

## CHAPTER 2

### AIR PREPARATIONS FOR THE ASSAULT ON NORTH-WEST EUROPE

IN its final form OVERLORD provided for an amphibious assault across defended beaches between Ouistreham and Varreville in Normandy with the initial objective of capturing Caen, Bayeux, Isigny and Carentan together with their airfields, the major port of Cherbourg and other ports in Brittany. The 5 seaborne and 3 airborne divisions making this assault were then to be increased speedily to 23 infantry, 10 armoured and 4 airborne divisions within the beach-head, when, after a show of force on the eastern flank near Caen to preoccupy the main German defences, American troops were to break out to the west, overrun Brittany and make a broad sweep eastward so that the whole front would pivot on Caen and the Allies could thus push forward to the Seine and capture Paris within three months. This plan assumed the ability of Allied navies to put troops ashore over heavily-defended open beaches, made more formidable for shallow-draught vessels by natural and artificial obstructions, and to maintain by sea a greater supply of arms, ammunition, food and troops than the enemy, using his internal lines of communication, could concentrate against the invaders.

An even greater responsibility lay with the Allied air forces not only to ensure positive success to both army and naval measures for the establishment and supply of the bridgehead, but also to frustrate or depress all German attempts either to supply or employ in action their own ground, air, or naval forces. Previous campaigns had made axiomatic the army contention that the air battle must be won before the ground battle, while the disappointing amphibious assault at Anzio early in 1944 had given rise to calls for air support on an ever-mounting scale in support of the OVERLORD project.

There were available in England more than 10,000 aircraft for participation in OVERLORD, yet even this force was insufficient to meet in full all the varied and often conflicting demands for air action. The R.A.A.F. or individual members made only a minute contribution of effort to the administrative and planning achievements which ensured the build-up, assembly, accommodation and provisioning of such a vast force, or even to the strategical and tactical concepts according to which it was employed.<sup>1</sup> A very brief summary of these plans is essential, however, to explain the part undertaken in operations by R.A.A.F. squadrons and aircrew scattered throughout the general line of battle of the R.A.F. The primary responsibility for air operations in support of the invasion lay

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<sup>1</sup> One Australian, Air Cmdre E. J. Kingston-McCloughry, was the chairman of the AEAFF Bombing Committee which prepared the main plans for air tasks in both the preparatory and assault phases of OVERLORD. McCloughry, like his brother AVM W. A. McCloughry (killed in an air accident in the Western Desert in Jan 1943), had joined the RAF immediately after distinguished service with the Australian Flying Corps in the 1914-18 war.

with Leigh-Mallory, who, as mentioned, coordinated his requirements for forces not under his direct control through the Deputy Supreme Commander, Air Chief Marshal Tedder. Thus in formulating early in April 1944 the "Overall Air Plan" he could dispose the Allied Expeditionary Air Force plus an allotted effort from R.A.F. Bomber Command, American Eighth Air Force, R.A.F. Coastal Command and Air Defence of Great Britain. The principal air tasks were then defined as:

- (1) To attain and maintain an air situation whereby the *Luftwaffe* would be rendered incapable of effective interference;
- (2) to provide continuous reconnaissance of enemy dispositions and movements;
- (3) to disrupt enemy channels of communications and supply;
- (4) to give active support in the landing and subsequent advance inland;
- (5) to deliver offensive strikes against enemy naval forces;
- (6) to provide air lift for airborne forces.

To achieve these objects the plan further set out specific preparatory and maximum close-support duties.<sup>2</sup> The outline of prerequisites detailed:

- (a) Attacks against the *Luftwaffe* both in its production centres and on its bases within operational distance of the assault area;
- (b) dislocation of supply by attacks on rail centres, locomotives and on road and railway bridges;
- (c) neutralisation of coastal defences;
- (d) disruption of enemy W-T and radar facilities;
- (e) attacks on enemy flying-bomb and rocket sites;
- (f) attacks on military depots, dumps and assembly and camp areas;
- (g) harassing of coastwise shipping and sea-mining;
- (h) very complete and continuous photographic and tactical reconnaissance of enemy coast and rear areas;
- (i) incidental tasks including the supply of arms, munitions, radio equipment and leaders for para-military organisations in France and other German-controlled countries.

Other plans were prepared within the scope of, or complementary to, the Overall Air Plan. Thus the "Joint Fire Plan" gave the part to be played by each Service in the destruction or neutralisation of enemy coast defences. This plan raised spirited opposition from R.A.F. Bomber Command which contended that the use of heavy bombers by night against coastal batteries would be "extremely unreliable and almost wholly futile". Nevertheless Bomber Command was allotted a considerable share in the program, being directed chiefly against batteries still under construction. Again a "Joint Air Plan and Executive Order" (JAPEO) issued by the Combined Control Centre<sup>3</sup> gave detailed instructions for continuous defence and offence to each of the 171 fighter and fighter-bomber squadrons available for OVERLORD. It also clarified the method of operational control of fighters by the static organisation in England, by special fighter direction tenders sailing with the assault fleet, and by ground control stations to be set up in the beach-head.

<sup>2</sup> The air tasks allotted for the invasion itself are detailed later.

<sup>3</sup> The Combined Control Centre at Uxbridge was staffed jointly by No. 11 Group RAF and IX US Fighter Command.

Plans for airborne operations were similarly prepared by No. 38 Group R.A.F. and here Air Commodore Bladin<sup>4</sup> was intimately associated with the concept and details of these arrangements. To Coastal Command the directive "Cork" gave specific orders for patrols, both independently and in cooperation with naval forces, to seal the western end of the English Channel against any infiltration of U-boats to the assault area. Furthermore Coastal Command had to prevent similar penetration by minor German surface warships from both westerly and easterly directions and guard against any mass attack by any means on ocean convoys. The unusual threat of heavy bombardment by German automatic missiles, the jet-propelled pilotless aircraft and the stratosphere rocket, gave rise to the CROSSBOW plan to frustrate enemy preparations by meticulous reconnaissance and damaging of the launching sites for these weapons. POINT-BLANK, the strategic bombing concept adopted at Casablanca, continued with whatever forces could be spared, but on 14th April 1944 control of the Strategic Air Forces was vested in the Supreme Commander and the preparatory operations vital to the success of the invasion were given absolute precedence. An "A.E.A.F. Signal Plan" and a "Joint Cover Plan" made exhaustive arrangements not only for efficient communications between all sections of this vast force, which was expected to attain a peak of 12,000 sorties daily during the assault, but also provided for simulated threats of invasion in areas remote from the actual beaches chosen, so that the Germans could concentrate their forces with certainty neither before nor, for a considerable period, after the initial landings, in case these were in fact only a feint for one of the other apparent threats.

Finally, in addition to all these operational plans there was the vast administrative task of making southern England the launching place for the invasion. Units not directly involved were moved to make room for participating squadrons, many of which were necessarily reorganised on a fully mobile basis in expectation of a further move to France. In the six months before June 1944 no fewer than 110 R.A.F. squadrons were re-equipped with the most up-to-date available types of aircraft. Comprehensive advance arrangements had to be made with inter-Service organisations such as "Build Up Control" (BUCO) and "Movement Control" (MOVCO) to ensure that the correct numbers of men and proportion of materials arrived in the beach-head in the sequence required for uninterrupted air development and operations, so that an estimated force of 20 squadrons could be based in France within the first three weeks of the land campaign. It was a far cry from the *ad hoc* planning and loading muddle which had characterised the first Anglo-French expedition to Norway in April 1940, when many vitally required stores appeared by perverse chance to be buried below inessentials or could not be identified quickly. Experience during the four years of desperate struggles in

<sup>4</sup> AVM F. M. Bladin, CB, CBE. Dir Operations and Intelligence 1940-41; AOC Southern Area 1941-42, North-Western Area 1942-43; SASO 38 Gp RAF 1943-44; Dep Chief of Air Staff RAAF 1945; Chief of Staff BCOF, Japan, 1946-47. Regular air force offr; of Kew, Vic; b. Korumburra, Vic, 26 Aug 1898.

all theatres of war had taught the lesson that administrative and supply efficiency was equal in importance to personnel or equipment problems.

At the beginning of April 1944, when the preliminary air offensive began, R.A.F. Home Commands had available for operations 292 squadrons of all types. By 6th June this force had risen to 306 squadrons and again by 1st January 1945 to 324 squadrons and a half. Within this large force, itself only part of the total air threat to Germany, there were on the same dates 10, 10 and 12 R.A.A.F. squadrons respectively. These figures, while they demonstrate the relatively small nature of Australian contribution to the whole task, do not bear any direct or precise arithmetical comparison. Apart from the training, administrative, supply and ancillary services supplied almost entirely by the R.A.F., none of the R.A.A.F. squadrons, except No. 10, was even in a day-to-day capacity entirely staffed by Australians. The decision made in March 1943 not to send further ground staff to England, inevitably meant that through repatriation, casualties and sickness, promotion and remuster to aircrew, the percentage of R.A.A.F. technical and other ground crews on each squadron waned, especially as the squadrons themselves had to be increased in complement for the special period of high operational activity envisaged for the final defeat of Germany. Even in respect to aircrews only No. 10 and the single-engined squadrons could be maintained as truly Australian squadrons.<sup>5</sup> The accompanying table shows the aircrew position on three dates, the last representing the highest level of R.A.A.F. aircrew representation on operations.

Squadron	1st April 1944			1st June 1944			1st January 1945		
	RAAF	Others	%	RAAF	Others	%	RAAF	Others	%
10 (C)	177	—	100	190	14	93.1	210	—	100
451 (F)	—	—	—	—	—	—	23	—	100
453 (F)	23	—	100	23	—	100	26	—	100
455 (C)	31	39	44.3	43	28	60.5	60	9	87
456 (NF)	34	14	70.8	35	16	68.6	42	7	85.7
460 (B)	129	98	56.8	176	189	48.2	245	162	60.2
461 (C)	131	42	75.7	153	57	72.8	149	55	73
462 (B)	—	—	—	—	—	—	135	150	47.3
463 (B)	96	70	57.8	107	84	56	180	109	62.3
464 (Second TAF)	14	39	26.4	23	44	34.3	34	27	55.7
466 (B)	131	74	63.9	153	76	66.8	147	133	52.5
467 (B)	85	88	49.1	83	78	51.5	202	92	68.7
	851	464	64.7	986	586	62.7	1,453	744	66.1

This shows, however, only one facet of the whole situation for, at the same relevant times, in addition to those serving in Training Command,

<sup>5</sup> For discussion of the difficulties of securing fully Australian crews see Chapter 20 in Volume III of this series.

training units within operational commands, administrative staff and other "rest" employment, R.A.A.F. men were disposed as shown in the next table in R.A.F. squadrons actively engaged on operations.

	1st April 1944		6th June 1944		1st January 1945	
	Pilots	Other Aircrew	Pilots	Other Aircrew	Pilots	Other Aircrew
Bomber Command	183	467	210	637	362	1,131
Coastal Command	80	422	90	492	78	529
Second T.A.F.	84	23	95	30	148	96
Fighter Command	94	16	107	16	91	21
No. 38 Group	34	83	46	93	54	111
	475	1,011	548	1,268	733	1,888

No satisfactory estimate is possible of the number of squadrons these scattered Australians might have manned had they been gathered together, for as will be quickly seen there was a preponderance of pilots and an acute shortage of other types of aircrew. In fact on 1st January 1945 the 2,621 R.A.A.F. men indicated above were serving on 214 R.A.F. squadrons and in no less than 111 instances, fewer than 10 Australians were together on a unit. Thus R.A.A.F. men were present on all except 88 squadrons in the entire R.A.F. line of battle, and these absences refer chiefly to Polish, Czech, French and Fleet Air Arm units from which they were naturally excluded, and to R.C.A.F. squadrons which by this time had attained a very distinct national flavour. One result of this dispersion is inevitably an abundance of incidents concerning R.A.A.F. aircrew spread over every aspect of air warfare, without a convenient yardstick by which such incidents can be assessed or grouped into a truly representative Australian effort. The same situation obtains in the wider field, for the total strength of the R.A.A.F. in England including men on operational squadrons averaged 13,000 men throughout the last year of the war, but they were in so many occupations and locations that it is impossible to distinguish their effort from that of the R.A.F. The reader is therefore warned against the unconscious bias of this record which deals with a period when air operations reached a new intensity and range, and in which the exploits of R.A.A.F. squadrons and individuals are employed to explain events. The incidents used to illustrate and analyse each task of air power must necessarily be selected on an arbitrary basis and are merely representative of the greater whole. An entirely different selection of incidents would show as great a record of efficient airmanship and individual stories of courage, endurance and

