

OPERATION NEPTUNE

THE NORMANDY INVASION

D DAY 6 JUNE 1944



Cover shows LCT's with 13/18th Hussars and their Sherman tanks on board about to set off for Normandy. (IWM)



OPERATION NEPTUNE

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WHAT WAS OPERATION NEPTUNE?

Operation Neptune was a combined British and United States undertaking by all Services of both nations, assisted by their Allies, whose 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 50 divisions and to enable this force to be augmented by follow-up formations at the rate of from three to five divisions a month”.

Neptune was thus the assault phase of Operation **Overlord**, which was the general plan for the liberation of north-west Europe; a common misconception has resulted in the latter code-word being commonly (but incorrectly) used for the invasion.

PLANNING FOR NEPTUNE

Detailed planning for a major cross-Channel amphibious operation began in late April 1942 under the code-name “Round-Up”. Admiral Sir Bertram Ramsay was appointed the naval commander and although he soon left to plan and command the 1942-43 series of Mediterranean amphibious operations. A small staff continued to plan the necessary UK infrastructure, providing headquarters at Portsmouth and Plymouth, landing craft bases and maintenance facilities and loading hards.

The Seine Bay was provisionally chosen as the assault area as early as January 1943. In May 1943, the Commander-in-Chief, Portsmouth (Admiral Sir Charles Little) was appointed Naval CinC (designate) for the invasion of Europe and made responsible for the preparation of the naval plan. At the end of June, a conference (“Rattle”) was held in London, chaired by Vice Admiral Lord Louis Mountbatten and attended by, among others, US and Canadian Army representatives. This conference reached definite conclusions as to future planning, training and the provision of equipment, including the need for artificial harbours. Six weeks later, in August 1943, the plan which followed the conclusions of Rattle was approved by the Combined Chiefs of Staff at the Quebec Conference.

Admiral Ramsay returned to resume naval command as Allied Naval Commander Expeditionary force (ANCXF) of the operation in October 1943 and although detailed joint planning began on 15 December 1943, much had to be changed after the subsequent appointment of General Montgomery as CinC 21st Army Group. Planning was recommenced on 14 January 1944 and the initial joint plan was issued on 1 February, followed on 15 February by the naval outline. Provisional naval orders were issued on 2 April and, on a very limited scale, sealed orders on 24 April. Two days later, ANCXF moved to Southwick Park and on 12 May the naval plan was “frozen”.

Earlier, on 8 May, Admiral Ramsay informed General Eisenhower that 5 or 6 June were the earliest acceptable dates, with 7 June in case of extreme necessity. Holders were ordered to open the operation orders on 25 May and on 28th were informed that the Supreme Commander had decided on 5 June as ‘D’-Day. At 0415 on 4 June the decision was taken to delay by 24 hours, in the hope of better weather.

WHERE WERE THE BEACHES?

Five sectors were targeted, three in the Eastern (British) Task Force Area and two in the Western (US) Task Force Area:

- "Sword"** between Ouistreham, at the mouth of the Orne and Lion Sur Mer
- "Juno"** between St Aubin and Ver-sur-Mer (around Courseulles)
- "Gold"** between Ver-sur-Mer and Port-en-Bessin (around Arranches)
- "Omaha"** between Port-en-Bessin and Isigny (around St Laurent)
- "Utah"** Between Quinelle and Isigny (near St Martin de Varreville)

The beaches were not assaulted along their full lengths 'gap-filling' being left to follow-up formations. The left flank, east of the Orne, was secured by a paradrop on 'Pegasus Bridge'.

WHAT FORCES WERE INVOLVED?

Military: A single division formed the initial assault force on each beach, reinforced by "special service" units (Commandos or Rangers). The flanks were secured by predawn landings by 6th (British) and 82nd and 101 st (US) Airborne Divisions.

		Nos of Men for Each Beach
I (Br) Corps		
"Sword"	3rd (Br.) Division (Bth, 9th and 185th Bdes), plus 41 & 45 (RM), Free French and No.3, 4 & 6 (Army) Commandos, 27th Armd Bde	28,845
"Juno"	3rd (Canadian) Division (7th,8th and 9th Canadian Bdes), plus 48 (RM) Commando, 2nd Canadian Armd Bde'	21,400
XXX (Br) Corps		
"Gold"	50th (Br) Division (56th, 69th, 151st and 231st Bdes), plus 47 RM Commando & 8th Armd Bde	24,970
		Sub-Total: 75,215
VII (US) Corps		
"Omaha"	1st (US) Division (16th, 18th, 26th, 115th and 116th Regimental Combat Teams), plus 2nd and 5th Ranger Bns	34,350
V (US) Corps		
"Utah"	4th (US) Division (8th, 22nd, 12th, 359th (from 90th 23,250 Division) Inf and 70th Tank Regt) plus Rangers	23,250
		Total: 132,815

Air Forces. According to information available to NHB, the total number of Allied air force aircraft available in the UK for offensive operations (ie exclusive of UK defence tasks and maritime duties) was as follows:

	RAF Commands	USAAF Commands
Heavy bombers	870	1,320
Escort fighters	-	720
Tactical bombers	216	528
Tactical and air superiority fighters	924	1,008
Night fighters	264	30
	2,274	3,612

Maritime (443 aircraft).

Strike	8 squadrons	(RAF, RAAF, RCAF, RNZAF)
ASW patrol	20 squadrons	(RAF, RAAF, RCAF, Polish, Czech, USN)
Inshore patrol	8 Squadrons	(all RN)
Fighter	3 squadrons	(all RAF)

Allied Naval Forces. 1,212 Allied warships, 4,125 amphibious craft, 735 ancillary craft and 864 merchant -ships were allocated to Operation NEPTUNE, in addition to 200 naval aircraft. The majority of the warships served under the Allied Naval Commander Naval Expeditionary Force, allocated to either the Eastern or Western Task Forces (ETFIWTF). The following principal units of the RN, Commonwealth and Allied Navies participated in Operation NEPTUNE:

RN	Canada	US	France	Poland	Norway	Neth.
3 Escort Carriers						
4 Battleships		3	1 (expended as blockship)			
17 Cruisers		3	2	1		
2 Monitors/Gunboats						2
62 *Destroyers	14	34	1	2	2	
22 'Hunt'-class			1	2	1	
82 *Frigates, Sloops & DEs	11	6	4			
42 **Corvettes	19		3		3	2
76 Fleet MIS	11	11				
33 Coastal M/S		18	5			
126 MTBs, etc	17	33	8			13
140 Motor Launches, etc		78			3	

* includes 52 Western Approaches escort destroyers and frigates on ASW barrier

** plus 2 Royal Hellenic Navy and 2 Belgian-manned Royal Navy corvettes

HOW MANY TROOPS WERE LANDED ON 'D' DAY?

Up to midnight on 617 June 1944, 75,215 (British and Canadians) + 57,600 (American) in all 132,815 men were landed from ships and craft, suffering 3,000 British casualties (4 per cent, compared with 16.5 per cent casualties among the 7,900 British troops landed by air). There were also 6,600 American casualties, an estimated 2,400 men were lost on Omaha, only 220 on Utah the remainder were airborne troops. (The millionth man was landed on 5 July 1944).

MAIN EVENTS OF D-DAY 6TH JUNE 1944 BEACH BY BEACH

Daybreak 05.15

Sunrise 06.00 Dawn on D-Day was around 0600 on all beaches

Tide Times Varied for each beach, East to West. This meant H-Hour was earlier in the West on Utah and Omaha

The leading ships were the minesweepers. Those attached to Force U came in view of the Normandy coastline at approx 0200 but the Germans did not see them. The Germans opened fire at 0530. Sweepers cleared the route for all ships and craft and an area for the bombarding ships to use. The fleet's bombardment started at 0550 (see page 12). They were joined by aircraft bombing on beach target areas. On the run in other landing craft with guns and rockets added their fire to cover the assault craft.

Utah Beach. On Utah the first troops touched the beach at 0630 but missed their target because of strong tides and 18 knot wind making four feet high waves during the 11 mile run in. Because of bad weather their amphibious tanks left the carrying craft at 3,000 yards (instead of the planned 5,000 yards). Of 32 DO (Dual Drive) tanks 28 made the beach. The first wave of LCAs each carrying 30 man assault teams was followed by a second wave of 32 craft who also had assault engineers and naval demolition teams to clear obstacles. Brigadier General Roosevelt realised the beach was lightly defended and ordered the advance. By the end of the day 4th Division had pushed inland 4 miles and made contact with 101st Airborne Division.

Omaha Beach. Minesweepers of force O were at work off the beach at midnight. At 0300 the transports had arrived and unloading of assault troops into landing craft began 11 miles off the beach. The sea was rough and many troops seasick – several craft were swamped as were most of the DO tanks (of 32 tanks only 5 made the beach). The strong easterly tide carried most craft to the wrong beaches and this breakdown of the landing plan had a disastrous effect on the assault. At 1000 yards the leading craft came under intense and accurate enemy fire. Many craft grounded 1,000 yards offshore and troops leapt into deep water - some drowned weighed down by their heavy equipment. By mid day the German lines had been breached in four places and troops began moving inshore around and bypassing heavily defended strongpoints. The tide had risen, drowning many wounded too weak to move ashore. The beach was crammed with men, trapped against the sea wall, sheer weight of numbers clogged up the exits and prevented artillery and vehicles landing. Supporting fire from the Navy destroyers which closed to 800 yards to fire directly into pill boxes helped turn the tide and inflicted heavy losses on defenders. The situation was tenuous. Follow up units were restricted to narrow cleared columns as most obstacles could not be cleared. V Corps did not have the planned tank or artillery support, suffered severely but in the course of the day managed to clear the beachhead to a mile inland.

Gold Beach. Similar minesweeping and fleet bombardment. The flood tide delayed H Hour until 0725 and this allowed the bombardment over an hour and a half. The British chose assembly areas only seven miles off the coast - for a shorter final run in by assault craft. Again bad weather affected plans. Rather than launch the DO tanks in the fierce current and force 5 winds the craft brought them in to the beach, behind the first infantry, most tanks were bogged down or disabled by enemy fire. Clearing its way through the Atlantic Wall the 50th Division covered five square miles by nightfall, almost to Bayeux.

