H.A.E.F.—Supreme Headquarters, Allied Expeditionary Force.

The greatest co-operation was given by Captain Barber, Superintendent of Trinity House, Cowes, to whom considerable credit is due. The difficulty of keeping to a swept channel with a strong cross tide had always been foreseen before D day and the attention of all concerned was drawn to it in my Operation Orders. As feared, however, the light buoys were roughly treated during the opening phases of the operation and a very large number of these was sunk.

Heavy Air Attack on Havre.

68. By 14th June there was a considerable concentration of enemy E-Boats in Havre and at my request Bomber Command carried out a heavy attack on the port just before dusk with the object of immobilising the enemy craft. This attack was extremely successful and 10 E-Boats and three torpedo boats are known to have been sunk, in addition to many other minor vessels.

Visit of H.M. The King.

69. His Majesty The King visited the British assault area on 16th June in H.M.S. *ARETHUSA*. This visit gave the greatest satisfaction and encouragement to all British naval personnel on the Far Shore. On the other hand it is worth remarking here that I had to make strenuous efforts to reduce the overall number of official visitors to the assault area during the first few weeks of the operation. The number of persons of greater or less importance who produced good reasons for proceeding there was alarming, observing that, during their stay, of necessity they occupied the time and attention of officers who should have been engaged in other more useful work.

The Northerly Gale.

70. From D day onwards the weather was never what one expected for June in the Channel and from 14th June onwards it deteriorated steadily apart from a temporary improvement during the night 17th-18th June which raised false hopes of better conditions. Low cloud very largely deprived our army of their close air support and a moderate to strong wind made conditions generally unfavourable for the optimum rate of discharge of shipping off the beaches and for the cross-Channel *MULBERRY* tows. On 19th June a north-easterly gale, unexpected and unforecast, began and at once stopped all unloading to the beaches. Conditions deteriorated rapidly and a large number of landing craft was soon in difficulties. Steps were taken to stop the sailing of further build-up convoys, but some of those already at sea had to continue, to prevent congestion in U.K. anchorages. Additional tugs were despatched to the Far Shore to assist ships and craft in difficulty until the weather moderated. Casualties were suffered by *MULBERRY* tows that were already at sea and all further sailings of these had also to be stopped. By 20th June a large number of ferry craft had been stranded by the onshore wind and had received serious damage. All unloading was on this day suspended, although a quantity of stores had been discharged the two previous days in the shelter of *MULBERRY* B (Arromanches). To meet this situation it was decided to dry out, regardless of risk of damage, a number of stores coasters and all

L.S.T. awaiting discharge.* It had previously been considered that L.S.T. should not dry out except in an emergency, but the operation was so successful when attempted on a large scale that thereafter this became the normal method of discharge. Coasters were also beached successfully and only a few of these ships suffered damage. By 21st June it was apparent that the continued high seas were seriously damaging the *MULBERRIES*. The *BOMBARDONS* protecting both harbours broke adrift and sank and generally proved useless to withstand weather with wind force 6† and above. The damage to blockships and the *PHOENIX* breakwaters was far more severe at *MULBERRY* A (St. Laurent) than at Arromanches. *GOOSEBERRY* I also lost all protective value. The *WHALE* piers in *MULBERRY* A were completely wrecked, chiefly by landing craft being driven down on to them. The gale eased slowly on 22nd June, but the sea did not finally go down until the next day.

71. The results of the gale were to confront the Task Force and Assault Force Commanders with a very critical situation just at the time when their organisations were finally settling down and when it was hoped that they and their staffs might be withdrawn. It is very difficult to estimate the total effect of the gale on the operation as a whole. An army estimate was made which suggested that from 19th to 24th June inclusive the unloading loss due to the gale was in the neighbourhood of 20,000 vehicles and 140,000 tons of stores. The effect of the gale on the arrivals of shipping and craft in France during these days is shown in the attached Table A. From the naval point of view the most serious result was the stranding of about 800 craft of all types, most of which were damaged and neaped, as this caused an immediate shortage of ferry craft on the far shore. It was soon also apparent that the damage done to St. Laurent harbour was very largely irreparable, and, shortly afterwards, you decided that this harbour would not be completed but that all remaining resources would be devoted to the strengthening of Arromanches to withstand winter conditions.

