

or part of six Divisions, one American Division, many troops of 21 Army Group, some 10,000 men working under Hants and Dorset District and a huge quantity of small units, HQ and installations, not to mention US big and small units (including colored ones) and the Royal Navy and crews of very many small craft plus a big civil population.

(W.D., S.D. & G. Highrs, May 1944:
Appx 8, "Memo, HQ 3 Cdn Inf Div to
9 Cdn Inf Bde (Adv)" dated 23
Apr 44)

The Canadian War Correspondent, Ross Munro, gives another account of the congestion of Allied troops on the southern coast of England:

It was one of the most populated areas in all Britain, jammed with British, Canadian and American troops. Soldiers were bivouacked in every field for miles around certain ports. There were thousands of tents in groves and on farms. Vehicles and masses of tanks with Bren carriers, armoured cars and guns were parked along the highways and network of country roads.

.....

The poor civilian in those areas was the person to pity. Even if his house had not been requisitioned, he would have tanks in his back yard, armoured cars on the lawn in front and probably a couple of jeeps parked in the garage with a 'duck' in the laneway.

(The Montreal Daily Star, 6 Jun 44)

201. While the Canadians were thus concentrated, distinguished visitors inspected 3 Cdn Inf Div. These DVs included His Majesty King George VI (25 Apr), and General Eisenhower (13 May). An amusing sidelight on the feeling of the troops at the succession of visits, both official and unofficial, is supplied by the War Diary of H.Q. R.C.A.:

We are starting to feel like birds in a cage. Everyone seems to want to look at us.

(W.D., H.Q. R.C.A., 3 Cdn Inf Div,
19 May 44)

202. Detailed plans had been drawn up months beforehand to enable unit commanding officers of the assaulting forces to follow a set course of procedure designed to guide the troops from their camps in England to the shores of France with a maximum of administrative efficiency. Two of the printed administrative orders issued to units exemplifying the above were Preparatory

Administrative Orders, Part I and Part II, issued by 21 Army Gp on 28 Mar and 22 Apr respectively. ((HS) 23203. (D2): Adm Orders - 3 Cdn Inf Div) Part I covered

- (i) Preparations to be carried out by units before leaving normal locations
- (ii) Moves to and certain action to be taken on arrival in Concentration Areas.

(Ibid)

Part II covered "the preparations to be carried out by units in Concentration, Marshalling and Embarkation Areas" (Ibid). An excellent idea of the working of the "sausage machine" (*infra*, para 207) may be had by reading Part II of the Orders.

203. The May war diaries of all the assaulting formations reflect the great activity during that month in preparation for D Day. Except for special 24-hr passes, or for duties in connection with their training, all troops were confined to camp. New operational equipment, varying from Anti-Vapour battledress and assault helmets to light ("James") motorcycles and heavy tanks, was issued. At the same time, units and men were stripped of all surplus gear, such as training vehicles and kit-bags, not on assault scales. 'Residue' transport and personnel left the battalions; inoculation parades were held; rifles, Brens and heavier weapons were zeroed; canteen accounts were closed out; vehicle water-proofing kits were received and some water-proofing commenced; and practice loading of assault-scale company and personnel equipment on vehicles was carried out. One unit made "a survey of all French speaking personnel in the Battalion" thinking it possible "that if we carry out an operation they will be of great help" (W.D., Nth N.S. Highrs, 10 May 44). A regimental historian, writing what was doubtless typical of all such officers, states that during May "the Adjutant ... was in his office until close to midnight every day of the month Work continued seven days a week..." (Ross, *op cit*, p. 22).

204. On 15 May commanders, commanding officers and staff officers were briefed* by the G.O.C. at divisional

*"The term 'Briefing' implies the issue of orders and instructions to units and individuals for the implementation of the plan in the theatre of operations" (Second Army O.O. No. 1).

headquarters in Cranbury House, Hampshire (W.D., H.Q. R.C.A., 3 Cdn Inf Div, 15 May). This was followed a week later by similar briefings held at brigade headquarters for all unit and serial commanders in the respective brigades (W.Ds., H.Q., 7, 8 and 9 Cdn Inf Bdes, May 1944). But for the great majority of the division the plan, down to its most minute detail, existed in a vacuum divorced from identifiable localities. One doubting diarist wrote: "Preparations are pretty well complete for the coming waterborne scheme called "OVERLORD". This scheme promises to be very realistic" (W.D., 13 Cdn Fd Regt, 24 May 44). Briefing of sub-unit personnel was done from "bogus" maps, i.e., maps with false place names and co-ordinates. Caen, for example, was known as "Poland", Courseulles as "Alba", and so on. (See 7 Cdn Inf Bde O.O. No. 1) Bogus map sheets of 1:25,000 scale were issued, complete with tinted contours and an overprint of enemy defences; certain battalion operation orders even went so far as to make use only of false names. (Cf for example, W.D., S.D. & G. Highrs, May 1944: Appx 7, S.D. & G. Highrs O.O. No. 1, 26 May, and bogus maps)

205. On 26 May all camps were sealed so that no one could "get in or out of the wire without a pass from the Camp Commandant countersigned by the Camp Security Officer" (W.D., 14 Cdn Fd Regt, 26 May 44). Even the civilians "within the camp area had to stay put. They were fed army rations" (Ross, op cit, p. 37). On that day all officers of the units and sub-units were briefed on the coming operation. Security measures surrounding the briefing of both officers and men were thorough. (Cf W.D., H.Q. 7 Cdn Inf Bde Gp (Adv), May 1944: Appx 15, "Instructions for Briefing") Briefing rooms (either in tents or huts) contained wall maps, aerial photographs, plaster and sand models of the area to be assaulted, etc. As one diarist described the process: "The exercise was reviewed in its entirety on bogus maps. Nobody left the room without a complete understanding of the plan. Throughout the day the briefing room was guarded. Two officers remained in the room day and night" (W.D., 14 Cdn Fd Regt, 27 May 44). From 27 May until the end of the month the men were briefed at platoon and associate levels. "Model rooms are being used 24 hrs per day," wrote one officer (W.D., Regina Rif, 27 May 44). At the same time, last minute administrative instructions were being carried out. Vehicles were being waterproofed and loaded for their final move; the men were issued with 200 francs as an emergency measure, muster parades were being held and units were broken into serials preparatory to moving off to camps in the Marshalling Areas.

206. For the infantry, the movement of serials to these camps began on 30 May. (Armoured squadrons had started to move into their marshalling positions as early as 15 May (W.D., 27 Cdn Armd Regt, 15 May 44)) The control of movement from Concentration Areas to Marshalling Areas, then from Marshalling Areas to Embarkation Areas and through

these to Embarkation Points, was exercised by the Movement Control/Transportation Corps organization of Southern Command ((HS) 969. (D21): Op "OVERLORD", GHQ Home Forces Op Instr No. 43 dated 15 Feb 44; see also W.D., H.Q., 8 Cdn Inf Bde May 1944: Appx 10, Op "OVERLORD", 8 Cdn Inf Bde, Admin Order No. 7). The "siting, composition, staffing and works services of Marshalling Areas and Embarkation Areas" was the responsibility of the G.O.C.-in-C. Southern Command (GHQ Home Forces Op Instr No. 43, op cit). As the serials began to move into the Marshalling Areas, even the most skeptical felt that this was not just a 'realistic' exercise. "At long last," wrote one diarist, "this looks like the real thing" (W.D., R. Wpg Rif, 31 May 44).

207. Once in the "sausage machine" -- a term commonly used to describe the 'assembly line' or mass productive methods employed in the Marshalling Areas -- the men were presented with more of the paraphernalia of assault: lifebelts, sea-sickness tablets and even vomit bags, (the last a seeming aspersion of the efficacy of the tablets). During their short stay at these camps, the men were fed on the 'hotel system'. Loading for the infantry was started almost immediately, at Southampton and Stokes Bay, and by 3 Jun most of the assaulting troops were on board their craft, where they at once relaxed.

208. The loading of the armoured elements taking part in the assault had started somewhat earlier. Two regimental histories give a graphic picture of the scene on the docks during this period:

On the docks themselves everything was turmoil. To a casual observer it would probably have appeared as a hopeless muddle. Roar of tanks filled the air and vehicles shuttled backwards and forwards. Men ran about shouting and waving their arms, trying to make themselves heard above the beat of the motors. But in spite of outward appearances, embarkation was accomplished quickly and with a maximum of efficiency.