Juno Beach. Task Force J carrying the Canadians offloaded them seven miles offshore and, the shorter distance to the beach helped the troops. Like Gold Beach Juno was wide enough to land two brigades side by side. The Canadian 7th Brigade landed at Courseulles (0745) and the 8th Brigade at Bernieres (0755). H Hour was delayed so that the tide could cover rocks. However many beach obstacles were also covered and thirty percent of all landing craft on Juno Beach were damaged/destroyed. Heavy seas again caused confusion. With the prompt arrival of the armoured units the extra fire power of DO tanks and 'funnies' (AVRE – Armed Vehicles Royal Engineers - some with a large gun or petard) made all the difference. Bypassing strongpoints the Canadians moved inland, joining up with the British on Gold Beach and forward elements even reached the Bayeux - Caen road in a strong position but to the East a gap of two miles still separated them from Sword Beach.

Sword Beach. H Hour was the same as on Gold (0725). Here the beach was only wide enough for one brigade at a time to come ashore because of offshore rocks/shoals and the entry to the River Orne at the small port of Ouistreham. The same minesweeping cleared the channels for ships' approach. The bombarding force faced batteries from Merville and further to the East and included battleships HMS WARSPITE, RAMILLIES and the monitor ROBERTS all with 15 inch guns. 8th Brigade came ashore at the right place, at the right time. Lovat's Commandos followed to reinforce 6th Airborne Division at Pegasus Bridge. The strong point of La Breche was subdued by 1000. The Free French assaulted Ouistreham. Frogmen and engineers had a hard time clearing obstacles and the tide reduced the beach to a 10 yard strip. However the exits were clear and infantry continued to land without much trouble. In the afternoon much of the armour and vehicles were packed close together - the beach remained under fire and only had one usable road exit. Most of the heavy weapons were left to catch up as best they could. By late afternoon 185th Brigade had reached two miles short of Caen and here met heavy German resistance from 21st Panzer Division. The enemy was about to launch a counter attack.

By nightfall on D-Day the Allies were firmly ashore on all beaches. Average depth inland was five miles, only half of what had been planned. The position was not yet continuous, but it was defensible. The weather had not been on the side of the Allies yet the landings had succeeded and a firm beachhead had been established.

WHAT WAS THE SCALE OF ENEMY RESISTANCE TO ALLIED NAVAL ACTIVITY?

The largest single cause of Allied shipping losses was the mine, which accounted for over a quarter of the ships sunk or damaged beyond repair. Strong daylight air cover over the anchorages and relatively small numbers of suitable night attack aircraft kept losses to bombing and torpedo attack to just 8 ships. The first major surface reaction, by a force of torpedo-boats (light destroyers) based at Le Havre, resulted in the sinking of a Norwegian destroyer before 'H'-hour on 'D'-Day but this sortie was not repeated; an attempt on 9 June by the large destroyers based on the Atlantic coast to intervene was beaten off, with the loss of two ships, by Plymouth-based RN and RCN destroyers. E-boats were more persistent and more successful, sinking 10 ships and craft in five nights before the bases at Le Havre and Boulogne were destroyed by RAF Bomber Command.

Three weeks passed before the U-boats scored their first successes against the cross-channel convoys. Always a danger, they were virtually neutralised by the scale of the surface and air escorts and patrols and of 11 ships sunk or damaged beyond repair, 7 were warships.

'Sword' Beach had to be abandoned on 1 July after German artillery on the east bank of the Orne destroyed three merchant ships and the final major threat to the anchorages, posed by midget submarines and explosive motor-boats launched from open beaches, also came from this quarter. These sank or severely damaged eight ships in the July and August no-moon periods and the nuisance was finally eliminated only by the German withdrawal from the coastal strip following the Falaise disaster.

HOW MANY ALLIED SHIPS WERE LOST DURING THE NORMANDY CAMPAIGN?

On 'D'-Day, three destroyers (Norwegian, British and American), one US minesweeper, one RN MTB and one US patrol craft were sunk or damaged beyond repair by all causes. One British merchant ship was lost.

Subsequent losses associated with support for the invasion forces, to 12 September 1944, totalled 50 major and 10 minor war vessels sunk or damaged beyond repair and 26 merchant vessels lost outright.

HOW WAS THE LOGISTICS BUILD-UP SUSTAINED?

24 convoys sailed before or on 'D'-Day for the main assault and the immediate follow-up, to arrive by '0'+3. Thereafter, a daily schedule of 8 convoys per day was planned, two consisting of coasters with stores and vehicles from the Thames and Bristol Channel, two of ocean-going merchant ships from West, of England ports and anchorages, two LST convoys from the Solent and Portland, and two troop convoys from Newhaven and the West of England. There was, in addition, a continual shuttle service of LCTs and Landing Craft (Infantry) sailing to and fro in unnumbered convoys. Thirty-eight Escort Groups, each made up of escort destroyers, frigates, corvettes and trawlers, were employed on the direct protection of these movements.

HOW LONG DID NAVAL SUPPORT FOR THE INVASION CONTINUE?

Operation Neptune was completed on 30 June 1944 ('D'+24), when responsibility for the reception and defence of shipping was transferred to the Flag Officer, British Assault Area and the Eastern Naval Task Force was formally disbanded. By this date, 570 Liberty Ships, 180 troop transports, 788 coasters and 905 LSTs, as well as 1,814 LCTs and LCI(L)s, had delivered their cargoes to the far shore, landing 861,838 men, 157,633 vehicles and 501,834 tons of stores.

The build-up convoys continued and a strong seaward defence was still necessary, to protect the anchorages and convoys against the surface ships and Uboats based on the Biscay coast, as well as the "Small Battle Units" deployed from the beaches to the east of the River Orne, until the former were all sunk or neutralised (in late August) and Le Havre was captured on 12 September 1944.

WHICH BASES WERE USED TO MOUNT AND SUPPORT OPERATION NEPTUNE?

The Shore Bases, assembly areas and Embarkation Hards principally connected with Operation Neptune were as follows:

Appledore	N Devon	US Navy advanced amphibious training	Coastal Forces repair facilities
Beaulieu River	Hampshire	Landing Craft base (HMS MASTODON)	
Belfast		Western TF bombarding forces assembly	
Birdham	Chichester	Landing Craft base (HMS SEA SERPENT) (post-assault Ferry Service)	
Brightlingsea	Colchester	Landing Craft base (HMS NEMO)	Coastal Forces repair facilities
Brixham	Devon	Landing Craft Hard (PU) (4 LCTs)	Coastal Forces base
Burnham-on- Crouch	Essex	Landing Craft base (HMS ST MATTHEW)	
Bursledon	Solent	Landing Craft base (HMS CRICKET)	Coastal Forces repair facilities

Calshot	Solent	Landing Craft maintenance base
Calstock	Tavistock	USN advanced amphibious maintenance
Cardiff		Turn-round Control HQ
Chatham	Kent	Turn-round Control HQ
Clyde		Eastern TF bombardment forces assembly
Cowes	Isle of Wight	HQ Naval Commander Force 'J'
		Landing Craft base (HMS VECTIS)
Dartmouth	Devon	USN advanced amphibious base; Coastal Forces base (HMS CICALA)
Deal	Kent	16 LCT Hards (NW 1, 2, 6 & 11)
Devonport	(various)	14 LCT Hards (PP 1-3 & PS) Western destroyer patrols
Dover	(various)	7 LCT Hards (NO -1, 2 & 4) Eastern destroyer patrols
Dungeness	Kent	'Mulberry' Phoenix and Whale assembly
Exmouth	Devon	Landing Barge (Vehicle) base (HMS TENNYSON)
Falmouth	Cornwall	USN advanced amphibious base 2 LST and 10 LCT Hards (PF 1-4) Coastal Forces base (HMS FORTE)
Felixstowe	Suffolk	6 LST and 4 LCT Hards (NST 1-3) Coastal Forces base (HMS BEEHIVE)
Folkestone	Kent	Landing Craft base (HMS ALLENBY) 1 LST and 3 LCT Hards (NT 1)
Fort Southwick	Portsmouth	HQ Build-up Control and Turn-round Control (HMS PORCUPINE)
Fowey	Cornwall	USN advanced amphibious training base
Gosport	Portsmouth	2 LST and 2 LCT Hards (GF & GH)
	Harbour	Coastal Forces base (HMS HORNET)
Harwich	Essex	Landing Craft Base (HMS BADGER)
Hastings	Sussex	4 LST and 4 LCT Hards (NB 1 & 2)
Hayling Island E	Hampshire	Landing Craft Maintenance base (HMS NORTHNEY)
Hayling Island W	Hampshire	Landing Craft base (HMS DRAGONFLY) (post-assault Ferry Service)
Hythe	Southampton	Landing Craft base (HMS SQUID II) 12 LCT Hards (NR 1-3)
Lepe	Solent	4 LCT Hards (Q)
Littlehampton	Sussex	Coastal Forces repair facilities
London	Royal Albert Dock	Hard
	Victoria Dock	Hard
Lowestoft	Suffolk	Landing Craft base (HMS MYLODON) Coastal Force base (HMS MANTIS)
Lymington	Hampshire	Landing Craft Maintenance base (HMS PAULINE) 2 LCT Hards (A)
Milford Haven	Pembrokeshire	USN advanced amphibious base
Newhaven	Sussex	Landing Craft base (HMS NEWT) Coastal Forces base (HMS AGGRESSIVE)
Oban	Argyllshire	Blockships (Corncobs) assembly
Pembroke Dock	Pembrokeshire	Coastal Forces base (HMS SKIRMISHER II)
Penarth	Cardiff	USN advances amphibious maintenance
Plymouth		USN advanced amphibious base Coastal Forces base (HMS BLACK BAT) RN auxiliaries depot ship (HMS PARIS)
	(Turnchapel)	2 LST or 4 LCT Hards (PK)

Polgwiddden	Cornwall	2 LST Hards (PH)
Poole	Dorset	Landing Craft base (HMS TURTLE) (post-assault Ferry Service)
	(Hamworthy)	Coastal Forces base
	(Sandbanks)	4 LCT Hards (P)
Portland	Dorset	Landing Craft Maintenance base
		USN advanced amphibious base
		5 LST and 4 LCT Hards (R 2 & 3)
		'Mulberry' Bombardon units
		Coastal Forces base (HMS ATTACK)
Portsmouth		1 st Destroyer Flotilla Base
		Naval Despatch Boat Service HQ
		Trawler dept ship (HMS MARSHAL SOULT)
		'Spout' destroyer and frigate patrols
Queenborough	Kent	Landing Craft base (HMS WILDFIRE II)
		Minesweeper base (HMS ST TUDNO)
Ramsgate	Kent	Coastal Forces base (HMS FERVENT)
Richborough	Sandwich, Kent	Landing Craft base (HMS ROBERTSON)
Rye	Sussex	Landing Craft base (HMS HAIG)
Ryde	Isle of Wight	Landing Craft base (HMS MEDINA)
St Mawes	Falmouth	USN advanced amphibious training base
Salcombe	Devon	USN advanced amphibious base
Saltash	Devon	USN advanced amphibious base
Seaford	Sussex	4 LCT Hards (C.2)
Selsey	Sussex	'Mulberry' Phoenix and Whale assembly
Shoreham	Sussex	Landing Craft base (HMS LIZARD)
		9 LCT Hards (H & K)
		Coastal Forces repair facility
Southsea	(S Parade Pier)	LCI loading point
Southampton		Landing Craft base & depot (HMS SQUID)
		6 LST and 2 LCT Hards (S 1-4)
		'PLUTO' Force depot (HMS ABATOS)
Stanswood Bay	Solent	3 LCT Hards (Q 2)
Stokes Bay	Gosport	16 LCT Hards (G 1-4)
Tamerton Foliot	Hamoaze	Landing Craft base (HMS FOLIOT)
Teignmouth	Devon	US advanced amphibious training base
Tilbury	Thames	Landing Craft Maintenance base
		(HMS ST CLEMENT)
		4 LST and 8 LCT Hards (NZ 1-5)
Torquay	Devon	4 LCT Hards (PY)
Warsash	Solent	Landing Craft Maintenance base
Weymouth	Dorset	Landing Craft HQ (HMS PURBECK)
		Landing Craft base (HMS GRASSHOPPER)
Yarmouth	Isle of Wight	Landing Craft base (HMS MANATEE)

WHERE DID THE ASSAULT CONVOYS LOAD AND ASSEMBLE?

