also wrong when he forecast that the Pathfinders would not be able to find the
aiming point in such a relatively small town. But there was trouble marking
it. ‘Excellent visibility in the target area with nil cloud,’ Wing Commander R.J.
Lane, commanding No 405 Squadron reported.

Target was identified visually. Many details of town and adjacent country positively
identified. Load released at 2303 from 17,000 feet on the aiming-point. Ran up river
from southwest. Six cans of flares white (first can 2259 hours) and T[arget] I[ndicator]
green over woods two to three miles south of target. Target not sufficiently illumina­
ted. Aiming-point not seen until over it. Circled to starboard and made second run
from southeast along railway. Found one visual marker T.I. red on aiming-point,
another on east end of marshalling yard, and another in the new town. Own T.I. red
undershot 6 to 700 yards to southeast. Saw one large bomb burst on island immediate­
ly south of aiming-point. By 2310 hours, whole town area well covered with incendi­
daries with three very good fires, but many incendiaries and several red T.I.’s were
spreading up to five miles west of town. Route-marking good.38

Squadron Leader J.B. Millward, also a visual marker from No 405, faced
similar problems.

Visibility was clear in target area. Aiming-point was identified visually. Load was
released at 2301 hours from 16,800 feet on aiming-point, cluster of buildings north of
bridge at northeast end of island in river. Saw first white flares going down at 2259
hours and green T.I. burst about half a mile northeast of aiming-point. At 2259 hours,
visually identified river and island in river and picked out aiming-point. Pressed bomb
tit but graticule light failed. Made another run and released high explosive only. By
this time the raid was spreading back with one T.I. red cascading over A.-P. And others
spreading back to open fields approximately five to six miles from A.-P. Another
concentration of red T.I.’s were in fields to east of A.-P. and a lot of bomb bursts seen
in open fields. On leaving target, it was evident that the attack was exceedingly
scattered with a tendency to undershoot. Saw the glow of fires from factory west of
town which was probably the result of the daylight attack [by the Americans.] Smoke
from flares concealed most of the built-up area on our second run.39

‘Big Week’ ended later that day when, with the return of bad weather, the
Americans were prevented from operating with anything like the intensity that
had marked the preceding five days. Raids on other targets associated with
Overlord and Pointblank – oil refineries, V-1 sites in France, and the railway
lines linking Germany and the Channel coast – now had to be considered, but
the campaign against the Luftwaffe and the German aircraft industry did not
cease altogether. Between 25 February and 1 April 1944 the Americans
pounded Brunswick, Frankfurt, Ludwigshafen, Düsseldorf, Augsburg, and
Schweinfurt, among other places, and by the end of March they had knocked
a sizeable, if temporary, hole in the enemy’s aircraft production. The number
of new single-seater fighters delivered to the German air force fell from 1162
machines in January 1944 to 794 in February, rising slightly to 934 in March,
LUFTWAFFE NIGHT FIGHTER ORGANIZATION
MARCH 1944

Luftflotte Reich HQ
Luftflotte 3 HQ
Jagdkorps HQs
Jagddivision HQs
Single-engine fighter bases
Twin-engine fighter bases

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and the total lost production between 20 February and 1 April may have been as high as 1000 aircraft. Now, however, that the Americans' long-range P-51 Mustang escorts had been freed to range far and wide in enormous numbers while protecting the bomber formations, they were hammering the Luftwaffe in aerial combat. It has been estimated that the Germans lost one-third of their day-fighter strength in the west during the Big Week fighting, and half of what was left in the month that followed. New production, no matter how well organized, could not keep up with attrition like that; nor could the training system keep up with pilot wastage on such a scale.

Bomber Command also continued to attack cities associated with aircraft production after 25 February, and sometimes the results were startlingly effective. In clear skies, with the city standing out against a covering of new-fallen snow, Harris's crews destroyed the heart of Augsburg on 25/26 February in a raid which saw 90 per cent of bombing photographs taken within three miles of the aiming point. Nearly three thousand houses were damaged beyond repair, 85,000 civilians (almost half the population) were rendered homeless, and thirty-seven factories were hit—among them a diesel engine plant and an aero-engine factory, both top priority targets. The enemy had been decidedly—and inexplicably—thrown off balance. Although both waves of the main force were identified as such and a few night-fighters were infiltrated into them as far forward as Metz, almost all of 1 Jagddivision's interceptors were held back against the possibility of an attack further north, and so intervened only on the bombers' return route.

Flight Sergeant P.E. Fillion of No 408 Squadron, on his third sortie, did not reach Augsburg. He had been forced to abort his first trip, to Leipzig, because of engine trouble on 19/20 February, though he completed the raid on Schweinfurt with no trouble five days later. Now he found his oil temperature high and the pressure dangerously low, so he again chose to jettison his bombs early and return home. Some fifteen or twenty minutes later he saw a night-fighter take off far below and begin to climb towards him in large circles with navigation lights on. These were switched off when the fighter reached about 7000 feet, but another light allowed Fillion to follow its progress clearly. Eventually the Canadian opened fire and the enemy 'burst into flames ... and went down.' The victim was undoubtedly a Himmelbett crew held back to pick off stragglers. Fillion, meanwhile, flew on into France where, with the oil temperature much too high and the pressure falling, all four engines seized up and he crashed near Abbeville. Two of his crew evaded capture and, making their way through France with the help of the Resistance, returned to London in late March 1944. Like some 2700 other Canadian airmen, however, Fillion and the others were taken prisoner, Fillion himself near Arras.

Every man's experience as a POW was different, 'some brooding in silent despair to the point of madness or even suicide,' most evincing 'a common

* After that, fighter output soared, standing at 1875 single-engine machines as early as July 1944. The focus of Allied bombing changed to pre-invasion targets and the Germans, given Hitler's long-awaited authorization to allocate the highest priority to fighter production, and now directed by Albert Speer, completely reorganized and rationalized their aircraft industry.
determination to make the best of it all, a refusal to be downcast.'43 Some tried
to escape, but fewer than is commonly believed. ‘People are apt to imagine,’
observed an official study commissioned by the RAF immediately after the war,
‘that when captured a man automatically longs to get away and that it is only
the physical difficulties which prevent him. This is not true. Only a small per­
centage of prisoners of war ever make persistent attempts to escape; sooner or
later the majority accept captivity and try to endure it with as much cheer­
fulness as possible.’44 That reflected neither cowardice nor dereliction of duty, but
rather a strong assertion of the instinct for survival as well as ‘the force of
inertia.’ Once a prisoner reached ‘the seclusion of the barbed wire’ his ‘first
sensation was one of relief. At least he ceased to be “on show.”’