(19 Canadian Army Field Regiment,
RCA, Regimental History, September
1941-July 1945, p. 23)

Another historian continues:

Months of training had made the drivers so proficient that there was little or no confusion at the docks or yards. Vehicles loading into Landing Ships, Tanks, had to back up into a steep ramp into the ship and from there up another ramp onto the lift. From here they were hoisted up to the main deck where they had to back over innumerable manhole covers to their allotted position according to the loading plan. Everything was then chained securely to the deck. As soon as a ship was loaded it moved out to its anchor station in the Solent or Southampton Water.

Every L.S.T. carried at least one barrage balloon. Great floating hulks, which later turned out to be parts of the famous "Mulberry" dock, were in evidence but meant nothing to us at the time. Destroyers, mine sweepers and M.H.Bs. [M.T.Bs.?] swept through the long lines of anchored craft. Churchill rode by in a launch giving his famous "V" salute. His progress could be followed by the cheers of the men as he passed each ship. Fighter aircraft rode unceasing herd in the sky.

(Ross, op cit, p. 37)

209. By the time the troops and vehicles were loaded, much of the tension felt prior to embarkation was gone. This is partly to be explained by the cheerful hospitality of the ships' crews with whom a spirit of close comradeship had been developed during months of training. More important, however, was the knowledge that this was at last the very threshold of action. A tribute to the Canadians at this moment was paid by Commodore G.N. Oliver, C.B., D.S.O., commanding Force "J", in these words:

During embarkation and prior to sailing the high spirits of the soldiers of the 3rd Canadian Infantry Division were outstanding; their enthusiasm infused itself throughout the Force.

(Report by Naval Commander,
Force "J")

210. The rifle companies of the battalions of 7 and 8 Cdn Inf Bdes were embarked in 15 L.S.I., each with its complement of L.C.A. at the davits. Two companies of reserve battalions found themselves quartered in Canadian ships: "A" Company of R. de Chaud in H.M.C.S. Prince David; and "B" Company of 1 C. Scot R. in H.M.C.S. Prince Henry, both L.S.I. (M.). For this reason the latter sub-unit was accounted by the rest of its battalion as "the luckiest of the serials" (W.Ds., R. de Chaud and 1 C. Scot R., 2 Jun 44) Headquarters of the four assaulting battalions were established in L.C.H. (3 Cdn Inf Div O.O. No. 1). The rifle companies of the reserve brigade were, on the other hand, boarded on ten L.C.I. (L.) of the 262nd Flotilla, R.C.N. ((HS) 122.013(D1): R.C.N.'s. Part in the Invasion. Narrative by R.C.N. Historical Section). These later craft would in time beach themselves, since they were not to participate in the assault phase. Formation and unit priority vehicles, i.e., those essential to the conduct of the battle ashore, were loaded in L.C.T. The first of these were to disembark at H plus 80 minutes. (3 Cdn Inf Div O.O. No. 1)

211. Throughout the force certain larger vessels were specially fitted out as headquarters, both naval and military. Chief among these was H.M.S. Hilary, the flag

ship of the Commodore commanding Force "J". She carried also H.Q. 3 Cdn Inf Div (reduced) and the Commander, 1 Brit Corps and his staff. It will be recalled that Hilary had served as headquarters ship to 1 Cdn Inf Div in the Sicilian operation (Cf C.M.H.Q. Report No. 126). Each brigade commander and his naval equivalent, the Senior Officer Assault Group (S.O.A.G.), were accommodated in an Assault Group Headquarters Ship -- the frigate H.M.S. Lawford for 7 Cdn Inf Bde (J.1), and H.M.S. Waveney for 8 Cdn Inf Bde (J.2). H.Q. 9 Cdn Inf Bde (J.3) was set up in L.S.I. (H), H.M.S. Royal Ulsterman, Alternate headquarters ships (stand-by ships) were named as a precautionary measure. In the event of Hilary being put out of action, for example, command was to be exercised from Royal Ulsterman. (3 Cdn Inf Div O.O. No. 1)

212. The two assault regiments of 2 Cdn Armd Bde - 6 and 10 Cdn Armd Regts - were borne mostly in L.C.T. 27 Cdn Armd Regt was carried in L.C.T. and L.S.T. Brigade Headquarters was split for the passage, each portion travelling on L.S.T. (2 Cdn Armd Bde Report on Operation "OVERLORD", op cit)

213. A word here as to loading and assembling generally may help to clarify the movements of the invasion fleets. All along the Southern English coast, in the order corresponding to their objectives across the Channel, the assault forces were preparing to sail. From West to East, these loading points were:

- Force "U": Torquay, Brixham, Dartmouth, Plymouth East
- Force "O": Portland and Weymouth
- Force "G": Southampton
- Force "J": Southampton and Portsmouth
- Force "S": Portsmouth, Newhaven, Shoreham.

The follow-up forces were embarked on the flanks of this huge area -- those of Force "B" at Falmouth and Plymouth West, and those of Force "L" at Tilbury and Felixstowe. The first build-up forces were to be loaded and assembled in the Bristol Channel and the Thames. "MULBERRY" concrete units were collected in anchorages clear of the other forces on the South coast. Most of the heavy units of the bombarding forces were assembled at ports on the west coast (Source quoted in C.M.H.Q. Report No. 147 as Operation "NEPTUNE", Naval Operation Orders, Part 4). Routes to be followed by all outward-bound groups, convoys and other units from D minus 1 to D plus 3 are clearly illustrated by the series of "Mickey Mouse Diagrams" in Naval Orders (Ibid, Part 20).

(b) The Selection of D Day

214. The problem of selecting a D Day and H Hour that would satisfy the conflicting demands of the three services, together with the attention it received from the Allied Commanders, is dealt with in A.H.Q. Report No. 42 (see section entitled "Considerations of Timing & Weather"). The same source (paras 405 ff) gives Eisenhower's reason for requesting, in January, the target date for D Day to be postponed from 1 May 44 (the original COSSAC D Day) to 31 May. Later, on 17 May, 5 Jun was set "as the 'final' date for the assault, subject of course, to last minute revision if the weather should prove unfavorable" (Report by the Supreme Commander ... op cit, p. 5). General Eisenhower explains his selection of 5 Jun as follows:

The selection of this date was based primarily on tidal and light conditions. It was necessary that the tide be sufficiently low to enable the initial assault elements to land and prepare lanes through the heavy obstacles which were above water only at or near a low tide. Also, this tidal condition had to coincide with a period of sufficient light to permit visual bombing by aircraft of the beach defences and bombardment by the naval vessels. The dates of 5, 6 and 7 June were all acceptable on this basis, but any postponement beyond these dates would have necessitated waiting until 19 Jun for a similar favorable tidal period. This later date would have necessitated the acceptance of moonless conditions.

(Ibid)

215. The possible effects of postponement are not dealt with in General Eisenhower's Report, but the grave problems arising from such an action -- and ultimately the decision was his -- are fully revealed in his book:

If none of the three days should prove satisfactory from the standpoint of weather, consequences would ensue that were almost terrifying to contemplate. Secrecy would be lost. Assault troops would be unloaded and crowded back into assembly areas enclosed in barbed wire, where their original places would already have been taken by those to follow in subsequent waves. Complicated movement tables would be scrapped. Morale would drop. A wait of at least fourteen days, possibly twenty-eight, would be necessary -- a sort of suspended animation involving more than 2,000,000 men! The good-weather available for major campaigning would become still shorter and the enemy's defences would become still stronger!

(Eisenhower, Crusade in Europe, p. 239)

216. The perfect summer weather during May which had worked in favor of the Air Forces completing their pre-invasion bombing came to an end during the first week of June. During this time, General Eisenhower held bi-weekly meetings with the tri-service Meteorological Committee, headed by Group Captain J.M. Stagg, R.A.F. (Ibid, p. 249; see also Wilmot, op cit, pp 221 ff for an excellent description of these meetings). From 1 Jun onwards the Supreme Commander held daily conferences with his commanders at his Advanced Headquarters at Portsmouth to consider the weather situation. (Capt H.C. Butcher, My Three Years With Eisenhower (New York, 1946), p. 545) These conferences, aside from General Eisenhower, included the Deputy Supreme Commander, Air Chief Marshal Sir A.W. Tedder, General Eisenhower's Chief of Staff, Lieutenant General W.B. Smith, Admiral Sir Bertram Ramsay, Rear-Admiral G.E. Creasy, General Sir Bernard L. Montgomery, Major General de Guingand, Air Chief Marshal Sir Trafford Leigh-Mallory, Air Vice Marshal H.E.P. Wigglesworth and the Heads of the Naval, Army and Air Meteorological Services (Leigh-Mallory, op cit, p. 55).