	Loading Areas	Assembly Areas
Force 'J' (Juno)	Portsmouth and Southampton	Solent and Spithead
Force 'G' (Gold)	Southampton	Solent and Spithead
Force'S' (Sword)	Portsmouth Newhaven and Shoreham	Spithead Newhaven and Shoreham
Force'L' (follow-up)	Tilbury Felixstowe	Southend and Sheerness Harwich
Force 'O' (Omaha)	Weymouth and Portland	Weymouth, Portland, Poole
Force 'U' (Utah)	Torquay, Brixham, Dartmouth E Dartmouth W Plymouth E	Torbay, Brixham, Dartmouth Brixham and Dartmouth Salcombe
Force 'B' (follow-up)	Plymouth W Falmouth	Plymouth Falmouth, Helford, Fowey
1 (US) Div (build-up)	Bristol Channel ports	Bristol Channel

WHERE DID THE MERCHANT SHIPS LOAD AND ASSEMBLE?

Loading ports	Assembly areas
Thames docks and Tilbury	89 coasters 37 freighters 6 troop ships
Grimsby	12 coasters
Bristol Channel ports	104 coasters 37 freighters 9 troop ships

KEY

- LCA** Landing Craft Assault

LCB Landing Craft Barge

LCF Landing Craft Flak

LCG(L)(M) Landing Craft Gun (Large) or (Medium)

LCH Landing Craft Headquarters

LCI(L)(S) Landing Craft Infantry (Large) (Small)

LCM Landing Craft Mechanised

LCP Landing Craft Personnel

LCP(L)FOO Landing Craft Personnel (Large) Forward Observation Officer

LCP(L)NAV Landing Craft Personnel (Large) Navigation

LCS Landing Craft Support
- LCS(M)** Landing Craft Support (Medium)

LCS(R) Landing Craft Support (Rocket)

LCT Landing Craft Tank

LCT(AVRE) Landing Craft Tank (Armed Vehicle Royal Engineers)

LCT(R) Landing Craft Tank (Rocket)

LCT(Sp) Landing Craft Tank (Support)

LSD landing Ship Dock

LSI Landing Ship Infantry

LST Landing Ship Tank

LVT Landing Vehicle Tracked

OPERATION "NEPTUNE"

Landing in Normandy

TYPICAL ASSAULT

PLANNED SITUATION AT H-HOUR (FORCES)

KEY

Assault Personnel.....Blue

Tanks and Vehicles.....Red

Support.....Black

■ L.C.H.

□ L.C.F.

▽ L.C.A.

■ L.C.T.(A.V.R.E)

□ L.C.S.(L)

□ L.C.T.(R)

□ L.C.P

V D.D. TANK.

▨ L.C.O.(L)

□ L.C.P.(L).F.O.O.

□ L.C.I.(S)

● MOTOR LAUNCH

▣ L.C.T.(C.B)

□ L.C.P.(L).NAV⁹.

□ L.C.T.

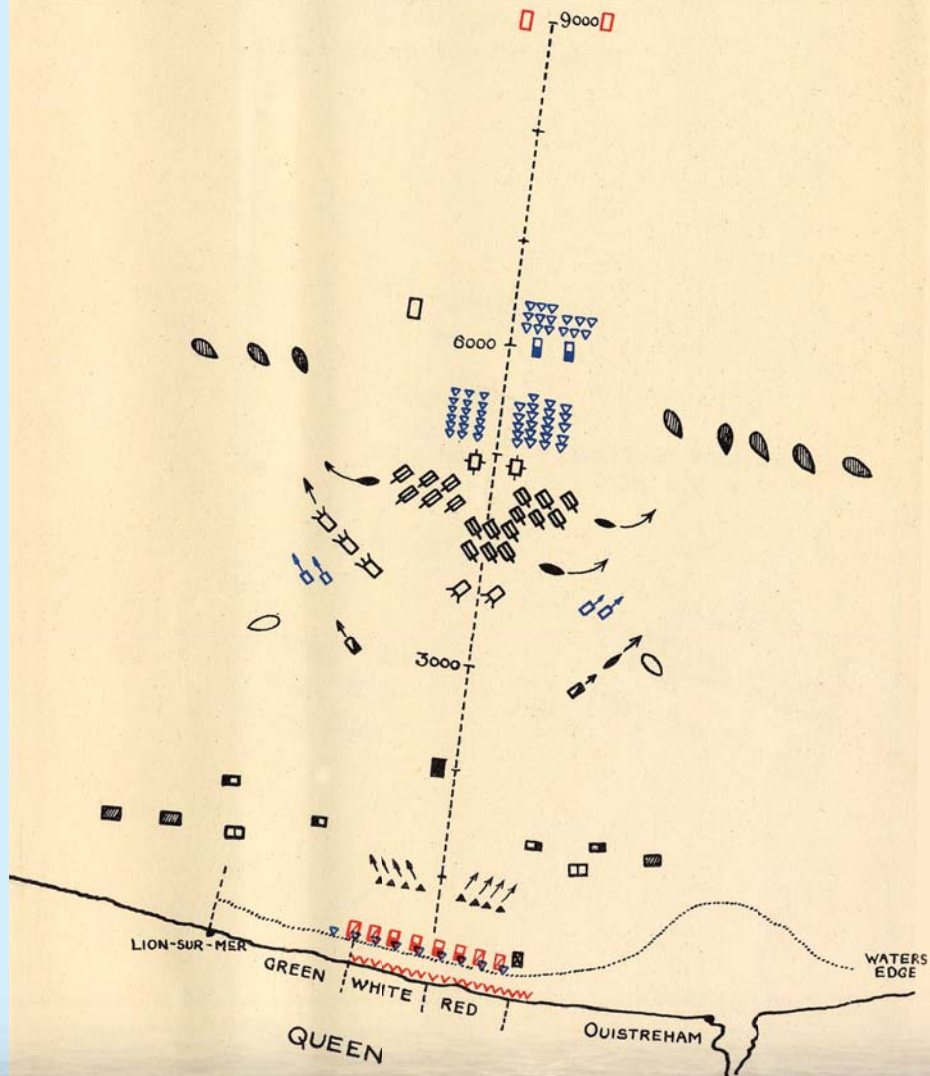
FLEET } DESTROYER

□ L.C.T.(Sp)

▽ L.C.A.(H.R)

□ L.C.T.(A)

HUNT }



OPERATION "NEPTUNE"

Landing in Normandy ; June , 1944.

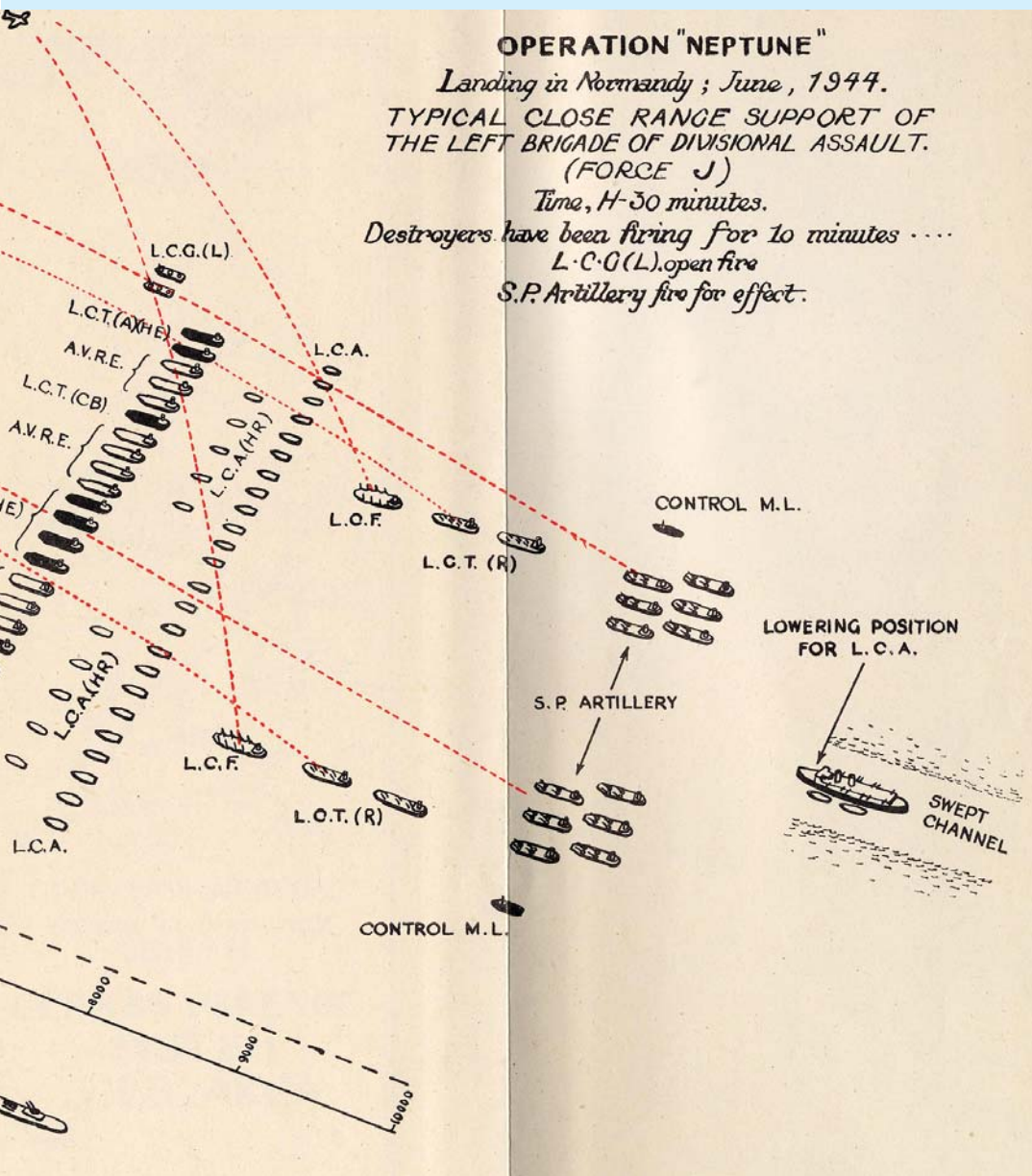
*TYPICAL CLOSE RANGE SUPPORT OF
THE LEFT BRIGADE OF DIVISIONAL ASSAULT.
(FORCE J)*

Time, H-30 minutes.

