

OPERATIONAL ASPECTS OF  
MILBERRY "B"

FOREWORD

This paper contains certain statistics which have been extracted from a variety of reports available within the War Office. These statistics, however, vary according to the source from which they have been compiled.

In order to avoid misconceptions arising from a comparison of the statistics in this paper with other records, the following table of the sources of the various figures may be useful:-

<u>Information</u>	<u>Source</u>
<u>A. PORT DISCHARGES (British)</u>	
1. <u>Planned</u>	
(a) Formations	21 Army Group - British Build-up Progress Reports.
(b) Personnel	21 Army Group Administrative Bulletins
(c) Vehicles	21 Army Group Administrative Bulletins
(d) Stores	21 Army Group British Stores Tonnage Programmes. Joint Maintenance Project - Administrative Plan.
2. <u>Actual</u>	
(a) Formations	21 Army Group - British Build-up Progress Reports
(b) Personnel	2nd Army Administrative Situation Reports 21 Army Group Administrative Bulletins
(c) Vehicles	2nd Army Administrative Situation Reports 21 Army Group Administrative Bulletins
(d) Stores: General	21 Army Group Transportation Situation Reports.
Ammunition	2nd Army Administrative Situation Reports
<u>B. PORT DISCHARGES (US)</u>	Port Operational Data Reports (Office of the Chief of Transportation Com-Zone) U.S. Operational Logistics Daily Progress Reports.
<u>C. STOCK POSITIONS</u>	2nd Army Administrative Situation Reports. 21 Army Group Administrative Bulletins
<u>D. ANNEX IX</u>	Q(M) 21 Army Group. (21 AGP/R/18666/1/Q(M)- 23 Mar 45)

## OPERATIONAL ASPECTS OF MULBERRY "B".

### Tactical Surprise.

1. A note on the need for tactical surprise has already been submitted by Major-General Simpson, late DMO War Office. From the administrative point of view that note can be expanded by saying that if we had landed without tactical surprise we should probably have had greater losses of landing craft and coasters, which would have slowed down the build-up and maintenance of formations. Without the conception of MULBERRY we should have had to land with the primary object of capturing a port and therefore near a port. That would have meant either near LE HAVRE - but the DIEPPE raid had shown that defences there were likely to be awkward - or in the PAS DE CALAIS where the defences were known to be formidable.

CHERBOURG, being a passenger port in peacetime, had not got the capacity to maintain both the US and British Armies. Even if it had, its early capture would have cramped the Commander's tactical freedom of action as the US Forces would have had to be directed to advance on CHERBOURG with the result that their beach-heads might not have been secure and the gap between the US and British Armies might not have been closed, so inviting defeat in detail. Had the plan been made with the early capture of CHERBOURG as the vital objective, a landing nearer the port would have given little freedom of manoeuvre and the enemy would have had the comparatively easy task of containing the Allied force in the CONTENTIN peninsula. A landing on the west coast of this peninsula would not have been feasible since the Channel Islands were in enemy hands apart from the fact that the coast is ironbound and beset with navigational hazards. A preliminary operation to capture these islands might have forfeited tactical surprise and caused losses in personnel and material, particularly in coasters, landing ships and craft and amphibians, which we could not have afforded.

As it happened CHERBOURG was not captured till D plus 21, that is 13 days late according to the plan.

Although the capture of a port provides sheltered water, its value is often reduced by under-water obstacles, sunken ships and mines, which take time to remove. The port itself may be heavily damaged and its clearance facilities blocked. The table at Annex I illustrates this point as regards CHERBOURG, LE HAVRE, ROUEN, DIEPPE and BOULOGNE.

### Weather.

2. Having decided for tactical reasons that the landings must take place away from a port, necessitating maintenance over beaches, the main enemy became the weather.

Records confirm the notorious fickleness of the weather in the Channel, even in summer. Equally the difficulties of forecasting the weather were shown by the postponement of D day for 24 hours and by the landing taking place in weather far from ideal and continuing unexpectedly adverse until after the storm of 19 - 21 June. That storm alone, being the worst for 40 years, further confirms the difficulty of forecasting and the fickleness of Channel weather. Again, but this time to our advantage, the equinoctial gales, which normally blow hard during September, were light and caused little or no inconvenience. The weather experts advised the designers of MULBERRY that they need not consider winds from the north. The storm was accompanied by strong north-east winds. They also advised that discharge over beaches should not be relied on for more than 21 days in the month of June.

Therefore the weather postulated the need to protect the beaches, hence GOOSEBERRIES and to supplement them by artificial ports.

/The Commitment

The Commitment.

3. The plan up to D + 30 required the following build-up:

PERIOD	FORMATIONS (in Divisions)	PERSONNEL	VEHICLES	STORES (in tons)
6 Jun - 12 Jun	7	246,000	34,976	72,675
13 Jun - 22 Jun	5 2/3	225,000	39,480	147,910
23 Jun - 5 Jul	3	268,500	45,852	230,826
TOTAL	15 2/3	739,500	120,308	451,411

How this was achieved can be seen in Annex II.

Ports.

4. The ports available to the British were:

Port	Date of Opening	Actual daily discharges	Remarks.
PORT EN BESSIN	12 June (D plus 6)	1,125 tpd	Originally developed for awkward stores discharged into lighters in MULBERRY. Subsequently used for bulk POL for British and US.
COURSEULLES	11 June (D plus 5)	1,028 tpd	Also used for evacuation of casualties by launch to hospital ships lying 4 - 5 miles offshore.
CHERBOURG	16 Jul (D plus 40)	500 tpd allotted to British.	Long rail or road haul to British depots. Railway to RMA opened 10 Jul 44.
OUISTREHAM/ CAEN	3 Sep (D plus 89)	2,378 tpd till 2 Oct.	OUISTREHAM under fire till end of July. CAEN very badly damaged by demolitions and our bombing.

These ports, except for the minor 500 tpd through CHERBOURG, could not be relied on during planning owing to expected demolitions and blockages; also in the case of OUISTREHAM/CAEN the lock gates were expected to be damaged. Although spare lock gates were constructed in this country it would have taken time to have towed them across and to have erected them apart from the fact that OUISTREHAM was under enemy fire until the end of July. In any case the capacity of these ports, ie 4,531 tpd, was only about one quarter of the maintenance requirement of 18,000 tpd.

Beaches.

5. The beaches in the British sector were as follows:

<u>Right</u>	-	GOLD	-	PORT EN BESSIN to LA RIVIERE
<u>Centre</u>	-	JUNO	-	LA RIVIERE to PETIT ENFER
<u>Left</u>	-	SWORD	-	PETIT ENFER to OUISTREHAM

These beaches covered approximately 30 miles of coast with adequate exits and roads. They would probably have been capable of dealing with the required tonnages of stores (exclusive of vehicles) provided the weather kept fine. The planned figures together with the actual tonnages discharged are shown at Annex II (Part 4).

SWORD beach was closed on 15 Jul owing to the losses in landing ships and craft sustained from enemy shell fire. The Admiralty have detailed figures which in total amount to 46 total losses and 32 ships and craft disabled. The closing of this beach meant a loss of 4,000 tpd according to the plan. 55,239 tons of stores were discharged over SWORD during the period 7 June - 11 July.

The other British beaches were closed on 3 September, by which time 217,924 tons had been discharged through the small ports (incl 500 tpd through CHERBOURG), 605,629 tons over the open beaches and 451,335 tons through MULBERRY, (110,522 tons over WHALES, 340,813 tons over MULBERRY beach) giving a total of 1,274,888 tons. In addition to the tonnage discharged and landed through MULBERRY approximately 150,000 tons were discharged within the shelter of MULBERRY up to 31 August but were landed over JIG and ITEM beaches just outside MULBERRY.

The highest discharge over the open beaches reached on one day (24 June) was 11,745 compared with 9,513 (16 Aug) through MULBERRY; for a ten day period an average of 10,400 tpd (during the period 23 Jul - 1 Aug) compared to 7,700 tpd (during the period 13 - 22 Aug) through MULBERRY.

The Storm

6. During the storm, 19 - 22 June, 6,500 tons were discharged over the open beaches and 3,500 tons through the two small ports; a total of 10,000 tons. During this same period 7,265 tons were discharged through MULBERRY. On the worst day of the storm, when only 1,148 tons were discharged over the open beaches and through the small ports, 2,826 tons were discharged through MULBERRY. The foregoing figures represent percentages on the total tonnage of 38% over open beaches, 20% through small ports and 42% through MULBERRY.