72. As a result of the gale it was decided that the Task Force and Assault Force Commanders would have to remain in the assault area until conditions were again normal. Energetic measures were taken to salve all the damaged craft possible, and new equipment and blockships were sent over for the *MULBERRIES*. About 250 additional hull repair ratings drawn from the Home Fleet and Home Commands were brought forward as planned for such an emergency, and an additional repair ship and a reserve port repair party were moved over to the assault area. The full salvage organisation was mustered. Due to the energy and resource of all concerned about 600 stranded craft and a few coasters and other small vessels were temporarily repaired and refloated at the next spring tides, on 8th July. A further 100 were refloated a fortnight later.

Landing Craft Repair Situation.

73. The numbers of damaged landing craft returning after the assault were much greater

Admiralty footnotes:

* On some beaches the practice of drying out L.S.T. had been resorted to as early as D + 2 day.

† Force 6—Strong breeze (21-26 m.p.h. at sea level).

than expected and the repair of craft was proving difficult in the Portsmouth area before the gale. After it, it became clear that this area alone would be unable to compete even with all the short-term repairs. Directions were accordingly given by COREP (Admiralty) to increase the number of repairs that were undertaken in yards in the southwest and on the east coast. Throughout the period of this report the number of unserviceable L.S.T. and L.C.T. increased slowly day by day and the number available for the build-up accordingly slowly decreased. This was disappointing to the army who at times demanded that more vigorous measures should be taken by the naval authorities responsible. I made a number of representations regarding this to the Commander-in-Chief, Portsmouth, and to the Admiralty, but except for minor improvements they were always able to show that all that could be done was already being done. The COREP organisation had been specially set up to meet the heavy demands of "Neptune" and it is clear that without it the distribution for, and early completion of, the repairs of hundreds of ships and craft would have been entirely impracticable.

Release of Warships.

74. COMINCH* and the Admiralty began to press about 20th June for the release of a considerable number of warships and landing craft from the operation. Some of these were required for Operation "Anvil" (later "Dragoon")† and some for service in the Far East. Vessels were released progressively as they could be spared but no large withdrawal of bombarding ships was possible until after Cherbourg had been captured. Previous experience in this war had shown the danger of withdrawing ships from an area before an operation had fully succeeded, and I was careful not to agree to the release of ships before I was really satisfied that they could be spared.

Naval Bombardment of Cherbourg.

75. General Bradley‡ had asked for naval bombardment of the defences of Cherbourg to synchronise with his final assault by land. A Task Force consisting of three battleships and four cruisers with screening destroyers and two minesweeping flotillas was formed under the command of Rear-Admiral M. L. Deyo, U.S.N. (C.T.F. 129), and was withdrawn to Portland, a few days before the operation for planning and briefing. The initial plan provided for a preliminary bombardment at a range of 28,000 yards to neutralise the long-range batteries, after which ships were to close in to about 14,000 yards and engage targets designated by the Army. The long-range bombardment was, however, cancelled at the request of the army after the ships had arrived in their initial positions, presumably due to the uncertainty of the position of our forward troops at the time. The bombarding ships then closed in to their close-range positions before they opened fire. The enemy batteries opened

fire with extreme accuracy whilst the force was turning at slow speed from the approach channel into the fire support area. To avoid heavy damage destroyers had to make smoke and the heavier ships to manoeuvre at increased speed and, in some cases, without regard to keeping inside swept water, in order to maintain manoeuvring searoom. Fire was opened with all speed on the army's targets but in many cases had very soon to be shifted to the batteries which were straddling our ships. Despite the accuracy of the enemy's fire, by frequent use of helm and alterations in speed the force managed to avoid any but minor casualties and damage, whilst at the same time continuing accurate fire on the enemy's defences. The bombarding force withdrew $3\frac{1}{2}$ hours after it first came in, by which time it was reported that all batteries save two had been silenced. This operation was carried out with skill and determination by Rear-Admiral Deyo, but it is considered unfortunate that it was not found possible to adhere to the original plan, which provided for the initial neutralisation of the enemy long-range batteries as, had better fortune attended the enemy gunners, they might well have inflicted heavy damage to our ships at the relatively close range at which they were firing.

Increased Casualties due to Mines.