Destroyers have been firing for 10 minutes

L.C.G.(L). open fire

S.P. Artillery fire for effect.



EASTERN TASK FORCE FLAGSHIP HMS SCYLLA

(Rear Admiral Sir Phillip Vian)

OPERATION NEPTUNE - SWORD BEACH

FORCE S

HQ Ship HMS LARGS
(Rear Admiral AG Talbot)

ASSAULT FORCES

S.1	S.2	S.3
HQ HMS LOCUST	HQ HMS DACRES	HQ HMS GOATHLAND
23 Landing Ship Tank (LSTs)		4 Landing Ships Infantry: (LSIs)
		SS EMPIRE BATTLEAXE
		SS EMPIRE BROADSWORD
		SS EMPIRE CUTLASS
		HMS GLENEARN
26 Landing Craft Tank (LCT)	34 LCT	43 LCT
1-3 Landing Craft Infantry (LCI(L))	32 LCI(L)	9 LCI(L)

FLEET MINESWEEPERS

1 st MIS Flotilla	15th M/S Flotilla
HARRIER	FRASERBURGH
BRITOMART	ARDROSSAN
GLEANER	BOOTLE
HALCYON	DUNBAR
HUSSAR	FORT YORK
JASON	LLANDUDNO
SALAMANDER	LYME REGIS
SEAGULL	WORTHING
SPEEDWELL	
4 danlayers	4 danlayers
3 MLs	4MLs

INSHORE MINESWEEPERS

132nd Motor Minesweeping Flotilla [10MMS]

GUNFIRE SUPPORT**Bombarding Force 'D'**

WARSPITE	RN	15in battleship
RAMILLIES	RN	15in battleship
ROBERTS	RN	15in monitor
MAURITIUS	RN	6in cruiser
ARETHUSA	RN	6in cruiser
DRAGON	Polish	6in cruiser
DANAE	RN	6in cruiser
FROBISHER	RN	7.5in cruiser
KELVIN	RN	'K'-class destroyer
SAUMAREZ	RN	'S'-class DD
SCORPION	RN	'S'-class DD
SCOURGE	RN	'S'-class DD
SERAPIS	RN	'S'-class DD
STORD	RNorN	'S'-class DD If
SVENNER	RNorN	'S'-class DD
SWIFT	RN	'S'-class DD
VERULAM	RN	'V'-class DD
VIRAGO	RN	'V'-class DD
EGLINTON	RN	'Hunt'-class escort DD
MIDDLETON	RN	'Hunt'-class escort DD
SLAZAK	Polish	'Hunt'-class escort DD

FLEET MINESWEEPERS**40th M/S Flotilla**

CATHERINE	PIQUE
CATO	STEADFAST
GAZELLE	CHAMOIS (danlayer)
GORGON	CHANCE (danlayer)
STEADFAST	

INSHORE MINESWEEPERS

115 Motor M/S Flotilla [10 MMS]

165th British, Yard M/S Flotilla [10 BYMS]

CLOSE SUPPORT CRAFT

- 3 Landing Craft (Gun) [2 x 4.7in]
- 4 Landing Craft (Flak) [4 x 2pdr, 8 x20mm AA]
- 5 Landing Craft (Rocket) [792 5in RIP]
- 8 LCT with 2 95mm gun tanks for direct fire support
- 1 LCT with 2 17pdr gun tanks for concrete-busting
- 9 LCA (Hedgerow)

OPERATION NEPTUNE - JUNO BEACH

FORCE J

HQ Ship HMS HILARY
(Commodore GN Oliver)

ASSAULT FORCES

J.1	J.2	J.3
(7th Canadian Bde)	(8th Canadian Bde)	(9th Canadian Bde)
HQ HMS LAWFORD	HQ HMS WAVENEY	HQ HMS ROYAL ULSTERMAN
10 Landing Ship Infantry (LSI): MV LLANGIBBY CASTLE HMCS PRINCE HENRY HMS QUEEN EMMA SS CANTERBURY SS DUKE OF ARGYLL HMS INVICTA SS ISLE OF THANET SS LAIRD's ISLE SS MECKLENBURG SS ULSTER MONARCH 1 LC(HQ) & 48 LCTs (Landing Craft Tank)	9 LSIs: SS CLAN LAMONT SS MONOWAI HMCS PRINCE DAVID SS BIARRITZ HMS BRIGADIER HMS DUKE OF WELLINGTON SS ISLE OF GUERNSEY SS LADY OF MAN SS ST HELIER 1 LC(HQ) & 48 LCTs	23 Landing Ship Tank (LSTs) 3 LC(Flak) &36 LCTs 18 LCI(L) [2RCN]
	J.4 (part) 48 Royal Marine Cdo 2 LSIs: SS PRINCESS MARGARET HMS PRINS ALBERT 14 LCI(S)	

FLEET MINESWEEPERS

7th M/S Flotilla	9th M/S Flotilla
FANCY	BANGOR
LENNOX	BLACKPOOL
PELORUS	BOSTON
PICKLE	BRIDLINGTON
PINCHER	BRIDPORT
PLUCKY	EASTBOURNE
RECRUIT	SIDMOUTH
RIFLEMAN	TENBY
4 danlayers	4 danlayers
3MLs	3MLs

GUNFIRE SUPPORT

Bombarding Force 'E'

BELFAST	RN	6in cruiser
DIADEM	RN	5.25in AA cruiser
KEMPENFELT	RN	'W'-class destroyer
FAULKNOR	RN	'F'-class DD
FURY	RN	'F'-class DD
VENUS	RN	'V'-class DD
VIGILANT	RN	'V'-class DD
ALGONQUIN	RCN	'Tribal'-class DD
SIOUX	RCN	'Tribal'-class DD
BLEASDALE	RN	'Hunt'-class escort DD
STEVENSTONE	RN	'Hunt'-class escort DD
GLAISDALE	RNorN	'Hunt'-class escort DD
LA COMBATTANTE	French	'Hunt'-class escort DD

Close Support Craft

7 Landing Craft (Gun) [2 x 4.7in]

8 LCT (Rocket) [792 5in R/P]

6 Landing Craft Support (L) [1 x 2 pdr]

6 Landing Craft (Flak) [4 x 2 pdr, 8 x 20mm AA]

Plus 4 embarked SP artillery regiments

LST's disembarking the follow on forces, being watched by US troops as they construct the exit route from the beach. (IWM)



OPERATION NEPTUNE - GOLD BEACH

FORCE G

HQ Ship HMS BULOLO
(Commodore CE Douglas-Pennant)

ASSAULT FORCES

G.1	G.2	G.3
HQ HMS NITH	HQ HMS KINGSMILL	HQ HMS ALBRIGHTON
4 Landing Ships Infantry:	4 LSI's:	29 LST's
SS EMPIRE ARQUEBUS	SS EMPIRE HALBERD	
SS EMPIRE CROSSBOW	SS EMPIRE LANCE	
SS EMPIRE SPEARHEAD	SS EMPIRE MACE	
HMS GLENROY	SS EMPIRE RAPIER	
2 LC(HQ) & 64 LCT's	2 LC(HQ) & 54 LCT's	11 LCT's
		21 LCI(L) (15 USN, 6 RCN)

FLEET MINESWEEPERS

6th M/S Flotilla	18th MIS Flotilla
VESTAL	READY
GOZO	COCKATRICE
LARNE	HOUND
LIGHTFOOT	HYDRA
MELITA	LOYALTY
PERSIAN	ONYX
POSTILLION	ORESTES
FRIENDSHIP	RATTLESNAKE
4 danlayers	4 danlayers
4 MLs	3 MLs

FORCE G

GUNFIRE SUPPORT

Bombarding Force K

ORION	RN	6in cruiser
AJAX	RN	6in cruiser
EMERALD	RN	6in cruiser
ARGONAUT	RN	5.25in AA cruiser
FLORES	RNethN	5.9in gunboat
GRENVILLE	all RN	'U' -class destroyer
ULSTER		"
ULYSSES		"
UNDAUNTED		"
UNDINE		"
URANIA		"
URCHIN		"
URSA		"
JERVIS		'J' -class destroyer
BLANKNEY	RN	'Hunt' -class escort DD
CATTISTOCK	RN	"
COTTESMORE	RN	"
PYTCHLEY	RN	"
HAMBLEDON	RN	"
KRAKOWIAK	Polish	"

Close Support Craft

4 Landing Craft (Gun) [2 x 4.7in]
 7 LCT (Rocket) [792 5in R/P]
 7 LCT (Flak) [4 x 2pdr, 8 x 20mm AA]
 10 LCT with 2 x 95mm gun tanks for direct support fire
 17 LCA (Hedgerow)

RN AND ALLIED UNITS SUPPORTING THE WESTERN NAVAL TASK FORCE

WTF FLAGSHIP USS AUGUSTA (ADMIRAL KIRK USN)

OPERATION NEPTUNE - OMAHA BEACH

(Force O and U included amongst others the following ships)

FORCE O

HQ Ship ANCON
(Rear Admiral J L Hall)