217. The evening conference on 3 Jun took place at 2100 hrs and lasted until after midnight. The decision on D Day was postponed by General Eisenhower "until the meteorological staffs could collect later reports" (Ibid). Nevertheless, it was decided "to allow the movements of the Forces to commence, despite the unfavorable outlook in view of the many advantages in launching the operation on the first possible day" (Ramsay, op cit, p. 5114).

218. The next conference took place at 0400 hrs on 4 Jun "and in the light of weather forecasts then available... [the Supreme Commander] decided to postpone the time of the assault for 24 hours primarily on the ground that the air forces would be unable to provide adequate support for the crossing and assault operations, and could not undertake the airborne tasks" (Leigh-Mallory, op cit, p. 55). Yet by this time, "all of Force 'U' from Devonshire and a proportion of Force 'O' from Portland were at sea, and ships and craft had to reverse their course and return to harbour" (Ramsay, op cit, p. 5114). No further decision was taken at the evening conference on 4 Jun.

219. The final conference was held during the early hours of 5 Jun. At that time the Allied commanders were told by Group Captain Stagg that "by the following morning a period of relatively good weather, heretofore completely unexpected, would ensue, lasting probably thirty-six hours" (Eisenhower, Crusade in Europe, p. 249). Although this was predicted as a calm spell in the midst of generally poor weather, General Eisenhower, after hearing the opinion of his commanders, "quickly announced the decision to go ahead with the attack on June 6. The time was then 4:15 a.m., June 5" (Ibid).

(c) D Minus One

220. The final executive order to sail was received by Force "J" at 0445 hrs on 5 Jun (Report by Naval Commander, Force "J"). During the day, which it was now possible to describe as D minus 1, sealed parcels of maps were broken open and final briefing began. Bogus names and co-ordinates were exchanged for genuine ones. Troops spent their remaining time cleaning weapons and priming grenades. Then, following the customary procedure on such occasions, messages were read to the troops from the Supreme Commander, from General Montgomery and from General Crerar.

221. The Canadian Army Commander's words made pertinent reference to the operation which at this moment inevitably came to the minds of the assault troops - the Dieppe raid. His message closed with a significant prophecy.

It is not possible for me to speak to each one of you, but by means of this personal message, I want all ranks of the Canadian Army to know what is in my mind, as the hour approaches when we go forward into battle.

I have complete confidence in our ability to meet the tests which lie ahead. We are excellently trained and equipped. The quality of both senior and junior leadership is of the highest. As Canadians, we inherit military characteristics which were feared by the enemy in the last Great War. They will be still more feared before this war terminates.

The Canadian formations in the assault landing will have a vital part to play. The plans, the preparations, the methods and the technique, which will be employed, are based on knowledge and experience, bought and paid for by 2 Canadian Division at Dieppe. The contribution of that hazardous operation cannot be over-estimated. It will prove to have been the essential prelude to our forthcoming and final success.

We enter into this decisive phase of the war with full faith in our cause, with calm confidence in our abilities and with grim determination to finish quickly and unmistakably this job we came overseas to do.

As in 1918, the Canadians, in Italy and in North West Europe, will hit the enemy again and again, until at some not distant time, the converging Allied Armies link together and we will be re-joined, in Victory, with our comrades of 1 Canadian Corps.

(H.D.G. Crerar) Lt-Gen

(W.D., H.Q. 9 Cdn Inf Bde,
June 1944: Appx 1)

222. The troops, accustomed as they were to the sight of a multitude of vessels, were nevertheless astonished at the endless expanse of ships, each with its nodding silver balloon, and much comfort was drawn from this formidable array. As one diarist observed, "the concentration of shipping in Southampton and the Solent has to be seen to be believed" (W.D., H.Q. 7 Cdn Inf Bde, 3 Jun 44). Yet this concentration represented but two fifths of the assault forces (Forces "G" and "J").

223. One important factor gave additional cause for cheerfulness. The Luftwaffe had failed to appear, either during the loading period, or even now when the vulnerable forces lay assembled and ready to sail. It was evident that the crippling of the German Air Force had been no idle boast, but was an indisputable fact.

224. Early in the afternoon, the convoys commenced to weigh anchor and slip out of their harbours towards Spithead Gate. Among the first was Royal Ulsterman and her attendant L.C.I. (L.). The departure has been described by a diarist:

...There were no bands or cheering crowds to give us a send off on the biggest military operation in history. A few dock workers silently waved good-bye. Friends called farewell and bon voyage from one craft to another. A few craft blew their whistles and up on the bridge Sagan the piper played 'The Road to the Isles'. The 9th 'Highland' Bde was on its way.

...There were craft of every type imaginable. There were blunt nosed LCTs butting their way along, small LCIs riding the crests like corks, big channel packets with their LCAs lashed to their sides and proud cruisers running hither and yon in search of an enemy who would dare to poke his head out of the water. In the distance big 'battle wagons' lent an air of confidence and security to the scene.

(W.D., H.L.I. of C., 5 Jun 44)

225. It was evening when the L.S.I. of the assaulting brigades sailed. Because of their superior speed, they were permitted to leave later than the slower L.C.T., which had sailed in mid-afternoon and would be overtaken in the approach channels. The L.S.I. groups were each formed into two divisions escorted by destroyers. Parallel, in line ahead, they proceeded along the swept approach channels 7 and 8, which were marked at intervals by tossing buoys. (R.C.N.'s Part in the Invasion) By evening H.M.S. Hilary was also under way; she was to be escorted during the sea passage by H.M.C.S. Algonquin.

226. Conditions in the Channel were not such as

to inspire confidence. The sky was overcast, the wind blew in strong gusts, and waves of five to six feet gave landing craft a rough passage. The ponderous L.S.T. following the assault groups rolled heavily in the seas, their loads of vehicles straining at the chains which anchored them to the decks. Many men, even naval personnel, were ill, and sea-sickness pills provided little relief. To those who were not so affected, it seemed incredible that the operation could take place. Yet the meteorological forecast had revealed improved conditions for the early hours of 6 Jun. On that basis, "OVERLORD" was to commence.

D DAY

(a) The Bombardment

227. (1) The Air Force Since "air superiority was the principal prerequisite for the successful assault of Europe from the West" (Leigh-Mallory, op cit, p. 41; see also Air Vice-Marshal E.J. Kingston-McCloughry, War in Three Dimensions (London, 1949), p. 85), and since bomber aircraft and airborne troops were employed in great numbers prior to H Hour, a summary of the Air Forces' "preliminary" and "preparatory" activities, as well as their D Day operations during the initial assault, will be given at this point. Indeed, the air activity which now reached its cumulative peak in support of "NEPTUNE" had a direct effect on the success or failure of the assault troops approaching the shores of Normandy under the cover of darkness.

228. The aims of Operation "POINTBLANK", the Allied strategic operation in the air, had met with considerable, but not complete, success. (Supra, para 41) The effectiveness of the G.A.F. fighter forces, as well as the war potential of Germany, had been reduced by the constant day and night hammering of the enemy's cities and factories, supply bases and power sites, by light, medium and heavy bombers.* However, the German will to continue the struggle had not noticeably weakened, although Germany's great offensive potentialities had withered with each successive strike of Allied bombers deep inside "Festung Europa".

229. In April 1944, when emphasis shifted from strategical to tactical considerations, the Allied Air Forces' operations against the enemy were even more directly concerned with the assault. Strategic bombing, hitherto "under the direction of the British Chief of Staff acting as a representative of the Combined Chiefs of Staff" was now directed by the Deputy Supreme Commander, Air Chief Marshal Sir Arthur W. Tedder, who coordinated the operations of both strategic and tactical air forces so as to best ensure the successful completion of the Overall Air Plan (Leigh-Mallory, op cit, p. 38; see also supra, para 42).