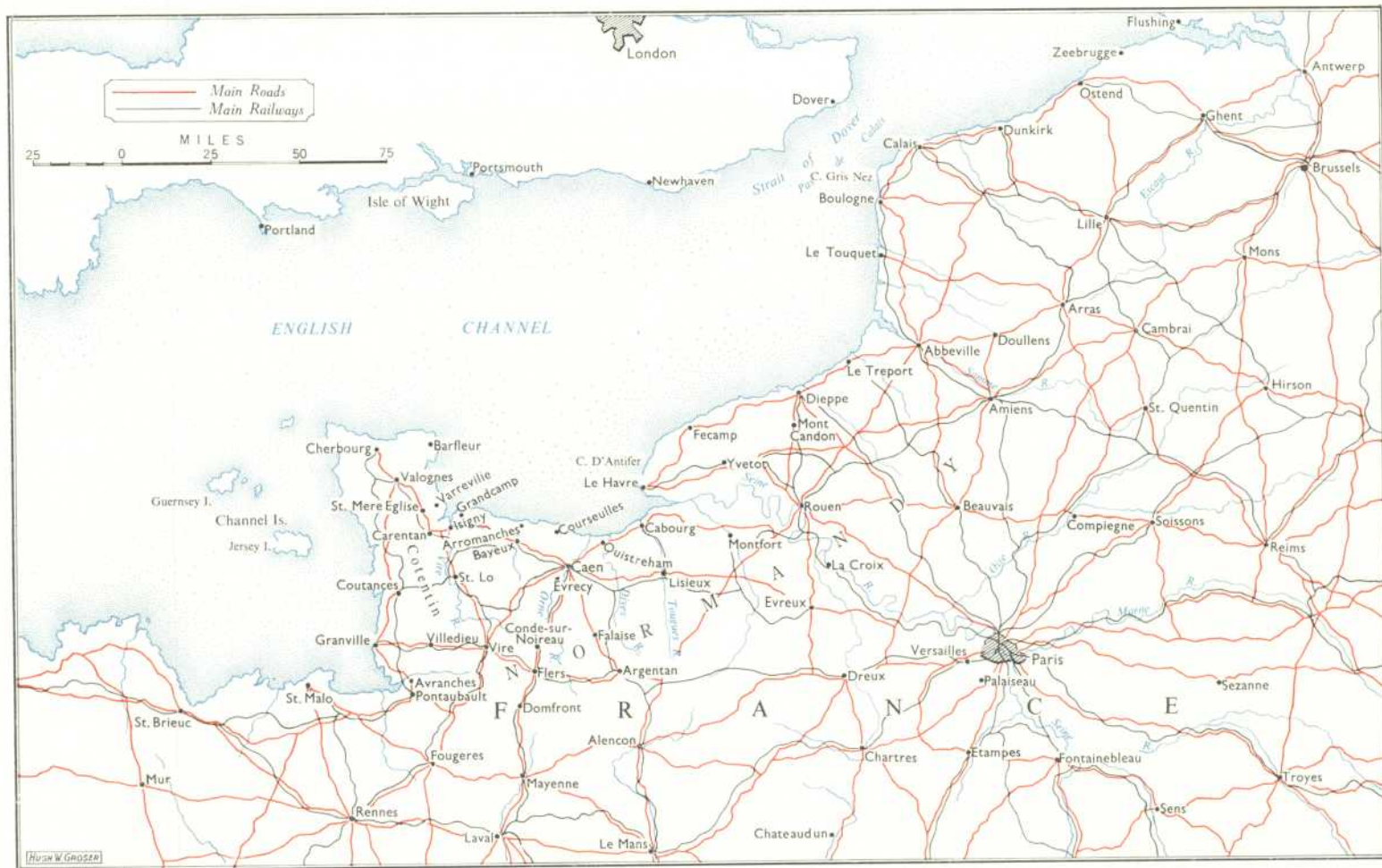
selfless duty of an equal order. Again the necessity to condense and to show graphically many of the repetitive large-scale actions must not hide the skill, cooperation and daring of the crews engaged.

The obvious first task of the Overall Air Plan was to secure such a measure of air superiority over the enemy that air power could be employed in any required direction regardless of counter-measures. This was not assured simply on the numerical estimation that against the 10,000 Allied aircraft the Germans could muster in France<sup>6</sup> early in 1944 fewer than 150 single-engined fighters. The astonishing production of German fighters under the direction of Albert Speer, the German Minister for War Production, the availability of bases in France and the obvious possibility of quick transfer of the large defensive fighter force then concentrated within Germany made the theoretical potential of the *Luftwaffe* in combating the invasion a serious threat. During April and May therefore a sufficiently heavy level of attack was aimed not only at enemy aircraft industries but also at operational bases to nullify this threat. The first part of this task consisted of a continuation of the heavy-bomber night and day attacks, but the principal French airframe and engine factories were added to the list of targets previously bombed. This program in addition to preventing full recovery of damaged aircraft factories, also forced the enemy to retain in Germany his active squadrons which otherwise might have been deployed in France. In prosecuting the additional offensive against operational bases in France the basic strategy was to force back enemy dispositions until the *Luftwaffe* was working at the same tactical disadvantage as squadrons based in England some 150 miles distant from the proposed invasion beaches. Should this be achieved, then numerical advantage both in offence and defence would give real air superiority.

Friedrichshafen, on the shores of Lake Constance, a very important centre of aircraft, tank-engine, gearbox and radar production, was attacked on 27th-28th April by 322 aircraft drawn mainly from No. 1 Group. In addition to 20 Lancasters of No. 460 Squadron, 17 other Australians captained aircraft engaged on this raid which took place in good visibility from 20,000 feet. The initial marking was accurate and a "Master of Ceremonies" closely controlled the whole operation with the result that within 15 minutes the whole area was afire and rent by heavy explosions. Three Dornier factories, the Maybach tank-engine plant, the Zahnrad-fabrik works and the Zeppelin hangar were heavily damaged, together with

<sup>6</sup> The actual disposition of the German Air Force in Western Europe on 5 June 1944 was:

	Long range bombers	Ground attack	S.E. fighters	T.E. fighters	L.R. recon- naissance	Tactical recon- naissance	Coastal	Total
South and south-west France (south of 46°N)	180	—	15	20	15	—	5	235
France (west of Seine to 46°N)	90	75	50	35	35	25	—	310
France (east of Seine) and Belgium	30	—	105	90	10	—	—	235
Holland	25	—	—	—	10	—	—	35
	325	75	170	145	70	25	5	815



Area of OVERLORD and ancillary operations

more than half of the residential and business areas. The experiences of crews on this eight hours and a half flight varied widely, many captains reporting a quiet trip while later arrivals had to face fighters over the target. Three Lancasters of No. 460 were among the 21 shot down, and Pilot Officer Cullen<sup>7</sup> of the same squadron, off course on his outward journey was heavily engaged by the Strasbourg gun defences but continued on to Friedrichshafen and brought his crippled aircraft safely home. Not so fortunate was Pilot Officer Peter<sup>8</sup> of No. 35 whose pathfinder Halifax was attacked and damaged by a night fighter both before and after reaching the target, the second attack setting the aircraft on fire abaft the mid-upper turret. Both the gunners suffered skin burns and their parachutes were destroyed as Peter, blinded by smoke, struggled to pull the Halifax out of a madly spinning dive, but two crew members successfully baled out before the aircraft at last came under control at 3,000 feet. The wireless operator now reported that his parachute had fallen through the escape hatch, so with three helpless men aboard the sluggish and hardly controllable Halifax, Peter turned back and made a successful descent on the surface of Lake Constance. The injured gunners were placed in a dinghy and the whole party paddled southwards towards the Swiss shore, watching at the same time the mounting fires and explosions in Friedrichshafen during the later stages of the raid.

A raid against Schweinfurt the previous night had not achieved the same success, although all five of the main ball-bearing factories were hit in varying intensity. Schweinfurt was well defended and had already occasioned two epic daylight battles between the *Luftwaffe* and the U.S.A.A.F.; and on this night intense fighter activity, incorrectly forecast winds, and a dense artificial smoke-screen led to difficulty in marking and lack of coordination in bombing. This raid was mounted by No. 5 Group and was only in moderate strength, 226 Lancasters dropping 674 tons of incendiaries and high-explosive bombs. In contrast to the majority of aircraft in the whole force which lost 21 Lancasters, the 27 crews dispatched by Nos. 463 and 467 met no difficulties. The report of Wing Commander R. Kingsford-Smith, cautiously optimistic, is typical of the R.A.A.F. assessment of the raid at that time: "the bombing appeared to be quite accurate. I cannot assess the markers as no ground detail could be seen. Flak and searchlights over the target offered little opposition. . . ."

Australians played a relatively large part in two attacks against aircraft factories, repair facilities, an airfield and an explosives factory near Toulouse during this preparatory phase. On 5th-6th April 147 Lancasters and one Mosquito of No. 5 Group were led and controlled by Wing Commander J. R. Balmer of No. 467, while from the same squadron Squadron Leader A. W. Doubleday and Pilot Officer Mackay<sup>9</sup> were

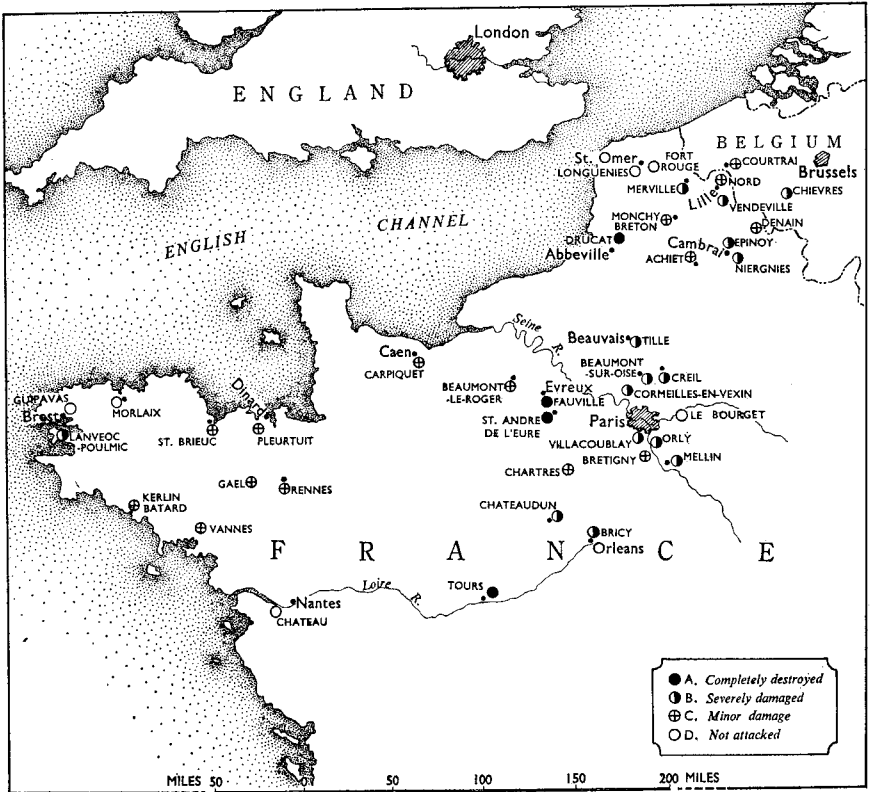
<sup>7</sup> F.O. D. J. Cullen, DFC, 421179; 460 Sqn. Golf professional; of Bondi, NSW; b. Bunbury, WA, 15 Nov 1914.

<sup>8</sup> F-Lt R. G. Peter, DFC, 415272. 51 and 35 Sqn RAF. Schoolteacher; of Victoria Park, WA; b. Geraldton, WA, 13 Jun 1917.

<sup>9</sup> F-Lt W. Mackay, DFC, 429771. 467 Sqn. 232 and 243 Sqn RAF. Machinist; of Adamstown, NSW; b. Merewether, NSW, 4 Aug 1916.



detailed as specialist wind-finders, as with so small a force on a long journey it was essential to advise other navigators of any meteorological change so that all aircraft could arrive simultaneously and deliver a concentrated attack. The two R.A.A.F. squadrons at Waddington sent 21 Lancasters and there were nearly a dozen other Australian pilots in this force, which set out in poor weather but met no opposition over France. Just after midnight Balmer dropped flares from 8,000 feet, and the second one burst immediately over the chosen aiming point, a large



Attacks on enemy airfields

hangar on Montaudran aerodrome. The main attack was made from between 9,000 and 11,000 feet despite moderate gun defences, and this resulted in very accurate bombing, as 16 of the R.A.A.F. crews brought back photographs clearly showing the aiming point in relation to their bombs, many of which had been fitted with delayed-action fuses to prevent speedy repairs to the airfield itself. The enthusiastic claims of the men engaged on this raid were borne out by daylight photographs which showed that main buildings in the three aircraft factories were heavily

damaged and three hangars and some aircraft had also been destroyed. All the Australians returned safely, although one experienced engine trouble and another landed at Waddington only to drop on the airfield a delayed-action bomb, which had failed to release over Toulouse. Fortunately a hurried calculation permitted this bomb to be defused before it exploded, but it provided yet another unusual hazard to the experience of bomber crews. The second attack against Toulouse repair and assembly factories was made on 1st-2nd May by an even smaller force of 72 Lancasters of which 20 came from Waddington. Satisfactory bombing results were obtained although artificial smoke defences were in operation, and the whole force returned without loss.