ASSAULT GROUPS

LSI(L)	SS EMPIRE ANVIL	'O.1'
LSI(L)	SS EMPIRE JAVELIN	'O.2'
LSD	HMS OCEANWAY	'O.3'
LSI(S)	HMS PRINCE BAUDOUIN	'O.4'
LSI(S)	HMS PRINCE CHARLES	"
LSI(S)	HMS PRINCE LEOPOLD	"
LSI(H)	SS BEN MY CHREE	"
LSI(H)	SS AMSTERDAM	"
LSI(H)	SS PRINCESS MAUD	"

FLEET MINESWEEPERS

4th M/S Flotilla

KELLETT
ALBURY
ELGIN
LYDD
PANGBOURNE
ROSS
SALTASH
SELKIRK
SUTTON

4 danlayers
4 MLs

31st (RCN) M/S Flotilla

CARAQUET
BLAIRMORE
COWICHAN
FORT WILLIAM
MALPEQUE
MILLTOWN
MINAS
WASAGA

4 danlayers (2 RN)
4 MLs

INSHORE MINESWEEPERS

104th Motor M/S Flotilla [10 MMS]

GUNFIRE SUPPORT**Bombarding Force 'C'**

ARKANSAS	US	14in battleship
TEXAS	US	14in battleship
GLASGOW	RN	6in cruiser
MONTCALM	French	6in cruiser
GEORGES LEYGUES	French	6in cruiser
MELBREAK	RN	'Hunt'-class escort DD
TALYBONT	RN	"
TANATSIDE	RN	"

Coastal Minesweepers

167th British Yard M/S Flotilla [10 BYMS]

OPERATION NEPTUNE UTAH BEACH

FORCE U

HQ SHIP BAYFIELD**(Rear Admiral Don P Moon)****ASSAULT GROUPS**

LSI(L)	SS EMPIRE GAUNTLET	"Green"
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FLEET MINESWEEPERS**14th M/S Flotilla**

ROMNEY
 GUYSBOROUGH (RCN)
 KENORA (RCN)
 POOLE
 RYE
 SEAHAM
 VEGREVILLE (RCN)
 WHITEHAVEN
 4 danlayers
 4 MLs

16th M/S Flotilla

SHIPPIGAN
 BEAUMARIS
 DORNOCH
 IFRACOMBE
 PARSBORO
 QUALICUM
 TADOUSSAC
 WEDGEPORT
 4 danlayers
 4 MLs

GUNFIRE SUPPORT**Bombarding Force 'A'**

EREBUS	RN	15in monitor
HAWKINS	RN	7.5in cruiser
ENTERPRISE	RN	6in cruiser
BLACK PRINCE	RN	5.25in cruiser
SOEMBA	RNethN	5.9in gunboat
NEVADA	US	14in battleship
QUINCY	US	cruiser
TUSCALOOSA	US	cruiser

NORMANDY NAVAL CHRONOLOGY

APRIL to SEPTEMBER 1944

APRIL 1944

- 1 Visitors' ban imposed within 10 miles of UK south coast
- 17 Ban of foreign diplomatic and courier movements to and from the UK
- 26 Admiral Ramsay (Allied Naval Commander Expeditionary Force) moved HQ to Southwick Park
German torpedo-boat (light destroyer) **T.29** sunk by **HMCS HAIDA** off lie de Batz
- 26 Torpedo-boat **T.27** driven ashore by **HMCS HAIDA** off Pontusval.
HMCS ATHABASKAN sunk by torpedo (with heavy loss of life).
- 26-28 Exercise "Tiger" - Force 'U' full-scale exercise in Lyme Bay
- 28 US **LSTs 507** and **531** sunk and **LST 289** damaged by E-boats (with very heavy loss of life)

MAY

- 2-6 Exercise "Fabius" - Force 'O' and ETF Forces dress rehearsals in Lyme Bay and Isle of Wight areas
- 8 Admiral Ramsay decided on 5 or 6 June for 'D'-Day
- 12 Naval Assault plan "frozen"
- 21 HM King George VI visited Southwick and Portsmouth
- 22 Practice mobilisation of 80 Press War Correspondents
- 24 Torpedo-boat **GRIEF** damaged by No 415 Sqdn RAAF and sank after collision with sister-ship **FALKE** off R. Orne; **KONDOR** simultaneously severely damaged by mine
- 25 2330: operation orders opened by holders
- 28 5 June nominated as 'D'-Day - all naval personnel "sealed" within their ships

JUNE

- 1 Admiral Ramsay assumed general control of English Channel operations
- 2 Bombarding Force 'O' Eastern Task Force (ETF).left Scapa Flow (2 battleships, 1 monitor, 5 cruisers, 8 Fleet destroyers)
Midget submarines X.20 ('Juno' Sector) and X.23 ('Sword' Sector) left Portsmouth in tow
- 3 Departures: Bombarding Forces 'E' & 'K' (ETF) from the Clyde
(1 battleship, 7 cruisers, 12 Fleet destroyers)
Bombarding Forces 'A' & 'C' Western Task Force (WTF) from Belfast
(3 battleships, 1 RN monitor; 9 cruisers (4 RN), 17 destroyers)
Force 'U' assault convoys from Start peninsula
- 4 0515: "Neptune" postponed by 24 hours due to weather
2300: US ICT (Force 'U') capsized off Portland without-loss of life
- 5 0400: Gen Eisenhower took "final and irrevocable decision" to land on 6 June
0900: First ETF assault groups left Portsmouth, Shoreham, etc
1800: Minesweeper **USS OSPREY** mined NW of Cap d'Antifer
1957: 14th Minesweeping Flotilla in sight of the of the French coast

JUNE 6 D-DAY

- 0440: Destroyer **HNoMS SVENNER** sunk by German torpedo-boats (light destroyers) west of le Havre - north of 'Sword' Beach
- 0630: 'H'-Hour in WTF area (Utah & Omaha) (H-hour the hour of actual landing)
- 0633: Destroyer **USS CORRY** mined off 'Utah' Beach
- 0645: Escort destroyer **HMS WRESTLER** damaged beyond repair by mine west of le Havre - off 'Sword' Beach
- 0725: 'H'-Hour in 'Gold' and 'Sword' sectors
- 0745-55: 'H'-Hour on 'Juno 1' and 'Juno 2' beaches
- 1620: Transport **SS SAMBUT** (Follow-up Force 'I') sunk in Dover Straits by German long-range artillery
- 1700: Convoy ETP.1 (9 large personnel ships) passed westbound undamaged through Dover Straits - first large ships to make the transit for four years
- 7 0700: US freighter **SUSAN B ANTHONY** sunk by mine off 'Juno' Beach
- US **LST 715** sunk by E-boat
- 0940: Minesweeper **USS TIDE** mined and sunk off 'Utah' Beach
- 1230: Scuttling of 54 merchant ships to form 5 protected anchorages ('Gooseberries')
- 7/8 2 RN **LCTs** sunk by E-boats in mid-Channel
- 8 0152: Destroyer **USS MEREDITH** mined off 'Utah' Beach (sank on 9th after near-miss during air attack)
- 0445: Assault HQ Ship (frigate) **HMS LAWFORD** sunk by air attack off 'Juno' Beach
- 0803: Destroyer **USS GLENNON** mined off 'Utah' Beach

The US 1st Army: Casualties of the 4th Infantry Division attended by US Medical Corpsmen, await evacuation by the sea wall at 'Uncle Red' Beach in the UTAH Area, on the morning of 6 June 1944. (IWM)



- 0920: Destroyer-escort **RICH** mined off 'Utah' Beach while assisting **GLENNON**
 Netlayer **HMS MINSTER** mined off 'Utah' Beach
 Coastal tanker **CHANT 6** sunk by air attack in ETF Area
 Port-en-Bessin (captured by 47 RM Cdo on 0+1) in use by coasters and barges
 Mulberry Harbours - first 'Bombardon' units laid (completed D+8)



Unloading at Port-en-Bessin. on D-Day +2. (IWM)

- 8/9 US **LSTs 314** and **376** sunk by E-boats in mid-Channel
- 9 0210: German destroyer **ZH.1** sunk by destroyer HMS **ASHANTI** off lie de Batz;
 German destroyer **Z.32** driven ashore on lie de Batz by **HMCS HAIDA**
 Mulberry Harbours - first 'Phoenix' units laid
- 9/10 Ammunition coasters **BRACKENFIELD** and **DUNGRANGE** sunk by E-boats in mid-Channel
- 10 US freighter **CHARLES MORGAN** sunk by air attack in WTF area
 'Gooseberry' anchorages completed
- 11 0315: Frigate **HMS HALSTEAD** damaged beyond repair by E-boats in ETF area
MTB.448 an one E-boat sunk in action in WTF area
 Coaster **ASHANTI** and 4 tugs sunk by E-boats in mid-Channel
 US 5th and British 30th Corps made contact

- 12 Winston Churchill and CIGS visited British assault area in HMS KELVIN
- 13 Escort destroyer HMS BOADICEA sunk by air torpedo south of Portland
- 14 0200: German minesweepers **M.83** and **M.343** sunk by destroyers **HMS ASHANTI** and Polish **PIORUN** off Channel Islands
- 15 0045: German Torpedo-boats **FALKE**, **JAGUAR** and **MÖWE** sunk and **KONDOR** damaged at Le Havre by RAF air raid (besides 1 t E-boats, 20 miscellaneous patrol craft and 19 tugs)
- 1145: Frigate **HMS MOURNE** sunk by **U.767** off Uzard
- 1910: Frigate **HMS BLACKWOOD** sunk by **U.764** off Portland
- Operation 'Pluto' commenced laying the first pipeline, to Port-en-Bessin
- Germans regained control of the east bank of the mouth of the Orne and shelling of 'Sword' Beach intensified - 2 HM Ships and 5 LSTs damaged on this day; unloading of personnel troops removed to 'Juno' Beach
- 16 HM the King visited the British assault area in **HMS ARETHUSA**
- Trinity House Vessel **ALERT** mined and sunk in 'Gold' area
- 17 Ban of foreign diplomatic movements in UK lifted (see 17 April)
- 18 0200: German minesweeper **M.133** damaged beyond repair by RN **MTBs 727** and **748**, off Jersey
- U.767** sunk by destroyers **FAME**, **INCONSTANT** and **HAVELOCK** Coaster **ALBERT C FIELD** sunk by air attack south of St Albans Head
- 19/23 Northerly Gale in Assault Areas - 13 merchant and auxiliary vessels and over 800 (eight hundred) minor craft driven aground; WTF sector 'Mulberry' Harbour situated off Omaha beach at St Laurent badly damaged and rendered unusable
- All convoy movements halted (resumed pm 21 st)
- 20 French Frigate **LA SURPRISE** severely damaged by mine off "Omaha" Beach
- 21 1045: Escort destroyer **HMS FURY** mined off 'Sword' Beach and beached
- 23 Coaster **DUNVEGAN HEAD** hit by artillery and destroyed by fire off 'Sword' Beach
- 2300: AA Cruiser **HMS SCYLLA** (Flag RAdm Vian NCETF) damaged beyond repair by mine off 'Sword' Beach
- Norwegian Escort destroyer **GLAISDALE** severely damaged by mine off 'Gold' Beach
- Minesweeper **HMS PERSIAN** severely damaged by mine off 'Gold' Beach
- 24 0735: Destroyer **HMS SWIFT** mined off 'Sword' Beach
- Freighters **FORT NORFOLK** and **DERRYCUNIHY** mined and sunk in ETF area
- Cruiser **HMS ARETHUSA** severely damaged by air attack
- U.971** sunk by **HMCS HAIDA**, **HMS ESKIMO** and **No 311** (Czech) Sqdn
- 25 Bombardment of Cherbourg by WTF (TF 129), including cruisers **HMS GLASGOW** and **ENTERPRISE**, with clearance sweeping by 8 Fleet minesweepers and 4 dan-layers of RN 9th M/S Flotilla
- 1415: Frigate **HMS GOODSON** damaged beyond repair by **U.984** in mid-Channel
- U.1191** sunk by **HMS AFFLECK** and **BALFOUR**
- U.269** sunk by **HMS BICKERTON**
- Flag Officer, British Assault Area, moved his HO ashore to Maison Clos Charlotte, Courseulles
- Continued enemy shelling of 'Sword' Beach forced abandonment of unloading by all but minor craft
- Operation 'Pluto': first line completed