230. The chief object of this plan, air

*"In the six weeks immediately prior to D Day, ... the enemy flew only 125 reconnaissance sorties in the Channel area and 4 sorties over the Thames Estuary and the east coast. Very few of these sorties approached land, most of them being fleeting appearances in mid-Channel. Our fighters rarely got even a glimpse of these enemy aircraft, which could have seen very little and only could have taken back, therefore, information of very small value...." (Leigh-Mallory, op cit, p. 53; see also W/Cdr. Asher Lee, The German Air Force (London, 1946) pp 152 ff; and Air Chief Marshal Sir Norman Bottomley, "The Strategic Bomber Offensive Against Germany", R.U.S.I. Journal, May 1948, p. 228)

superiority, had been won well before D Day.* Another main objective of the Overall Air Plan "was to produce a lasting and general dislocation of the railway system in use by the enemy" (Ibid, p. 40). Complementary to this was a further objective covering the destruction of road and railway bridges. Air operations designed to complete this task had been going on months before D Day and had intensified as D Day approached. As the weight of bombs dropped on transportation targets increased, so too was the overall area of operations contracted so as to seal off the invasion area. An idea of the effort and effects of these strikes against the enemy's transportation may be imagined from the following extract:

On... 21st May, 504 Thunderbolts, 233 Spitfires, 16 Typhoons and 10 Tempests of A.E.A.F. operated throughout the day, claiming 67 locomotives destroyed, 91 locomotives damaged and six locomotives stopped. Eleven other locomotives were attacked with unknown results and numerous trains were attacked and damage inflicted on trucks, carriages, oil wagons, etc.

On this same day, United States Eighth Air Force Fighter Command sent out 131 Lightnings, 135 Thunderbolts and 287 Mustangs against similar targets in Germany. They claimed 91 locomotives destroyed and 134 locomotives damaged. In addition, one locomotive tender, six goods wagons and three box cars were destroyed, whilst seven goods wagons, seven trains, three rail cars, four box cars and thirteen trucks were damaged, and sixteen trains set on fire.

(Leigh-Mallory, op cit, p. 45)

231. Attacks against railway centres, marshalling yards, repair depots, signals and ancillary services, railroad junctions, etc., added as much to the enemy's transportation and communication paralysis on D Day as did the air attacks against road and railroad bridges and tunnels.** All such attacks not only contributed to deny the enemy freedom of movement, but also caused him to draw more heavily on his precious supplies of oil and rubber. The attacks on the bridges, which had started in April, reached "a crescendo of effort over a period of about ten days prior to D Day" (Leigh-Mallory, op cit, p. 46). So successful was this effort that

*Between 1 Nov 43 and 1 Apr 44, enemy single-engine fighter production was planned to total 7065 aircraft. Owing to Allied bombing results, only 2950 of these aircraft were produced (Leigh-Mallory, op cit, p. 42). Between 15 Nov 43 and 5 Jun 44, Allied airmen and A.A. gunners accounted for 6238 aircraft destroyed, 1060 probably destroyed and 2551 damaged (Ibid). These figures do not account for those aircraft destroyed on the ground.

**See Lord Tedder, Air Power in War (London, 1948), pp 108 ff, for further elaboration on air strikes against the enemy's transportation system. Also see Air Marshal Sir Robert H.M.S. Saundby, "Air Attacks on Communications," R.U.S.I. Journal, November 1945, for an excellent account on this subject.

By 6 June, 1944, twelve railway and twelve road bridges over the Seine were impassable; three bridges at Liege, and bridges at Conflans, Hasselt, Herenthals, Hirson, Konz-Harthaus, Namur, Saumur, Tours and Valenciennes, were down. Altogether, 118 bridges were affected, in addition to a few others not scheduled as targets, but chosen by aircrews as targets of opportunity.

(Macmillan, op cit, p. 147)

232. Important features in the Overall Air Plan were air attacks against enemy coastal defences, military facilities, communications, Radar stations and enemy airfields. Regarding the latter, air operations were carried out to destroy enemy airfield bases "within 130 miles radius of the assault area" so as to drive G.A.F. fighter forces as far from the battle area as were Allied fighter bases (Leigh-Mallory, op cit, p. 41). "Attacks on forty main enemy operational fields began on 11 May 44. Fifty-nine other operational bomber bases ... within range of the assault area and ports of embarkation in the United Kingdom were also selected for attack, as opportunity permitted..." (Ibid, p. 50). By D Day four airfields were completely destroyed and fifteen severely damaged. To quote a German source:

The systematic destruction of the ground organization of the Luftwaffe, especially of the fighter airfields, was very effective just before and during the start of the invasion.

((HS) 981.013(D32): "The Normandy Invasion -- June, 1944", A Study Prepared by the German Air Historical Branch (6 Aug 44); Translated by the Air Ministry, 23 Jun 47)

233. Air attacks against enemy means of communication were carried out with equal vigor. The destruction, among many other W/T stations, of the Headquarters of the German Air Force Signals Intelligence near Cherbourg on the night of 3/4 Jun "contributed greatly to the feeble enemy air resistance on the first day of the assault" (Macmillan, op cit, p. 148). A German report stated later that "the start of the invasion was marked by the complete breakdown of land-line communication" ("The Normandy Invasion - June 1944", German Air Historical Branch, op cit, p. 2). Attacks against key enemy Radar stations begun on 10 May and reaching a peak of intensity three days before D Day, saved the lives of countless soldiers, sailors and airmen at a most decisive time. Those Radar stations not destroyed were subjected to deception measures on the night of 5/6 Jun. (See below para 236)

234. Further air operations designed to prepare

the way for the assault landing were attacks against enemy military facilities, such as ammunition and fuel dumps, military camps and headquarters, etc., and against coastal defences. Strategic and tactical air forces made a total of 1562 sorties against such military targets between 1 May and 6 Jun (Leigh-Mallory, op cit, p. 50). Attacks against "forty-nine known coastal batteries capable of firing on shipping approaching the assault area" commenced well before D Day (Ibid, p. 46). Those batteries which it was thought the navy would find difficult to destroy were the special targets of the air force. Up to 5 Jun, a total of 2495 sorties against coastal batteries within the "NEPTUNE" area had been made, and over 6,000 tons of bombs had been dropped on these targets.

235. On the night of 5/6 Jun, Royal Air Force bomber aircraft began their aerial bombardment of ten selected coastal batteries within the assault area (Supra, para 180) which was the opening phase of the fire plan designed to support the assault troops. An hour after the beginning of this six-hour bombardment, (which lasted from 11:31 p.m. 5 Jun to 5:15 a.m. 6 Jun) the first Canadian soldiers to land in Normandy were dropped east of the Orne. These were parachutists from "C" Company, 1 Cdn Para Bn, who were dropped near Varaville with other elements of the 6th Airborne Division half an hour in advance of the main body. (Hist Sec, A.H.Q., Report No. 26, The First Canadian Parachute Battalion in France -- 6 June-6 September, 1944) Shortly thereafter, while the aerial bombardment was not yet half completed, parachutists of the British 6th Airborne Division and of the American 82nd and 101st Airborne Divisions were dropping on the eastern and western flanks, respectively, of the assault area. The British/Canadian parachutists would be engaged in a ten to twelve-hour battle with the enemy before seaborne troops came inland west of the Orne to their aid. American parachutists dropped behind "UTAH" Beach would be engaged for approximately the same time before VII U.S. Corps troops were due to arrive.

236. During the night operations, the combined air and naval-air diversionary plans were being implemented. (Supra, paras 58-61) An air historian writes of one part of the deception and diversionary plans:

...while the assault craft were underway across the Channel, 105 radio counter-measure aircraft were employed to blind and deceive the remaining enemy radar and radio stations. Between one and four on the morning of June 6 no enemy radio station was heard operating between Le Havre and Barfleur, and only eighteen were working instead of a normal ninety-two in the area covering the 'spout', as the contained sea area of the crossing from coast to coast was called.

(Macmillan, op cit, p. 148)

He continues:

The German mistook the Cap d'Antifer diversion for a real threat and operated searchlights and opened gun-fire on the ghost convoy. They sent twenty-four night-fighters against the jamming formation over the Somme, who hunted the night skies for three hours for an imaginary bomber stream that never came. And all this great intelligence and counter-radar war was entirely British. (Ibid, p. 149)

237. Shortly after R.A.F. Bomber Command ceased their bombardment of enemy coastal batteries, light and medium bombers, fighter-bombers, and other aircraft of the Allied Expeditionary Air Force swarmed over the assault area. (Allied Expeditionary Air Force, Daily Intelligence/Operations Summary No. 133, 6 Jun 44. Copy in custody of Air Historian, R.C.A.F., Ottawa) These aircraft fulfilled a multitude of tasks both before and after H Hour. Offensive and beachhead patrols were maintained, attacks were made on military installations both on the shore and inland, strongpoints and targets of opportunity were bombed and strafed, smokescreens were laid, reconnaissance sorties carried out, aircraft 'spotters' corrected naval gunfire, and so forth.