The campaign against German airfields was initially made to destroy maintenance, repair and servicing facilities rather than to block the aerodromes by craters which could be speedily filled in. Every airfield was constantly photographed after each attack to determine whether damage to major installations was sufficient to force an enemy withdrawal. It was then either removed from the target list or subjected to further attack. Both heavy and medium bombers shared in these attacks but the overwhelming majority of them were made by U.S.A.A.F. aircraft between 11th May and 5th June 1944:

	Attacks	Sorties	Tons of Bombs
Ninth U.S.A.A.F.	56	2,550	3,197
Second T.A.F.	12	312	487
R.A.F. Bomber Command	6	119	395
Eighth U.S.A.A.F.	17	934	2,638
	91	3,915	6,717

The only attack of this type made by R.A.A.F. squadrons was on 8th-9th May when Nos. 463 and 467 provided more than half a force of 40 Lancasters which attacked Lanveoc-Poulmic aerodrome near Brest. The bombing was done from heights as low as 6,000 feet and, although several aircraft were damaged by gunfire, only the aircraft piloted by Flight Lieutenant Whitford<sup>10</sup> of No. 83 Squadron was shot down. The result of this attack, as confirmed by later reconnaissance photographs, revealed five hangars and nine barrack buildings destroyed and five oil storage sheds damaged, and this target was put at the bottom of the list of those still requiring attention. In the 12 lighter attacks against aerodromes made by Second T.A.F. no R.A.A.F. squadron participated but individuals flew in the Mitchell and Boston bombers on eight occasions, those Australians serving with No. 98 Squadron R.A.F. joining in five attacks of this type.

<sup>10</sup> F-Lt A. P. Whitford, DFC, 406587, 467 Sqn, 83 Sqn RAF. Clerk; of Riverdale, WA; b. Perth, WA, 23 Feb 1921. Killed in action 9 May 1944.

Supplementary to this task of depressing German air potential was that of safeguarding Allied ports, communications and preparatory dispositions from enemy attack. Leigh-Mallory estimated the strength of available German long-range bombers as 450, capable of individual raids of up to 150 aircraft and a sustained effort of 25 bombers every night. (As mentioned above, the actual strength was 325.) In the period from 1st April to 5th June 1944, there were, however, only three short periods of *Luftwaffe* activity, totalling about 600 sorties. At Ford, No. 456, whose pilots had relished the opportunities afforded by the "little blitz" during March, found the medium-sized raids interspersed with night fighter-bomber attacks more difficult to oppose. The first three weeks of April were indeed uneventful, although a constant eager state of readiness was maintained at Ford. The Australians indeed were not engaged when the first large German raid was mounted on 19th April by 115 bombers striking at London from the east, but on the next night, when a few fighter-bombers ventured over the south coast just before midnight, "A" Flight of No. 456 were ordered aloft in terrible weather. These "red herring" raids by FW-190's and Me-410's severely tested ground control organisation and airmanship, for the German aircraft were quite as manoeuvrable and showed a faster rate of climb than the Mosquitos. On this occasion, however, Flight Lieutenant Brooks<sup>1</sup> climbed up through 23,000 feet of cloud, obtained a radar contact and then sighted visually an Me-410 flying very slowly in a clear patch. Brooks made an immediate surprise attack and the enemy fell out of control and crashed near Horsham in Sussex. The other Mosquitos had no opportunity to emulate this success and chased the "will o' the wisp" Germans through cloud until the enemy finally withdrew.

During the last week of April, the *Luftwaffe* mounted a series of raids, aimed mainly at Portsmouth and at shipping along the south coast of England, which brought the Australians well to the fore. Thus on 23rd April, when 90 enemy aircraft roamed over Dorset, Wiltshire and Hampshire, Wing Commander Hampshire,<sup>2</sup> commander of the squadron, shot down a Ju-88 near Swanage and was unfortunate that his firing mechanism failed as he closed in on a second bomber. Two nights later a two-phase attack was staged, 60 aircraft timidly approaching the coast between Poole and Beachy Head just before midnight, and a weaker force later aiming at Portsmouth. During the first phase most bombs fell in the sea and the deepest penetration inland was only 15 miles, but Flight Lieutenant Lewis<sup>3</sup> destroyed a Ju-88. During the second attack Flying Officer Roediger<sup>4</sup> and Flying Officer G. R. Houston each shot down a Ju-88,

<sup>1</sup> Sqn Ldr C. L. Brooks, 47998 RAF, 456 Sqn and test pilot duties Royal Aircraft Establishment, Farnborough. RAF aircraft apprentice; of East Dereham and Fakenham, Norfolk, Eng; b. Holt, Norfolk, 22 Oct 1920.

<sup>2</sup> Gp Capt K. MacD. Hampshire, DSO, DFC, 147. 12 Sqn; comd 6 Sqn 1941-42, 23 Sqn 1942, 22 Sqn 1942-43, 456 Sqn 1943-44. Regular air force off; of Peppermint Grove, WA; b. Port Macquarie, NSW, 10 Sep 1914.

<sup>3</sup> F-Lt W. R. V. Lewis, 407969, 488 Sqn RNZAF, 456 Sqn. Bank clerk; of Cumberland, SA; b. Wayville, SA, 12 Jun 1922.

<sup>4</sup> F-Lt K. A. Roediger, 415227; 456 Sqn. Butcher; of Northam, WA; b. Balaklava, SA, 25 May 1921.

both raiders crashing in flames into the sea. The month ended with a night of success and disaster when the Australians were sent to investigate suspected enemy minelaying in the English Channel. One Mosquito failed to return but the indefatigable Hampshire engaged and destroyed a Do-217 at 1,200 feet. The Mark X radar was proving adequate to permit interceptions on high and low-flying raids alike, and as the crews became more practised they could hold on to even the most skilfully evasive targets.

The first fortnight in May was a period of bright moonlight and the *Luftwaffe* was quiescent, but on 14th-15th May nearly 100 bombers made scattered attacks at Portsmouth, Southampton and Bristol. This proved a peak night for the defences, which claimed 20 enemy aircraft destroyed or damaged. Flying Officer McEvoy<sup>5</sup> scored the only R.A.A.F. success when he shot down a Ju-188 over Salisbury Plain, after following it in over the coast. Flying Officer Arnold<sup>6</sup> during a similar raid on the next night destroyed a Ju-88 after a long chase. Several more lighter raids followed, but an attack on 22nd-23rd May, when Hampshire and Pilot Officer Sanderson<sup>7</sup> each claimed a Ju-88, virtually brought to an end the enemy attempts to hinder Allied preparations for invasion. The Australians had played a triumphant part in repulsing the *Luftwaffe*; of 22 German bombers destroyed by Air Defence of Great Britain night fighters during the six weeks before 5th June, eight fell to No. 456.

Meanwhile No. 464 led by Wing Commander R. W. Iredale was stationed at Gravesend and was mainly occupied with intruder activity over German bomber aerodromes. The principal task allotted at this time was to fly to enemy bases suspected of being active, and either to attack the bombers on their return or to bomb and machine-gun the airfield so as to cause dousing of the flare path and generally to impede efficient airfield control. Similarly intruders went to German fighter bases on nights when Bomber Command was active. In all No. 464 flew 93 sorties on 24 nights between 10th April and 27th May, the normal tactics being to cross the English Channel at 5,000 feet and dive through the coastal gun belt to an operational patrol height of 1,500 to 2,000 feet. If the area was quiet the bombs were brought back; these operations produced little excitement, although on 22nd May, while circling Rheine aerodrome, Flying Officer Crofts<sup>8</sup> was given a visual "permission to land" signal by the German controller so that he was able to run in and bomb the runway from a low height, without opposition.

It was not anticipated that *Luftwaffe* activity by day would be very large but the assembly areas for Allied forces in southern England had to be protected constantly against the threat of low-level "tip and run" raids by FW-190 fighter-bombers. Thus, although there were no high-

<sup>5</sup> F-Lt A. S. McEvoy, 411157; 456 Sqn. Warehouse assistant; of Randwick, NSW; b. Sydney, 25 July 1915. Killed in aircraft accident 19 Sep 1945.

<sup>6</sup> F-Lt D. W. Arnold, 418045; 456 Sqn. Clerk; of Hampton, Vic; b. Caulfield, Vic, 28 Jul 1921.

<sup>7</sup> F-O I. W. Sanderson, DFC, 413670; 456 Sqn. Farmer; of Condobolin, NSW; b. Trundle, NSW, 3 Jun 1920.

<sup>8</sup> F-Lt B. I. Crofts, 404745; 464 Sqn. Bank clerk; of Auchenflower, Qld; b. Nambour, Qld, 28 Feb 1921.

lights, the care and thoroughness with which defensive patrolling was maintained were very important to the uninterrupted marshalling of the assault forces, as each convoy was given continuous cover and handed on from sector to sector.

Intruder methods were also employed in daylight to preoccupy the enemy and to act as an offensive outer screen. One of the outstanding pilots engaged on these duties was Squadron Leader Scherf,<sup>9</sup> who had already scored several successes over French and German aerodromes during January and February 1944 while serving with No. 418 Squadron R.C.A.F. Scherf was appointed as an intruder controller at A.D.G.B. headquarters in March 1944, but his impatient spirit was far from satisfied with a staff position. While on two days' leave he revisited his squadron; on 5th April he flew to Lyon and St Yan airfields in France, where he claimed two enemy aircraft destroyed in the air and a further three on the ground. Scherf flew further "holiday" trips on 2nd and 16th May, visiting several *Luftwaffe* bases in north Germany and the Baltic area, and claimed six more enemy aircraft shot down and five others destroyed on the ground or at their moorings.

This lone swashbuckling was a brilliant contribution to the growing pressure by Mustang and Tempest squadrons in opportunist raids of the "Ranger" type. Many Australians took part and Flight Sergeant Kelly<sup>1</sup> of No. 65 Squadron had successful encounters both over France and Denmark. The Spitfire squadrons of No. 10 Group also relieved the monotony of escort patrols by flying provocative "Rodeo" sorties over French airfields, but although they were invariably in small formations the *Luftwaffe* was rarely tempted to dispute their presence.

This mixture of staunch defence and virile pugnacity produced an effect far more valuable than the sum of every individual encounter, for it led to an almost complete failure of German reconnaissance in the months preceding the invasion. No. 453, and 36 R.A.A.F. pilots on eight other squadrons, maintained special high-level and low-level patrols some 50 miles south of the Isle of Wight in the expectation that German reconnaissance aircraft, so successful during the campaigns of 1940-41, would make a special effort to discover Allied strength and dispositions. These flights, however, were almost as uneventful as the shipping escorts, for although there was a slight increase in activity during May the Spitfires seldom had more than a glimpse of enemy aircraft. The *Luftwaffe* flew only 125 reconnaissance sorties in the Channel area and no attempt was made to penetrate overland, the German pilots obtaining only occasional distant oblique photographs of their objectives. This failure was a vital factor in the inability of the German High Command to analyse accurately either the degree of preparedness or the direction of the assault and it contributed to a widespread dispersal of all German defences throughout the coastline of Europe.

<sup>9</sup> Sqn Ldr C. C. Scherf, DSO, DFC, 413671; 418 Sqn RCAF. Grazier; of Emmaville, NSW; b. Emmaville, 17 May 1917. Killed in motor car accident 13 Jul 1949.

<sup>1</sup> F-O W. P. Kelly, DFM, 420208; 65 Sqn RAF. Laminator; of Annandale, NSW; b. Paddington, NSW, 6 Jan 1923.