The value of MULBERRY as regards stores discharge can be further illustrated by the situation of 25 pdr ammunition. This is shown at Annex III, and it will be seen that without the discharges through MULBERRY the ammunition situation would have been such that if the enemy had launched an attack 25 pdr ammunition would have quickly run out.

During the storm, MULBERRY provided shelter for 155 minor landing craft from the beaches. Had these craft been damaged or destroyed, discharge over the beaches would have been seriously curtailed. Repair facilities in the UK were already fully occupied and there was no reserve of minor landing craft.

/Build-up

### Build-up of Reserves

7. Soon after the storm, when the British Armies were contained in a small bridgehead, it was decided to build-up reserves to the greatest possible extent over and above the planned scales before bad weather set in to restrict discharge over the beaches and in case we should not be able to capture a major port before the winter.

The tonnages discharged over and above expenditure during the period 5 Jul to 3 Sep were 902,849 tons; if the MULBERRY tonnages were subtracted this capacity for building up reserves would have been reduced to 524,082 tons. This figure would in actual practice have been less as the capacity of the beaches would have been restricted by the discharge of vehicles and evacuation of casualties instead of through MULBERRY.

### Shipping

8. It was decided at the QUEBEC conference, 1943, that only 50% (625,000 DW tons) of the British coaster fleet could be allotted to 'OVERLORD' as the balance was required for essential civil requirements of this country. This shipping tonnage was insufficient, being about 26,000 tpd compared to the British/US requirement of 38,000 rising to 44,000 tpd by D plus 40 (16 July). More coasters of the type required could not be obtained from NORTH AMERICA as they could not have undertaken the ATLANTIC crossing. This meant the use of bigger ships, so that a sheltered artificial anchorage was essential.

MULBERRY also improved the turn-round of coasters and saved more coasters being beached with consequential damage to their bottoms. Both these points were very important factors especially as repair facilities were fully occupied.

### Discharge of vehicles

9. It would have been very difficult, if not impossible, owing to the weather to build up LST piers outside MULBERRY so that vehicles could have been landed dryshod and LSTs turned round quickly. The discharge of MP from beached LST meant the loss of one tide, i.e. approximately 10 hours, whereas discharge over the LST pierhead took only 18 minutes in the best instance recorded. This saving in time meant a great saving in the number of LST required; an important factor in view of the restricted number of these craft which were available. Without MULBERRY the waterproofing problem would have been immense and probably insoluble. In any case, the provision of the necessary material and personnel would have had serious repercussions on industry and the running of the main base in the UK. The build-up would have been slowed down as the turn-round of LSTs would have been lengthened. Some 100,000 vehicles were landed dryshod over the LST and whale piers in MULBERRY which is estimated to have given a saving of 6 million military manhours in waterproofing. If we had had to waterproof these vehicles modification and servicing of other Army equipment would have been delayed.

### Evacuation of casualties.

10. Hospital ships were brought alongside the LST pier so that they could be loaded direct from ambulances giving a quicker turn-round, far greater comfort to the wounded and an uplift to morale. It is doubtful whether we would have had enough hospital ships, particularly if the number of casualties had been up to forecasts, to evacuate those casualties, who could not be evacuated by air owing to the nature of their wound, weather and lack of aircraft, if the turn-round had been lengthened. The small craft and amphibians required to take casualties out to hospital ships lying off would have meant taking them away from stores discharge

/so slowing

so slowing down the maintenance build up. However, it is pointed out that the evacuation of casualties was not included in the staff requirement nor in the plan. It was arranged as soon as the LST pierhead proved itself.

#### Assessment of MULBERRY

11. When considering the value of MULBERRY it must be remembered that there was a beach inside the harbour over which stores were discharged. The tonnages discharged over this beach and over 'WHALE' are shown in Annexure II. It will be seen that 33% of these stores were discharged over WHALE. The apparent deduction is that, for the stores discharge, better shelter for the beaches than the Gooseberries were required, but that 'WHALES' were not essential. However, the use of WHALE equipment was considerably greater in proportion than the actual percentage of tonnage landed. The stores landed over WHALE largely consisted of awkward stores and lifts, which were discharged from barges alongside direct to heavy motor vehicles by the 10 ton mobile cranes. These stores would have been very difficult to handle over a beach. Further, the WHALE pierhead enabled coasters, unsuitable for beaching, to be discharged alongside instead of at anchor so saving lighterage and amphibians. Much of the plant and stores discharged from these coasters was too bulky and awkward for discharge into amphibians.

The value of the LST pier was proved by the evacuation of casualties and the discharge of vehicles, particularly as the vehicle deficit on the plan at 17 July, the date the LST opened, was 11,363.

Return salvage traffic was despatched from MULBERRY to UK. Details are shown in Annex IV. It would have been difficult to backload tanks and SP guns for heavy repairs in the UK from the small ports or beaches.

The biggest engineering, construction and towing problems were caused by the Phoenixes, not the 'WHALE' equipment. It seems that Phoenixes would have been required in any case to provide the necessary protection to the beach. To have provided another modified MULBERRY to increase the discharge over another beach to make up for the tonnage of stores discharged over the WHALE would have needed a far greater effort than the construction, towing and erection of the LST and WHALE piers. It is doubtful if another site could have been found and there was only one possible beach inside MULBERRY.

Without MULBERRY further beaches would have had to be used which would have meant more Beach Groups, coasters, minor landing craft and amphibians. More Beach Groups could have been raised at the expense of an equivalent number of fighting troops, though their training would have been difficult owing to limited facilities in this country. More coasters, minor landing craft and amphibians could not have been provided as there were no reserves and no spare constructional capacity. We only got sufficient amphibians assigned from USA just in time and then only with difficulty. Extra beaches would have had to have been secured by land attack from the rear as another naval assault force could not have been provided, due to lack of craft, manning and training difficulties. Even if another naval assault force had been available it would also have meant landing on a wider front so weakening the whole landing by losing a degree of concentration of men and weapons ashore, air cover and naval fire support. It is doubtful whether another beach suitable for discharge, and with necessary exits, could have been found in the British sector. It would have complicated the road problem. MULBERRY probably gave the Navy an easier task of protection and mine sweeping compared to another open beach in lieu of MULBERRY.

+ 'WHALE' was a codeword covering the construction of barge/stores/LST piers and floating roadways. All equipment so used was defined as 'WHALE' equipment.

/Construction

### Construction of MULBERRY

12. Although MULBERRY involved the use of tons of material and thousands of workmen it is doubtful whether they could have been used for other purposes, which would have helped 'OVERLORD' directly. Constructional capacity would not have been used for construction of coasters nor landing craft, which would have been required in lieu of MULBERRY.

If the WHALE piers had not been built the saving in steel would have been 24,000 tons. However, most of this tonnage has been serviced and is available for other use and as scrap. ~~These~~ pierheads and 880 ft of WHALE equipment are being sent out to the FAR EAST for use in sheltered water and port areas. In addition there are 33,500 tons of steel in recovered and spare pierheads and WHALE equipment which are available to the Ministry of Supply for use as scrap. The serviced equipment includes some returned from the US MULBERRY.

Four Phoenix units have been used in the repair of a deep water berth at LE HAVRE. There are 23 spare units in the United Kingdom, which may be useful for port rehabilitation in EUROPE. A proportion of the units in both the MULBERRIES could be raised and re-planted if required.

### Achievement of MULBERRY

13. 33.1% of the total British tonnages, apart from vehicles and evacuation of casualties, were discharged entirely through MULBERRY up to 12 Oct when it was handed over to the Americans. They used it till 19 Nov and during that period 19,100 tons of stores were discharged. If the stores discharged within the shelter of MULBERRY and landed over adjacent open beaches are included then the percentage is 42%.

10 May 45.

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## PORTS - DATES OF CAPTURE - DATES OF OPENING - DISCHARGES.