Having been stared at, pointed at, segregated from those around him by special guards,
perhaps interrogated for long hours, he was among his own people. The sound of his
own language raised his spirit and he could laugh once more without a guilty feeling
that he was fraternising with the enemy; within the limits of the camp he could move
how and where he pleased.

When these first sensations had worn off, others took their place. The mere fact of
being a prisoner offered endless possibilities. A man might dream of reading
Shakespeare, of learning languages, of playing the piano, of doing some of the things
he had often longed to do but for which he had never found time.45

There were men for whom the barbed wire was a symbol of security. As a prisoner
of war, they reasoned, there were no responsibilities. You neither looked for your food
nor paid for it. You could read, paint, act, or play the trombone, sleep for long hours
and eat when you felt like it. You did not have to go anywhere or get dressed for
Sunday. You were never alone ... Laws and regulations were not multifarious and
complex, but rigid and easy to understand.46

For many, learning to cope within this environment was a better way of
spending their days than thinking of escape which, at best, had a slender
chance of success: of the ten thousand Commonwealth airmen imprisoned in
permanent camps in Germany, Italy, and present-day Poland and Lithuania,
fewer than thirty ever reached Britain or neutral territory following an es­
cape.47

For RAF and RCAF POWs (officers especially – one reason the Canadian
government eventually insisted upon a very liberal commissioning policy) life
was at least bearable until very late in the war. Food, while not available in
quantity or variety, met minimum standards, and Red Cross parcels, with their
cigarettes, chocolate, and other luxuries, came in comparatively freely at this
stage of the war. A Red Cross report on conditions at Stalag Luft I, at Barth
on the Baltic coast near Stettin (which housed 1,959 prisoners on 9 March
1944, thirty-nine of them Canadian), noted, ‘each camp has an adequate kit­
chen.’

Rations are regulation ones, checked by the officers in charge of the kitchen. Food­
stuffs issued by the German Authorities are always entirely used up without satisfying
Figures show sorties flown/tonnage dropped/aircraft losses, if any.

No 6 GROUP
MINELAYING OPERATIONS
1943-1945

Total mining sorties: 2,413
Tonnage of mines laid: 5,100
Aircraft lost: 44
Loss percentage: 0.49

©Compiled and drawn by the Directorate of History.
Berlin, Mining, and Preparations for Overlord

the appetites of the prisoners. Their principal nourishment, therefore, consists of the contents of Red Cross Food Parcels.

Condition of clothing of prisoners who have been in camp for several months is satisfactory. The reserve stocks in hand, however, are insufficient to cater for new arrivals ... A large increase has been asked for in regard to reserve supplies of food in view of the increasing strength of the camp.

The Senior [Allied] Officers have complete control of food and clothing parcels, and have unrestricted liberty in administering them. Store room for food and clothing is large enough to house all the articles asked for ... Hygiene satisfactory ...

The Medical Section has lately been directed by a German doctor who is permanently resident at the camp. The prisoners seem to like him ...

In conclusion, it is difficult to precisely judge the quality of this Camp as it is in full tide of alteration. The officers in charge are encountering great difficulties in organizing the intellectual life and leisure occupations of their comrades while their numbers continually vary. Housing accommodation and living conditions are, however, satisfactory.48

The largest camp for Commonwealth and American aircrew was Stalag Luft III and it was here that Flying Officer Fillion – he was promoted effective the date he went missing – was first sent.49 A rectangle of some three square miles cut out of the deep pine forests near Sagan in Lower Silesia (present-day Polish Zagan), Stalag Luft III was seventy-five miles northeast of Dresden. Opened in April 1942, it was 'a model of what a prisoner of war camp should be – from the captor’s point of view.'

Between the double wire of the perimeter fence loose coils of barbed wire lay thick on the ground so that it was impossible to walk across the intervening space. Exactly above the fence, at intervals of about a hundred yards, stood watch towers on each of which was a machine gun covering the interior of the camp ... Immediately inside the wire was an area of dead ground six to fifteen yards wide, bounded by a low guard rail; if any prisoner crossed it, he could be shot without warning. At night boundary lights lit the perimeter ... and from each guard tower searchlights swept the compounds.49

A few climbed over the wire in heavy blizzards and thick fog; some climbed it at night, rather more cut their way out, and a number were killed in the attempt. But tunnelling through the sandy earth offered the best chance, and it was from Sagan, on 24 March 1944, that 'the Great Escape' took place, when seventy-six POWs including six RCAF and four Canadians in the RAF successfully exited Harry, one of three tunnels upon which work had begun almost a year before.50

• In July he was transferred to Stalag 357, a combined army-air force camp located at Oerbke, near Fallingbostel, thirty miles north of Hanover. Here 'living conditions were bad because of dilapidated barracks, leaking roofs, and insufficient heating and lighting, and with the passage of time these conditions were worsened by over-crowding as further batches of Army prisoners arrived from other camps further east.'
The RCAF officer in charge of security for the escape plan was Flying Officer G.R. Harsh, an American who had been convicted of armed robbery and murder in the late 1920s and who, after being pardoned, enlisted in the RCAF in May 1941 and was shot down over Cologne in October 1942. The chief engineer was also from the RCAF. Pilot Officer C.W. Floody, a native of Chatham, Ontario, who had flown Spitfires with No 401 Squadron before being shot down in October 1941, consciously traded upon his brief experience working in the gold mines of Kirkland Lake, Ontario, to become involved in the project. ‘I knew the idiosyncracies of every member of the team. We were an international shift composed of men from England, Ireland, Scotland, Wales, France, Denmark, Norway, South Africa, Canada, Australia, New Zealand and the Argentine ... Even when feeling ill or hungry they had turned up for work day after day with nothing worse than a crack at me for always picking on them when there was dirty work to do. Oddly enough it was with a feeling of sorrow that we went below to complete the final stages.’