The fruits of air superiority also gave the Allies a freedom of tactical reconnaissance which contrasts sharply with the sorry enemy failure. Thirty-one R.A.A.F. pilots were spread among four squadrons of Second T.A.F. and four squadrons of No. 106 Group, Coastal Command, available for photographic reconnaissance. These R.A.F. units, in conjunction with similar U.S.A.A.F. squadrons, frequently flew, in one day, more sorties than the entire enemy effort for the six weeks before 5th June. One of the first requirements of General Eisenhower was a complete photographic cover of the invasion beaches and their immediate hinterland, but to hide any special interest in one area it was necessary to extend this cover from Holland to Brittany. When these photographs had been secured and relief models prepared, it was still necessary to keep a systematic watch to discover any change in the nature or extent of enemy defences. This general requirement entailed the following specific photographs:

- (a) Obliques at wave-top height taken from three to four miles off shore to provide assault-craft coxswains with a preview of their allotted landing spot.
- (b) Similar low obliques at 1,500 yards distance to provide platoon commanders with recognition landing points.
- (c) Strip photographs pointing south so that infantry commanders could orientate themselves after leaving the beaches.
- (d) Low-tide and high-tide cover of all beaches to show the extent and nature of underwater obstacles.
- (e) The banks of all rivers and streams so that engineers could plan emergency bridges in advance.
- (f) Suitable landing and supply areas for airborne forces.
- (g) Possible sites for airfields, radar and W-T stations.
- (h) Flooding areas and other areas of natural defences.
- (i) Enemy dumps, headquarters, communications and concentrations.

Over a wider field a complete picture of German dispositions was built up, permitting accurate estimates of possible lines of enemy reinforcement. Although these tasks were regarded as routine assignments by the pilots, they demanded a very high degree of airmanship, patience, accuracy and courage in unarmed aircraft. Flight Lieutenant Sampson,<sup>2</sup> one of the most experienced pilots of No. 16 Squadron R.A.F., flew many sorties over the beaches chosen for American forces, and with a specially adapted camera obtained photographs so clear and detailed that even the barbs of the wire entanglements could be distinguished. Flying Officer K. G. Campbell of No. 541 quickly adapted himself to conditions very different from his previous experience on long-range bomb damage surveys, and flew several times during May in a formation of six aircraft which provided wide cover of the inland area from Calais to Cherbourg.

This reconnaissance activity, although directed primarily to army and naval requirements for the assault itself, provided also a basis for air plans during the preparatory period. Leigh-Mallory considered that next to winning air superiority "the dislocation of the enemy's lines of communication was the most important task set the Air Force". In view of

<sup>2</sup> Sqn Ldr D. W. Sampson, DFC, 407744. 16, 285 and 650 Sqns RAF; comd 288 Sqn RAF 1945. Optometrist; of Rose Park, SA; b. Solomontown, SA, 8 Jul 1915.

experience in Italy, and with the same consideration in mind as for *Luftwaffe* bases in France, it was intended "to force the enemy off the railways, initially within an area of 150 miles from the battle front". A proposal to accomplish this by mass attacks immediately before the amphibious assault was considered but rejected, as the enemy had demonstrated that railway tracks, like airfield runways, could be quickly repaired, and such a plan depended unduly on the vagaries of weather. Accordingly a longer term plan was adopted to attack a large number of railway repair and maintenance centres and thus progressively to reduce "the movement potential and the motive power of the railway system". In its final form the plan allocated 39 targets to R.A.F. Bomber Command, 23 to the American Eighth Air Force and 18 to the light bombers of A.E.A.F. A category system similar to that for airfield attacks was adopted, so that after each raid it could be assessed how many "live" targets remained.

There was considerable opposition to the plan, partly from political sources which deplored the possible loss of French lives and disruption of French economy, partly from military sources which considered that quick Allied advances towards Germany would equally be thwarted, but principally from within the air forces themselves. Harris fought tenaciously against any diversion of Bomber Command from strategic attack against German industry, denied emphatically the possibility of daylight operations or the ability to hit tactical targets accurately by night, and pointed out the dangers of allowing the enemy to transfer air units to France. The American Eighth Air Force had also prepared a plan to defeat Germany by systematic attack on her oil resources, and wished to prosecute this, while at the same time causing large air battles which would aid in the attrition of the *Luftwaffe* fighter resources. Late in March 1944, however, Eisenhower ruled that the rail interdiction campaign must proceed in the absence of a better plan to weaken the enemy materially before June. Once this decision was made, the task of evolving new techniques to attack these targets was not only tackled energetically by Bomber Command but solved in a most successful manner; the result was that, by 5th June, of the 80 prime targets, 51 were assessed as so heavily damaged that they warranted no further attack until vital repairs had been effected, 25 were severely damaged but had some installations intact, while 4 had received only superficial damage.<sup>3</sup>

Transport experts and operational research sections advised that for optimum damage to rail centres, a maximum concentration of 500-lb bombs should be dropped around the main aiming point, sufficient to achieve a stated overall density of strikes. This involved a reduction of the normal Bomber Command force to approximately 100 aircraft, and radically changed the bomb-load, which against German targets had

<sup>3</sup> The total result was achieved by the following forces:

	Category A	Category B	Category C
AEAF	14	2	2
RAF Bomber Command	22	15	2
Eighth USAAF	15	8	—

tended to consist of increasingly larger individual bombs. The vital difficulty of target marking was overcome partly because most of the targets lay within range of "Oboe", and partly by the low-level visual marking method evolved by No. 5 Group, in conjunction with the master of ceremonies technique, which, although it sometimes increased the danger to crews orbiting the target, reduced to a minimum wild bombing and thus prevented unnecessary casualties among French civilians.

The first Bomber Command attack was made on 6th-7th March 1944 against the marshalling yard of Trappes, south-west of Paris, but in the campaign proper, from 1st April to 5th June, 53 raids were made, mostly by Nos. 4 and 5 Groups, although on occasions other Bomber Command groups were active. R.A.A.F. squadrons joined in 25 of these attacks, the heaviest effort naturally being that of No. 466 in No. 4 Group and Nos. 463 and 467 in No. 5 Group.

## THE RAIL INTERDICTION CAMPAIGN

Target		Total Force		RAAF Attacked		Bomb Tonnage	Total Missing	RAAF Missing
		Dis- patched	Attacked					
April 9-10	Villeneuve St George marshalling yards	225	210	466 460	15 2	994	—	—
April 10-11	Tours marshalling yards	180	173	463 467	17 18	947	1	—
April 10-11	Tergnier marshalling yards	162	154	466	15	692	10	2
April 10-11	Aulnoye marshalling yards	140	130	460	13	791	7	1
April 11-12	Aachen Main station	350	339	460 463 467	5 15 17	1,938	9	—
April 18-19	Paris-Juvisy marshalling yards	209	204	463 467	17 20	1,106	1	—
April 18-19	Rouen marshalling yards	289	282	460	3	1,538	—	—
April 18-19	Tergnier marshalling yards	167	161	466	15	720	6	1
April 20-21	Paris-La Chappelle marshalling yards	269	259	463 467	19 19	1,265	6	1



THE RAIL INTERDICTION CAMPAIGN—*continued*

Target	Total Force		RAAF Sqn A Attacked		Bomb Tonnage	Total Missing	RAAF Missing
	Dis- patched	Attacked					
April 21-22 Ottignies marshalling yards	196	191	466	15	916	1	—
April 26-27 Villeneuve St George marshalling yards	217	202	466	16	852	1	—
April 27-28 Aulnoye marshalling yards	223	212	466	17	930	—	—
April 30- May 1 Paris- Acheres marshalling yards	128	122	466	14	530	—	—
May 1-2 Malines marshalling yards	132	120	466	12	535	2	—
May 6-7 Mantes Gassicourt marshalling yards	149	143	466	12	630	3	1
May 10-11 Lille marshalling yards	89	86	463 467	31	419	12	6
May 11-12 Hasselt rail centre	128	43	460	11	231	5	1
May 12-13 Hasselt rail centre	111	106	466	15	437	7	2
May 19-20 Boulogne rail centre	143	134	466	12	562	—	—
May 19-20 Tours rail centre	117	107	463 467	14	477	—	—
May 27-28 Nantes junction	104	54	463 467	14 17	255	—	—
May 31- June 1 Tergnier rail centre	115	101	460	23	539	2	—
May 31- June 1 Saumur junction	86	51	463 467	12 15	240	—	—
June 2-3 Trappes rail centre	128	124	466	15	481	16	2

All the attacks except those on Aachen (Main) and Ottignies resulted in important damage, although at several places more than one attack was required, especially at Villeneuve St George and Aulnoye where the enemy made a surprising recovery from the earlier attacks, and at Hasselt where on the first occasion difficult bombing conditions led the master



bomber to abandon the operation and send aircraft back with their bombs. The largest raid of all against Aachen had to be staged from 20,000 feet because of the accurate German defences, and although it failed in its precise objective much damage and destruction was caused in the centre and south-western suburbs of this German city. Later raids, in which only individual Australians participated, had much greater success against the Rothe Erde and West railway stations at Aachen. The failure at Ottignies in Belgium was also by a relatively large force, and in clear weather crews reported a "fair concentration of bombing" from 13,000 feet, but in fact the railway workshops escaped damage and most of the bombs fell in the open marshalling yards.

The greatest success was in the Paris area on 18th-19th April, when No. 5 Group attacked Juvisy from heights as low as 8,000 feet. The two R.A.A.F. squadrons at Waddington dropped 231 of the total 1,105 tons of bombs, all but one of the 17 crews of No. 463 returning with aiming point photographs. Subsequent reconnaissance showed that engine sheds, carriage and wagon shops and trans-shipment bays were almost totally destroyed, and over large areas of the marshalling yards there was a mass of debris and twisted rails. The concentration of bombs at Juvisy was the best so far attained on a small target, and even seven weeks later, on 5th June, this rail centre was listed as needing no further attack. Casualties were light at the beginning of this campaign because all the westerly targets lay outside the normal enemy gun and fighter defended areas, but a significant increase in enemy counter-measures was noticeable during May when many Australians had to ward off night fighters. The heaviest setback suffered by the R.A.A.F. squadrons was on 10th-11th May when Waddington provided 31 of the total force of 86 Lancasters which attacked Lille, near the Belgian border. Squadron Leader H. B. Locke of No. 97 Squadron controlled this force and the bombing was very concentrated and effective. Gun defences were not unduly heavy but in numerous combats with enemy fighters Nos. 463 and 467 each lost one flight commander and two other crews, or 20 per cent of the crews sent out.

The last raid of the series, against Trappes near Paris on 2nd-3rd June, was again well executed but once more enemy fighters were waiting over the target; with the aid of moonlight and special flares they found many opportunities to attack. Two Halifaxes of No. 466 were shot down; another piloted by Flight Lieutenant J. H. Stevens was severely damaged by an Me-210 and at one stage of the homeward journey lost height until it was almost at ground level, although Stevens managed to keep his aircraft under control and reached base. The Halifax flown by Pilot Officer Bancroft<sup>4</sup> of No. 158 Squadron was damaged even more extensively in a desperate encounter with a Ju-88. All the instruments and the inter-communication system were damaged, the hydraulic system was

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<sup>4</sup>F-O B. D. Bancroft, DFC, GM, 421635. 158 and 96 Sqns RAF. Compositor; of Pennant Hills, NSW; b. Rockdale, NSW, 29 Oct 1916.

destroyed, causing the bomb-doors and flaps to fall open, and a large hole, three feet long and the full width of the aircraft, was smashed in the floor. Another gaping hole appeared near the radio position, both turrets were useless, one of the petrol tanks was holed, and fires broke out in the bomb bay and near the rear bulkhead. Bancroft wrestled with the controls of this battered hulk while his navigator, Pilot Officer Fripp,<sup>5</sup> aided by the only two other survivors, tackled and extinguished the fires. The compasses had been destroyed but luckily the upper sky was clear and Bancroft steered by the North Star and reached Hurn airfield.

Attacks on the smaller but, in aggregate, no less important railway workshops and facilities were meanwhile conducted by the light bombers and fighter-bombers of A.E.A.F. Most of this work was performed by the American Ninth Air Force but Australians in Second T.A.F. joined in 29 out of the 46 attacks made by R.A.F. light bombers; the highest representation was on 2nd May, when 7 out of 40 Mitchells bombing Namur were captured by R.A.A.F. pilots. At the end of April, six Mosquitos of No. 464 made three experimental raids on Abancourt, bombing in daylight from 20,000 feet with the help of pathfinder aids, but results were poor and this method was discontinued. The normal practice was for varying forces of up to 60 Bostons and Mitchells to bomb<sup>6</sup> from 8,000 feet and to be escorted by four or five squadrons of Spitfires. No. 453, command of which Squadron Leader D. G. Andrews handed over to Squadron Leader D. H. Smith at the end of April, nine times acted as part of the protective screen for R.A.F. and U.S.A.A.F. light bombers during this period without once being challenged by enemy fighters. In general the bombers had great freedom of action and unless weather conditions over the target were bad, significant damage resulted. Some of these minor targets were well defended by guns but no Australians were shot down. Against the nearer targets, fighter-bombers were often employed as on 27th May, when Smith led No. 453 to Douai, each Spitfire dropping one 500-lb bomb in a dive from 12,000 to 5,000 feet and securing hits on the main buildings, sidings and tracks.