238. The United States Eighth Air Force provided the final heavy air bombardment against the "NEPTUNE" area immediately prior to H Hour. "In the thirty minutes immediately preceding the touch-down hour, 1,365 heavy bombers attacked selected areas in the coastal defences, dropping 2,796 tons of bombs" (Leigh-Mallory, op cit, p. 56).

239. The air attacks by Second Tactical Air Force and the United States Eighth Air Force overlapped the naval bombardment. A naval historian comments on this overlapping in the "Juno" area:

The [Naval] bombardment would have been even more accurate had not the Air Force bombing thrown up clouds of smoke and dust which at times obliterated the targets and called forth some choice invective from the gunnery officers. At 0720 just after the bombers had been bombing through the cloud, there was a note in "Algonquin's" log: 'God Damn Air Force is messing up our target again.'

(R.C.N.'s Part in the Invasion)

These aircraft, presumably, were those of the Eighth Air Force.

240. Only meagre reports are available regarding

the close support air effort, but insofar as a comparison exists between the neutralizing effect of air and naval fire, it would appear that the naval bombardment had a greater stunning effect on the enemy. A report on the bombardment reads in part:

They [the enemy] were bowled over less by aerial bombardment, which they were somewhat accustomed to, than by the deadly accuracy and weight of naval gunfire, in which the heavies, i.e. the fire of distant major warships were most effective, because of the penetrating power of their shells.

.....

Even when it was not reinforced by simultaneous air bombing, the [naval] drum fire inspired in the defenders a feeling of utter helplessness, which in the case of inexperienced recruits cause fainting or indeed complete paralysis. The instinct of self-preservation drove their duty as soldiers ... completely out of their minds.

(Army Operational Research Group Report No. 264, Opposition Encountered on the British Beaches in Normandy on D Day, p. 152, Copy in custody of Director of Weapons and Development, A.H.Q.)

Poor visibility, made worse by smoke and dust, was believed by some to have cancelled entirely the projected bombing attacks on beach defences. The diarist of H.Q. R.C.A., observing that naval and artillery bombardment had commenced, added: "We are all wondering what became of the Air Force" (W.D., H.Q. R.C.A., 3 Cdn Inf Div, 6 Jun 44). Senior officers, acknowledging that the attacks were delivered, commented on their want of accuracy, which they ascribed to low cloud base. (Cf above naval statement that aircraft were "bombing through the cloud") Brigadier ~~Foster~~ stated that "the terrific devastation which was to have been caused by hy bombing on the coast defs on either side of the R Seullles did not materialize" ((HS) 265C7.011 (D1): Memorandum of Interview with Brigadier H.W. Foster. Similarly Interview with Brigadier Blackader: "On the left bn front [St. Aubin] neither the RAF hy Oboes, the rockets, nor the S.P. arty covered the main strong pt").

241. Comments by observers in the "Juno" area leave the impression that only two aerial attacks were made against the beaches. The diary of Group Captain Cleland, Air Representative aboard Hilary, contains this entry:

... At approximately 0530 hrs ... bombing was seen to be taking place on the beaches.

Naval gunfire from cruisers and destroyers had by now opened up, and kept up continuous fire until the commencement of bombing by U.S. heavy day bombers at approximately H-30....

(Form 540, Air Representative,
Force "J", Copy in custody of
Air Historian, R.C.A.F., Ottawa)

Canadian naval reports confirm this statement. (R.C.N.'s Part in the Invasion) The lack of documentary material dealing with the part played by the United States Eighth Air Force during the pre-H Hour bombardment,* the conflicting reports that exist in available sources, and the loose terminology used in many cases among the three services as to what constituted beach defences, coastal defences and strongpoints, prevent further elaboration on this point.

242. Aircraft of the R.C.A.F. played a prominent part in the D Day air operations. R.C.A.F. Halifax and Lancaster heavy bombers provided the major striking force attacking the Houlgate and Merville/Franceville coastal batteries. (H.Q. R.A.F. Bomber Command, "Bomber Command Intelligence Narrative of Operations No. 818", Appx A92: R.C.A.F. Record Book of Bomber Command Operations for the Month of June 1944. Copy in custody of Air Historian, R.C.A.F., Ottawa) Over a third of the aircraft attacking the coastal battery at Longues was also provided by No. 6 (R.C.A.F.) Group and No. 405 (R.C.A.F.) Squadron Lancasters (Ibid). R.C.A.F. fighter, fighter-bomber, pathfinder and reconnaissance squadrons were also involved in D Day operations. ((HS) 180.015 (D1): "Battle Order of R.C.A.F. on 6 Jun 44" shows the number and types of Canadian squadrons operating under R.A.F. overall command).

243. One Canadian squadron of fighter-bomber aircraft (No. 439 Sqn of No. 143 (R.C.A.F.) Wing) was allocated to H.M.S. Hilary for close support. It carried out a successful attack on a three-gun battery near Vaux (942857), and the C.R.A. later confirmed that no further fire was

*On the OMAHA Beach, American heavy bombers had to bomb by instruments owing to the low cloud ceiling. To avoid hitting the assaulting troops, they deliberately delayed releasing their bomb loads for several seconds, with the result that the bombs landed well inland from the beach defences (Gordon A. Harrison, Cross-Channel Attack (Washington, 1951), p. 300) It is quite possible that the same situation arose on the Eastern beaches.

experienced from this position.* (Report by Naval Commander, Force "J") The other Typhoon aircraft in this Wing, as well as Canadian squadrons throughout Second Tactical Air Force, made continuous sorties throughout D Day supporting the assault by providing air cover and attacking enemy defences and forces on the ground.

244. (ii) The Navy The following comments, written by a Canadian naval historian, describe the movement of the assault forces from the coast of England toward their rendezvous in the Baie de la Seine.

Group by group, moving at set speeds and along routes dictated by their allotted stations, the arriving vessels passed into the assembly area and took up their formations. Joining the columns of troop-carrying craft came lines of the heavier and larger tank landing-craft, loaded with the soldiers' vehicles. Troop carriers and vehicle carriers would sail together in double-columned convoys, accepting the difficulties created by their varying sizes and speeds in order that their interdependent cargoes might be delivered to the beaches together.

Warships, transports, and weirdly assorted special craft of every size and kind, were ranging themselves in the order designed to bring them to the required positions off the beaches at the required time. The formed groups began to take on the appearance of individual convoys, each separated by exact intervals from the one behind and the one ahead. Escorts moved into stations beside them, and the whole began to feed outward from the assembly area in ten great streams. Leaving behind it a weaving, ordered chaos fed continually by new floods of shipping, it flowed toward the mid-channel positions where dimly lighted buoys marked the entrances to the approach lanes.

Dusk closed down on the Channel at a little after ten. A southwest wind set briskly across the tide and lifted the sea into a choppy swell. By midnight a full moon, rarely seen among patches of ragged, scudding cloud, had lifted from the horizon. Beneath it the dark face of the Channel was combed by twenty lines of white and red lights, winking faintly at one-mile intervals along the port and starboard boundaries of the ten lanes. Between the bordering lights the

*No subsequent requests for air support were made by the G.O.C., 3 Cdn Inf Div, while on board ship, following the initial pre-arranged attack (Air Representative, Force "J", op cit).

ribbons of dark water were restless with shadowy movement, churned by an endless series of wakes whose ragged V's pointed steadily southward toward Baie de la Seine.

(Schull, op cit, pp 263-64)

245. Admiral Ramsay comments on the latter part of the passage to Normandy as follows:

There was an air of unreality during the passage of the assault forces across the Channel curiously similar to that on D-1 in "HUSKY" as our forces approached Sicily. The achievement of strategical surprise was always hoped for in 'NEPTUNE' but was by no means certain, whereas that of tactical surprise had always seemed extremely unlikely. As our forces approached the French coast without a murmur from the enemy or from their own radio, the realization that once again almost complete tactical surprise had been achieved slowly dawned.