Port (a)	Date of Capture (b)	Date of Opening (c)	Time required for opening (c) - (b)	Average daily discharges in tons (0 - date of opening)			
				0 to 0+13	0+14 to 0+27	0+28 to 0+41	0+42 to 0+55
CHERBOURG	27 Jun	16 Jul	19 days	1,828	5,509	9,837	8,906
LE HAVRE	12 Sep	4 Oct	22 days	662	3,744	5,095	4,246
ROUEN	1 Sep	16 Oct	45 days	1,656	3,518	3,924	4,850
DIEPPE	2 Sep	7 Sep	5 days	3,655	5,247	4,965	5,017
BOULOGNE	24 Sep	13 Oct	19 days	523	1,609	2,385	2,580
ANTWERP	9 Sep	28 Sep	20 days	998	1,907	2,366	2,946

## PART I FORMATIONS (DIVISIONS)

## THE BUILD-UP, PLANNED AND ACTUAL.

	Date	Planned		Actual		On Planned Programme	
		Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
D	Jun 6	3 1/3	3 1/3	3 1/3	3 1/3	-	-
D + 1	7	2/3	4	2/3	4	-	-
D + 2	8	2/3	4 2/3	1	5	+1/3	+1/3
D + 3	9	1/3	5	-	5	-1/3	-
D + 4	10	2/3	5 2/3	1	6	+1/3	+1/3
D + 5	11	2/3	6 1/3	1/3	6 1/3	-1/3	-
D + 6	12	2/3	7	1/3	6 2/3	-1/3	-1/3
D + 7	13	2/3	7 2/3	-	6 2/3	-2/3	-1
D + 8	14	1/3	8	2/3	7 1/3	+1/3	-2/3
D + 9	15	1/3	8 1/3	-	7 1/3	-1/3	+1
D + 10	16	1/3	8 2/3	1	8 1/3	+2/3	-1/3
D + 11	17	2/3	9 1/3	1/3	8 2/3	-1/3	-2/3
D + 12	18	-	9 1/3	-	8 2/3	-	-2/3
D + 13	19	1	10 1/3	2/3	9 1/3	-1/3	-1
D + 14	20	1	11 1/3	-	9 1/3	-1	-2
D + 15	21	2/3	12	2/3	10	-	-2
D + 16	22	2/3	12 2/3	-	10	-2/3	-2 2/3
D + 17	23	1	13 2/3	1/3	10 1/3	-2/3	-3 1/3
D + 18	24	-	13 2/3	1/3	10 2/3	+1/3	-3
D + 19	25	-	13 2/3	2/3	11 1/3	+2/3	-2 1/3
D + 20	26	1	14 2/3	1/3	11 2/3	-2/3	-3
D + 21	27	-	14 2/3	1	12 2/3	+1	-2
D + 22	28	-	14 2/3	-	12 2/3	-	-2
D + 23	29	1/3	15	-	12 2/3	-1/3	-2 1/3
D + 24	30	2/3	15 2/3	-	12 2/3	-2/3	-3
D + 25	Jul 1	-	15 2/3	-	12 2/3	-	-3
D + 26	2	-	15 2/3	2/3	13 1/3	+2/3	-2 1/3
D + 27	3	-	15 2/3	-	13 1/3	-	-2 1/3
D + 28	4	-	15 2/3	1/3	13 2/3	+1/3	-2

Date	Planned		Actual		* or - On Planned Programme	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
D + 29 Jul 5	-	15 2/3	1/3	14	+1/3	-1 2/3
D + 30 6	1/3	16	1/3	14 1/3	-	-1 2/3
D + 31 7			1/3	14 2/3		-1 1/3
D + 32 8			-	14 2/3		-1 1/3
D + 33 9			-	14 2/3		-1 1/3
D + 34 10			-	14 2/3		-1 1/3
D + 35 11			-	14 2/3		-1 1/3
D + 36 12			-	14 2/3		-1 1/3
D + 37 13			-	14 2/3		-1 1/3
D + 38 14			-	14 2/3		-1 1/3
D + 39 15			-	14 2/3		-1 1/3
D + 40 16			-	14 2/3		-1 1/3
D + 41 17			-	14 2/3		-1 1/3
D + 42 18			-	14 2/3		-1 1/3
D + 43 19			-	14 2/3		-1 1/3
D + 44 20			-	14 2/3		-1 1/3
D + 45 21			1/3	15		-1
D + 46 22			-	15		-1
D + 47 23			-	15		-1
D + 48 24			1/3	15 1/3		-2/3
D + 49 25			-	15 1/3		-2/3
D + 50 26			2/3	16		-

## THE BUILD-UP, PLANNED AND ACTUAL

PART 2 - PERSONNEL

	<u>DATE</u>	<u>PLANNED</u>	<u>ACTUAL</u>	<u>PLUS OR MINUS ON PLANNED PROGRAMME</u>
D	Jun 6	92,500		
D plus 1	7	29,100		
D plus 2	8	30,600		
D plus 3	9	25,100	178,647	
D plus 4	10	24,600		
D plus 5	11	23,000		For period 6 Jun - 12 Jun
D plus 6	12	21,100	16,652	<u>minus 50,701</u>
D plus 7	13	22,500	11,700	
D plus 8	14	22,500	8,789	
D plus 9	15	22,500	16,561	
D plus 10	16	22,500	13,022	
D plus 11	17	22,500	15,527	
D plus 12	18	22,500	17,984	
D plus 13	19	22,500	5,615	
D plus 14	20	22,500	544	
D plus 15	21	22,500	2,762	
D plus 16	22	22,500	7,007	For period 13 Jun - 22 Jun
D plus 17	23	22,500	21,743	<u>minus 125,489</u>
D plus 18	24	22,500	13,187	
D plus 19	25	22,500	14,872	
D plus 20	26	22,500	11,078	
D plus 21	27	22,500	12,902	
D plus 22	28	19,500	12,890	
D plus 23	29	19,500	15,910	
D plus 24	30	19,500	13,938	
D plus 25	Jul 1	19,500	9,456	
D plus 26	2	19,500	13,033	
D plus 27	3	19,500	12,329	
D plus 28	4	19,500	6,274	For period 23 Jun - 5 Jul
D plus 29	5	19,500	10,732	<u>minus 100,156</u>
		<u>739,500</u>	<u>463,154</u>	For period 6 Jun - 5 Jul minus 276,346

THE BUILD-UP - PLANNED AND ACTUALPART 3 - VEHICLES (including guns and limbers, each of which count as one vehicle.)

<u>DATE</u>	<u>PLANNED</u>	<u>ACTUAL</u>	<u>PLUS OR MINUS ON PLANNED PROGRAMME</u>
D Jun 6	9,155	↑	
D plus 1 7	4,780	↑	
D plus 2 8	4,835	↑	
D plus 3 9	4,206	27,818	
D plus 4 10	3,804	↓	For period 6 Jun - 12 Jun
D plus 5 11	4,098	↓	minus 4,518
D plus 6 12	4,098	2,640	
D plus 7 13	3,948	2,147	
D plus 8 14	3,948	2,639	
D plus 9 15	3,948	3,979	
D plus 10 16	3,948	3,353	
D plus 11 17	3,948	3,177	
D plus 12 18	3,948	3,058	
D plus 13 19	3,948	1,635	
D plus 14 20	3,948	282	
D plus 15 21	3,948	922	For period 13 Jun - 22 Jun
D plus 16 22	3,948	2,662	minus 15,626
D plus 17 23	3,948	5,372	
D plus 18 24	3,948	3,098	
D plus 19 25	3,948	3,365	
D plus 20 26	3,948	2,413	
D plus 21 27	3,948	3,125	
D plus 22 28	3,264	3,003	
D plus 23 29	3,264	3,210	
D plus 24 30	3,264	3,145	
D plus 25 Jul 1	3,264	2,882	
D plus 26 2	3,264	3,074	
D plus 27 3	3,264	3,058	
D plus 28 4	3,264	2,080	For period 23 Jun - 5 Jul
D plus 29 5	3,264	3,618	minus 4,409
	120,308	95,755	For period 6 Jun - 5 Jul minus 24,553