While emphasis was placed primarily on long-term damage to enemy repair and maintenance facilities, no opportunity was lost to attack locomotives and rolling-stock. Although it was thought unlikely that the estimated 12,000 locomotives available to the enemy could be so drastically reduced that in moments of supreme crisis he could not retain a sufficient number by simply cancelling all civilian traffic, yet it was held that in conjunction with the long-term plan, attacks on locomotives would influence German ability to reinforce and supply his forward troops. As Allied air superiority became more pronounced, no fewer than 3,932 sorties<sup>7</sup> were made by fighters against railway rolling-stock in France

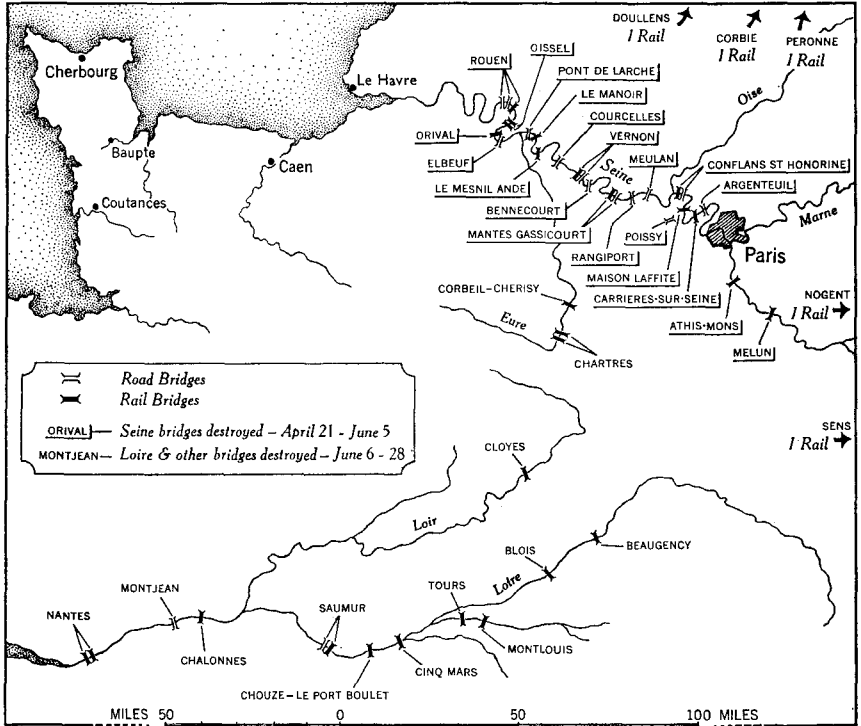
<sup>5</sup> F.O. C. F. A. Fripp, DFC, 423092; 158 Sqn RAF. Farm labourer; of Tuggerah, NSW; b. Wyong, NSW, 27 Jul 1923.

<sup>6</sup> The bomb-loads were eight 500-lb for Mitchells and four 500-lb for Bostons.

<sup>7</sup> 2,201 by AEAF and 1,731 by 8th USAAF.

between 19th May and 5th June, an average of more than 200 sorties a day. No. 453 was engaged on this duty only on 21st May, when three small formations took off at hourly intervals during the morning to patrol south of the Seine and damaged one train, several stationary trucks, a military staff car and a lorry, for the loss of one Spitfire.

Allied plans envisaged destruction of the road and rail bridges over the Seine and Loire Rivers, not only to hamper enemy reinforcement



but to make him stand and fight in Normandy. To safeguard the secret of the area chosen for invasion, only the Seine bridges could be attacked beforehand, this action pointing equally to an attempt to seal off the Calais area. Previous experience in Italy and in experimental attacks showed that the most economical method of securing vital hits on bridges was by fighter-bombers, although heavy and medium bombers of the U.S.A.A.F. were also employed. The contribution of Second T.A.F. was not large, but R.A.A.F. pilots on Typhoon, Mustang and Spitfire squadrons all made at least one attack of this type. No. 453 on 27th April three times went out in full squadron strength, bombing a road bridge near the base of the Cherbourg peninsula at noon, the railway bridge at Bauple in mid-afternoon and Pont de la Rocque, near Coutances in

the early evening. This last attack achieved decisive results, severing the main span at the northern end and destroying the approaches and some buildings at the southern end. The R.A.A.F. Spitfires were again sent out on 2nd May when a force of 56 aircraft attacked a viaduct on the main line between Le Havre and Rouen, diving down to 3,000 feet. Pilots of No. 453 claimed hits on the centre and northern end of this objective. The main weight of attack against the Seine bridges proper was concentrated in the last 10 days before 5th June and Australians played only a minute part in achieving the final result.

The weakness of German aerial reconnaissance gave the Allies great freedom in preparing for their cross-Channel invasion, but it was appreciated that tactical surprise could not be gained unless the impressive enemy radar network was seriously damaged. Accordingly air attack was ordered against all radar installations which could not be jammed by electronic counter-measures, all those capable of clear detection of shipping, those used for controlling coastal batteries, and any likely to threaten airborne operations. To mislead the enemy, two targets outside the assault area were attacked for every one inside, so that this campaign, which began on 10th May, in fact ranged from Ostend to the Channel Islands. The first targets were long-range aircraft reporting stations, followed on 18th May by radar installations for night-fighter and gun defences. On 25th May, 42 sites holding 106 installations were detailed for attack, and by 3rd June, the destruction of 14 of the sites had been confirmed. To conserve effort it was then necessary to concentrate on 12 of the remaining 28 sites, the choice lying equally between air and naval authorities, and these were repeatedly battered in the remaining three days of the preparatory period.

Before 6th June aircraft of A.E.A.F. flew 1,668 sorties against German radar stations; 694 by rocket-firing Typhoons, 759 by Spitfire and Typhoon dive bombers, and 215 by light bombers. Low-level attack on these exceptionally well-defended installations demanded great skill and daring. Casualties were often high, as on 5th June when 25 Typhoons made a most successful attack on the "Hoarding" equipment used for long-range aircraft reporting, at Cap de la Hague, firing rocket-projectiles after a power dive down to 2,000 feet. Warrant Officer Pugh<sup>8</sup> and two other pilots were shot down. Pilot Officer McGovern<sup>9</sup> of No. 181 Squadron R.A.F. and Flying Officer Roberts<sup>1</sup> of No. 164 with six and five attacks respectively were prominent among the R.A.A.F. pilots engaged in these attacks as well as in missions against railways and airfields. No. 453 itself made four attacks. On 30th May, Smith led 12 Spitfires to dive-bomb the radar station at Cap D'Antifer, and the same afternoon, in

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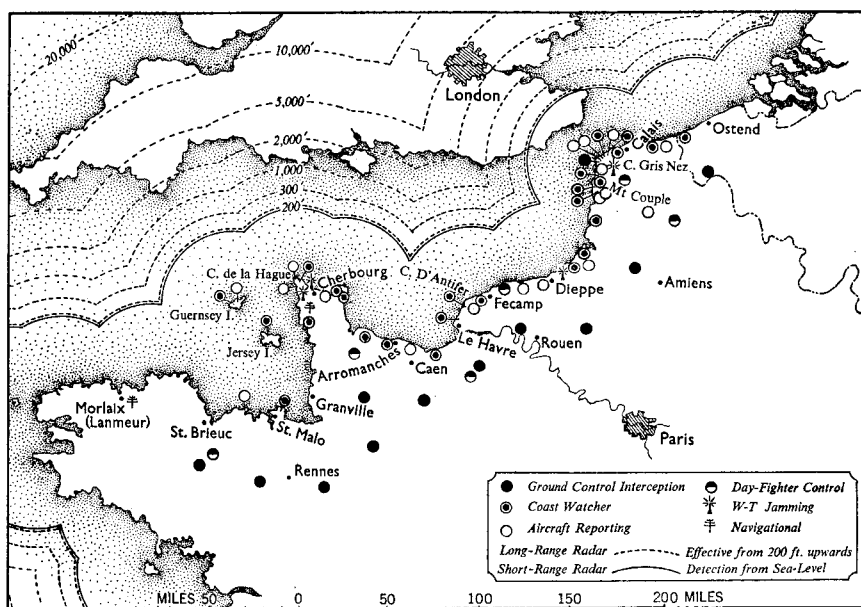
<sup>8</sup> W-O J. H. Pugh, 416998; 175 Sqn RAF. Bank clerk; of Murray Bridge, SA; b. Murray Bridge, 4 Oct 1919. Killed in action 5 Jun 1944.

<sup>9</sup> F-Lt T. H. McGovern, DFC, 416269. 532, 195 and 181 Sqns RAF. Clerk; of Victor Harbor, SA; b. Adelaide, 25 Nov 1921.

<sup>1</sup> F-O A. E. Roberts, 409775; 164 Sqn RAF. Clerk; of Middle Park, Vic; b. Collingwood, Vic, 25 May 1918. Killed in action 6 Jun 1944.

company with No. 602, direct hits were gained on the "Wurzburg" apparatus at Arromanches. Flight Lieutenant P. V. McDade led the Australians on 2nd June against the "Hoarding" at Cap Gris Nez and although this was a failure, much better results were obtained two days later at Cap de la Heve near Le Havre.

During the first week in June, R.A.F. Bomber Command joined in this campaign against enemy early-warning equipment by attacks on two navigational stations and four W-T stations important in the general defence of the assault area. Stations at Sortesville, south of Cherbourg,



The German radar network

Lanmeur and Mont Couple were put out of action by forces containing only a few Australians, but on 2nd-3rd June No. 460 contributed 23 Lancasters to a raid by 107 aircraft against the W-T station at Berneval-le-Grand near Dieppe. A concentrated attack demolished all seven aerial masts, obtained direct hits on several of the main buildings protected by blast walls and badly shattered some of the unprotected minor buildings. The previous night 16 Halifaxes of No. 466 had been in a similar force attacking Ferm d'Urville, near Cherbourg, the headquarters of the German signals Intelligence service in north-west France, but the target had been completely shrouded in cloud and no great optimism was shown by pilots returning after bombing on sky markers. The second attempt to destroy Ferm d'Urville on 3rd-4th June was made by No. 5 Group, Nos. 463 and 467 each dispatching 13 Lancasters in a total force of 100. Flight

Lieutenant van Raalte<sup>2</sup> of No. 97 headed the Pathfinders, and dropped the spot marker in the centre of the target. The crews of the R.A.A.F. aircraft which then pressed in to drop 148 of the total 509 tons were confident of success from their own observation of the bombing. Wing Commander W. L. Brill of No. 467 reported that he circled the target during the whole attack and had never seen such a close concentration of bomb-bursts. The subsequent photographic interpretation report stated: "The station is completely useless. The site itself is rendered unsuitable for rebuilding the installation without much effort being expended in levelling and filling in the craters."

The success of all these preparatory attacks went a long way towards blinding the enemy's early-warning system. The commitment of air power in this respect had been well fulfilled, for although many radar installations remained untouched these were to be nullified by other means. Far smaller success attended the attacks on coastal batteries in the rapidly growing defences of the vaunted "West Wall". Including those still under construction there were 49 known gun batteries capable of firing across the approaches to the chosen assault area, and it was imperative to reduce to a minimum the number which would have to be engaged by warships escorting the invasion fleets. Again to avoid showing particular interest in any one area, diversionary attacks twice as numerous as the real ones were made in other areas. The campaign began on 10th April; the effort expended by 5th June is shown in the accompanying table:

(a) Inside assault area					
A.E.A.F.	1,755	sorties	2,886.5	tons of bombs <sup>3</sup>	
Eighth U.S.A.A.F.	184	"	579	"	"
R.A.F. Bomber Command	556	"	2,438.5	"	"
(b) Other areas					
A.E.A.F.	3,244	"	5,846	"	"
Eighth U.S.A.A.F.	1,527	"	4,559	"	"
R.A.F. Bomber Command	1,499	"	6,785	"	"
	8,765	"	23,094	"	"

The R.A.A.F. heavy-bomber squadrons made nine attacks before 5th June but the first did not come until 8th-9th May when six Halifaxes of No. 466 joined in a small-scale attack on a six-gun battery at Morsalines. The same target was attacked again on the following night, 13 R.A.A.F. Halifaxes being included in the total force of 62 sent out by No. 4 Group. Good results including direct hits on an ammunition dump were achieved, and after a third attack by heavy bombers and one by medium bombers the site was abandoned and maintained only as a dummy.