76. By about 24th June casualties to our ships due to enemy mines were becoming serious. This was apparently as much due to the ripening of mines that had already been laid as to new lays that were made by enemy aircraft at night. Special measures were taken to reduce all traffic and the speed at which it proceeded within the assault area to a minimum. As soon as these regulations were rigidly enforced, casualties were reduced to small dimensions. Our sweeping was also largely successful. By 3rd July it was estimated that, including spontaneous detonations, nearly 500 mines had been accounted for by our minesweepers, and at this date, although the threat had not been completely mastered, it was felt that the worst was probably over and that the build-up and our operations generally would develop as desired in spite of mining.

Increasing Air Attacks in Assault Area.

77. Enemy aircraft were more active at night during this period and, in addition to continued minelaying by low-flying aircraft, attacks by composite aircraft and by torpedo aircraft were also reported. It is possible that the enemy were aware that craft on the eastern defence line were restricted from A.A. fire because aircraft sometimes came in very low over them. The restriction of ships' gunfire at night in order to give full scope to night fighters will always remain a most vexed problem, as low-flying enemy aircraft cannot be successfully countered by night fighters whilst, in this case, A.A. fire is often most effective.

Capture of Cherbourg.

78. The completion of the capture of Cherbourg was effected p.m. 27th June and no time was lost in commencing a reconnaissance of the port and deciding upon salvage operations. The first naval report on the state of the harbour showed that severe damage had been done to the docks and the arsenal,

Admiralty footnotes:

* COMINCH—C-in-C. U.S. Fleet, Navy Department, Washington.

† ANVIL (later DRAGOON)—The landing on the South Coast of France.

‡ General Bradley—In command of U.S. Troops employed in this sector.

whilst the entire anchorage had been heavily mined. All types of mines were swept during the next few days in Cherbourg harbour.—moored contact, ground contact, fired on a snag line, moored magnetic, ground magnetic, and ground acoustic. A great number of ships had been sunk in the harbour, and full scope was given to the genius of Commodore Sullivan, U.S. Navy, in effecting the clearance of the port, which in the event took nearly 90 days.

Sound Army Administrative Position.

79. During the first few weeks of the operation frequent representations were made by your staff and those of your Army Group Commanders whenever the build-up appeared to fall any distance short of the plan. This was natural and their desire for the maximum rate of reinforcement and of landing stores was fully shared by me. Sometimes I felt, however, that their protests were not entirely related to facts as, so far as I know, the position of the Expeditionary Force was never in doubt from D+2 onwards. The naval view had always been that the build-up plan should be an optimum plan at which we should aim but that its attainment was most improbable, if only by reason of the naval difficulties inherent in the continuous turn round of such a large volume of shipping. In the event, not only naval difficulties were experienced during the first few weeks, but also a considerable number of military ones, especially with regard to loading in the port of Southampton, and the programme did fall behind as we had expected that it would. It was very satisfactory, therefore, to me that your Chief Administrative Officer was able to report at his meeting held on 1st July, that the "Commanders in the field had complete freedom of action so far as the administrative arrangements were concerned". This, it was considered, confirmed our view that the Navy had in fact met the Army's requirements for their reinforcement and maintenance.

Withdrawal of Task Force and Assault Force Commanders. Transfer of Naval Command ashore.

80. During the last few days of June the British and U.S. Assault Force Commanders were successively withdrawn from the assault area when conditions in their sector permitted. On 25th June, Rear-Admiral J. W. Rivett-Carnac established his Headquarters ashore as F.O.B.A.A.* and Rear-Admiral J. Wilkes similarly hoisted his flag as F.O. West on 27th June. Rear-Admiral Sir Philip Vian left the British Assault Area on 30th June when the Command was assumed by F.O.B.A.A. Rear-Admiral Alan Kirk withdrew from the U.S. Assault Area on 3rd July, when F.O. West assumed command. The withdrawal of all these officers and the transfer of the two naval commands to the shore marked the stabilisation of the naval position in the assault area and the conclusion of the first phase in the capture of the lodgment area by our armies. Both during the training and planning period, and during the operation, the Task Force and Assault Force Commanders and their subordinates rendered the very highest service to the operation and thus to the Allied cause. The

experience that the majority of them had gained in other theatres in previous amphibious operations proved invaluable. They afforded me the greatest possible measure of support and assistance and I could not have wished for more loyal or helpful commanders.

Comments and Recommendations of Task Force Commanders.