(Ramsay, op cit, p. 5114)

The achievement of both strategic and tactical surprise was indeed an exceptional combination of well-executed planning and good fortune in the form of German miscalculation. (Infra, paras 401 ff) Certainly everything had been done to blind and deceive the enemy's radar chain, but the success gained in this operation was something to be hoped for rather than expected. The first tentative warnings of the invasion for the enemy came from code words broadcast to the French Resistance groups by the B.B.C.* and from a report at 0120 hrs from 711 Inf Div (headquarters at Le Quesnay) telling of parachutists dropping near divisional headquarters and of hearing "battle noises" (Hist Sec; A.H.Q., Report No. 50, The Campaign in North-West Europe, Information From German Sources; Part 11: Invasion and Battle of Normandy, para 7**). These latter were actually the 50 dummy parachutists and 'noise' machines dropped as a diversion for 6 Airborne Div ("TITANTIC II" -- Supra, para 61). At approximately 0130 hrs, both Fifteenth and Seventh Army were given "Alert II" orders, the highest form of alert, because of the wide-spread reports of

*These were understood by the enemy "to be warnings of invasion within forty-eight hours" (Harrison, op cit, p. 275).

**At the time of writing, Report No. 50 is in draft form.

parachutists landing (Ibid, para 10). Naval Group West, which "at the very time when the Channel was crowded with Allied craft ... [had] deemed the 'weather' unfavourable for the movement of patrol boats," also ordered 'Alert II', "recording at the same time their concurrence with O.B. West's and Air Fleet's views that a major landing attempt was improbable" (Ibid, para 9).

246. Shortly after 0500 hrs on the morning of 6 Jun the warships of Eastern Task Force took up their bombarding positions. A War Correspondent describes the moment:

We got closer, and as the light improved and the mist cleared we made out landmarks -- the strips of white beach and the brown dunes, slender church spires at Courseulles, Bernieres and St. Aubin, the water towers behind the towns. Back of the dunes were the rich green and brown fields on gentle slopes where some of the finest crops in France are grown. Woods dotted the fields and ribbons of roads led back from the coast toward Caen and Bayeux, over the slightly rolling countryside. This was the new Canadian battlefield, but at that moment it looked like a travel poster.

Not a single gun fired from the shore.* The entire fleet was now in full view of the German coastal garrisons, with the first line of landing ships and support craft only a mile or so from shore. Others were massed for miles and miles out to sea. The Bay of the Seine was choked with Allied shipping. Four thousand ships and landing craft were participating in this operation and most of them seemed to be here off the Normandy shore at this tense time between the dawn and H Hour

(Ross Munro, Gauntlet to Overlord
(Toronto, 1946), pp 55-56)

247. At approximately 0530 hrs the guns of Eastern Task Force opened fire on their targets ashore. Inasmuch as no very formidable enemy batteries lay within 3 Cdn Inf Div's area, the bombarding force provided was accordingly small. On the Eastern flank, Bombarding Force "D", in order to deal with coastal batteries on either side of the Seine estuary, comprised two battleships, five cruisers and one monitor. (Gunnery Review, Normandy

*Force "J" was able to report the remarkable fact that no offensive action by enemy aircraft or surface vessels was encountered throughout the passage (Report by Naval Commander, Force "J").

Bombardment Experience, op cit) In "Juno" area, the achievement of the cruiser "Diadem" in silencing the battery at Beny-sur-Mer is adequate evidence of the efficiency of naval bombardment. The Diadem opened fire on this battery at 0552 hrs with air observation. The same battery was re-engaged at 0725 hrs to cover touchdown and finally at 0905 hrs, the total expenditure amounting to 223 rounds. Although the battery suffered no direct hit, the effective neutralization of the battery could not be doubted. The crew of one such gun position retired in great disillusionment to a cave in the vicinity of Fontaine-Henry, where their depression was such that they later permitted a few Canadians whom they had captured to take their whole number (109) into custody. (Infra, para 482) The failure of the coastal defence guns to cause any damage to the closely packed shipping off shore gives final proof of the results of naval counter-battery fire coupled with aerial bombardment.

248. The beach drenching fire achieved its object of neutralizing interference of the run-in, and was said to have been delivered "with clock-like precision" (Report by Naval Commander, Force "J"). The preparatory bombardment was so much admired by one assaulting company that the soldiers stood up in the L.C.A. to watch it (W.D., 1 C. Scot R., June 1944; Appx 2, "C" Coy Diary). While its effects were never intended to be totally destructive, the actual damage to enemy defences caused by this very heavy volume of fire was later found to be somewhat less than expected. Poor visibility was undoubtedly a contributing factor. Thus although Rear Admiral Vian was later able to declare that the "main batteries opposing Force "J" were effectively neutralized during the assault and subsequently captured before they could interfere with ships or craft" (Report by Naval Commander, Eastern Task Force), it was also true that the stunning effect of naval bombardment had greater effect on the defenders of major strongpoints than did the physical damage wrought by bombardment (Ibid). In this connection a significant point was brought to light: the emplacements housing infantry guns had been defiladed from direct fire from the sea by a heavy concrete wall running almost parallel to the shoreline. This, while it denied shelling to seaward, meant that the beaches could be swept by enfilade fire. Admiral Vian points out that had Intelligence been aware of this peculiarity, destroyers and support craft might have been stationed farther to the flanks of the assault so as to bring cross-fire against the vulnerable embrasures of these bunkers.

249. It must not be supposed, however, that every enemy position withstood this saturation with complete immunity. Examination of the area showed that 7 Cdn Inf Bde's sector contained six guns, two mortars, and 19 machine guns, of which 20 per cent were believed to have been knocked out by the preparatory bombardment. In 8 Cdn Inf Bde's sector there were three guns, three mortars and 13-15 machine guns; of these a smaller percentage was destroyed

by drenching fire (Opposition Encountered on the British Beaches in Normandy on D Day, op cit, Part IV). By way of comparison, it may be noted that of a total of about 106 such positions in the whole British assault area not more than 14 per cent were estimated to have been put out of action by naval gunfire (Gunnery Review).

250. On the whole, the lethal effect of this massed fire power appears to have been slight. Despite considerable damage in Bernières and Courseulles, it was believed that "less than a dozen" civilians were killed by the bombardment, although neither town had been evacuated (Report by Naval Commanders, Eastern Task Force and Force "J"). The War Diary of R. Wpg Rif observes somewhat bitterly that the drenching fire "failed to kill a single German or silence one weapon" (W.D., R. Wpg Rif, 6 Jun 44). While acknowledging that there was good reason for this statement (sub-units of this battalion suffered very severe casualties), it is only fair to note that the assault company of 1 C. Scot R. which landed under orders of R. Wpg Rif found that its beach objective had been demolished by naval gunfire (Infra, para 271).

251. It is impossible to present accurate evidence of the performance of each class of weapon, there being no sure method of differentiating the effects on the targets. Results must therefore be discussed in the broadest terms.

252. Neutralizing fire by destroyers was described by the G.O.C., 3 Cdn Inf Div, as "accurate and sustained" ((HS) 235C3.013(D8): Comments on Operation "OVERLORD" by Maj-Gen R.F.I. Keller, 21 Jun 44). The observed shoots carried out by H.M.C. Ships Algonquin and Sioux are typical. Algonquin silenced a battery of two 75-millimetre guns situated between houses on the sea-front just west of St. Aubin. Thereafter she proceeded to demolish other buildings in the same area. Sioux, in support of 48 R.M. Commando, opened fire at 10,000 yards on a gun position near Langrune. Both ships ceased fire at about 0745 hrs, as the first assault wave was approaching shore. (R.C.N.'s Part in the Invasion) Farther west, Kempfenfelt engaged a three-gun battery near Courseulles, but this fire could not be observed (Report by Naval Commander, Force "J"). The general deployment of destroyers was as follows: on the right, Venus, Faulknor, Fury, Stevenstone and La Combattante, engaging beach sector targets; and similarly, on the left, Vigilant, Algonquin, Sioux, Bleasdale and Glaidsdale (Ibid).

253. L.C.G.(L.) working on the flanks of the assaulting battalions, opened fire at ranges between 9,000 and 6,000 yards and thereafter continued to engage concrete defences from 1,000 yards until the landing craft had touched down (Report by Naval Commander, Force "J").

Their position close inshore gave them better opportunities for observed shooting (Gunnery Review).