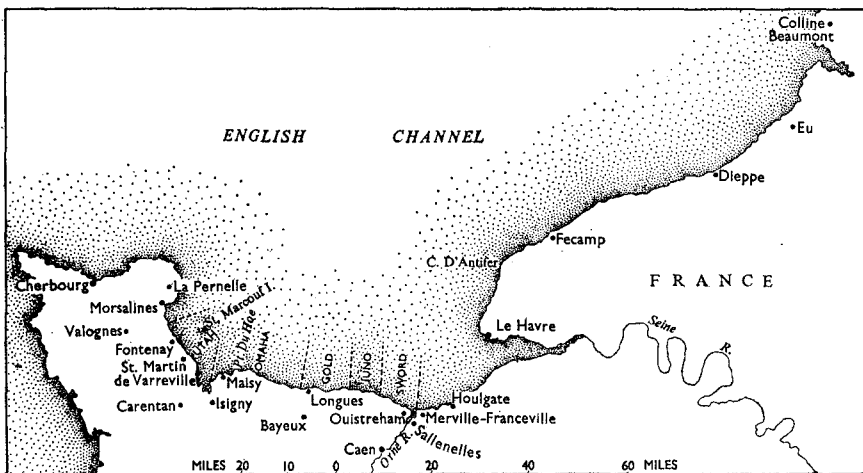
Meanwhile on 11th-12th May 13 Halifaxes made one of the diversionary attacks on a battery at Colline Beaumont, and No. 466 returned to the same target on 24th-25th May. Similarly a force from No. 1 Group

<sup>2</sup> F-Lt H. S. van Raalte, 415220; 97 Sqn RAF, Metal rigger; of North Perth, WA; b. Guildford, WA, 21 Jan 1913. Killed in action 23 Jun 1944.

<sup>3</sup> 495 60-lb rocket projectiles were also employed by fighters.



including 10 Lancasters of No. 460 had begun operations against one of the real targets between Merville and Franceville on 9th-10th May, and, when this and a second attack were indecisive, 20 R.A.A.F. Lancasters were dispatched against this battery on 27th-28th May causing considerable damage to the whole site, although the heavily casemated guns still appeared intact. Three nights earlier No. 460 had set a new squadron record, 24 Lancasters carrying no less a load than  $133\frac{1}{2}$  tons of bombs



against a battery—one of the “red herring” targets—outside the assault area. The final attack involving No. 460 was when 22 Lancasters (in a total force of 56) attacked Eu on 28th-29th May. On the same night Nos. 463 and 467 made their single and outstanding contribution to this preparatory bombing of coastal gun emplacements when they sent out 21 Lancasters with 55 others to attack St Martin de Varreville. No. 463 crews in particular returned with excellent photographs showing the aiming point and the markers, one of the best being obtained by Flying Officer Schultz,<sup>4</sup> who was on the last trip of an extremely meritorious tour of operations. A report on this raid by the battery commander was later captured and stated:

Several direct hits with very heavy bombs were made on No. 3 casemate which apparently burst open and then collapsed . . . the rest of the casemates remained undamaged . . . the iron equipment hut which contained signals apparatus, the armoury, the gas chamber and artillery instruments received a direct hit and only a few twisted iron girders remain . . . the men's canteen received several direct hits and was completely destroyed. The messing huts, containing the battery dining room, the kitchen and clerk's office were completely destroyed by near misses.

Thus, although in most of these attacks the strongly protected guns themselves remained intact, the enemy ability to range the guns accurately,

<sup>4</sup> F-Lt K. Schultz, DFC, 417003; 463 Sqn. Fruit grower; of Summertown, SA; b. Summertown, 6 Aug 1921.

or to use them to full advantage was greatly reduced by the demolition of ancillary buildings. Failure against the casemates themselves was chiefly due to the fact that only 1,000-lb bombs were available and few of these were armour-piercing, so that on the eve of the assault Leigh-Mallory claimed only that hits had been secured on "essential elements" of five batteries within the invasion area and on nine outside.

This result was not attributable solely to Bomber Command, because an equal tonnage of smaller bombs was rained on other gun-defended areas by light and medium bombers of A.E.A.F. On 14 occasions small numbers of R.A.A.F. men, principally from Nos. 88, 98 and 226 Squadrons R.A.F., were engaged in these medium-level daylight attacks which were more hazardous and hotly contested than the night raids.

Thus far air operations had been directed principally to ensuring that Allied divisions could be transported and landed in a given area with a minimum amount of interference from the enemy. Other attacks designed to cripple German potential in subsequent battles were, however, in progress at the same time, and during May Bomber Command made heavy attacks on two of the largest German military camps in western Europe. Thus on 3rd-4th May 338 heavy bombers, including 17 from No. 460, 12 from No. 463 and 10 from No. 467 raided Mailly-le-Camp, a tank depot and park then housing considerable elements of the *21st Panzer Division*, the main training centre in France for German armoured units. To ensure good results, a calculated risk was taken in dispatching this force in good visibility and bright moonlight. The *Luftwaffe* reacted promptly, and in very heavy engagements 42 bombers, including seven from the R.A.A.F. squadrons were shot down. The bombing from between 5,000 to 8,000 feet was very efficient, however, and the damage inflicted was on a tremendous scale. In one section of the camp, out of 47 buildings housing the transport section and barracks, 34 were totally destroyed and the others severely damaged, while in another large group of barrack buildings almost all were heavily hit. The report of the commander of the *21st Panzer Division* stated:

The main concentration was accurately aimed at the most important permanent buildings, the ammunition stores and an ack-ack battery . . . in that part of the camp which was destroyed, concentration of bombs was so great that not only did the splinter proof trenches receive direct hits, but even the bombs which missed choked them up and caused the sides to cave in. . . .

Eight nights later, on 11th-12th May, 193 Lancasters set out to attack a military camp at Bourg Leopold in Belgium, but this was cancelled by the master bomber before it was completed owing to difficulties in target-marking. A little over half the force, including 11 crews from No. 463 and 14 from No. 467, had already bombed but few claims were made of real damage. This raid aroused only moderate fighter opposition, but the non-return of Group Captain Balmer was a great blow to No. 467, for this was his last trip on operations and he was to have passed on to a higher command. It was typical of Balmer that he should have

flown on this occasion, for only the night before three crews, including that of Squadron Leader Smith,<sup>5</sup> a particularly well loved veteran flight commander, had failed to return from a raid on Lille. Such losses inevitably affected the spirit of junior crews, and Balmer's action in leading the next sortie was another, and unfortunately the last, act of his fine record of leadership. It was indeed fortunate for No. 467 that Wing Commander Brill, a very experienced officer then serving his second tour with No. 463, was available to assume command, and he proved a very worthy successor to Balmer both in administration and in the dashing type of leadership which had brought the Waddington squadrons to the fore in No. 5 Group. The first raid on Bourg Leopold was more happily remembered as the occasion of the hundredth operation of one of the Lancasters of No. 467—an event of psychological importance to the ground crews, who knew too well that the average life of a bomber was fewer than 30 trips. A second attack on Bourg Leopold was made by 331 aircraft on 27th-28th May and caused devastation among large buildings and barrack blocks similar to that achieved at Mailly-le-Camp. Fifteen Halifaxes of No. 466 joined in this raid and, although rocket-firing fighters intercepted the bomber stream, only one R.A.A.F. aircraft was shot down, while Flying Officer Dobinson,<sup>6</sup> a rear gunner in another aircraft, destroyed one of the attackers, his victory being witnessed and confirmed by other crews.

A considerable number of light- and fighter-bomber raids were made on smaller military targets, including *châteaux* used by the enemy as headquarters, telephone exchanges, electric power and switching stations; as well as troop concentrations and billets. The campaign extended also to small enemy munition dumps throughout north-western France which, although well camouflaged or hidden in forests, were blown up or set on fire by bombs and rockets. Reserves of petrol, oil and ammunition were in this way denied to the enemy, while his main lines of communication were under constant attack. The seven largest ordnance factories and depots were reserved for attack by R.A.F. Bomber Command, and the R.A.A.F. squadrons raided five of these targets late in April or early in May.

A No. 5 Group attack on 28th-29th April 1944 against the largest German-controlled French explosive factory, at St Medard-en-Jalles near Bordeaux, was abortive, but the next night in cloudless weather every important building in the works was heavily damaged. For this second raid the Waddington squadrons dispatched 20 Lancasters led by Smith of No. 467 and Squadron Leader M. Powell of No. 463, who for the sake of accuracy pressed in to bomb at 4,000 feet. Almost from the outset terrific explosions resulted, and all the members of Smith's crew were lifted from their seats. Smoke quickly rose to 5,000 feet and

<sup>5</sup> Sqn Ldr D. P. S. Smith, DFC, 400495. 103 Sqn RAF, 467 Sqn. Industrial chemist; of Mosman, NSW; b. Sydney, 13 Mar 1917.

<sup>6</sup> F-Lt D. J. Dobinson, DFC, 424530. 466 and 462 Sqn. Cost clerk; of Wollongong, NSW; b. Newtown, NSW, 4 Apr 1919.

forced later arrivals to attack from greater heights. Similarly spectacular results were obtained on 30th April-1st May when No. 1 Group sent 116 Lancasters against a very large ammunition dump near Maintenon. The 14 aircraft of No. 460 attacked from 8,000 feet but in excellent visibility they had no difficulty in identifying the markers even when the whole area became a mass of flames and "a grand firework display". Squadron Leader Donaldson<sup>7</sup> reported that the marking and control of this attack had been excellent and that he could still see the fires and explosions when 120 miles away on his return journey.

Locke of No. 97 and Smith of No. 467 were deputy controllers for a raid by 68 aircraft against another dump at Sable-sur-Sarthe on 6th-7th May, when No. 5 Group continued its audacious practice of bombing from extremely low heights. Wing Commander Tait,<sup>8</sup> with an aircraft and crew of No. 467, even went down to between 1,000 and 1,500 feet so that members of the R.A.F. Film Unit could photograph the huge fires and explosions which practically destroyed the ammunition-filling and storage units. At the very same moment, 30 miles to the south-east, five Lancasters of No. 460, led by Group Captain H. I. Edwards, were engaged with 47 other aircraft of No. 1 Group in wiping out the ammunition dump at Aubigne-Racan. Twelve crews of No. 460 were again out the following night in a force of 54 which attacked the ordnance depot at Rennes; this had been a B.E.F. centre in 1939-40. The bombing proceeded smoothly against two aiming points, but the immediate results were not as spectacular as those on the previous raids, and later photographs showed that only one of the sections of the depot had been destroyed. The general success of this series of raids was remarkable, considering the relatively small forces employed; and, at a time when fighter defences were meagre, no R.A.A.F. aircraft were lost.

While Bomber Command and A.E.A.F. were preparing the stage for the final liberation of Europe, Coastal Command was ensuring that no logistical problems would hamper Allied plans. The great victories of 1943 and the smashing of each recurring attempt by U-boats to regain their former strength had given Allied aircraft undisputed mastery over the whole of the North Atlantic. The U-boats were clearly being husbanded by Admiral Doenitz, the Commander-in-Chief of the German Navy, in anticipation of a major effort against Allied invasion fleets in the English Channel, and, with the war at sea thus strategically quiescent but tactically successful, air patrols ensured the ceaseless build-up in the United Kingdom of munitions and supplies. Allied shipping losses during April 1944 were the lowest for four years, and twice as many U-boats as merchant ships were sunk during that month. Shipping losses declined further in May to a mere 18,000 tons, representing two independently

<sup>7</sup> W Cdr D. R. Donaldson, MVO, AFC, 400631. 44 Sqn RAF, 460 Sqn; comd 463 Sqn 1944. Accountant; of North Brighton, Vic; b. Calcutta, India, 7 Jan 1915.

<sup>8</sup> Gp Capt J. B. Tait, DSO, DFC, RAF. 51 and 35 Sqn RAF, 467 Sqn; comd 51 Sqn 1940-41, 1652 Conversion Unit 1941-42, 78 Sqn 1942, 22 OTU 1943-44, 617 Sqn 1944; Operations Offr, 53 and 54 Bases, Waddington, 1944, 100 Gp HQ 1944-45. Regular air force offr; of Abereynon, Glamorganshire, Wales; b. Manchester, England, 9 Dec 1916.

routed ships in the South Atlantic and one in the Mediterranean. The knowledge that their vigilance was resulting in great Allied material superiority *vis-à-vis* Germany helped crews to maintain philosophically their arduous patrols, which otherwise would have seemed dull and monotonous. They were well aware that a final battle would have to be fought against the still numerically powerful U-boat fleet, which was already being fitted with the *Schnorkel* device by which it hoped to frustrate air patrols.