81. A large number of comments on the operation and recommendations arising therefrom are included in the reports of Naval Commanders Eastern and Western Task Forces. It is clear that Naval Commander Western Task Force and his staff had considerable difficulty both during the preparatory period and during the operation in working in a foreign country and with a command system which was unfamiliar to them. The fact that they overcame these difficulties so well reflects great credit on them all. It is obvious that the general organisation and procedure to be adopted for any joint operation must be that of the nation from whose country it is launched. Although British and American methods are by no means similar, we are now becoming accustomed to each other's working, and with the mutual trust and goodwill which has obtained in the past there should be no undue difficulties in this respect in the future.

My Relations with the Home Commands.

82. The introduction of a Flag Officer as Allied Naval Commander-in-Chief 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 myself and the respective Home Commanders-in-Chief in whose stations I was called upon to plan and to operate. It was clear that whilst I was charged with the preparation of the naval plan and with the formation and training of the naval assault forces, and later with the chief naval command of the operation, the executive implementation of the plan must very largely remain in the hands of the Home Commanders-in-Chief. From the very outset it was my policy to make them my agents for this operation and to employ existing organisations, where these existed, rather than to institute new ones. This policy worked admirably.

83. Some resentment might well have been felt by the Commanders-in-Chief, 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 and I would particularly mention Admiral Sir Charles J. C. Little, Commander-in-Chief, Portsmouth, on whose Command fell the main burden of the operation on the naval side. Admiral of the Fleet Sir John C. Tovey (Commander-in-Chief, The Nore) and Admiral Sir Ralph Leatham (Commander-in-Chief, Plymouth) together with Admiral Sir Henry D. Pridham-Wippell (Admiral Commanding Dover) also threw themselves wholeheartedly and unselfishly into our preparations, quickly grasping the problems ahead of them and reorganising their Commands to deal admirably with the particular requirements of "Neptune". During the operation the co-ordination between the Commands was perfect.

* Admiralty footnote: F.O.B.A.A.—Flag Officer, British Assault Area.

and the intricate machine worked as if it had been running for years.

Conclusion.

84. I am greatly indebted to my staff, so admirably led by Rear-Admiral G. E. Creasy, for their magnificent work and outstanding devotion to duty throughout the long planning period and later during the operation. No Commander-in-Chief has ever been better served and I count myself fortunate in having had the services of so fine a company of officers.

85. I desire also to record my complete satisfaction and admiration for the manner in which the ships of our Allies have carried out their arduous duties, and which has contributed so much towards the liberation of their countries.

86. Finally, I cannot close this letter without expressing my deepest admiration for the

manner in which the efforts of the many Commands of all Services and of both our countries were directed and co-ordinated by yourself as Supreme Commander. I deem it a very great honour to have commanded the Allied naval forces in this great operation under your inspiring leadership, which more perhaps than anything else has been responsible for the success achieved.

I have the honour to be,

Sir,

Your obedient servant,

(Signed) B. H. RAMSAY,
Admiral.