254. L.C.T.(R.) were said to have fired their salvoes of rockets "accurately and a little early" (Report by Naval Commander, Force "J"). Short rounds were observed by R. Wpg Rif (W.D., R. Wpg Rif, 6 Jun 44). An unfortunate, though spectacular, incident occurred when a Typhoon fighter, swooping in low over Bernières, flew into a pattern of rockets and was instantly destroyed (Report by Naval Commander, Force "J").

255. Since enemy aircraft discreetly absented themselves from the assault area, the L.C.F. of Force "J" were not exercised in an anti-aircraft role, and were therefore used to supplement close support fire (Ibid). One of these craft was observed close inshore firing tracer at the beach (W.D., Q.O.R. of C., 6 Jun 44). This method of adding to drenching fire by L.C.A. was also practised by Force "G" (Gunnery Review).

256. The diaries of the armoured regiments make no mention of the performance of L.C.T. (C.B.). One instance is recorded of a concrete-buster engaging a casemate ((HS) 145.2R11011(D4): Memorandum of Interview with Lt-Col F.M. Matheson). The commander of Force "J" further reported their fire to be very destructive when used against buildings (Report by Naval Commander, Force "J").

257. The little naval "hedgerows", towed to the beaches in L.C.A. (H.R.), while not properly contributing to drenching fire, may be mentioned here. They too seem to have run afoul of heavy seas for it was reported that of nine craft of the first division (G.J.1) only one appeared; the second division arrived intact. This may help explain the difficulty experienced in opening exits on the right sector. (See below)

258. (iii) The Army In the weather conditions which prevailed, the Royal Marine Centaurs were hampered by the unseaworthiness of the L.C.T. (A.) and L.C.T. (H.E.). There were some craft casualties (Infra, para 315) and others arrived late, but the batteries performed their tasks to good effect (Report by Naval Commander, Force "J"). An artillery signaller called for fire from a troop of Centaurs against a block-house on the beach which was holding up Regina Rif. The Royal Marines quickly "eliminated this nuisance" (W.D., 13 Cdn Fd Regt, 6 Jun 44).

259. The success of the seaborne S.P. artillery in the assault is beyond doubt, and all observers, both naval and military, acknowledged its value. General Keller's comment was:

The SP arty put on the best shoot that they ever did on the four areas pre-selected for them....

(Comments on Operation "OVERLORD",
op cit)

More specific was the statement of the commander of 7 Cdn Inf Bde that "the only damage visible from sea was that effected by our SP arty fire..." (Interview with Brigadier Foster).

260. Curiously enough, the gunners themselves are non-committal in their remarks on the run-in shoot (probably because it had become a drill) and provide almost no detailed information about it. It can be gathered, however, that no disappointment was felt over the performance, which several diarists perfunctorily described as "very effective" or "most effective". (W.Ds., H.Q. R.C.A.; 13 and 19 Cdn Fd Regts, 6 Jun 44) Only one diary notes, what is common to all, that "the concentration was NOT as tight as had been attained in some training exercises due to the running sea" (W.D., 14 Cdn Fd Regt, 6 Jun 44). The infantry unit which this regiment's concentration was designed to support makes particular mention of shells falling in the town of Bernières and of the beach being obscured by their smoke (W.D., Q.O.R. of C., 6 Jun 44). The statement in the diary of H.Q. 8 Cdn Inf Bde that at 0800 hrs "for some unknown reason SP arty had switched all fire to St. Aubin" is not easily explained; according to 14 Cdn Fd Regt, the Bernières strongpoint was under fire from H minus 30 to H plus 5, as planned (W.Ds., H.Q. 8 Cdn Inf Bde and 14 Cdn Fd Regt, 6 Jun 44). The unavoidable dispersion of shot doubtless gave the impression to some observers that fire was being largely wasted: one diarist speaks of "SP guns afloat firing short as usual" (W.D., R. Wlg Rif, 6 Jun 44). Here again it is pertinent to recall that fire for effect was both observed and corrected by Forward Observation Officers in L.C.S. (M.), whose advanced station gave them better opportunity to judge its results.

261. External evidence may be adduced to support the conclusion that S.P. artillery made an important contribution to the fire preparation. In "Gold" area the strongpoint at Le Hamel offered unexpectedly fierce resistance; this has been attributed not only to the failure of the bombing programme in this area, but also the fact that the artillery concentration designed to cover it failed altogether to materialize, owing to navigational difficulties. (Gunnery Review)

262. Finally, it should not be forgotten that these same regiments, in addition to performing the astonishing feat of firing from sea, were able to disembark at an early hour with relatively few casualties and thus afford the infantry normal field artillery support during the initial stages of land battle. The dual role assigned

to field and S.P. guns stands out as one of the most arresting features of the operation.

263. The ultimate proof of the validity of the Dieppe lessons is established by the following conclusions: "All reports confirm that the British principle of employing special support craft in the assault is sound" (Gunnery Review). There is moreover a striking reminder of the recommendation for "overwhelming fire support" in the finding of the Gunnery Review that there was "no evidence to show that the fire support provided was excessive."

(b) 3 Cdn Inf Div Assault

264. Half an hour after the ships of Force "J" opened fire, the headquarters ship dropped anchor (0558 hrs). By this time distinctive landmarks on the shore could be recognized easily. Gun flashes were now visible from the coast, but as yet no fire appeared to be directed against the "Juno" area.

265. But all was not well everywhere throughout the force. Already the heavy seas had caused four groups of Force "J" to enter the wrong swept channels leading to the beaches; one of these errant groups consisted of the L.C.T. bearing the A.V.R. Co. of 7 Cdn Inf Bde Gp. It was clear that time would inevitably be lost in making to the proper channel. (Report by Naval Commander, Force "J") This lamentable circumstance was to have an effect on H Hour. The agreed times set for the assaulting brigades on 6 Jun were 0735 hrs for 7 Cdn Inf Bde and 0745 hrs for 8 Cdn Inf Bde, ten and twenty minutes late, respectively, of the H Hour for the neighbouring assaults. (Supra, para 66) But the tardiness of certain groups caused both Assault Group Captains to defer H Hour to a further ten minutes. It was thus decided that the times of H Hour should be 0745 hrs for 7 Cdn Inf Bde and 0755 hrs for 8 Cdn Inf Bde (Ibid; see also W.D., G.S., H.Q., 3 Cdn Inf Div, June 1944: Appx "Q", Message Log, 6 Jun 44, Serials 10 and 15). It was not a happy situation, for it meant that the swiftly rising tide, aggravated by heavy seas, shortened the interval before high water and deprived engineer groups of the minimum time to complete demolition of obstacles. In consequence, "craft beached among the obstacles instead of short of them, and clearance of the outer obstacles was not practicable until the tide had fallen" (Report by Naval Commander, Force "J").

266. Even before Hilary dropped her anchor, the L.S.I. of Force "J" had arrived punctually at their lowering positions.* All had come through the two swept

*"The choice of the 'lowering positions' ... had been a matter of considerable discussion, the conflicting factors of being outside the range of the enemy's shore batteries and south of the known mined area having to be balanced. The Eastern Task Force (British) finally chose their 'lowering positions' about 7 to 8 miles off shore..." (Ramsay, op cit, p. 5115).

channels of the German mine belt unharmed, " and by 5:35 the nineteen vessels were swinging at anchor in an eerie half-dawn light, each an exact three hundred yards from the next" (Schull, op cit, p. 273). No time was lost in lowering and forming up the L.C.A. (Report by Naval Commander, Force "J"). A Naval historian describes this operation as it concerned some of the men who were to land shortly after H Hour:

With the pipers of the Canadian Scottish playing cheerfully in the bright morning as they had the evening before when the ship sailed, 227 assault troops of the Canadian Scottish Regiment embarked in the Prince Henry's seven landing craft assault (L.C.A.) as they hung at boat deck level, and the craft were lowered at 0645 hrs. As the troops left they gave three rousing cheers for Prince Henry, which her ship's company heartily reciprocated. While Prince Henry was lowering her troops, Prince David lowered her remaining five L.C.A.'s with 148 troops and the L.C.A.'s from both ships then formed up with their respective beaching flights, three flotillas to a flight, and, each led by an MGB, they proceeded towards their beaches.