This sense of standing on the brink of important events led men to enter whole-heartedly into a vast training program, which during April and May for No. 461 overshadowed even its operational duties. Wing Commander Hampshire,<sup>9</sup> brother of K. MacD. Hampshire mentioned earlier in this chapter, was rapidly converting No. 461 to a role of night-search and strike, entailing not only crew familiarisation and drill with Mark VI radar, but, in the absence of Leigh lights, a new technique of attack with special 1.7-inch flares. Dummy radar homing approach and attack exercises were constantly maintained with friendly submarines in special bombing "sanctuaries". The Sunderlands also joined in a special operational exercise to test the plan for sealing the western end of the English Channel against U-boats. H.M.S. *Viking*, with batteries and air tanks fully charged, attempted to travel 90 miles at her best surfaced or submerged speed, as occasion allowed, through an area patrolled by aircraft of No. 19 Group. Out of 28 hours 7 minutes spent on this passage, *Viking* was surfaced only for 2 hours 2 minutes in 9 different spells, being forced to submerge each time before she could charge either batteries or tanks, and her average progress was less than 3 knots. Her commander reported that "further progress . . . would have been very uncomfortable and that the U-boat meeting such opposition would find it exhausting and demoralising". Even so, *Viking's* partial success had been aided by bad weather and radar failures among the searching aircraft, and this further highlighted the need for bringing all individual airmen to a peak of technical proficiency. Similar trials were repeated and the general principle of barring U-boats from mid-Channel by an "unsurmountable fence" of air patrols was fully vindicated in the minds of aircrew.

During April, No. 10 flew 64 daytime patrols in the Bay of Biscay without incident, but at Mount Batten also Australians were caught up in the general excitement of invasion preparations, although at first these consisted in hindrances to the flying-boats. The vast numbers of naval and troop-carrying ships, which began to throng Plymouth Sound, caused congestion unequalled since the fall of France almost four years before. Taxiing within the harbour even by day had its difficulties and night operations were almost impossible. There was also a recurrence of air raids during which the *Luftwaffe*, either in attempting to drop radio-controlled bombs (Fritz X) on Devonport, or during passage towards

<sup>9</sup> W Cdr J. MacL. Hampshire, DFC, 256. 11 and 33 Sqns; comd 41 Sqn 1942-43, 461 Sqn 1944; HQ Coastal Cd RAF 1944-45. Regular air force offr; of Cottesloe, WA; b. Port Macquarie, NSW, 27 Feb 1916.

Bristol, threatened Mount Batten. In the event the enemy efforts were so scattered and poorly pressed that no damage resulted, but the threat was sufficiently real for Wing Commander R. N. Gillies to encourage all aircrew to construct small foxholes on the hill behind the station. After the first few air raid alerts, however, the Australians became rather selective in their reactions. On awakening to the insistent wail of the air raid sirens, many would lie in bed listening for sounds of approaching aircraft, and only if reconnaissance flares were dropped indicating that Plymouth was indeed the chosen target would they reluctantly leave their beds. Even then the favourite procedure was to pad down to the kitchen in search of a hot drink before watching the raid from some vantage point, such as the sandbagged portico of the officers' mess, rather than take full precautionary measures. These air raids added to the congestion of the harbour in impeding training, for Gillies had the task of providing an almost entirely new set of captains to replace his experienced pilots. That this was done in time under existing conditions was a remarkable feat, for No. 10 was still independent of the normal operational training unit organisation. The devoted work of craftsmen and technicians, the skill of training officers, and the expedient of performing some night flying at other bases, provided No. 10 with ample young, capable and eager captains for the expected clash with the U-boats in midsummer.

The majority of R.A.A.F. men in other squadrons of No. 19 Group experienced the same sense of expectancy as Nos. 10 and 461 during this interim period, but towards the end of April a few were involved in attacks on cautious reconnaissance U-boats, but in all three instances no decisive results were obtained. The U-boats were now using their guns freely at night, and on 16th-17th April two Liberators of No. 53, each navigated by an Australian, failed to return from patrol, and one of these was almost certainly shot down just after it had sent a message indicating that it was attacking a U-boat. The number of R.A.A.F. men engaged on these duties rose considerably with the move of Leigh-light squadrons from other areas and the heavy reinforcement of all squadrons with surplus crews. The abundant supply of aircrew also made it possible to fly Liberator patrols with two navigators, and many Australians awaiting operational postings volunteered and were found suitable for this employment. In No. 19 Group, however, throughout May, training still predominated over operations, although nearly 10,000 hours were spent searching for U-boats. No. 10 flew 52 sorties and No. 461 flew 40 by night without finding any target at which to strike, although on 4th May Flight Lieutenant Ryan<sup>1</sup> found and photographed an oil patch and survivors from *U866* sunk by aircraft the previous night. Enemy aircraft were seen on three occasions but no combats resulted, and the only untoward incident during the month was on 6th May, when Flight Lieutenant Cargeeg's<sup>2</sup> Sunderland developed engine trouble at the southern

<sup>1</sup> F-Lt T. M. Ryan, 409231; 10 Sqn. Clerk; of Kew, Vic; b. Melbourne, 27 Jul 1917.

<sup>2</sup> F-Lt R. E. Cargeeg, 415398; 10 Sqn. Accountant; of South Perth, WA; b. South Perth, 5 Mar 1916.

end of his patrol and was forced to re-cross the Bay on three engines at the mercy of chance enemy fighters.

The unnatural calm before the gathering storm in the south-west was not reflected in the north-east, where No. 18 Group, although sadly depleted in strength, initiated a vigorous campaign against U-boats in transit to the Atlantic or making for Norwegian ports, where they were being gathered together in anti-invasion task forces. This Coastal Command offensive opened on 16th May and the most probable enemy routes from the Baltic were closely watched. An attack was made on the very first day, and before the end of the month 21 sightings and 13 attacks had resulted from this well-planned operation, for which only two Liberator and three flying-boat squadrons were available although the Sunderlands of No. 4 Operational Training Unit were also temporarily employed with great effect. Australians in this area, who had maintained long negative patrols during the preceding months and had bemoaned their lot in remaining in the north-east while their friends on other squadrons gathered in No. 19 Group, took a prominent part in this offensive. Thus, early on 18th May, Warrant Officer Henderson,<sup>3</sup> front gunner of Catalina S/210, used his comparatively ineffectual Vickers machine-gun to such good purpose that he killed, or prevented from firing, the anti-aircraft gun crews of *U241*, while his pilot coolly dived down and sank the enemy submarine with well-placed depth-charges. Henderson joined in another attack against a U-boat on 22nd May and although this and a similar attack the previous day by a Catalina of the same squadron, navigated by Pilot Officer Mott,<sup>4</sup> failed to achieve a "kill", they played a valuable part in the general pressure which deprived the enemy of freedom of action.

The position of the Catalina attacks implied that a group of U-boats was bound for Arctic waters, apparently in an attempt to create a diversion on the supply route to Russia. The aircraft patrols were accordingly adjusted and almost immediately success was gained in the sinking of *U675* by a Sunderland from No. 4 Operational Training Unit, captained by Flight Lieutenant Frizell.<sup>5</sup> Frizell had already completed an uneventful operational tour with No. 423 Squadron R.C.A.F. and, although he was heading a makeshift crew of instructors and pupils, his somewhat fortuitous chance to strike at the enemy was crowned by a magnificent and fearless attack. The patience, skill and watchfulness which had availed little during his Atlantic patrols now made him the second man to sink a U-boat while serving at an operational training unit.<sup>6</sup> On the same day a Catalina of No. 210 seriously damaged a second U-boat, which

<sup>3</sup> F-O R. J. Henderson, DFC, 409700. 190 and 210 Sqns RAF. Brewery employee; of Box Hill, Vic; b. Moorabbin, Vic, 3 Sep 1915.

<sup>4</sup> F-Lt W. D. Mott, 425455. 190 and 210 Sqns RAF. Geologist; of Townsville, Qld; b. Charters Towers, Qld, 7 Sep 1915.

<sup>5</sup> F-Lt T. F. P. Frizell, DFC, 402332. 201 Sqn RAF, 423 Sqn RCAF, 4 OTU, 102 Sqn RAF. Bank clerk; of Balgowlah, NSW; b. London, England, 9 Dec 1918.

<sup>6</sup> The other was also an Australian—Sgt A. J. Benson of No. 10 OTU. See Volume III, p. 439, in this series.

was then hunted by as many aircraft as could be sent to the position of the attack.<sup>7</sup> Flight Lieutenant W. G. Loney in Liberator L/59 began a square search that evening and at 9 p.m. encountered an enemy destroyer in company with two flush-decked U-boats. He made an attack with his forward-firing guns from 500 feet, securing strikes on all three vessels, but before he could pierce the anti-aircraft barrage to make a low-level depth-charge attack, he was driven off by an Me-110. During the same night two R.A.A.F. gunners in C/59 attacked a U-boat with machine-gun fire, while Flight Sergeant Playford<sup>8</sup> in S/59 again located the enemy destroyer and at 7.30 a.m. next morning participated in an attack which sank *U990*. Two days later Flight Sergeant McCleary<sup>9</sup> was wireless operator-air gunner in another crew of No. 59, which sank *U292* in an area farther west.

The relentless air campaign which had sunk six U-boats in eleven days, forced the enemy to ever more cautious tactics. Bad weather also intervened to hamper the searchers and although five more U-boats were seen during May, only one hurried attack was possible. There was no relaxation of pressure, however, and on 3rd June, the sinking of *U477* by an R.C.A.F. Canso off south Norway gave further encouragement on the eve of the Allied invasion that the vast air preparations in No. 19 Group would be equally successful.

The second major responsibility of Coastal Command during this preparatory phase was to attack enemy surface vessels. The strike wings were moved to bases in Nos. 16 and 19 Group areas to deny entrance to enemy minor warships attempting to attack either flank of the invasion convoys. Thus No. 455 under Wing Commander J. N. Davenport moved on 2nd April to Langham in Norfolk where it began intensive bombing training and was singled out for special praise for the way in which crews, although thirsting for action, enthusiastically prepared themselves by individual squadron and wing exercises to defeat any combination of naval forces which the enemy might throw into the battle. The R.A.A.F. Beaufighters now had a dual role, as anti-flak aircraft for wing strikes and as armed reconnaissance aircraft operating singly or in small groups. In the first role they were to employ their four 20-mm cannon to silence ship-borne guns at the critical moment when the torpedo-carrying aircraft were closing in, while on reconnaissance flights each Beaufighter carried two 500-lb and two 250-lb bombs to use against any shipping encountered once a sighting report had been sent back to base.

Although training had greatest emphasis, opportunities came to test the general level of preparedness by attacks on merchant shipping along the European coastline. Eight Beaufighters of No. 455 made independent reconnaissances on 19th April and as a result of reports from Squadron

<sup>7</sup> This vessel *U476* was in fact sunk but the air hunt was ordered because of lack of definite proof at that time.

<sup>8</sup> W-O A. R. Playford, 420627; 59 Sqn RAF. Junior clerk; of Grafton, NSW; b. Murwillumbah, NSW, 5 Jan 1923.

<sup>9</sup> F-O R. L. McCleary, 422238; 59 Sqn RAF. Clerk; of Randwick, NSW; b. Kerang, Vic, 12 Jan 1923.



Leader A. L. Wiggins and Flying Officer Barbour,<sup>1</sup> strike forces from other squadrons were able to locate and attack convoys. Even more satisfactory was the first strike by the Langham Wing on 6th May when 12 R.A.A.F. Beaufighters escorted 6 torpedo Beaufighters of No. 489 Squadron R.N.Z.A.F. in an evening attack against an enemy convoy of 7 merchant ships west bound in company with 12 escort vessels. Although the convoy was more than an hour's flying time from Langham, the attack was delivered only two hours and a half after receiving orders to prepare the strike. The Australians attacked from ahead, out of the sun, and round to the port beam of the convoy, from an altitude of 800 feet down to mast height. Many hits on the leading naval escorts greatly diminished the volume of gunfire from the convoy so that the torpedo carriers had a clear approach, ending in the sinking of one merchant ship.

On 14th May 12 R.A.A.F. aircraft formed the starboard anti-flak cover for a similar strike in very bad weather. Davenport led the Langham Wing as far as Norderney without finding his target so he wheeled the formation on a reciprocal course and finally at 1.15 p.m. found a convoy near Ameland. The cloud base was down to 300 feet and rain showers and spindrift obscured the windscreens of the Beaufighters as they ran in to make an immediate attack from the port beam. Two R.A.A.F. aircraft had to break away without seeing their targets and six of the others sustained damage from gunfire, but again attention was successfully drawn from the Torbeaus<sup>2</sup> which set one merchant ship ablaze and damaged one other. The concentrated fire from the Australians had also seriously damaged an escort vessel on the convoy's port flank, and this ship was last seen with a 15 degree list.