Harsh and Floody were moved out of the main compound to a subcamp at Belaria, a few kilometers down the road, before the mass escape took place, and that may well have saved their lives. Of the seventy-six airmen who exited the tunnel before the Germans discovered what was happening, just three—two Norwegians and a Dutchman—made home runs, reaching Britain in fairly short order. Fifteen were captured in the immediate vicinity of the camp and were returned to it straight away. Of the rest, eight would be caught and sent to other camps (including the concentration camp at Sachsenhausen), but an unfortunate fifty, including six Canadians, who had been turned over to the Gestapo after being apprehended were summarily executed.

Two raids on Stuttgart were almost as successful as that on Augsburg, damaging the Bosch and Daimler-Benz works with relatively little loss to the attacking force. On 1/2 March, for example, when cloud from the Channel to the target grounded both 1 and 2 Jagddivisionen and the Wilde Sauen and limited 3 Jagddivision’s response to fifty-three sorties, the main force lost only four aircraft, 0.7 per cent. However, two weeks later, on 15/16 March, when the weather was somewhat better, 4.3 per cent of the 836 aircraft involved were lost even though the Germans were so confused that at one point Augsburg, almost one hundred miles to the south-east, was identified as the target. Much the same happened at Frankfurt, where two raids involving more than eight hundred heavy bombers each knocked out public utilities and facilities belonging to I.G. Farben, again with manageable losses. On 18/19 March just twenty-two bombers went missing, 2.6 per cent, while four days later thirty-three (4 per cent) failed to return.

Three of the raids on Stuttgart and Frankfurt had been supported by large Gardening and other diversionary operations in the north and west, and all four

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* He spent twelve years in jail, many of them working on a chain gang and some as a hospital orderly, and had been pardoned only after he performed a successful emergency appendectomy on a fellow inmate ‘by the flickering light of candles and kerosene lanterns, assisted only by another convict and a stiff tot of medicinal alcohol and ginger ale.’
involved complex and imaginative routes. That, among other things, suggested to some of the operational research scientists at High Wycombe that the tactical stalemate existing since early winter could be broken if bomber crews curtailed their use of IFF over enemy territory. At the same time, they cautioned, the gaps in the enemy's southern defences that had helped keep losses low at Schweinfurt, Augsburg, and now Stuttgart would soon be filled, and operations there would then involve the same risks as in the north. They were right. Beginning in late March, radar and fighter units were transferred to southern Germany and to France, astride the route to southern targets.

The ORS was also keeping a close watch on No 6 Group in the early months of 1944, but by March the Canadian casualty statistics were 'reassuring,' as Harris himself observed. They were no longer the worst in Bomber Command and, although still too high for comfort, some of the losses could be accounted for by the large number of Halifax IIIs and Vs used on bombing operations until mid-February. Better still, when losses were compared by aircraft type, it was found that the experienced Canadian Halifax squadrons had fared better than the No 4 Group average, and that the Lancaster squadrons were doing better than their counterparts in No 3 Group despite the longer distance they had to fly to most targets and the often worse weather besetting the bases in the Vale of York. Apparently having found its feet, No 6 Group had passed through its worst period, and its tactical refinements, as decided upon by Air Vice-Marshal Brookes and his operations staff, were now giving it an edge. In particular, the Canadians were well served by their practice of maintaining altitude after bombing rather than converting height into speed by diving away from the target, the standard procedure in No 4 Group.

As it happened, Brookes was no longer AOC of the group when Harris communicated his sense of satisfaction with its performance to Overseas Headquarters. Having supervised the original organization, and having nurtured it through some very difficult times, Brookes was exhausted and the strain had begun to show. Called to London on the morning of 17 February 1944, he was informed by Air Marshal Breadner of his pending 'return posting home' (he would retire from the RCAF altogether in November), and his diary expresses neither surprise nor disgruntlement at the unexpected turn of events. He drove that afternoon to High Wycombe and spoke for just under an hour with Harris, whom he found 'in good form,' and then returned to London, spending the next day with Breadner and the AOC-designate, Air Vice-Marshal C.M. McEwen, station commander at Linton-on-Ouse.

Like Brookes, McEwen was a veteran of the First World War who had joined the RCAF when it was formed. He had attended the RAF Staff College in 1930 and had been judged a good organizer and an excellent trainer of men. Following a tour as AOC of No 1 Group (St John's) in the RCAF's Home War Establishment, he had been posted overseas, first to command the Canadian

* That H2S was being routinely plotted and its volume measured by the Germans was still lost on the ORS, who, mistakenly and tragically, continued to assert that intercepted IFF transmissions were 'the only accurate means left to the enemy to plot and engage the bomber stream.'
training base at Topcliffe and subsequently the operational base at Linton in June 1943. There he was considered to be a stickler for discipline and correct dress, attitudes he took with him to Allerton Hall. He also took a burning commitment to the principle of training and yet more training, even for established operational crews. Improving their standard of navigation was clearly important, but so, too, was giving them more practice in defensive tactics through fighter affiliation exercises.

McEwen felt that training was the area where his predecessor had been weakest - although in Brookes's defence it must be said that throughout most of 1943 the Air Ministry had allocated only three Spitfires per group to practise defensive tactics, a number he, Carr of No 4 Group, and High Wycombe considered inadequate and which was subsequently increased. In the event, McEwen soon imposed a rigorous new regimen on his squadrons, insisting that all crews do regular cross-country navigation and fighter affiliation exercises to hone their skills. He boasted later that that was the major reason why the group's losses soon came down, and it undoubtedly was a factor, although the conversion from the Halifax II/V to Halifax III also played a part. On the five raids flown between 25 February and 23 March - just after McEwen took over but before he could have had any appreciable impact - the loss rate of 5.6 per cent seemed explicable entirely in terms of poor flying discipline and, in particular, because of poor time- and track-keeping, faults the extra training he instituted was designed to correct.57

The well-documented and well-understood link between navigation and losses was demonstrated again when Bomber Command returned to Berlin on 24/25 March and seventy-two crews, 9 per cent of the 793 dispatched, did not return. Surprised by unbelievably strong north winds of 100 miles per hour, many navigators simply could not believe their findings as they checked their positions en route to the target and so did not make the appropriate corrections to their course. The bomber stream was pushed well to the south, losing cohesion in the process, as individual crews, trying to come to grips with the discrepancy between their wind forecast and what they were experiencing, decided on their own what measures to take. Eventually many navigators appear to have gained confidence in their observations, but by then the stream was well spread out in time and space. At zero hour about half the force was still more than twenty miles off track and two-thirds at least ten miles away from where they were supposed to be. The night-fighters had been up early and in strength - about two hundred of them from 1 Jagdkorps alone - and they had a relatively easy job picking off isolated prey. Others, following a new tactic introduced by Schmid as a hedge against diversions, were held back for insertion into the stream on its return route, and they too had considerable success.58