## THE BUILD-UP - PLANNED AND ACTUAL.

## PART 4 - STORES.

DATE	PORT EN BESSIN	COURSEULLES	MULBERRY			OPEN BEACHES	CAEN CUISTREHAM	DIEPPE	OSTEND	TOTAL	PLANNED	+ or - on planned figure
			WHOLE	BEACHES	TOTAL							
D 6 Jun	-	-	-	-	-	-	-	-	-	-	4,486	- 4,486
D+1 7 "	-	-	-	-	-	4,600	-	-	-	4,600	11,057	- 6,457
D+2 8 "	-	-	-	-	-	-	-	-	-	-	10,913	- 10,913
D+3 9 "	-	-	-	-	-	2,924	-	-	-	2,924	11,326	- 8,402
D+4 10 "	-	-	-	-	-	6,049	-	-	-	6,049	12,009	- 5,960
D+5 11 "	-	-	-	-	-	9,911	-	-	-	9,911	10,824	- 913
D+6 12 "	770	955	-	900	900	11,364	-	-	-	13,989	12,060	+ 1,929
D+7 13 "	1,192	958	-	1,126	1,126	6,992	-	-	-	10,268	12,760	- 2,492
D+8 14 "	952	1,157	-	1,012	1,012	6,251	-	-	-	9,372	13,536	- 4,164
D+9 15 "	882	746	-	1,052	1,052	7,717	-	-	-	10,397	13,542	- 3,145
D+10 16 "	1,240	1,242	-	1,771	1,771	6,898	-	-	-	11,151	14,298	- 3,147
D+11 17 "	1,328	1,090	-	1,992	1,992	6,568	-	-	-	10,973	14,863	- 3,885
D+12 18 "	832	1,254	-	2,925	2,925	5,126	-	-	-	10,137	15,996	- 5,859
D+13 19 "	1,535	1,043	-	2,374	2,374	2,154	-	-	-	7,106	14,417	- 7,311
D+14 20 "	415	155	-	833	833	2,158	-	-	-	3,561	15,024	- 11,463
D+15 21 "	95	Nil	-	1,232	1,232	1,368	-	-	-	2,695	16,163	- 13,468
D+16 22 "	325	Nil	-	2,826	2,826	823	-	-	-	3,974	17,311	- 13,337
D+17 23 "	1,813	243	1,035	2,698	3,733	7,066	-	-	-	12,855	18,440	- 5,585
D+18 24 "	1,508	904	921	4,377	5,098	11,745	-	-	-	19,255	17,650	+ 1,605
D+19 25 "	1,306	1,042	-	5,483	5,483	11,464	-	-	-	19,295	17,656	+ 1,639
D+20 26 "	788	1,113	1,046	4,092	5,138	11,737	-	-	-	18,776	17,769	+ 1,007
D+21 27 "	1,255	1,127	938	2,347	3,285	11,639	-	-	-	17,306	17,616	- 310
D+22 28 "	1,524	1,411	665	3,371	4,036	11,280	-	-	-	18,251	17,591	+ 660
D+23 29 "	1,220	1,040	-	4,798	4,798	10,576	-	-	-	17,634	17,674	- 40
D+24 30 "	1,500	1,219	1,064	2,337	3,401	10,114	-	-	-	16,234	17,763	- 1,529
D+25 1 Jul	994	1,490	1,103	3,458	4,561	6,976	-	-	-	14,021	17,712	- 3,691
D+26 2 "	1,422	1,513	138	4,364	4,502	8,200	-	-	-	15,637	17,740	- 2,103
D+27 3 "	855	1,462	1,248	4,210	5,458	9,476	-	-	-	17,251	17,651	- 400
D+28 4 "	1,525	1,665	1,127	3,925	5,052	8,199	-	-	-	16,511	17,798	- 1,287
D+29 5 "	1,316	1,201	1,212	4,645	5,857	7,663	-	-	-	16,037	17,766	- 1,729

DATE	PORT EN BESSIN	COURSEULLES	MULHENS			OPEN BEACHES	CAEN CUISTREHAM	DIEPPE	OSTEND	TOTAL	PLANNED	+ or - on planned figure
			WHALE	BEACHES	TOTAL							
D+30	6 Jul	1,476	1,706	1,144	4,542	5,686	7,835	-	-	16,703	17,946	- 1,243
D+31	7 "	1,294	1,597	1,240	4,105	5,345	6,689	-	-	14,925	17,076	- 2,151
D+32	8 "	1,234	1,822	1,351	4,410	6,261	6,821	-	-	15,638	17,076	- 1,438
D+33	9 "	1,541	1,536	1,250	4,637	5,887	7,463	-	-	16,477	17,076	- 599
D+34	10 "	1,073	1,769	1,723	4,483	6,206	4,092	-	-	13,140	17,076	- 3,936
D+35	11 "	390	753	1,222	4,583	5,810	4,245	-	-	11,198	17,076	- 5,878
D+36	12 "	1,588	1,856	1,391	4,800	6,691	7,264	-	-	17,399	17,076	+ 323
D+37	13 "	703	2,177	1,606	4,501	6,107	7,228	-	-	16,215	17,076	- 861
D+38	14 "	1,953	1,667	1,249	4,647	5,896	9,317	-	-	18,813	17,076	+ 1,737
D+39	15 "	1,269	1,624	1,021	4,686	5,707	9,039	-	-	17,639	17,076	+ 563
D+40	16 "	1,071	1,542	1,089	5,236	6,375	8,496	-	-	17,484	17,076	+ 408
D+41	17 "	1,061	1,683	597	5,641	6,238	6,493	-	-	15,475	16,888	- 1,413
D+42	18 "	1,004	1,860	547	6,039	6,586	6,782	-	-	16,232	16,888	- 656
D+43	19 "	1,045	1,662	525	5,814	6,339	7,342	-	-	16,388	16,888	- 500
D+44	20 "	629	1,997	1,542	6,164	7,706	8,223	-	-	18,555	16,888	+ 1,667
D+45	21 "	21	1,180	1,002	4,099	5,101	315	-	-	6,617	16,888	- 10,271
D+46	22 "	1,109	334	1,319	3,431	4,750	7,046	-	-	19,239	16,888	- 3,649
D+47	23 "	667	1,110	1,503	3,927	5,430	11,711	-	-	18,918	16,888	+ 2,030
D+48	24 "	362	1,690	1,169	3,988	5,157	10,303	-	-	17,512	16,888	+ 624
D+49	25 "	1,695	1,436	1,062	4,158	5,220	10,427	-	-	18,778	16,888	+ 1,890
D+50	26 "	1,004	1,896	1,245	4,443	5,688	9,837	-	-	18,425	16,888	+ 1,537
D+51	27 "	761	1,610	1,390	4,395	6,225	10,557	-	-	19,153	Kc	+ 19,153
D+52	28 "	983	2,048	492	5,574	6,066	9,821	-	-	18,918	programme	+ 18,918
D+53	29 "	1,195	1,098	1,002	6,216	7,218	11,769	-	-	21,280	allotted	+ 21,280
D+54	30 "	1,271	1,091	1,134	5,949	7,083	10,883	-	-	20,328	16,337	+ 3,991
D+55	31 "	1,780	1,536	969	5,370	6,339	9,730	-	-	19,335	16,337	+ 3,048
D+56	1 Aug	877	1,281	1,272	5,513	6,785	8,740	-	-	17,683	16,337	+ 1,346
D+57	2 "	702	1,472	920	5,409	6,329	5,559	-	-	14,062	16,337	- 2,275
D+58	3 "	554	1,496	846	5,317	6,663	5,901	-	-	14,614	16,337	- 1,723
D+59	4 "	871	1,639	774	5,481	6,255	5,009	-	-	13,774	16,337	- 2,563
D+60	5 "	621	1,648	915	5,518	6,433	4,956	-	-	13,658	16,337	- 2,679
D+61	6 "	1,248	-	418	5,184	5,602	10,329	-	-	17,079	16,337	+ 742
D+62	7 "	1,387	1,231	1,214	4,200	5,414	9,315	-	-	17,081	16,337	+ 744