(R.C.N.'s Part in the Invasion)

While the L.S.I. were disgorging their assault craft, divisional wireless silence was broken (at 0634 hrs) and the first of a constant stream of urgent messages commenced to flow to and from the operations room. (W.D., G.S., H.Q. 3 Cdn Inf Div, June 1944: Appx "Q", Message Log, Serial 2, 6 Jun 44)

267. It was still too early to perceive much tangible evidence of the bombing programme. Fires had been observed inland, and at 0715 hrs, when the leading assault waves had begun their one-hour passage to the beach, bombers were heard passing overhead. (W.D., H.Q. 7 Cdn Inf Bde, June 1944: Appx 8, Message Log, 6 Jun 44)

268. (i) The Assault by 7 Cdn Inf Bde* On the right, opposite MIKE Sector, 7 Cdn Inf Bde, commanded by Brigadier H.W. Foster, was able to report most of its group intact; the only really serious omission was the A.V.R.E. group, which as we have seen (para 265) would inevitably be late. Otherwise, all seemed in order; the L.C.A. groups were formed up and ready; the L.C.T. bearing the D.D. tanks had arrived. Only the weather remained unruly. Still unmolested by enemy fire, the infantry companies in L.C.A. commenced their six-mile voyage to the beach. The noise of the bombardment accompanied them on their way. At 0715 hrs the men in the craft heard the close support bombardment roar into life as S.P. artillery, L.C.G.(L.) and L.C.T.(R.) let loose their fire against the beach strongpoints. (Message Log, H.Q. 3 Cdn Inf Div,

*A map showing the advance inland of the Canadian formations on 6 Jun is attached as Appendix "K".

6 Jun 44, Serial 14) A F.O.O. of 12 Cdn Fd Regt Artillery Group reported the first fall of shot to be effective (Message Log, G.S., H.Q. 3 Cdn Inf Div, 6 Jun 44, Serial 13), but smoke soon obscured further observation. For the artillerymen, "the noise on board the craft was deafening as round after round was pumped onto the shore" (Lt W.W. Barrett; The History of 13 Canadian Field Regiment R.C.A., 1940-1945, p. 30). From the gunner's viewpoint "it looked as if the whole area would be completely pulverized and annihilated..." ((H.S.) 142,4F12013 (D2): History of 12 Cdn Fd Regt, RCA, 27 May 40 - 5 May 45).

269. It had been decided not to launch the D.D. tanks because of the roughness of the waves, but instead to beach their L.C.T. at H Hour. But the Deputy Senior Officer Assault Group (D.S.O.A.G.) in charge of the L.C.T. of G.J.1 reversed his decision when within about 2500 yards of the beach, and ordered the two D.D. squadrons of 6 Cdn Armd Regt to swim ashore. The problems confronted by the D.D. tanks of "A" Squadron during the run-in through the heavy seas is told by the regimental historian:

As 'A's' D.D. tanks headed for Mike sector of the beach it was immediately noticeable to all crew commanders that the [canvas] screens were in great danger of collapsing as the struts began to bend from the pounding of the giant waves. Most of the commanders called the turret crews from the tanks to stand with them on the decks to support the screen. In addition the size of the waves made steering exceptionally hard. The pressure of a strong tide running from west to east increased this difficulty and kept carrying the D.Ds. to the left towards the pier at the river's mouth. However, the squadron shook itself out and on approaching land crew commanders were able to recognize the positions allotted to them on the beach.

(Lt F. Stark, Comp, A History of the First Hussars Regiment 1856-1945 (London [Canada], 1951), p. 54)

On the run-in seven tanks were sunk by enemy fire, and another was run down by rocket craft (W.D., 6 Cdn Armd Regt, 6 Jun 44). The unit's historian gives a vivid description of the D.D. tanks in action when ashore:

When they were in sufficiently shallow water and not likely to be swamped by huge waves the D.Ds. quickly deflated and began to engage the pill-boxes. The advantages of remaining in the water were three-fold. The sudden appearance of tanks on the beaches in front of their positions had momentarily disorganized German gunners. The pill-box on the extreme right of Mike sector near Nan beach was never manned. The tanks wished to make full use of the surprise by

knocking out the guns before they could destroy them. Any further movement towards the beaches benefited the enemy, giving him time to collect his wits. In addition, by remaining in the water the tanks presented smaller targets and the deflecting qualities of water gave more protection to the vulnerable lower hull where the armour was thinnest. Lastly, it was to be expected that the beaches would be heavily mined, and no crew commander wanted his tank to go up on a mine and be rendered immobile on that fire-swept expanse of sand.

.....

As soon as the anti-tank guns on the beach had been liquidated, the ... D.D. tanks began to cruise up and down the beach engaging the machine gun nests. At first the fire was so intense that the crew commanders had difficulty in locating the targets, but gradually these were found and neutralized, permitting the infantry to sweep on over the dunes to begin their push inland.

(Stark, op cit, pp 55-56)

The first of the D.D. tanks reached shore twenty minutes before the leading infantry (W.D., G.S., H.Q. 3 Cdn Inf Div, June 1944: Appx "K", Report by 2 Cdn Armd Bde, DD Tanks in the Assault; see also Message Logs, G.S., H.Q. 3 Cdn Inf Div; H.Q. 7 Cdn Inf Bde; and Report by Naval Commander, Force "J"). Their presence ashore proved invaluable to the infantrymen, as both assault battalion commanders testified.

270. Approximately 2,000 yards from the shore the craft carrying the seaborne artillery ceased fire and swung to the flanks to await their time for landing. The L.C.A. continued on toward their planned landing places. The Royal Navy was praised later for the accurate manner in which they landed the troops in their assigned sectors.* There were no instances of major inaccuracy throughout Force "J". The navigational difficulties faced by craft commanders are described in a Canadian naval account:

*"A particular[ly] fine job was done by the RN, who, under unfavorable circumstances, made their landings exactly at the right spot, even to the coy level" ((HS) 265C8.013(D1): Memorandum of Interview with Brigadier K.G. Blackader, M.C., E.D., by Historical Officer, 3 Cdn Inf Div).

From the LCA's it was impossible to see the beach except from the crests of the waves, but in these fleeting moments the assault personnel got glimpses of landmarks that had been made familiar to them by the photographs and diagrams which they had been shown in their briefing.

(R.C.N.'s Part in the Invasion)

271. The precise time of touchdown in each battalion group is uncertain, hardly a circumstance to be wondered at. One authority has it that the first infantry were ashore at 0810 hrs, twenty minutes late of the deferred time. (Report by Naval Commander, Force "J") Reports by participants do not all support this timing. In general, it may be said that assault companies, although a few minutes late, made their landfall with striking precision. R. Wpg Rif, commanded by Lt-Col J.M. Meldram, reported that its three forward companies landed "all within seven minutes of one another," a remarkable achievement considering sea conditions* (W.D., R. Wpg Rif, 6 Jun 44). On the extreme right flank, "C" Company 1 C. Scot R., under the command of R. Wpg Rif, disembarked at the junction of MIKE and LOVE Sectors "in about three feet of water just short of the beach obstacles" (W.D., 1 C. Scot R., June 1944: Appx 2, "C" Coy Diary). Opposition was negligible, and these troops soon discovered that their first objective - a pill-box - had already been demolished by naval gunfire. This was, incidentally, one of the few acknowledgments of the effectiveness of supporting fire. The remainder of R. Wpg Rif Assault Group encountered much more serious opposition to the west of the Courseulles breakwater (MIKE Green). "B" Company's L.C.A. were engaged while about 700 yards from shore and disembarkation had to be done while under fire; in consequence heavy casualties were sustained by this sub-unit (W.D., R. Wpg Rif, June 1944: Appx 6, "B" Coy Diary). The strongpoint in this area consisted of three casemates and twelve machine-gun emplacements which seemed not to have suffered from the immense volume of fire which had been brought to bear on the beaches. This circumstance left to the infantry and tanks the grim prospect of clearing it by direct assault, as proved to be necessary with all four major strongpoints. In the course of the battle the company was reduced to its commander and 26 other ranks (W.D., R. Wpg Rif, 6 Jun 44).

*Weather conditions off the beaches immediately before H Hour were described as:

Wind - Westnorthwest, force 4.

Sea - Moderate, waves 3-4 feet.

Sky - fair to cloudy with clouds increasing.

(Ramsay, op cit, p. 5116)

On the Eastern Task Force front, the wind is reported somewhat stronger (Report by Naval Commanders, Eastern Task Force and Force "J").