Switching gears, Bomber Command made for Essen two nights later. Harris's selection of a target in the Ruhr surprised the enemy controllers who, anticipating a second and deeper penetration, initially withheld their fighters. Then, when finally convinced that Essen was the only objective, the risk of icing limited the number of interceptors they could put up. Just eight bombers
were shot down, at a cost of twenty of the 105 fighters scrambled in I Jagd­
korps. After four years of experiment and effort, when it came to keeping
losses down, bad weather remained Bomber Command’s greatest ally and the
Germans’ biggest foe.59

The next operation, to Nuremburg on 30/31 March 1944, brought the battle
of Berlin to a formal and prearranged close. For those involved, this raid was
a shattering experience. Ninety-five of the 786 heavy bombers dispatched were
lost, 12 per cent, and a further twenty-six were heavily damaged – the highest
absolute total recorded during the war. Furthermore, in terms of the damage
done to the target, the raid was an abysmal failure. Strong winds pushed some
crews over Schweinfurt – not altogether a waste, given the importance of its
ball-bearing plants – but over Nuremburg, where there was cloud, the
Pathfinders missed their aiming point. That, and the fact that many crews were
well aware of the carnage around them and wanted nothing more than to get
home safely, led to extensive creep-back in the northern suburbs, and there was
only slight damage to the city centre. Of the industrial facilities hit, a steel
rolling mill and a margarine works suffered most, but neither was a significant
objective.60

Because of the horrendous casualties, the Nuremburg raid has since been the
subject of microscopic scrutiny. Like many military disasters where obvious
rules appear to have been broken, a body of mythology has grown up around
it. But the central element of the Nuremburg myth – that the enemy had
specific foreknowledge both of the raid and the target, and that German fighter
crews were lying in wait for the bomber stream – can be dispensed with easily,
particularly when the Luftwaffe’s strong and early response is cited as the main
evidence for the alleged forewarning.61

As we have already seen many times, the Luftwaffe’s radio intelligence and
electronic-tracking capabilities were more than good enough to explain its deft
riposte. Moreover, there is compelling evidence that, although the Germans
knew that the weather in the north did not favour operations there, Harris’s
selection of a distant southern target during the moon period and on such a
clear night came as a complete surprise. The enemy had anticipated raids
further west, if any were mounted at all, a predisposition that was sub­
sequently strengthened by the route laid down for the main force and by the
early diversionary flights over Cologne. Under these circumstances, when it
became obvious that Bomber Command would be operating, I Jagddkorps
simply assembled the bulk of its fighters at the IDA and OTTO beacons, near
Frankfurt and Cologne, and waited, ready to defend the Ruhr and the Rhine
industrial basin and poised on the flank of a possible approach to Berlin. As
it happened, because of high winds, much of the bomber stream passed direct­
ly over IDA, leaving the enemy interceptors well placed for insertion into the
bomber stream without their having any special knowledge of where it was
going.

* The process began in early April, with Bomber Command’s own ‘Report on casualties in
night operations, 30/31st March 1944: Nuremburg,’ PRO Air 19/169.
Indeed, once it was clear that the enemy did not intend to double back to the Ruhr or Rhineland, first Frankfurt and then Berlin were announced as Bomber Command’s likely objectives, and in the end all Wilde Sauen within range were sent to the capital. Nuremburg itself was never identified as the target, no fighters were directed there, and even after the bombing began one Staffel based in the vicinity of the town remained on the ground. From the perspective of concealing the identity of the target and thereby illustrating High Wycombe’s mastery over the Luftwaffe’s efforts at point defence, the Nuremburg operation was a magnificent success.

As an illustration of the power, even triumph, of pursuit night-fighting, however, Nuremburg tells a different, perhaps not altogether surprising, story – and one which should not have shocked Bomber Command’s research staffs. The ORS had already observed that the enemy’s defences in the south were likely to improve, and as recently as 21 March it had warned against dropping route-markers (because of their value to the enemy) and against passing the main force too close to the ‘natural’ routes between night-fighter beacons. Route markers were not a factor on 30/31 March, but as we have seen the bomber stream not only strayed into one of those natural routes because of unpredicted winds, but actually passed right over one of the beacons, so that upwards of fifty Halifaxes and Lancasters were lost before they reached the last turning-point at Fulda.

Even with the issue of German foreknowledge laid to rest, it has still been possible for bitter survivors to wonder, given the ORS warnings, why Nuremburg was selected as the target in the bright moonlight prevailing on 30/31 March. Meteorological flights mounted in the late morning and early afternoon of 30 March found that the cloud cover anticipated en route was not likely to materialize – although there would be cloud at the target – and it was at this point, Harris’s deputy Sir Robert Saundby recalls, that ‘everyone, including myself, expected the C-in-C to cancel the raid.’ But he did not, and beginning at 9:30 in the evening the crews from No 6 Group, who had the farthest to fly, began to taxi to their dispersal points and then takeoff. By the time they reached Belgium they realized that, flying in brilliant, cloudless moonlight, and with their condensation trails visible for miles, they were in for a difficult night. ‘Just how difficult,’ Flying Officer F.F. Hamilton of No 424 Squadron recalled, ‘became apparent with a beautiful clear night and lots of fighter activity.’

[It was] easy to see the tracer, then the ball of fire and scratch one of Bomber Command. I began to think that what I saw could not be bombers going down but some German scare technique but I soon realized that it was the real thing and that Bomber Command was taking some terrible punishment.