DATE	PORT EN		MULLERBY			OPEN BRACHES	CAEN			TOTAL	PLANNED	+ or - on planned figure
	BESSIN	COURSEULES	WHALE	BRACHES	TOTAL		CUISTREHAM	DIEPPE	OSTEND			
D+63. 8 Aug	857	1,273	616	4,420	5,036	9,543	-	-	-	16,809	16,337	+ 472
D+64. 9 "	1,034	1,381	1,888	3,116	5,004	8,773	-	-	-	15,192	15,494	+ 698
D+65. 10 "	1,875	1,014	1,932	3,082	5,014	8,726	-	-	-	16,629	15,494	+ 1,135
D+66. 11 "	1,534	1,569	2,131	4,196	6,327	7,986	-	-	-	17,416	15,494	+ 1,922
D+67. 12 "	843	1,450	1,620	3,713	5,333	7,607	-	-	-	15,233	15,494	- 261
D+68. 13 "	425	1,575	2,045	6,399	8,444	6,802	-	-	-	17,246	15,494	+ 1,752
D+69. 14 "	1,688	1,302	2,086	6,317	8,403	5,241	-	-	-	16,634	15,494	+ 1,140
D+70. 15 "	800	1,392	2,236	5,948	8,184	2,221	-	-	-	12,597	15,494	- 2,897
D+71. 16 "	1,459	1,381	2,099	7,414	9,513	4,335	-	-	-	16,688	15,494	+ 1,194
D+72. 17 "	1,256	1,366	2,396	6,125	8,521	5,564	-	-	-	16,707	15,494	+ 1,213
D+73. 18 "	1,353	1,225	2,387	5,546	7,933	7,835	-	-	-	18,346	15,494	+ 2,852
D+74. 19 "	1,302	1,508	2,632	4,781	7,413	7,060	-	-	-	17,283	15,179	+ 2,104
D+75. 20 "	537	1,256	2,514	4,293	6,307	6,129	-	-	-	14,729	15,179	- 450
D+76. 21 "	1,012	1,096	2,570	3,721	6,291	1,856	-	-	-	10,255	15,179	- 4,924
D+77. 22 "	578	1,475	2,401	3,030	5,431	1,562	-	-	-	9,046	15,179	- 6,133
D+78. 23 "	1,048	1,677	2,984	3,818	6,802	5,166	-	-	-	14,693	15,179	- 486
D+79. 24 "	782	1,544	2,670	4,170	6,840	6,605	-	-	-	15,771	15,179	+ 592
D+80. 25 "	793	1,295	2,804	3,522	6,326	6,202	-	-	-	14,616	15,179	- 563
D+81. 26 "	932	913	3,113	3,186	6,299	6,668	-	-	-	14,812	15,179	- 367
D+82. 27 "	1,202	1,454	2,836	2,831	5,667	5,140	-	-	-	13,463	15,179	- 1,716
D+83. 28 "	1,401	1,223	2,708	3,934	6,642	4,018	-	-	-	13,284	15,179	- 1,895
D+84. 29 "	803	1,181	2,917	3,353	6,270	4,765	-	-	-	13,019	12,387	+ 632
D+85. 30 "	270	1,206	2,651	3,623	6,274	4,518	-	-	-	12,268	12,387	- 119
D+86. 31 "	209	1,019	2,394	3,565	5,959	3,248	-	-	-	10,435	12,387	- 1,952
D+87. 1 Sep	194	922	2,661	3,113	5,774	1,111	-	-	-	8,001	12,387	- 4,386
D+88. 2 "	-	1,165	2,241	1,128	3,369	128	-	-	-	4,662	12,387	- 7,725
D+89. 3 "	190	1,148	1,410	1,006	2,416	145	195	-	-	4,094	12,387	- 8,293
D+90. 4 "	441	2,184	1,174	673	1,847	-	790	-	-	3,262	12,387	- 7,125
D+91. 5 "	919	910	1,735	1,478	3,213	-	1,506	-	-	6,518	12,387	- 5,839
D+92. 6 "	339	614	1,487	1,296	2,783	-	885	-	-	4,621	12,387	- 7,766
D+93. 7 "	578	146	1,853	226	2,079	-	908	-	-	3,711	12,387	- 8,676
D+94. 8 "	742	-	2,520	236	2,756	-	1,710	2,046	-	7,254	7,733	- 479
D+95. 9 "	99	-	1,696	154	1,850	-	2,968	3,046	-	7,963	7,733	+ 230

DATE	PORT EN BESSIN	COURSEILLES	MILBERRY			OPEN BEACHES	CAEN			TOTAL	PLANNED	+ or - on planned figure	
			WHALE	BEACHES	TOTAL		CUISTRIELAM	DIEPPE	OSTEND				
D+96	10 Sep	583	1,280	1,261	2,541	-	2,935	3,015	-	9,074	7,733	+ 1,341	
D+97	11 "	-	2,643	146	2,794	-	2,536	3,108	-	8,439	7,733	+ 705	
D+98	12 "	-	2,514	423	2,937	-	1,720	3,750	-	8,407	7,733	+ 674	
D+99	13 "	170	2,821	203	3,024	-	2,179	3,785	-	9,158	7,733	+ 1,425	
D+100	14 "	154	2,519	235	2,774	-	2,487	4,165	-	9,580	7,733	+ 1,847	
D+101	15 "	454	2,735	223	2,958	-	3,087	2,795	-	9,294	7,733	+ 1,561	
D+102	16 "	383	2,662	392	3,054	-	3,340	3,913	-	10,690	7,733	+ 2,957	
D+103	17 "	281	1,446	649	2,095	-	4,113	4,156	-	10,645	7,733	+ 2,912	
D+104	18 "	548	2,123	35	2,158	-	3,376	4,947	-	11,029	10,166	+ 863	
D+105	19 "	420	2,222	694	2,916	-	3,715	6,315	-	13,366	10,166	+ 3,200	
D+106	20 "	687	2,170	1,140	3,310	-	1,724	4,088	-	9,809	10,166	- 357	
D+107	21 "	665	2,486	1,447	3,933	-	3,044	3,481	-	11,123	10,166	+ 957	
D+108	22 "	322	2,604	192	2,796	-	2,537	5,299	-	10,954	10,166	+ 788	
D+109	23 "	350	2,597	17	2,614	-	2,347	3,597	-	8,908	10,166	- 1,258	
D+110	24 "	622	1,683	-	1,683	-	2,720	4,543	-	9,568	10,166	- 598	
D+111	25 "	151	712	-	712	-	1,933	1,635	-	4,431	10,166	- 5,735	
D+112	26 "	-	1,038	-	1,038	-	1,791	2,615	614	6,058	10,166	- 4,108	
D+113	27 "	-	1,738	655	2,393	-	3,676	6,566	-	12,635	10,166	+ 2,469	
D+114	28 "	-	2,306	1,710	4,016	-	3,653	5,610	650	13,929	11,096	+ 2,833	
D+115	29 "	-	2,534	881	3,415	-	3,119	4,903	-	11,437	11,096	+ 341	
D+116	30 "	-	2,111	111	2,222	-	2,907	4,902	-	10,031	11,096	- 1,065	
D+117	1 Oct	-	2,382	-	2,382	-	2,063	6,078	516	11,039	11,096	- 57	
D+118	2 "	-	1,868	-	1,868	-	1,391	7,209	1,022	11,490	11,096	+ 394	
D+119	3 "	-	1,444	-	1,444	-	1,737	6,746	859	10,846	11,096	- 250	
D+120	4 "	-	1,439	37	1,476	-	2,007	6,838	156	10,477	11,096	- 619	
D+121	5 "	-	1,202	-	1,202	-	2,855	6,647	874	11,578	11,096	+ 482	
D+122	6 "	-	989	-	989	-	3,403	5,979	67	10,443	11,096	- 653	
D+123	7 "	-	63	-	63	-	3,363	5,972	130	9,528	11,096	- 1,568	
D+124	8 "	-	346	-	346	-	1,375	3,394	1,575	6,690	12,180	- 5,490	
D+125	9 "	-	572	388	960	-	2,611	6,547	2,898	13,016	12,180	+ 836	
D+126	10 "	-	1,490	915	2,405	-	3,705	4,929	2,737	13,776	12,180	+ 1,596	
D+127	11 "	-	1,618	942	2,560	-	2,996	7,079	2,486	15,121	12,180	+ 2,941	
D+128	12 "	-	1,548	905	2,453	-	2,480	3,326	1,008	9,267	12,180	- 2,913	
TOTAL		94,000	111,491	180,897	358,497	539,394	605,629	97,952	163,024	15,592	1,627,082	1,753,817	- 126,735

AMMUNITION SITUATIONDURING THE STORM

Date (a)	Total amm discharged (in tons) (b)	Amm discharged through MULBERRY (in tons) (c)	Stocks of 25 mm in Depot	
			RPG (d)	Days at Army Cp Rates (e)
18 Jun	2844	318	365	5
19 Jun	2120	420	286	4
20 Jun	1283	99	186	3
21 Jun	1256	534	145	2
22 Jun	1579	1215	103	1½
23 Jun	5428	2374	115	1½
24 Jun	9548	2680	211	3
TOTAL	24,058	7,640		

RETURN TRAFFIC DESPATCHED TO U.K. FROM MULBERRY 'B'.

Week Ended	No. of Vessels	D.W. Tonnage	No. of A.F. Vs.
8 July	5	151	
15 "	6	300	
22 "	7	241	
29 "	8	416	
5 Aug	9	499	
12 "	11	1,493	19
19 "	9	745	
26 "	7	747	
2 Sept	12	1,062	
9 "	6	71	
16 "	10	915	4
23 "	7	2,521	58 tanks 8 S.P. guns.
30 "	6	969	
7 Oct	9	2,383	25
14 "	2	742	26
21 "	4	2,597	19
28 "	5	2,886	24
4 Nov	-	-	
11 "	2	876	23
18 "	3	48	
25 "	7	235	78 tanks 22 trailers
2 Dec	4	1,251	21
9 "	2	950	18
	<u>141</u>	<u>22,098</u>	<u>345</u>

MULBERRY 'B'A. APPROXIMATE TIME TABLE

June 6 - Assault  
" 10 - First caissons planted  
" 11 - Blockships breakwater complete - ships could discharge  
in shelter  
" 13 - 960 ft of LST pier complete  
" 16 - Two pierheads added - first ships berthed alongside  
" 18 - Unloading in outer anchorage began  
" 19 - 22 - Gale  
July 8 - Target figure of 6,000 tons reached for first time  
" 17 - LST pier completed  
Aug 8 - Winterization started  
" 16 - Over 9,500 tons a day being discharged  
(7,400 over Beach, 2,100 over Whale)  
Sep 3 - Beaches closed  
Oct 13 - Discharge of US stores commenced  
Nov 3 - Closed for discharge of British stores  
" 4 - Winterization stopped  
" 10 - Decision made not to winterize  
" 19 - American use ceased after a total discharge of 19,100  
tons (an average of 600 tpd with a maximum of 1,634  
tons on 23 Oct)  
Dec 2 - Dismantling started  
" 24 - All parts except PHOENIXES and the LST pier removed.