- 26 Cherbourg captured by US 7th Corps
- 27 1515: Corvette **HMS PINK** damaged beyond repair by U-boat off Barfleur
- 28 US freighter **CHARLES W ELLIOT** mined and sunk off 'Juno' Beach
- 29 1335: Convoy **EMC.17** attacked by **U.984**: US freighters **JAMES A FARRELL**, **JAMES A TREUTLIN** and **HG BLASDEL** damaged beyond repair
EDWARD M HOUSE damaged
- 1600: Convoy **FMT.22** attacked by **U.988**: freighter **EMPIRE PORTIA** sunk.
U.988 sunk by **HMS DUCKWORTH**, **ESSINGTON**, **COOKE**, **DOMETT** and No 224 Sqdn RAF
- 30 FO British Assault Area assumed responsibility for defence and unloading at the eastern beaches

JULY

- 1 'Sword' Beach closed for all unloading due to enemy artillery fire
- 2 Merchant LSI (Large) **EMPIRE BROADSWORD** mined and sunk in WTF area
- 3 **OFFICIAL END OF OPERATION NEPTUNE** on withdrawal of Rear Admiral A G Kirk, Commander WTF - Naval "C2" assumed by shore HQs in British and American sectors
- 5 Millionth man landed in France
- Minesweeper **HMS FRIENDSHIP** severely damaged by mine off 'Gold' Beach
U.390 sunk by **HMS WANDERER** and **TAVY**
- 6 Minesweepers **HMS MAGIC** and **CATO** sunk by midget submarines off 'Sword' Beach
U.678 sunk by **HMCS OTTAWA**, **KOOTENAY** and **HMS STATICE**
- 7 Fighter direction tender (converted LST) **FDT .216** sunk by air attack in Seine Bay
- 8 0428: Polish cruiser **ORP DRAGON** beached after midget submarine attack off 'Sword' Beach (added to Arromanches 'Mulberry')
- 0500: Minesweeper **HMS PYLADES** sunk by midget submarine off 'Sword' Beach
- Battleship **HMS RODNEY** and monitor **HMS ROBERTS** engaged targets in and around Caen
- RAF Bomber Command raid on Caen
- 600 minor craft damaged in storm (19-23 Jun) refloated at the spring tide
- 18 **U.672** sunk by **HMS BALFOUR**
- 20 Escort destroyer **HMS ISIS** lost by enemy action (unconfirmed cause) Off 'Sword' Beach
- pm: Frigates **HMS ST JOHN** and **MATANE** damaged by guided missiles off Ushant
- 21 Minesweeper **HMS CHAMOIS** damaged beyond repair by mine in the Eastern Task Force (ETF) area
U.212 sunk by **HMS CURZON** and **EKINS**
- 24 Assault HQ ship (escort destroyer) **HMS GOATHLAND** damaged beyond repair by mine in ETF area
- 25 Admiralty resumed operational control of the English Channel, through normal chain of Commands
- 26 **U.214** sunk by **HMS COOKE**
- 30/31 Convoy **FTM.53** attacked by E-boats off Beachy Head: freighter **SAMWAKE** sunk, 4 others damaged
- 31 **U.333** sunk by **HMS STARLING** and **LOCH KILLIN**

AUGUST

- 2/3 German Navy "Small Battle Units" launched 58 midget submarines and 22 explosive motorboats to attack the ETF anchorages; only 17 midget submarines returned: .
- 0300: Escort destroyer **HMS QUORN** and Trawler **HMS GAIRSAY** sunk by midget submarines, LCT sunk by explosive motorboat
- 4 pm: German minesweepers **M.271**, **M.325** and **M.422** sunk by RAF strike on Pauillac (Gironde)
U.671 sunk by **HMS WENSLEYDALE** and **STAYNER**
- 6 0040: German minesweepers **M.263** and **M.486**, with four ships in convoy, sunk south of St Nazaire by AA cruiser **HMS BELLONA** and destroyers **HMS ASHANTI** and **TARTAR** and **HMCS HAIDA** and **IROQUOIS**
- pm: German escort **SG.3** (ex- **SANS PAREIL**). damaged in above action, destroyed by RAF air attack at Sables d'Olonne
U.736 sunk by **HMS LOCH KILLIN**
- 8 pm: German minesweepers **M.366**, **M.367**, **M.428** and **M.438** sunk by RAF strike off Noirmoutiers
- 10 Minesweeper **HMS VESTAL** severely damaged by mine off 'Gold' Beach
- 11 1955: German minesweeper **M.27** mined off Pauillac
U.385 sunk by **HMS STARLING** and No 461 Sqdn RAAF
- 12 German minesweeper **M.370** sunk by RAF strike of Royan
- 14 German minesweeper **M.444** sunk in Brest Roads (probably mined)
U.618 sunk by **HMS DUCKWORTH**, **ESSINGTON** and No 53 Sqdn RAF
- 15 0300: German minesweeper **M.385** beached off Sables d'Olonne - damaged by cruiser **HMS MAURITIUS**, destroyers **HMS URSA** and **HMCS IROQUOIS**
U.741 sunk by **HMS ORCHIS**
- 18 **U.621** sunk by **HMCS OTTAWA**, **KOOTENAY** and **CHAUDIERE**
- 19 Falaise Gap closed at Chambois - German Army evacuation of Normandy begun
- 20 **U. 413** sunk by **HMS WENSLEYDALE**, **FORESTER** and **VIDETTE**
U.984 sunk by **HMCS OTTAWA**, **KOOTENAY** and **CHAUDIERE**
- 21 0830: Corvette **HMS ORCHIS** mined off Courseulles - beached as total loss
- 1140: Corvette **HMCS ALBERNI** sunk by U-boat in mid-Channel
- pm: German destroyer **Z.23** sunk by RAF strike at La Pallice
German minesweeper **M.292** sunk by RAF strike off Le Verdon
- 22 1605: Minesweeper **HMS LOYALTY** sunk by U-boat in mid-Channel
- 24 pm: German destroyer **Z.24** and torpedo-boat **T.24** sunk by RAF strike off Le Verdon (Gironde)
U.445 sunk by **HMS LOUIS**
- 25 Minesweeper **HMS GLEANER** severely damaged by mine off 'Sword' Beach
- 27 1345: Minesweepers **HMS BRITOMART** and **HUSSAR** sunk and **SALAMANDER** damaged beyond repair by RAF strike in Seine Bay
- 31 **U.247** sunk by **HMCS SWANSEA** and **ST JOHN**

SEPTEMBER

- 12 Surrender of Le Havre - end of Normandy campaign

ALLIED NAVAL FORCES ALLOCATED TO
OPERATION ‘NEPTUNE’

EASTERN & WESTERN TASK FORCES	ETF	WTF	OTHER
Minesweeping Forces			
Fleet Minesweepers	56	42	nil
Coastal Minesweepers	30	26	nil
Inshore Minesweepers	30	20	20
M/S Trawlers (Influence)	nil	nil	20
Bombarding Units			
Battleships	4	3	nil
Monitors	1	1	nil
Cruisers	13	10	nil
Gunboats	1	1	nil
Destroyers	28	30	20
'Hunt'-class destroyers	12	5	7
Escort and Patrol			
Escort destroyers	6	4	13
Destroyer-escorts (frigates)	6	8	19
Sloops	4	nil	10
Corvettes	17	4	50
A/S Trawlers	21	9	30
Patrol Craft	nil	18	nil
Fighter Direction Tenders (converted LSTs)	3	nil	nil
Coastal Forces			
MTBs, MGBs, etc	23	41	139
Submarine Chasers	nil	18	nil
Motor Launches	31	19	90
Small CG Cutters	30	30	nil
Harbour Defence MLs	6	5	31
HQ and 'Marker' Units			
Landing Ships (HQ)	4	2	-
Gunboat	1	-	-
'Hunt'-class destroyers	2	-	-
Frigates	5	-	-
Landing Craft (HQ)	11	15	-
Midget submarines	2	-	-

Amphibious Forces (principal types, exclusive of minor landing craft)

	ETF	WTF
Amphibious Assault Vessels		
Landing Ships (Infantry)	36	19
Landing Ships (Tank)	130	106
Landing Ships (Dock)	1	1
Landing Craft (Tank)	444	324
Landing Craft (Infantry)	116	93
Support Landing Craft	109	60

Merchant Ships (all sectors)

Troopships	18	Tankers & colliers	49
MT ships & coasters	288	Cased petrol Carriers	136
'Liberty' stores ships	78	Ammunition carriers	76
Stores coasters	122	Amm. supply issuing ships	18
Accommodation ships	10	Hospital ships and carriers	10
Blockships	59		

Auxiliaries (all sectors)

Tugs and Rescue tugs	216	Survey ships	4
Mooring and Buoy vessels	36	Telephone cable ships	6
Salvage and wreck dispersal	42	Depot and repair ships	15
'Mulberry' control	9	'Pluto' force	33
AA craft	9	Smoke-screen trawlers	62
"Miscellaneous"	295		

Distant support, and cover for the amphibious operations, to prevent German naval interference, was provided at both ends of the English Channel by destroyers, light forces and aircraft; the ships allocated are included in the UK Home Commands strengths listed above. In addition, Western Approaches Command provided surface and air anti-submarine patrols to prevent U-boats entering the assault area from the Atlantic and the French bases; these forces were **additional** to those listed.