Bomber Command also entered into sea preparations by a greatly increased program of mining during the second quarter of 1944. Strategically the aims were to disrupt U-boat training in the Baltic; to prevent or delay the passage of U-boats to operational areas,<sup>3</sup> and to dislocate sea-borne traffic and especially military supplies for Norway. Tactically the intention was to sow minefields which would guard the invasion area against enemy light warships and U-boats. Thus the 7,161 mines laid by Bomber Command in April, May and June 1944 were distributed not only in the routine Baltic and Biscay areas, but in the channels between Ushant and Brest, and the approaches to Morlaix, St Malo and Cherbourg in the west, and the Frisian coast, the Heligoland Bight, Danzig and Kiel to the east of the intended invasion area.

The main weight of this offensive was carried by Stirlings and Halifaxes of Nos. 3, 4 and 6 Groups, but on 9th-10th April 11 Lancasters of

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<sup>1</sup> F-O W. M. Barbour, 414380; 455 Sqn. Bank clerk; of Eagle Junction, Qld; b. Chinchilla, Qld, 26 Jul 1922. Killed in action 6 Jul 1944.

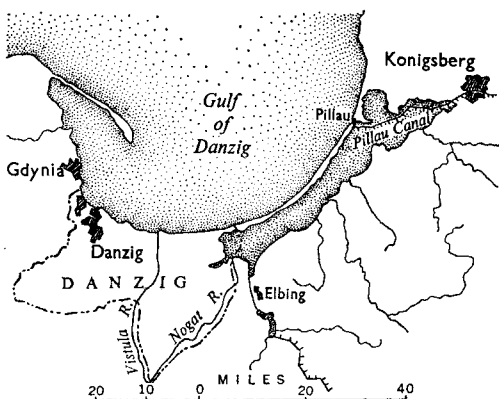
<sup>2</sup> Airmen were fond of elision and abbreviation to denote the differing functions of aircraft, and this was reflected in official documents—hence Flakbeau, Torbeau, Rockbeau. A similar expedient produced the Hurribomber, Kittybomber, Tiffybomber, etc.

<sup>3</sup> Nine U-boats were sunk during 1944 by mines laid by aircraft in the Baltic and Bay of Biscay.

No. 460 were in a special force which laid 450 mines in the Gulf of Danzig. For this very distant target, involving a round trip of nine hours, each Lancaster carried five mines, which for the first time were laid from high level. Enemy opposition was very strong and three R.A.A.F. aircraft were shot down and three others damaged, but the military result was significant as Danzig Bay was closed to traffic for 15 days.

Other sorties were made by No. 460 on 18th-19th April to the Pomeranian Bay and on 12th-13th May to the Heligoland Bight, each time without loss. The latter

operation was in conjunction with the first mining sortie by Mosquito aircraft which were sent to block the Kiel canal. Flying Officer Macdonald<sup>4</sup> of No. 692 Squadron flew one of the minelayers and Squadron Leader A. S. Grant of No. 156 was chosen as navigator of one of the route markers and illuminators. After reaching Heligoland at an altitude of 10,000 feet, the tiny force turned



south-eastwards in a shallow dive, and then due east for the last 14 miles run up to the target in a steeper dive down to 300 feet. All except one aircraft successfully dropped mines in the canal, which was closed for seven days after this operation. It was then partially reopened, but owing to losses was quickly closed again for another three days. Another equally difficult task was successfully accomplished on 9th-10th April when six Lancasters from Nos. 49 and 106 mined the Königsberg-Pillau canal. This target lay nearly 1,000 miles from United Kingdom bases and the Lancasters had to locate the canal and fly along it only 150 feet from the ground. The waterway was only 54 yards wide, and until the mines were laid no evasive action was possible against the many light guns and dazzling searchlights which lined both banks, but Flying Officer Anderson<sup>5</sup> and Flying Officer Roantree<sup>6</sup> both succeeded in planting their mines in the canal.

Despite all the increasingly heavy demands on the resources of Bomber Command for attacks on invasion targets, the independent strategic offensive against Germany and her occupied territories did not entirely cease,

<sup>4</sup> Sqn Ldr I. S. H. S. Macdonald, 402383. 51, 296, 1478 Flt and 692 Sqn RAF. Electroplater; of Carlingford, NSW; b. Manilla, NSW, 2 Jun 1916.

<sup>5</sup> F-Lt R. F. Anderson, DFC, 410291; 106 Sqn RAF. Cabinet maker; of Lara, Vic; b. Heathcote, Vic, 18 Jul 1917.

<sup>6</sup> F-Lt C. Roantree, DFC, 416789; 49 Sqn RAF. Advertising trainee; of Keswick, SA; b. Broken Hill, NSW, 14 Jan 1921.

and R.A.A.F. squadrons were dispatched on nine such raids, as shown in the accompanying table.<sup>7</sup>

Date	Target	Total Force		R.A.A.F.			Tons of bombs	Total missing	R.A.A.F. missing
		Dis-patched	Attacked	Squadron	D	A			
April 20-21	Cologne	379	358	460	19	19	1,767	4	—
„ 22-23	Dusseldorf	596	567	460	19	18	2,150	30	1
„ 22-23	Brunswick	265	256	463	20	20	741	3	1
„ 24-25	Karlsruhe	637	598	467	16	16			
„ 24-25	Munich	260	255	460	15	15	2,171	20	—
„ 26-27	Essen	493	471	466	14	14			
May 21-22	Duisburg	532	488	463	18	17	712	9	1
„ 22-23	Dortmund	375	326	467	15	15			
„ 22-23	Brunswick	235	211	460	25	25	1,878	5	1
				460	21	21	2,220	29	1
				463	15	13			2
				467	16	15			1
				460	22	21	1,656	17	—
				463	14	14	613	14	—
				467	15	14			

The Cologne attack developed well despite the presence of thick cloud, and fires were soon burning in the centre of the city. Two Lancasters of No. 460 reported engagements with night fighters but the most desperate battle was forced on Flight Sergeant Cowell<sup>8</sup> of No. 15 whose aircraft had already been damaged by gunfire over Cologne. Early on his return route a single enemy aircraft attacked but was outwitted and then, with one engine and the rear turret out of action, Cowell had to beat off three more determined attacks before he crossed out over the French coast. Forty per cent of the tonnage of bombs carried to Cologne had been incendiaries, but this ratio was increased to 57 per cent two nights later when the target was Dusseldorf. The R.A.A.F. Lancaster and Halifax crews praised the clear pathfinder marking and vividly described a mass of fires raging over two or three square miles; later photographic reconnaissance of Dusseldorf showed that 28 industrial concerns had received damage. Of particular importance was a high level of destruction at two branches of the Rheinmetall steel combine, then the most important armaments works in Germany. It was, however, far from an easy operation and German fighters penetrated the bomber stream during the outward journey shooting down one aircraft from each R.A.A.F. squad-

<sup>7</sup> Some main-force bomber squadrons were also called upon to reinforce the effort of the special units which had for some years been active in delivering men, arms and equipment to the French Maquis. There was a great expansion of this work during the six months prior to the actual invasion, many of the deliveries taking place under cover of bombing raids.

<sup>8</sup> F.O. J. E. Cowell, DFC, 421007; 15 Sqn RAF. Station hand; of Bedgerebong, NSW; b. Forbes, NSW, 6 Aug 1916.

ron, and damaging the Lancaster flown by Squadron Leader Willis<sup>9</sup> of No. 460 so badly that he dropped his bombs on Krefeld and prudently struggled home with one engine unserviceable, one fuel tank punctured, the mid-upper turret and hydraulic controls out of action, and his bomb-doors almost shot away. Several more aircraft were damaged by accurate ground-fire, and Squadron Leader Connolly<sup>1</sup> of No. 466 suffered a large hole torn in his port rudder-fin by a bomb released from another aircraft.

No. 5 Group was also out in force on 22nd-23rd April, thrusting beyond Dusseldorf to attack Brunswick. Heavy flak defences upset the pathfinder program, but despite this a good concentration was achieved on the main aiming-point and large fires enveloped the town. The incendiary technique was carried further on this raid, each R.A.A.F. aircraft dropping one 2,000-lb high-explosive bomb and 12 500-lb incendiary cluster bombs, which caused a tight ring of fires immediately after impact. Brunswick was particularly susceptible to this form of attack as a large proportion of its buildings were of timbered or half-timbered style, and the destruction achieved in industrial, business and residential areas was very great in relation to the weight of attack. The Australians were not unduly worried by fighters and the gun defences were swamped by the time the main force were over the target. This degree of success was not achieved, however, when a similar force returned a month later on 22nd-23rd May. Again cloud and gun defences led to scattered marking, but this time the bombing also failed to centre on prime objectives. All the R.A.A.F. Lancasters returned safely, but many were forced to dive away from well-controlled searchlights, several were damaged by flak and five crews of No. 467 had combats with night fighters.

The main force of Bomber Command was sent to Karlsruhe on 24th-25th April and once again Nos. 460 and 466 participated, together with many individual R.A.A.F. men from Nos. 1, 3 and 4 Groups. Weather conditions were again difficult with dense drifting layer cloud obscuring the target, but many Australians dived down into clear air to drop their loads, equally divided among high-explosive and incendiary bombs. These men had the satisfaction of seeing large fires out of control near the railway station and throughout the industrial area, and this section of the bomber stream met little opposition from fighters or gunfire.

At the same time Nos. 463 and 467 were well represented in a smaller force bombing Munich under almost ideal weather conditions. This was almost entirely a fire raid, no less a proportion than 663 of the total 712 tons of bombs being incendiaries, and, as at Brunswick, the predominantly timber buildings in the centre of the city were soon blazing and a smoke pall rose to 18,000 feet. Scarcely any building between the main railway station and the river escaped damage, and the scale of destruction was phenomenal in relation to the moderate force employed. Munich was a very important garrison town and six groups of barrack

<sup>9</sup> W Cdr A. V. Willis, DFC, DFM, 402940. 460 Sqn (comd 1944). Station overseer; of Inverell, NSW; b. Toorak, Vic, 15 Aug 1915.

<sup>1</sup> W Cdr H. W. Connolly, DFC, 402492. 76 and 78 Sqns RAF; comd 466 Sqn 1944. Clerk; of Seaforth, NSW; b. Balgowlah, NSW, 31 Mar 1918.

buildings received extensive damage. Again the defences were not unduly active, although several R.A.A.F. crews had fleeting engagements. The high offensive spirit of No. 5 Group, which consciously tried to make itself a *corps d'élite* within Bomber Command, was reflected by the conduct of Flying Officer Kennedy,<sup>2</sup> a bomb aimer of No. 467, who was injured by flak en route to Munich but who did not report his wounds until back at Waddington, although he had bombed successfully and assisted in the safe return of the Lancaster while himself suffering considerable pain.

This emphasis on incendiary attack for area raids, in contrast to the existing technique against tactical targets, was maintained on 26th-27th April, when nearly 500 aircraft bombed Essen in clear weather. The 25 Lancasters of No. 460 alone dropped 133 tons and many of the crews reported that it was the best raid in which they had taken part; with markers accurately placed they found no difficulty in adding to the conflagration which quickly sprang up round the Krupps works, where 91 large industrial buildings and many smaller installations housing laboratories and testing equipment, electric sub-stations, steam plant and pumps were all temporarily put out of action. It was a magnificent end to a week of strategic bombing carried through with casualties of only 3 per cent, in contrast to the crippling losses suffered during March.

Except for a small attack on the Berleit motor vehicle works at Lyon on 1st-2nd May, the R.A.A.F. squadrons concentrated on tactical targets until 21st-22nd May, when Ruhr targets were again bombed, partly for the intrinsic value of impeding German production, but with the important corollary of splitting enemy air defences between German industries and the French invasion area. That night Nos. 460, 463 and 467 all attacked Duisburg, causing especially heavy damage in the industrial suburb of Hoshfeld. The next night, while the Waddington squadrons went to Brunswick, No. 460 bombed Dortmund, adding considerably to the area laid waste by the heavy raids during 1943. All three attacks were made in bad weather against increased enemy defences, but although the loss rate rose to over 5 per cent, this reaction was, if anything, reassuring to the Allied strategic plans, as the assault in Normandy was only a fortnight away and there had obviously been by no means a total transfer of *Luftwaffe* strength to the area of vital importance.

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<sup>2</sup> F-Lt J. A. C. Kennedy, DFC, 409001. 467 and 463 Sqns. Bank clerk; of Melbourne; b. Mount Gambier, SA, 30 Nov 1911.