The fact that I was hit head-on gives some indication of the visibility; all I saw was white tracer getting near, then Bang! It all happened in one or two seconds. The aircraft was on fire and I knew we probably had ten seconds to get out [but we] were hit again from above and behind and the flames were shot right out [extinguished] by this second burst ... and no one jumped. We were hit a third time ... jettisoned the
incendiaries and continued on our happy way with the main stream across Nurem­
burg.\textsuperscript{65}

The Germans, in contrast, had an extraordinarily easy time. ‘We were flying
from Laon,’ Unteroffizier Erich Handle of III/NJG 1 remembered, ‘and had been
told by the running commentary that the bombers were about five minutes
away. I hadn’t even switched on the SN2 set when the gunner poked me in the
back and pointed. “There he is up there, the first one!” As we came round we
saw another straight away, about 200 metres directly above. I switched on my
SN2 but we had dropped 2,000 metres behind in the turn and had lost them.
When the set warmed up I saw three targets on it at once. I headed for the
nearest ... Weather was marvelous – clear sky, half-moon, little cloud and no
mist – it was simply ideal, almost too bright.’\textsuperscript{66}

Although losses were heavy, they were not equally divided among all groups
or squadrons. While Bomber Command lost 12 per cent overall, No 4 Group,
with all its crews flying Halifaxes, lost 16.5 per cent, and No 6 Group, with
one-third Lancasters, all from Linton, only 11 per cent. At Leeming, where
squadrons had been assigned to the highest (and usually the safest) height
band, five of twenty-nine crews failed to return. The Tholthorpe units, placed
in the lowest band, lost only one of twenty-six machines.\textsuperscript{67} For some (and for
once) the key to survival may have been to arrive late, which two-thirds of the
Canadians did.\textsuperscript{68} ‘We were some twenty minutes late to the target, but ... being
off track and behind time worked to our advantage, for when we arrived in the
vicinity of Nuremburg there was no enemy activity whatsoever. The last of the
markers had died ... so we released our load at the approximate point where
the glow of the red target indicators faded. Heaven only knows where our
bombs went.’\textsuperscript{69}

Keeping in mind that the loss of ninety-five aircraft meant the loss of almost
seven hundred aircrew – about the strength of an entire infantry battalion, or
the ship’s company of a large cruiser – the Nuremburg raid was in its own
way an apposite conclusion to the battle of Berlin. In early November, it will
be recalled, Harris had predicted that a combined Anglo-US offensive against
the enemy capital was likely to cost five hundred bombers and lose Germany
the war – a forecast he did not change even when the Americans chose not to
participate. The first half of his prediction was accurate. On raids against
Berlin from November 1943 to March 1944 five hundred machines (including
187 from No 6 Group) were lost out of 8983 sorties – 5.56 per cent – and
another fifty-nine crashed in England. Just over 3000 aircrew were killed and
another 750 were captured – of which 1300 came from the RCAF. However, the
AOC-in-C was not even close on his second prediction. Germany did not sue
for peace because of the battle, nor did Berliners’ morale crack, despite their
10,000 dead, several hundred thousand injured and homeless, or the additional
‘2,180 gross acres of devastation’ Sir Arthur felt it necessary to emphasize in
his Despatch on Operations.\textsuperscript{70}

Moreover, despite the unanticipated disruption caused to that part of the
electronics industry situated in Berlin, it cannot be said that the German war
TONNAGE OF BOMBS DROPPED BY BOMBER COMMAND, (INCLUDING 6 GROUP) AND EIGHTH US AIR FORCE

NOTE: Percentage figures indicate proportion of total tonnage dropped attributable to No 6 Group.
economy suffered long-lasting, much less permanent and irreparable, harm because of the sixteen raids on the capital mounted between November 1943 and March 1944. Much of what was destroyed was simply not essential for waging war and, as elsewhere in Germany, there was enough elasticity in the industrial system to take up the slack and to allow labour and materials to be shifted from one sector to another. To be sure, the need to disperse production because of bombing created temporary shortages and the campaign against Berlin, taken in conjunction with the burgeoning American bombing effort, undoubtedly contributed to the German decision to give higher priority to air defence and so withdraw resources and personnel from other branches of the Wehrmacht. However, it would be wrong to ascribe too much to the offensive against Berlin in this regard. As even the postwar British bombing survey admitted, ‘area attacks,’ including those on Berlin, ‘could not have been responsible for more than a very small part of the fall which ... actually occurred in German production.’

Area attacks, the survey added, were also ‘a very costly way of achieving the results which they did achieve.’ Few were more so than the campaign against Berlin, and when it was over High Wycombe was forced to concede not only that the loss rate had become unsustainable, but also that Bomber Command’s store of tactical innovations was now ‘practically exhausted.’ ‘We did not fail for lack of trying,’ a Pathfinder group captain recalled, ‘but there was nothing left in the kitty’ to allow for the destruction of Berlin at acceptable cost. ‘The battering we received over the North German Plain cost us more than a thousand aircraft and between seven and eight thousand lives. Berlin wasn’t worth it.’

Indeed, Harris was now finally convinced that to achieve his purpose he could no longer simply hide from the enemy, but must instead seek it out and beat it in battle with a much strengthened offensive night-fighter force. However, Mosquitoes in the numbers he wanted were simply not available. What saved things, then, in terms of the casualty rate, was the gradual shift in target systems (to assist Overlord) that began on 1 April, the day after Nuremburg.

This shift in objectives was also a tonic for Bomber Command’s morale. During the Battle of Berlin, with its disheartening return runs to the same target area and its high losses, Bomber Command most noticeably ‘balked at the jump.’ Reports of ‘fringe merchants’ – those who aimed at quickly getting into, and away from, the crude target area, caring little about the aiming point or the Pathfinders’ markers – and of those who dropped their heaviest bombs over the North Sea in order to gain height, proliferated. And perhaps because of the strain (but the effect of flying in cloud and bad weather must always be taken into account), the early return rate remained consistently around 10 per cent, higher than the norm of comparatively quiet periods.

‘Fear,’ one RAF veteran observed, was the ‘eighth passenger’ in all heavy bombers, and in some aircrew it produced sufficient physiological or neuropsychiatric distress that they had to be taken off operations. Others simply tried to avoid flying. That it was ‘difficult to draw a line on one side of which a
man was condemned as a coward and on the other absolved as being a victim of circumstances beyond his control' was always acknowledged. But when no recognized medical or psychological explanation could be found and they lost the confidence of their commanding officers, these men could be classified as lacking in moral fibre and, as ‘waverers’ be removed from their base, stripped of their rank and flying badges, and employed in the lowest rank on the ground until they were either sent to the army or to the coal mines.74

That was British practice. It was consciously designed to dissuade. It worked. And because of that, at times, it was harsh, as Murray Peden, a Canadian pilot in No 100 Group, observed first hand.