Surface Patrols	Dover	Plymouth	Portsmouth
Destroyers	4	12	4
Frigates (MTB control ships)	2	nil	2
MTBs	37	36	39
Motor Launches	9	nil	nil
Naval Aircraft	48	48	42

Anti-Submarine Escort Groups (under Western Approaches Command)

Escort carriers	3 (62 aircraft)
Escort destroyers	14
Sloops	3
Frigates	38

WHAT WERE THE MULBERRY HARBOURS?

Because of the lack of any adequate deepwater ports along the open stretch of the Normandy coast selected for the assault it was necessary to provide shelter and large-scale unloading facilities for the build-up, until such time as Cherbourg and Le Havre could be captured and put into operation. Two quite separate projects were undertaken to fulfil these needs - **Corncob** and **Mulberry**.

'**Corncob**' provided artificial breakwaters by scuttling blockships - four old warships and 54 merchant ships - off each of the assault beaches. The five shelters, which were code-named **Gooseberries** and were laid between 7 and 10 June, formed a lee for the smaller landing craft and also served as bases for maintenance and repair parties; the French battleship **COURBET** continued to fly her ensign and man her AA armament.

The two '**Mulberry**' harbours were far more ambitious in their concept and execution. Each was to provide a sheltered anchorage equivalent in area to Dover harbour, with unloading facilities which could handle 6,000 tons of stores and 1,250 unwaterproofed vehicles daily by the fourteenth day after the initial assault; due to a lack of tugs, these targets were extended, four days before the operation began, to the twenty-first day. The life of the harbours was to be 90 days.

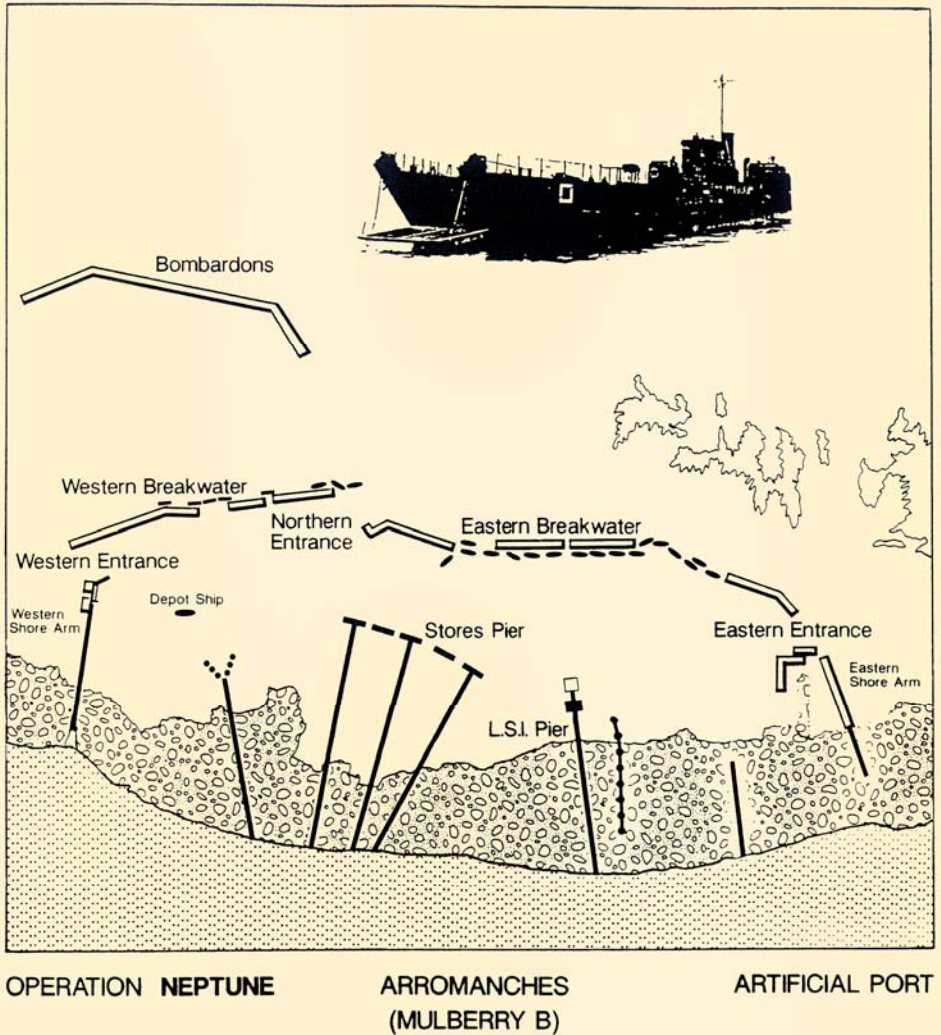
Each **Mulberry** comprised three main components:

- Bombardons** 200-ft floating steel cruciform structures moored end to end offshore to reduce wave energy and provide shelter for a deepwater anchorage; in practice, they were found to reduce wave height by up to 40 per cent.
- Phoenixes** concrete caissons, uniformly 200 feet long but varying in displacement between 2,000 and 6,000 tons, sunk on the 10 metre (5% fathom) line to form breakwaters for the inner harbour; the Gooseberries off 'Juno' and 'Omaha' beaches were incorporated into these breakwaters. The Phoenixes also provided accommodation and AA gun positions for the defence of the harbour.
- Whales** the floating pierheads, piers and roadways within the port; prefabricated in steel and concrete sections, they were assembled on arrival. Like the Phoenixes, the Whales were a War Office design and production responsibility: towing characteristics were not prominent among the design criteria and caused problems - after the loss of four Whale tows through bad weather, sailing in wind strengths above Force 3 was not permitted.

Arromanches: One of the 1km long 'Whale' floating roadway piers. These enabled stores vehicles to exit directly from the ship to shore, regardless of tidal movement. (NHB)



NHB



The moorings for the Bombardons were laid off 'Omaha' (*Mulberry A*) and Arromanches (*Mulberry B*) on D+ 1 and the first units were moored on the next day. Phoenixes were laid down from D+3 as surveys of the intended lines were completed and on the same day the first Whale pier was begun in the Arromanches harbour. The bad weather interfered with the programmed work but by D+ 10 piers were operational in both harbours and Mulberry B was handling a dozen coasters and 1,500 tons of stores daily; Mulberry A was not quite so far advanced.

Between noon on 19th and midnight 20th/21 st June, the Channel and Seine Bay were affected by a Force 7 gale which produced waves of an average height of eight feet in the assault area. The more exposed Mulberry off 'Omaha' beach was wrecked, two thirds of the Phoenix units collapsing and the main pier destroyed by up to 30 -LCTs and other craft being driven against it. Mulberry B was more fortunate and remained virtually intact, although over 800 craft of all types from LCTs downwards were stranded; When stock was taken of the damage and loss (which included 22 Whale tows - 2% miles of roadway - which sank offshore), it was decided that Mulberry A would be abandoned and all resources would be devoted to clearing and expanding the Arromanches harbour. The 'life' of the harbour was to be extended to permit it to continue operating into the winter.

After Neptune

The surviving Mulberry was not completed until 20 July. It was, however, already operating beyond its planned capacity and an average of 6,750 tons per day was cleared between 20 June and 1 September. Compared with the tonnage delivered over the open beaches from LSTs, LOTs and lighters - a daily average of 15,000 tons over just the two US beaches, this 'dryshod cargo' figure may not seem impressive, but among its other virtues the Mulberry was able to handle certain loads which could not be simply driven ashore .. Cherbourg fell to the US• Army on 27 June but the very thorough German demolition of the facilities prevented its reopening until September; thereafter, a daily tonnage of 12,000 was soon reached.

The Arromanches Mulberry remained open well into the autumn for although Le Havre and Antwerp were captured during the first half of September, neither could be reopened until November, the former because demolition, by the RAF as well as the retreating Germans, had been so comprehensive and the latter because the heavily-mined approaches to the undamaged port were dominated by enemy-held territory, necessitating a further major amphibious operation (the invasion Of Walcheren), followed by a major mine clearance operation before the first cargo could be delivered. Antwerp was opened to large ships on 28 November 1944 and, with a daily capacity of 40,000 tons, thereafter became the principal Allied supply port for the advance into Germany.

UK AIRFIELDS

MARITIME PATROL AND STRIKE BASES SUPPORTING OPERATION NEPTUNE RAF COASTAL COMMAND AND 2ND TACTICAL AIR FORCE

Bircham Newton	Norfolk	Wellington & Albacores	1 squadron
Chivenor	Devon	Wellington ASW	4 squadrons
Davidstow Moor	Cornwall	Beaufighter R/P	2 squadrons
		Wellington ASW1 squadron	1 squardon
Dunkeswell	Devon	Liberators (USN)	3 squadrons
Harrowbeer	Devon	Swordfish (RN)	1 squadron
(see also Tactical Bases)			
Hawkinge	Kent	Avengers (RN)	2 squadrons
Langham	Suffolk	Beaufighter RIP & torpedo	2 squadrons
Lee-on-Solent (RNAS)	Hampshire	Seafires (RN)	4 squadrons
		Spitfires	2 squadrons
		(for bombardment spotting duties)	
		Walrus SAR (RN)	1 squadron
Manston	Kent	Beaufighter (fighters)	1 squadron
(see also Tactical Bases)		Swordfish (RN)	1 squadron
		Avengers (RN)	1 squadron

Mount Batten	Devon	Sunderlands	1 squadron
North Coates	Lincolnshire	Beaufighter R/P & torpedo	2 squadrons
Pembroke Dock	Pembrokeshire	Sunderlands	1 squadron
Perranporth	Cornwall	Avengers (RN)	3 squadrons
Portreath	Cornwall	Beaufighters (fighters)	1 squadron
(see also Tactical Bases)		Mosquitoes (6pdr gun)	1 squadron
Predannack	Cornwall	Wellington ASW	1 squadron
(see also Tactical Bases)		Liberators	1 squadron
St Davids	Pembrokeshire	Halifax ASW	2 squadrons
St Eval	Cornwall	Liberators	4 squadrons

TACTICAL, TRANSPORT AND SAR BASES SUPPORTING OPERATION NEPTUNE 2ND TACTICAL AIR FORCE, AIR DEFENCE OF GREAT BRITAIN (ADGB 10 & 11 GROUPS) AND US 9th AIR FORCE

NOTES:

A USAAF Troop Carrier, Fighter or Bombardment Group consisted of three or four squadrons totalling approximately 72 of the same type of aircraft. Reconnaissance Groups were somewhat smaller and consisted of different types.