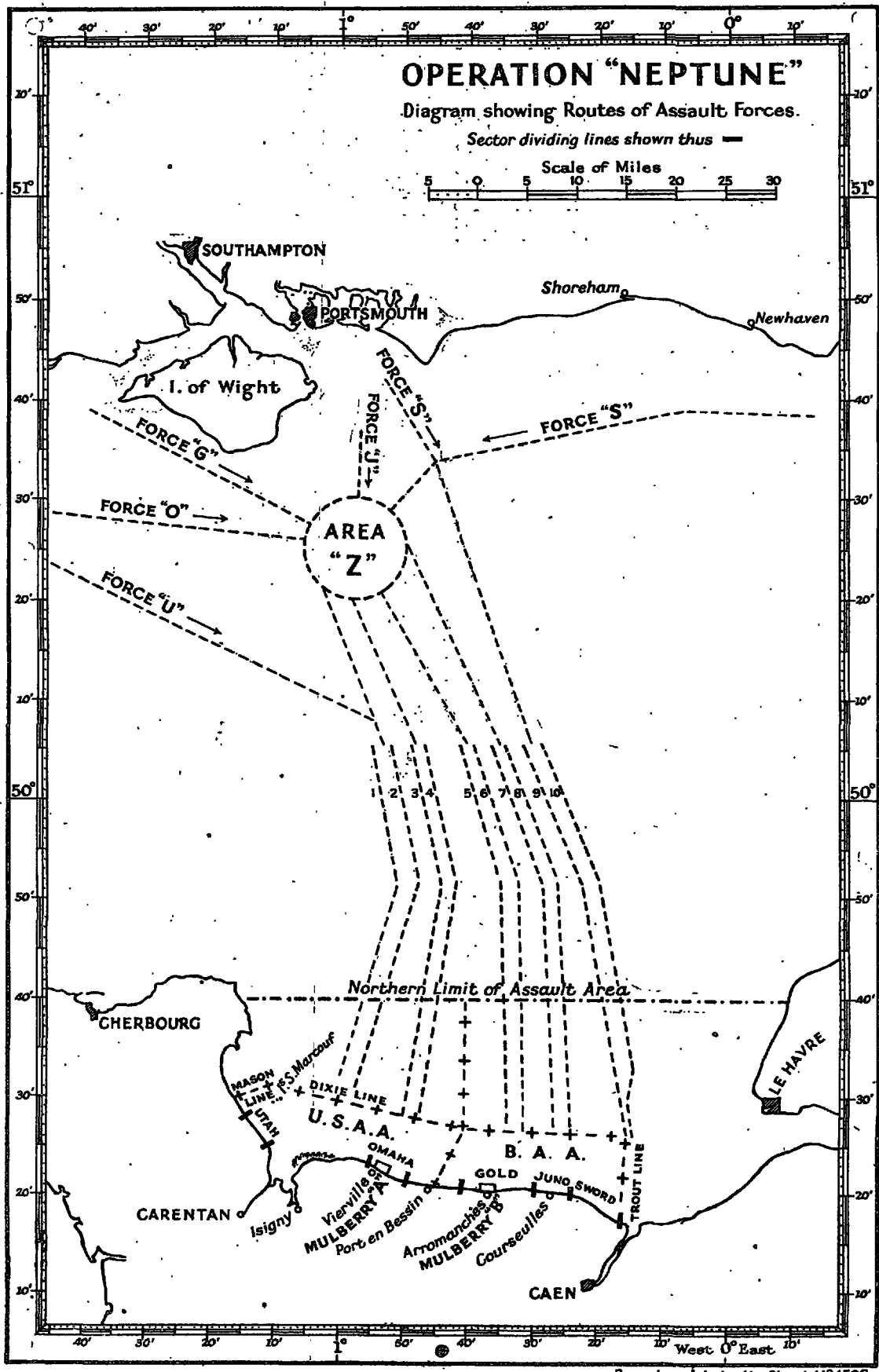
GENERAL DWIGHT D. EISENHOWER, U.S. Army,
Supreme Commander,
Allied Expeditionary Force.

TABLE A—ARRIVALS OF MERCHANT SHIPPING AND LANDING CRAFT IN FRANCE
7th June—30th June, 1944, inclusive
(Subsequent to Initial Lift of Assault Forces)

Date	Liberty Ships	Coasters	L.S.T. ¹³⁹	L.C.T. ¹³	Personnel Ships	L.C.I. (L.)
7th June	17	17	4	51	9	—
8th June	29	29	6	110	11	31
9th June	35	37	15	50	10	18
10th June	29	44	31	81	10	28
11th June	30	25	39	80	9	16
12th June	17	68	55	57	11	18
13th June	19	30	56	73	8	30
14th June	30	25	53	95	9	29
15th June	34	44	52	76	8	17
16th June	25	52	62	48	8	18
17th June	27	29	42	79	7	17
18th June	30	26	48	89	11	29
19th June	39	37	48	75	8	32
20th June	20	22	3	—	2	—
21st June	—	—	—	—	—	—
22nd June	—	30	38	—	13	—
23rd June	—	33	60	165	9	14
24th June	14	39	37	22	3	5
25th June	23	50	29	39	7	15
26th June	26	38	55	72	3	13
27th June	28	27	38	59	7	9
28th June	35	33	48	—	8	—
29th June	33	29	41	—	4	16
30th June	30	24	45	121	5	17
Totals	570	788	905	1,442	180	372

Note:—Following vessels are not included:—

- (a) Tankers.
- (b) Hospital Carriers.
- (c) Salvage ships and other auxiliaries.



Based on Admiralty Chart N° 1598

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