One crew flew three nights in a row ... They found themselves on the battle order the fourth day. This sort of thing rarely happened because the weather was seldom favourable that long. This time it did happen, and the crew were extremely tired. It is entirely possible that if they had gone to see Doc Vyse before they went to briefing, he would have ordered them, on medical grounds, taken off the battle order for one night. Instead, they discussed it amongst themselves, and took the indefensible but understandable position: ‘... If it’s a short trip, we’ll go; if it’s a long trip, to hell with it.’

... The target was Berlin ... The pilot told the Flight Commander that they were not going. He in turn told the Wing Commander. The Wing Commander came over. ‘Look,’ he said, not unkindly, ‘I’ll pretend that this has not happened. You know you can’t come to briefing and then decide you are not going to do the operation. Now get your gear together and be ready to go to the aircraft with the other crews.’

The pilot and two other members of the crew realized immediately that they had put themselves in an untenable position by going to briefing before telling anyone that they felt incapable of flying a long operation. These three indicated at once that they would fly the duty as detailed. The other four members refused to go ... insisting that all they wanted was one night’s rest.

The recalcitrant crew members were immediately placed under close arrest ... were posted to Uxbridge, where they were reduced to the ranks, given LMF endorsements on their records, and sentenced to 180 days detention

I knew the pilot, an Australian, and saw a good deal of him in the weeks after this unhappy event. I did not know the crew members who had persisted in their refusal to fly, but I always felt that they had been their own worst enemies. It was harsh treatment to label them LMF, bearing in mind the service they had rendered and the ordeals they had already endured, but they had tied the Wing Commander’s hands by the procedure that they had adopted.

Indeed, Peden elaborated, ‘the harsh treatment was necessary simply because the strain was so great. If there had been an easy and graceful way to abandon operational flying, many crews would have found the temptation hard to resist.’75

In the RCAF from 1943 on, however, largely at the insistence of Air Minister C.G. Power, suspected LMF cases were returned to Canada for a thorough physical and mental-health examination before a final decision was taken. Greater emphasis was placed on medical and psychological assessments in
Canada, and there was a much greater inclination to find ‘genuine’ cases of ‘flying stress’ (particularly among those reaching the latter stages of their operational tour) who, for that reason, would not have to be treated as waverers. It was left to the minister to make the final disposition. Despite the more understanding policy in vogue in the RCAF, many Canadian aircrew nevertheless abhorred the idea of LMF and all that accompanied its use.\textsuperscript{76}

Although there are hints of waverers in the Canadian squadron records before November 1943, it was not until late February 1944, at the height of the battle and just before he left No 6 Group, that Air Vice-Marshall Brookes had to deal with his first ‘disposal’ case. It involved a twenty-six-year-old pilot (and former aerobatics instructor at the Central Flying School in Canada) who had been posted to England just five days after the birth of his son. He had begun to exhibit some symptoms of ‘neuro-psychiatric hysteria’ when he realized not only that he would not be able to travel home to see his wife, who had suffered post-natal complications, but also that he would be given an operational posting in Bomber Command. He considered himself better suited to instructional duties. OTU and HCU courses kept him occupied for a few months, but he was eventually posted to a bomber squadron where, on his fourth operation, he returned to base within an hour of setting out because he believed he did not have enough fuel to reach the target. There was unimpeachable evidence that he had purposely mishandled his aircraft to ensure he would use an abnormal amount of fuel, and he was labelled ‘LMF.’ Having lost the confidence of his commanding officer, he was interviewed by Brookes, who concluded he should be removed from flying duties and returned to Canada as a possible waverer. Once in Ottawa he was brought before the special board established to review such cases. While agreeing that he had ‘failed in gaining his crew’s confidence, lacked the ability to gain proper crew co-operation, [and was] a poor leader’ and that ‘his claim of inexperience was ... a feeble excuse for his inefficiency,’ the board nevertheless concluded that wavering ‘could not, with the evidence, be proved.’ With the concurrence of the air member for personnel, the chief of the air staff, and the minister, he was retired as ‘inefficient’ but permitted to keep his rank and flying badge.\textsuperscript{77}

Although the fact (and the issue) of wavering is a part of the RCAF and Bomber Command story, it would nevertheless be altogether misleading to put too much emphasis on it. During the whole war, in all commands in all theatres, fewer than 3000 Commonwealth aircrew were categorized as lacking moral fibre – less than 0.2 per cent of those who served. More to the point, in Bomber Command between July 1943 and June 1944 – when hopes that Window and other counter-measures would permanently befuddle the enemy’s defences were raised and dashed in just a few months, and casualties were frequently high – less than 0.4 per cent of its aircrew strength were identified as being even possible LMF cases.\textsuperscript{78}

The battle of Berlin was arguably the central event in Bomber Command’s war, and the Nuremberg raid of 30/31 March 1944 was demonstrably the single most dramatic episode within that battle. But while 786 bomber crews
made for southern Germany that night, another forty-nine, including thirty from Nos 419, 428, and 434 Squadrons, were operating far to the north, dropping mines on the shipping lanes around Heligoland.79

Besides having a genuine military value, Gardening was often used to introduce novice crews to operations because of the relatively low casualty rates involved. The comparative ease and safety of mining was not obvious in late July and August 1943, when Window momentarily confused the enemy’s defences and bomber losses fell, but it became startlingly so again during the battle of Berlin. While 1081 crews failed to return from 24,754 night bombing sorties (4.36 per cent), mining cost just twenty-one of 2078 sorties (1.01 per cent). No 6 Group contributed 395 of the latter, losing four crews, or exactly the overall percentage rate.80 Because of statistics like these, minelaying came to be regarded as a good means of employing obsolescent aircraft as well as introducing new crews to operations.

Wellingtons bore the brunt of the Gardening effort in the summer and early autumn of 1943, Stirlings were added in November, after their withdrawal from operations over Germany, and in early 1944 it was the turn of the Halifax IIs and Vs, following the disastrous mid-February strike on Leipzig. Like area bombing, Gardening had its own rhythms based on weather and season. Since accuracy was crucial (it was essential not to lay mines where British ships or submarines might operate, or to let them fall on land or in shallow water where the enemy could recover them and devise counter-measures), crews were invariably instructed to bring their mines back if they could not find the aiming point or a designated safe dropping zone in deep water. Given the vagaries of European weather, a sustained effort against any single area was therefore often impossible.