A-20	Havoc (= RAF Boston) light bomber
B-26	Marauder light bomber
P-38	Lightning fighter/ground attack (F-5 PR variant)
C-47	Dakota transport
P-47	Thunderbolt fighter/ground-attack
P-51	Mustang fighter (F-6 PR variant)

Advanced Landing Grounds were temporary airfields with wire matting or pierced steel planking runways and minimal facilities; the 22 ALGs which were activated for Neptune remained in use only until even more advanced ALGs could be opened in France.

RAF Stirling, Albemarle and Halifax aircraft were employed as glider-tugs.

Aldermaston	Berkshire	C-47	434th TCG
Appledram ALG	W. Sussex	Spitfires	3 squadrons
Ashford ALG	Kent	P-47	406th FG
Barkston Heath	Lincolnshire	C-47s	61st TCG
Beaulieu	Hampshire	P-47s	365th FG
Bisterne ALG	Hampshire	P-47s	371st FG
Blakehill Farm (Cricklade)	Gloucestershire	Dakotas	2 squadrons
Bognor ALG	W. Sussex	Spitfires	3 squadrons
Bolt Head	Devon	Spitfires (ADGB)	1 squadron
Boreham	Essex	B-26s	394th BG
Brize Norton	Oxfordshire	Albemarles	2 squadrons
Broadwell	Oxfordshire	Dakotas	2 squadrons

Chailey ALG	E. Sussex	Spitfires	3 squadrons
Chalgrove	Oxfordshire	F-5, F-6 PR	10th RecG
Chilbolton	Hampshire	P-47s	368th FG
Chipping Ongar	Essex	B-26s	387th BG
Christchurch	Hampshire	P-47s	405th FG
Coolham ALG	W. Sussex	Mustangs	3 squadrons
Cottesmore	Rutland	C-47s	316th TCG
Culmhead	Devon	Spitfires (ADGB)	3 squadrons
Deanland ALG	W. Sussex	Spitfires (ADGB)	3 squadrons
Detling	Kent	Spitfires (ADGB)	3 squadrons
Down Ampney	Gloucestershire	Dakotas	1 squadron
Dunsfold	Surrey	Mitchells	3 squadrons
Earles Colne	Essex	B-26s	323rd BG
Exeter	Devon	C-47s	440th TCG
Fairford	Gloucestershire	Stirlings	2 squadrons
Fairwood Common	Devon	Beaufighter NF (ADGB)	1 squadron
Folkingham	Lincolnshire	C-47s	313rd TCG
Ford	W. Sussex	Spitfires Mosquito NF (ADGB)	6 squadrons 1 squadron
Friston	E. Sussex	Spitfires (ADGB)	2 squadrons
Funtington ALG	W. Sussex	Mustangs Typhoons	3 squadrons 3 squadrons
Gatwick	Sussex	Mustang Tac/R	3 squadrons
Gosfield	Essex	A-20s	409th BG
Gravesend	Kent	Mosquito FB	3 squadrons
Great Dunmow	Essex	B-26s	386th BG
Great Saling	Essex	B-26s	322nd BG
Greenham Common	Berkshire	C-47s	438th TCG
Harrowbeer	Devon	Spitfires (ADGB) Typhoons (ADGB)	1 squadron 1 squadron
Hartford Bridge	Hampshire	Spitfires Bostons Mitchells Mosquito FB	1 squadron 2 squadrons 1 squadron 1 squadron
Harwell	Berkshire	Albemarles	2 squadrons
Headcorn ALG	Kent	P-47s	362nd FG
High Halden ALG	Kent	P-47s	358th FG
Horne	Surrey	Spitfires (ADG8)	3 squadrons

Hunsdon	Hertfordshire	Mosquito NF	1 squadron
Hurn	Hampshire	Typhoons	5 squadrons
		Mosquito NF	1 squadron
		Mosquito (ADGB)	1 squadron
Ibsley	Hants	P-47s	48th FG
Keevil	Wiltshire	Stirlings	2 squadrons
Kingsnorth ALG	Kent	P-47s	36th FG
Lasham	Hants	Mosquito FB	3 squadrons
Lashenden ALG	Kent	P-51s	354th FG
Little Walden	Essex	A-20s	410th BG
Lymington ALG	Hampshire	P-47s	50th FG
Lympne	Kent	Spitfires (ADGB)	3 squadrons
Manston	Kent	Mosquito FB	1 squadron
		(ADGB)	
		Spitfires (ADGB)	1 squadron
Matching	Essex	B-26s	391st BG
Membury	Devon	C-47s	436th TCG
Merryfield	Somerset	C-47s	441st TCG
Merston	W. Sussex	Spitfires	3 squadrons
Middle Wallop	Hampshire	F-5 PR, P-51	68th RecG
		Tac/R	
Needs Oar Point ALG	Hampshire	Typhoons	4 squadrons
Newchurch ALG	Kent	Spitfires	1 squadron
		Tempests	2 squadrons
Northolt	Middlesex	Spitfire PR	1 squadron
		Mosquito PR	1 squadron
		Wellington Tac/R(1)	1 squadron
Odiham	Hampshire	Mustang Tac/R	4 squadrons
Portreath	Cornwall	Warwick, Spitfire, Walrus	SAR
Predannack	Cornwall	Spitfires (ADGB)	2 squadrons
		Mosquito NF	1 squadron
		(ADGB)	
Ramsbury	Wiltshire	C-47s	437th TCG
Rivenhall	Essex	B-26s	394th BG
Saltby	Leicestershire	C-47s	314th TCG
Selsey ALG	W. Sussex	Spitfires	3 squadrons
Shoreham	E. Sussex	Spitfires (ADGB)	1 squadron
		Lysander, Spitfire, Walrus	SAR
Spanhoe	Northamptonshire	C-47s	315th TCG
Stansted	Essex	B-26s	344th BG

(1) Employed as nocturnal flare-droppers to provide battlefield illumination.

THE NORMANDY INVASION

Staplehurst ALG	Kent	P-51s	363rd FG
Stony Cross	Hampshire	P-38s	367th FG
Tangmere	W. Sussex	Spitfires	6 squadrons
Tarrant Rushton	Dorset	Halifaxes	2 squadrons
Thorney Island	Hampshire	Typhoons	2 squadrons
Thrupton	Hampshire	P-47s	366th FG
Upottery	Devon	C-47s	439th TCG
Warmwell	Dorset	P-38s	474th FG
Anson, Spitfire, Walrus SAR			
Welford Park	Berkshire	C-47s	435th TCG
Westhampnett	W. Sussex	Typhoons	1 squadron
West Malling	Kent	Spitfires	1 squadron
Mosquito NF	2 squadrons		
Mosquito NF (ADGB)	1 squadron		
Weston Zoyland	Somerset	C-47s	442 nd TCG
Wethersfield	Essex	A-20s	416th BG
Winkleigh (ADGB)	Devon	Beaufighter NF	1 squadron
Winkton ALG	Hampshire	P-47s	404th FG
Woodchurch ALG	Kent	P-47s	373rd FG
Zeals	Wiltshire	Mosquito NF	1 squadron

NF = Night Fighter

WHAT WAS THE CONTRIBUTION OF NAVAL AVIATION?

Sixteen naval air squadrons flying from shore bases took part in Operation Neptune, one Dutch, three American and twelve Royal Navy air squadrons. Two of the US Navy squadrons flew Liberator anti-submarine patrol aircraft, operating against submarines in transit through the Bay of Biscay; the third squadron was the only US Navy unit ever to operate Spitfires. The single Royal Netherlands Navy squadron was equipped with B-25 Mitchell Bombers and flew as part of the 2nd Tactical Air Force's medium bomber force against inland targets.

The Royal Navy's contribution was more mixed, in equipment as well as in the tasks. The Swordfish of 838 Squadron provided night anti-submarine patrols in the western English Channel, complemented by 849 and 850 Squadrons' Avengers, which flew the day patrols in this area. 816 Squadron Swordfish, operating from Perranporth, ventured further afield, providing night anti-E-boat patrols off the coast of Brittany. In the central Channel, in the invasion area, the Swordfish of 819 and Avengers of 848 operated by night against the E-boats, while on the extreme eastern flank two more Avenger squadrons, 854 and 855, supported the Dover Command's E-boat patrols. After the assault phase, some of the squadrons were moved to meet the changing requirements, notably the arrival of U-boats in the waters used by resupply convoys and the introduction of midget submarines. The Avengers occasionally found themselves in a completely unexpected combat role and this resulted in two 'kills' against V.1 flying bombs.

Seven fighter squadrons (five of them naval) had perhaps the most unusual task. Spotting for the guns of the Fleet, whether in action against ships or shore targets, had been one of the very first tasks for shipborne aircraft but by 1943 it was clear that the 'traditional' multi-seat spotter aircraft was too vulnerable to modern AA defences. In the autumn of that year, certain single-seat fighter squadrons began to train for the job and in the spring of 1944, No.3 Naval Fighter Wing was moved to RNAS Lee-on-Solent as the nucleus of the Air Spotting Pool, to spot for the Neptune battleship and cruiser shore bombardment forces. Besides the Seafires of 885 and 886 Squadrons and the Spitfires of 808 and 897 Squadrons, the Pool included two RAF Spitfire Squadrons, Nos 26 and 63, whose pilots had also been trained in this role, and VCS.7, a US Navy unit whose pilots' already knew the role but who had to accustom themselves: to the high-performance landplane Spitfires after the float biplanes which they had previously flown from ships' catapults.

Pairs of spotters from Lee-on-Solent were active over all the beaches from dawn on 'D'-Day, correcting the fall of shot on batteries, enemy movements and key bridges and junctions up to 15 miles inland, identifying fresh targets for the guns and, during the opening days, occasionally fending off German fighters, several of which were shot down. VCS.7 was withdrawn after the fall of Cherbourg in late June, but not until the second week in July were the enemy pushed back out of battleship gun range in the Caen sector. Fewer bombardment targets were available, but this released some sorties for a task - dawn patrols against midget submarines, several of which were sunk by the "anti-submarine fighters". When, in mid-July, the Pool was disbanded, its Seafires and Spitfires had flown 1,230 sorties in 33 'flyable' days, for the loss of two dozen aircraft to flak, fighters and the weather but very few of the RN, USN and RAF pilots were lost. It had also proved the value of the fighter-spotter.