B. PLANNED CAPACITY

D plus 4 (June 10)	1,000 tons
D plus 9 (June 15)	3,400 tons
D plus 14 (June 20)	6,000 tons

ANNEX VISTOCK POSITION - 21 ARMY GROUP

<u>June</u>	<u>Arm Stocks</u> <u>tons</u>	<u>Sups 1000's</u> <u>rations</u>	<u>MT 80</u> <u>tons</u>
12	10,765	532	2,500
13	12,350	794	3,500
14	21,000	1,010	4,200
15	22,900	1,051	5,000
16	24,800	1,437	6,640
17	27,000	1,663	7,900
18	28,850	2,133	8,150
19	29,800	2,620	9,300
20	31,700	2,520	9,033
21	31,800	2,345	8,362
22	32,000	2,108	8,087
23	33,800	1,960	9,200
24	32,000	1,895	11,350
25	43,000	2,193	12,886
26	47,000	2,590	15,687
27	50,700	3,286	16,506
28	54,000	4,680	18,010
29	58,000	4,850	19,516
30	60,000	5,435	21,120
<u>July</u>			
1	65,000	6,025	21,883
2	65,000	6,472	24,100
3	65,800	7,193	26,280
4	68,700	7,600	27,490
5	71,700	7,897	29,963
6	72,000	8,199	29,973

Deduction In spite of storm arm stocks went steadily upwards. Supplies fell from 2,620,000 to 1,895,000 in five days then recovered. POL hardly affected.

GROSS TONNAGE HANDLED THROUGH "MULBERRY B" BY WEEKLY PERIODS IN COMPARISON  
WITH PLANNED CAPACITY AND WITH TOTAL TONNAGE HANDLED IN BRITISH SECTOR TO  
12TH OCTOBER 1944

ANNEX VII

Week Ended A	Planned Capacity of Mulberry B B	Gross Tonnage D.W. through MULBERRY B C	Gross Tonnage D.W. through British Sector D	Proportion of Mulberry Tonnage to Total in % E
June 12 (D / 6)	3,000	900	37,473	2.4
" 19 (D / 13)	19,000	12,252	69,409	17.6
" 26 (D / 20)	42,000	24,343	80,411	30.2
July 3 (D / 27)	42,000	30,041	116,334	25.8
" 10 (D / 34)	42,000	40,294	109,431	36.8
" 17 (D / 41)	42,000	42,824	114,223	37.4
" 24 (D / 48)	42,000	41,069	107,461	38.2
" 31 (D / 55)	42,000	43,839	136,267	32.1
Aug 7 (D / 62)	42,000	43,481	107,951	40.2
" 14 (D / 69)	42,000	43,561	116,159	37.5
" 21 (D / 76)	42,000	54,662	106,605	51.2
" 28 (D / 83)	42,000	44,007	95,635	45.9
Sep 4 (D / 90)	42,000	31,909	57,741	55.2
" 11 (D / 97)	42,000	18,016	47,609	37.0
" 18 (D / 104)	42,000	19,000	68,803	27.6
" 25 (D / 111)	42,000	17,964	68,159	26.5
Oct 2 (D / 118)	42,000	17,334	76,619	22.6
" 12 (D / 128) (10 days)	60,000	13,890	110,742	12.5
	712,000	539,394	1,627,082	33.1

NOTE: In addition to the figures shown in column 'C' above, a further 150,000 tons, approximately, was landed over near by beaches up to 31 August, the discharge of these stores to craft having been made within the shelter of MULBERRY. MULBERRY could properly be credited with part or all of this tonnage if all is to be credited, the proportion of tonnage to the total discharged, as shown in Column 'E', would be 42% approximately, as at 12 Oct.

A COMPARISON BETWEEN FIGURES  
FROM THREE SOURCES FOR GROSS TONNAGE  
HANDLED THROUGH, OR ATTRIBUTABLE TO MULBERRY 'B'

WEEK ENDED	GROSS TONNAGE DW THROUGH BRITISH SECTOR	PLANNED CAPACITY OF MULBERRY 'B'	GROSS TONNAGE DW THROUGH MULBERRY 'B'					
			21 Army Gp Transportation Situation Reports	Column D As % of Column B	21 Army Gp Q Movements	Column F As % of Column B	Statement A To "Overlord Artificial Harbours"	Column H As % of Column B.
A	B	C	D	E	F	G	H	I
JUNE 12 (D+ 6)	37,473	3,000	900	2.4	1,595	4.2	1,826	4.8
" 19 (D+13)	69,409	19,000	12,252	17.6	11,825	17.0	8,359	12.0
" 26 (D+20)	80,411	42,000	24,343	30.2	24,343	30.2	19,295	23.9
JULY 3 (D+27)	116,334	42,000	30,041	25.8	30,041	25.8	22,808	19.6
" 10 (D+34)	109,431	42,000	40,294	36.8	40,274	36.8	65,052	59.4
" 17 (D+41)	114,223	42,000	42,824	37.4	42,824	37.4	70,074	61.3
" 24 (D+48)	107,461	42,000	41,069	38.2	51,648	48.0	58,703	54.6
" 31 (D+55)	136,267	42,000	43,839	32.1	71,043	52.1	67,404	49.4
AUGUST 7 (D+62)	107,951	42,000	43,481	40.2	66,578	61.6	65,193	60.3
" 14 (D+69)	116,159	42,000	43,561	37.5	62,548	53.8	60,509	52.0
" 21 (D+76)	106,605	42,000	54,662	51.2	61,196	57.4	66,909	62.7
" 31 (D+86) (10 days)	131,407	60,000	62,510	47.5	71,003	54.0	73,304	55.7
	1,233,131	460,000	439,776	35.6	534,918	43.3	579,436	46.9

NOTES: The following are the sources for the three columns of figures representing tonnages discharged through MULBERRY 'B'

- (i) Column D - 21 Army Group Transportation Situation Reports, showing the tonnages discharged through the port of MULBERRY 'B' only.
- (ii) Column F - 21 Army Group, Q (Movements), showing the tonnages discharged through the port of MULBERRY 'B' and, in addition, the tonnages cleared from JIG Sector of GOLD beach which used the same beach exits as MULBERRY 'B'.
- (iii) Column H - Statement A to a paper "THE OVERLORD ARTIFICIAL HARBOURS" by Brigadier I.L.H. MacKillop CBE. RE. dated October 1944.

This column, in addition to the tonnages discharged through the port of MULBERRY 'B' includes the following:-

- (a) discharges through JIG and ITEM Sectors of GOLD beach after D+28
- (b) discharges from ship to craft within the shelter of MULBERRY 'B' for eventual discharge at PORT EN BESSIN, an approximate average of 100 tons per day from D+6 to D+86
- (c) tonnage backloaded through MULBERRY 'B'.

DETAILS OF COMMODITIES, IN DEAD WEIGHT AND MEASUREMENT TONS,  
HANDLED THROUGH MULBERRY B DAILY UP TO THE OPENING  
OF DIEPPE ON THE 7TH SEPTEMBER, 1944.