The focus of operations also shifted seasonally. Because of the risk of interception, northern Gardens were rarely sown during the short summer nights, and the weight of mining was moved to the approaches to French ports and the coastal sea-lanes inside the Frisian Islands. These regions had the advantage of lying within Gee range, which promised greater accuracy, but the pickings were not so good as in the Baltic, where there was considerable traffic to Norway, Sweden, and the Eastern Front. Indeed, success outside the Baltic was sometimes measured by the sinking of a single ship. Such was the case in September 1943 when Nos 4 and 6 Groups, and particularly Nos 429 and 432 Squadrons (the last of the Canadian formation’s Wellington units and regarded, by then, as minelaying specialists), were credited with the beaching of the Strasbourg, a 17,000-ton liner commandeered from its Dutch owners, before it could make a run for the Baltic to replace the troopship Gneisenau (not to be confused with the battle-cruiser of the same name), which had also been sunk by mines while ferrying reinforcements to the Russian front.81

The greatest threat to Gardening crews, whether they were off the French coast, over the Frisians, or in the Baltic, was anti-aircraft artillery fire. The earlier aerial mines had to be sown from 6000 feet or below, well within the range of ground-based or shipborne light Flak. There was good reason, therefore, for Bomber Command to ask that experiments be conducted and refine-
ments made in mine design to permit operations from heights up to 15,000 feet, using both timed runs from visible landmarks and H2S as navigation aids. This was done; and, allowing for inexperienced crews and mistakes in wind-finding of up to fifteen miles per hour, it was found that the average dropping error should be between 1000 and 2000 yards. That was good enough, in all but the narrowest channels.82

High-level minelaying using H2S required a commitment of heavy bombers to Gardening, something which, in the autumn of 1943, even the Royal Navy did not expect Sir Arthur Harris to do immediately or regularly. Indeed, if the deputy director of operations (mining) at the Admiralty is to be believed, the sailors were actually quite content to know that Harris was ‘fully alive’ to the importance of obstructing enemy shipping, especially in the Baltic – actual sinkings were always a secondary consideration – and that he hoped ‘to get going in this area at an early date,’ once he had sufficient stocks of suitable mines.83

Largely because of the relegation of No 3 Group’s Stirlings to minelaying and the conversion of the remaining RCAF Wellington squadrons to Halifaxes, No 6 Group did very little Gardening in November and December 1943.84 But when new mines became available in January 1944, just as Canadian Halifax squadrons began to receive H2S on a regular basis, that unforeseen and happy coincidence led to Allerton Hall’s being asked to continue No 3 Group’s high-altitude trials. These occurred on 4/5 January, when Nos 419 and 428 Squadrons mined the waters outside Brest, and then again two nights later at Brest and St Nazaire. Both missions were successful – photographs confirmed that all mines had been laid within 2100 yards of the aiming point—and that meant that a number of inner German harbours, heretofore too risky to approach at 6000 feet or below, could now be attacked.85

Besides permitting an expansion of Gardening activities, the development of effective high-altitude mining techniques also had an impact on the planning and conduct of the area offensive against German cities. Gardening forces approaching the enemy coast at low altitude and without using H2S were not normally identified by the enemy as the main bomber stream, and so they played no role in deceiving controllers as to the latter’s whereabouts. But a mining mission flown at 15,000 feet could deceive the enemy, particularly after the 106 Halifax ts and vs of Nos 4 and 6 Groups, which had been withdrawn from operations over Germany in mid-February, were added to the eighty-odd Stirlings of No 3 Group already committed to the task. Together, and using Window and H2S, they made an impressive display on radar screens and at the enemy’s electronic listening posts. Indeed, as early as 24/25 February 1944, just six days after Leipzig, large minelaying forces were dispatched to Kiel before the bombing raid on Schweinfurt, and again the next night in advance of the attack on Augsburg.86

Of course, Gardening through cloud required that the target area be marked for those crews that did not have H2S. But when High Wycombe decided it could not routinely spare any of No 8 Group’s Pathfinders for the task, target indicators were cobbled together for the most experienced H2S crews in Nos
4 and 6 Groups, and on 24/25 February 419 Squadron found itself marking for No 3 Group in Kiel Bay and the Kattegat. No 428 joined 419 over Kiel Bay the next night and, although some non-H2S crews had difficulty finding the marker flares (three crews from 434 Squadron returning early for this reason), Harris was persuaded that the experiment had been a success and that this make-shift pathfinding force was adequate to the task.

On 9 March, therefore, he issued instructions to supply them regularly with all the necessary pyrotechnics for the job.87

By then, the intensified, high-altitude mining campaign begun in mid-February 1944 was already paying dividends. A Dutch fisherman ‘liberated’ by the Royal Navy reported that German minesweeping crews were suffering severe psychological distress.88 More to the point, the number of ships damaged and sunk had increased dramatically, from seven sunk (919 tons) and two damaged (1,377 tons) in November 1943 to nineteen sunk (19,496 tons) and four damaged (4,909 tons) in March 1944.89 However, beginning in March, the RCAF’s Halifax II/V squadrons would find themselves increasingly busy over France, where they were carrying bombs, not mines.

That the Allied heavy-bomber forces would be used in direct support of Operation Overlord was a foregone conclusion following the May 1943 Trident conference held in Washington. But what they would be asked to do, once Luftwaffe fighter strength in the west had been dealt with, was not determined in any specific way. Rather, the architects of Pointblank and the initial Overlord planners simply assumed that the resources of Bomber Command and the American strategic air forces would be employed against the Wehrmacht in Normandy as required, without preordained restraints or limits - a presumption shared by General Eisenhower after his appointment as supreme allied commander in December 1943.90

As we have seen, Sir Arthur Harris thought differently, arguing on 13 January 1944 that the results would be better (and the needs of Overlord better served) if he were left to continue and even expand the night-bombing effort against ‘suitable industrial areas’ in Germany. For his part, while preferring precision daylight bombing, General Carl Spaatz, now commanding the US Strategic Air Forces in Europe, was no more eager than Sir Arthur to surrender strategic control of his heavy bombers to the requirements of a ground campaign. Believing, like Harris, that it was only from the ‘pure’ application of air power against strategic targets that something decisive would be achieved, he did not want to see them withdrawn from operations against the Luftwaffe or, when the goals of Argument had been realized, the German oil and rubber industries, whose destruction would render the Germans immobile on all fronts, not just in Normandy. But when the Wehrmacht had been pushed out of the Caucasus and denied access to Russian crude, and Romanian supplies were threatened, it was the attack on oil in particular, Spaatz would observe on 5 March, that held out ‘great promise for hastening German defeat.’91