DATE	AMN		POL		SUPS		RE		MISC		COAL		TOTAL (EXCLUDING MT)	
	DW Tons	Measurement Tons @ 40 c.ft.	DW Tons	Measurement Tons @ 60 c.ft.	DW Tons	Measurement Tons @ 60 c.ft.	DW Tons	Measurement Tons @ 100 c.ft.	DW Tons	Measurement Tons @ 80 c.ft.	DW Tons	Measurement Tons @ 40 c.ft.	DW Tons	Measurement Tons
June 10th)	200	200	-	-	200	300	-	-	295	590	-	-	695	1090
11th)														
12th	240	240	-	-	220	330	154	385	286	572	-	-	900	1527
13th	180	180	-	-	200	300	51	127.5	690	1380	-	-	1121	1987.5
14th	-	-	-	-	311	466.5	-	-	701	1402	-	-	1012	1868.5
15th	-	-	248	372	97	145.5	107	267.5	600	1200	-	-	1052	1985
16th	-	-	308	462	408	612	270	675	795	1590	-	-	1781	3339
17th	-	-	218	327	647	970.5	243	607.5	901	1802	-	-	2009	3707
18th	318	318	231	346.5	709	1063.5	162	405	970	1940	88	88	2478	4161
19th	420	420	196	294	354	531	464	1160	938	1876	-	-	2372	4281
20th	99	99	222	333	72	108	124	310	316	632	-	-	833	1482
21st	534	534	185	277.5	185	277.5	108	270	220	440	-	-	1232	1799
22nd	1215	1215	878	1317	181	271.5	57	142.5	495	990	-	-	2826	3936
23rd	2374	2374	1288	1932	63	94.5	8	20	-	-	-	-	3733	4420.5
24th	2680	2680	2180	3270	106	159	40	100	92	184	-	-	5098	6393
25th	1924	1924	2837	4255.5	176	264	229	572.5	317	634	-	-	5483	7650
26th	1061	1061	2596	3894	521	781.5	337	842.5	623	1246	-	-	5138	7825
27th	342	342	1326	1989	518	777	384	960	715	1430	-	-	3285	5498
28th	97	97	1902	2853	624	936	302	755	1111	2222	-	-	4036	6863
29th	485	485	1476	2214	1280	1920	633	1582.5	924	1848	-	-	4798	8049.5
30th	131	131	306	459	1341	2011.5	375	937.5	1248	2496	-	-	3401	6035
July 1st	491	491	463	694.5	1769	2653.5	332	830	1506	3012	-	-	4561	7681
2nd	1314	1314	1690	2535	922	1383	214	535	362	724	-	-	4502	6491
3rd	1462	1462	2090	3135	609	913.5	835	2087.5	462	924	-	-	5458	8522
4th	2095	2095	1174	1761	722	1083	513	1282.5	548	1096	-	-	5052	7317.5
5th	1977	1977	1881	2821.5	593	889.5	427	1067.5	979	1958	-	-	5857	8713.5
6th	1547	1547	1282	1923	1116	1674	995	2487.5	746	1492	-	-	5686	9123.5
7th	713	713	992	1488	1180	1770	1129	2822.5	1331	2662	-	-	5345	9455.5
8th	199	199	1186	1779	1713	2569.5	1731	4327.5	1432	2864	-	-	6261	11739
9th	1150	1150	104	156	1346	2019	1053	2632.5	2214	4428	-	-	5867	10385.5
10th	2409	2409	-	-	1282	1923	676	1690	1839	3678	-	-	6206	9700
11th	2609	2609	-	-	1310	1965	223	557.5	1668	3336	-	-	5810	8467.5
12th	4049	4049	-	-	787	1180.5	521	1302.5	1334	2668	-	-	6691	9200
13th	2362	2362	-	-	1133	1699.5	735	1837.5	1877	3754	-	-	6107	9653
14th	887	887	1277	1915.5	1006	1509	799	1997.5	1927	3854	-	-	5896	10163
15th	1064	1064	176	264	1551	2326.5	1028	2570	1813	3626	75	75	5707	9925.5
16th	1166	1166	-	-	1476	2214	1499	3747.5	1756	3512	478	478	6375	11117.5
17th	2023	2023	-	-	1765	2647.5	1431	3577.5	1003	2006	16	16	6238	10270
18th	2354	2354	-	-	1659	2488.5	1249	3122.5	1306	2612	-	-	6568	10577
19th	2911	2911	-	-	1827	2740.5	565	1412.5	1016	2032	-	-	6319	9096
20th	3562	3562	-	-	1895	2842.5	1032	2580	1217	2434	-	-	7706	11418.5
21st	2608	2608	-	-	1234	1851	1037	2592.5	949	1898	-	-	5828	8949.5
22nd	1025	1025	567	850.5	1809	2713.5	1162	2905	2610	5220	-	-	7173	12714
23rd	2117	2117	325	487.5	2610	3915	1770	4425	2029	4058	148	148	8999	15150.5
24th	2862	2862	564	846	1778	2667	1519	3797.5	2163	4326	169	169	9055	14667.5
25th	2437	2437	540	810	1620	2430	1595	3987.5	2544	5088	57	57	8793	14809.5
26th	1816	1816	1296	1944	2215	3322.5	1452	3630	2556	5112	24	24	9359	15848.5
27th	3639	3639	1570	2355	2107	3160.5	1434	3585	2071	4142	-	-	10821	16881.5
28th	6029	6029	184	276	1070	1605	1139	2847.5	2040	4080	-	-	10462	14837.5
29th	6819	6819	818	1227	1072	1608	705	1762.5	1777	3554	-	-	11191	14970.5
30th	5365	5365	1068	1602	893	1339.5	645	1612.5	2419	4838	-	-	10390	14757
31st	4608	4608	1227	1844.5	1204	1806	570	1425	2418	4836	-	-	10027	14515.5
August 1st	4518	4518	1648	2472	1348	2022	1137	2842.5	2091	4182	-	-	10742	16036.5
2nd	3587	3587	1012	1518	1885	2827.5	1924	4810	1504	3008	-	-	9912	15750.5
3rd	2503	2503	1855	2782.5	2459	3688.5	1645	4112.5	1514	3028	-	-	9976	16114.5
4th	1995	1995	1922	2883	2238	3357	1548	3870	1254	2508	120	120	9077	14733
5th	2863	2863	1117	1675.5	1541	2311.5	1359	3397.5	1725	3450	476	476	9081	14173.5
6th	3818	3818	1338	2007	876	1314	834	2085	1841	3682	95	95	8802	13001
7th	3030	3030	1536	2304	450	675	1474	3685	2498	4996	-	-	8988	14690
8th	2796	2796	1400	2100	708	1062	1630	4075	2508	5016	-	-	9042	15049
9th	934	934	1146	1719	806	1209	2265	5662.5	3036	6072	-	-	8187	15596.5
10th	809	809	676	1014	1210	1815	3029	7572.5	2807	4014	125	125	7856	15349.5
11th	1680	1680	958	1437	1338	2007	2121	5302.5	2482	4964	786	786	9365	16176.5
12th	1346	1346	1536	2304	1365	2047.5	1602	4005	2369	4738	207	207	8425	14647.5
13th	2275	2275	1740	2610	1970	2955	1673	4182.5	2243	4486	-	-	9901	16508.5
14th	2923	2923	1419	2128.5	2376	3564	1254	3135	1800	3600	-	-	9772	15350.5
15th	4235	4235	389	583.5	1598	2397	919	2297.5	1091	2182	-	-	8232	11695
16th	4229	4229	694	1041	1590	2385	1268	3170	1747	3494	-	-	9528	14319
17th	2992	2992	1776	2664	1497	2245.5	1480	3700	1925	3850	-	-	9670	15451.5
18th	2618	2618	1544	2316	1776	2664	1894	4735	1739	3478	-	-	9571	15811
19th	2890	2890	1183	1774.5	1623	2434.5	1503	3757.5	1685	3370	63	63	8947	14289.5
20th	2630	2630	389	583.5	1825	2737.5	1118	2795	2231	4462	162	162	8355	13370
21st	2230	2230	391	586.5	1465	2197.5	1181	2952.5	1557	3114	69	69	6893	11149.5
22nd	1645	1645	422	633	1663	2494.5	959	2397.5	1193	2386	-	-	5882	9556

DATE	AMN		FCL		SUPS		RE		MISC		COAL		TOTAL EXCLUDING MT	
	DW Tons	Measurement Tons @ 40 c.ft.	DW Tons	Measurement Tons @ 60 c.ft.	DW Tons	Measurement Tons @ 60 c.ft.	DW Tons	Measurement Tons @ 100 c.ft.	DW Tons	Measurement Tons @ 80 c.ft.	DW Tons	Measurement Tons @ 40 c.ft.	DW Tons	Measurement Tons
B/Fwd														
2 August														
23rd	1591	1551	362	543	2111	3166.5	1853	4632.5	1705	3410	-	-	7622	13343
24th	1920	1920	487	730.5	1900	2850	2310	5775	1541	3082	-	-	8158	14357.5
25th	1643	1643	97	145.5	1706	2559	2685	6712.5	1422	2844	-	-	7553	13904
26th	1073	1073	792	1188	1781	2671.5	2232	5580	1665	3330	-	-	7543	13842.5
27th	892	892	975	1462.5	912	1368	1945	4862.5	1787	3564	-	-	6506	12149
28th	1940	1940	301	451.5	1256	1884	1996	4990	2042	4004	-	-	7535	13349.5
29th	1399	1399	472	708	1322	1983	2109	5272.5	2090	4180	-	-	7392	13542.5
30th	1158	1158	522	783	966	1449	2033	5082.5	1727	3454	-	-	6406	11926.5
31st	934	934	778	1167	981	1471.5	1601	4002.5	2112	4224	-	-	6406	11799
Sept. 1st	1024	1024	366	549	1773	2659.5	1198	2995	1413	2826	-	-	5774	10053.5
2nd	79	79	293	439.5	1258	1887	598	1495	1141	2282	-	-	3369	6182.5
3rd	-	-	70	105	582	873	186	465	302	604	-	-	1140	2047
4th	31	31	-	-	-	-	423	1057.5	219	438	-	-	673	1526.5
5th	395	395	-	-	200	300	405	1012.5	478	956	-	-	1478	2663.5
6th	966	966	-	-	387	580.5	1026	2565	404	808	-	-	2783	4919.5
TOTAL	161,560	161,560	68,477	112,715.5	102,228	153,342	90,480	226,200	124,232	248,464	3,158	3,158	550,135	895,439.5

NOTE: It will be seen that the total daily tonnages of stores handled through MULBERRY B as shown in this Annex do not agree with the total daily tonnages as shown in Annex II Part 4. Whereas the figures in Annex II Part 4 were taken from the 21 Army Group Transportation Situation Reports and show the tonnages discharged through MULBERRY B only, the figures in this Annex were provided by (Movements) 21 Army Group. These figures include clearance from JIG sector of GOLD beach, which used the same exits as MULBERRY B.

NOTES ON MULBERRY 'A'

1. MULBERRY 'A' was so damaged in the storm that SHAEF decided to suspend further work on building the harbour but that full use was to be made of the shelter afforded by the surviving components. All available MULBERRY components and material were diverted to the repair and completion of MULBERRY 'B'.

2. The shelter afforded by the remains of MULBERRY 'A' was used for the unloading of shallow draught ships to craft and as a haven for vessels during spells of rough weather until the U.S. beaches were closed in November.

3. After the storm it is estimated that at least 25% of the total U.S. tonnage landed over OMAHA beach was first discharged within the shelter of the MULBERRY 'A' breakwater. This factor, together with the more liberal amount of engineer equipment possessed by the Americans and the fact that they took greater risks than the British in beaching craft, enabled average daily tonnages of 15,000 over OMAHA and 8,000 over UTAH beaches to be handled.

4. CHERBOURG was captured on D+21 (27 June), 13 days late on the plan, and opened on D+40 (16 July). By then the deficiencies on the plan were

<u>Vehicles</u>	28,888	(18%)
<u>Stores</u>	186,992 tons	(24%)

The British deficiency on that date was -

<u>Vehicles</u>	9,521	(7%)
<u>Stores</u>	128,719 tons	(20%)

5. The Americans also had the use of the following small ports.

<u>PORT</u>	<u>DATE OF OPENING</u>	<u>DAILY AVERAGE TONNAGE DISCHARGED OVER BEST SEVEN CONSECUTIVE DAYS TO 15 AUG 44.</u>
ST VAAST	8 Jul	1,510 tpd
ISIGNY	22 Jul	1,707 tpd
GRANDCHAMP	24 Jul	1,355 tpd
CARENTAN	25 Jul (closed 31 Jul)	302 tpd
BARFLEUR	26 Jul	780 tpd (later increased to 1,293 tpd).

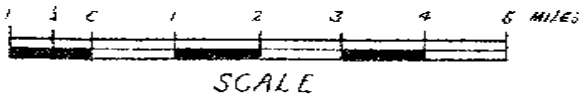
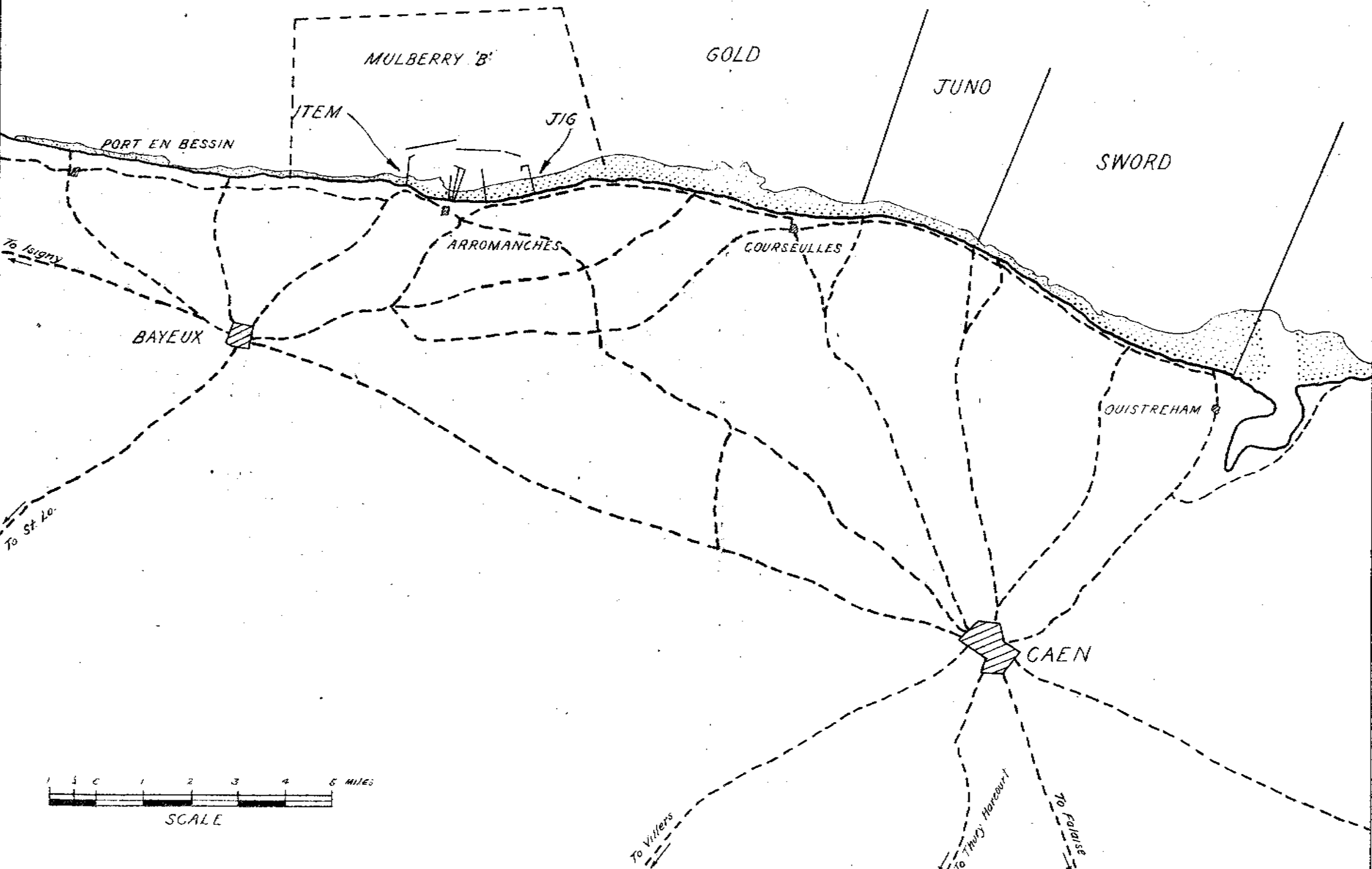
These small ports gave an average capacity of 5,654 tpd up to the middle of August compared to 3,133 tpd through the small ports in the British Sector for the same period.

6. The above notes were compiled from conversations with Captain Johnson, U.S.N. and Lieutenant Commander Langevin. The former was Public Works Officer, U.S. Naval Forces in EUROPE; the latter was Technical Adviser to the Commander Task Force 128 which was concerned with the construction and operation of MULBERRY 'A'. Statistics have been taken from the U.S. Operational Daily Progress Reports and U.S. Communication Zone Transportation Port Operational Data Reports.

# 'OVERLORD' British Sector showing position of MULBERRY 'B'

MAP A.

Roads shown thus - - - -



# MULBERRY 'B' ARROMANCHES ON D+90 DAYS.