As supreme allied commander in Europe (SACEUR), Eisenhower was likely to win any power struggle with the ‘bomber barons’ over the future employ-
ment of the forces under their command. But when, in January 1944, Harris and Spaatz began to prepare their ground, the newly appointed SACEUR had not made any firm decisions about how the heavy bombers would be used to support Overlord. It was obvious that some action would have to be taken against German U-boats, surface warships, coastal batteries, and radar sites in France and the Low Countries. Experience in the Mediterranean theatre, from which he had just arrived, suggested that it was also feasible to cut off enemy forces in the invasion area from their sources of supply and reinforcement by attacking railways in France and western Germany. But whether the railways could be dealt with best by a relatively brief program of interdiction ('line-cutting, strafing, bridge-breaking, and the destruction of a few ... focal points') immediately before the invasion, or whether it would require a longer-term effort that included the destruction of locomotives, rolling stock, repair shops, roundhouses, stations, signal boxes, and the entire infrastructure of the railway system all over Western Europe, was at issue until the last week of January at least. It was then that SACEUR’s deputy, Air Chief Marshal Sir Arthur Tedder, and his overall air commander, Air Chief Marshal Sir Trafford Leigh-Mallory, convinced by civilian specialists in the Air Ministry, plumped for the latter.92

The ‘Transportation Plan,’ as the proposed campaign of attrition came to be called, was never expected to bring all rail traffic to a halt – there were simply too many railway lines in France for that to be possible – but it was hoped that most major centres could be put out of action by the time Overlord took place. Attacks would have to commence in early March to ensure that everything had been completed before the inevitable last-minute panic calls for bomber support elsewhere. Accordingly, on 4 March, while the US Eighth Air Force was bombing Berlin and the day before General Spaatz submitted his formal counter-proposal to give oil priority, the CAS directed High Wycombe to attack the French railway marshalling yards at Trappes, Aulnoye, Le Mans, Amiens, Courtrai, and Laon to ‘obtain experience of the effects of night attacks’ on such targets before the main pre-Overlord air assault began. It was, in essence, to be a test of the transportation plan and of Harris’s assessment that his bombers would not be able to contribute to it effectively.93

This time the AOC-in-C responded promptly to Portal’s directive, perhaps because those aircraft which could no longer be used against German targets might well be used for this plan. (Indeed, because No 6 Group had so many Halifax IIs and Vs in service, fully half of the crews taking part in these experimental attacks would come from RCAF squadrons.) The first such raid took place just two nights later, on 6/7 March, when 267 Halifaxes of Nos 4 and 6 Groups and six Mosquitoes from No 8 (Pathfinder) Group attacked the yards at Trappes, a few miles southwest of Paris.94 Enjoying the full benefits of No 8 Group’s Oboe ground-marking on this shallow penetration (the preferred method for the rest of the March series) and facing relatively light opposition, the main force was able to bomb from 13,000 feet with no casualties. Indeed, the most dangerous aspect of the raid was not enemy fighters or Flak but the ‘great congestion of a/c over the target,’ which led at least one crew from No
Squadron to drop down to 8000 feet to avoid the possibility of collision despite the not insignificant risk of being hit by bombs dropped by other aircraft. Many were able to identify the target visually, and 263 crews reported that they had hit the aiming point. Photographs backed up their claims—the average bombing error, not counting the few wildly inaccurate efforts, was less than three hundred yards—and confirmed that ‘enormous damage’ had been inflicted on the railway tracks, rolling stock, and installations around Trappes. Bad weather over England forced a number of crews to land at alternate bases, but for some hours it was ‘almost assumed’ that one crew from No 431 Squadron had gone missing. Nothing was heard from them until the next morning, when it was learned they had put down at Chipping Warden in Northamptonshire, far to the south of the Vale of York. Although Chipping Warden was home to No 12 OTU in No 92 Group, and so was part of Bomber Command, the station orderly officer, acting on the orders of his commanding officer, refused to give the crew beds. They could sleep on the floor instead.

The next night 304 crews from Nos 3, 4, 6, and 8 Groups made for Le Mans, where the main lines from Paris branched off to Brittany and the Biscay ports. Heavy cloud with a base of 5000 feet and the late arrival of the Pathfinders combined to create a great deal of congestion as crews orbited the target area searching, often in vain, for markers on which to drop their bombs. Because this was France, they were forbidden from releasing their bombs unless they could see the target indicators clearly; by the same token, however, because this was France and there was less Flak to worry about, circling the target area to find markers was not as risky a business as it was over Germany. All told, about a third of the crews eventually gave up on the attempt, including forty-four of the 140 sent by No 6 Group, but they had not done so easily. One crew from No 424 Squadron, for example, took twenty-two minutes to make two complete circuits of the target area before turning for home. Others were more patient, however, and their persistence paid off. A crew from No 433 Squadron ‘arrived over target at 2115 hours, PFF very late, orbited for 26 minutes, saw second lot of TI and made successful bombing run.’ After circling for thirteen minutes, another from 419 Squadron had already turned for home when they finally saw markers going down. They returned to the target area and ‘bombed the centre of red TI seen in cloud.’ Although the effort seemed unimpressive to those involved, three hundred bombs were recorded as falling in the railway yards; six locomotives, one turntable, and 250 freight cars were hit and many lines were cut.

For the next two nights only No 5 Group was active over France, conducting its patented low-level moonlight raids on precision targets like the Michelin works at Clermont-Ferrand. On 13/14 March, however, Nos 4, 6, and 8 Groups returned to Le Mans and, in clear weather, and following timely and accurate marking, the main force caused considerably more damage than in the initial attack mounted a week before. Eight hundred freight cars and fifteen locomotives were claimed and many more lines were cut.

Although Bomber Command would continue its experiment, Eisenhower had already been convinced that the transportation plan would work. It was never-
theless important that the location of these raids not give the enemy a clue as to where, exactly, the invasion would take place and for that reason, as part of Operation Fortitude (the overall deception plan for Overlord), many attacks were mounted against targets less directly related to the proposed landing area. On 15/16 March, for example, 863 crews made for Stuttgart and twenty-two Lancasters from No 5 Group were sent to bomb the aero-engine factory at Woippy, near Metz, while 140 machines from Nos 3, 4, and 6 Groups raided the marshalling yards at Amiens, due north of Paris and east of Dieppe. With the target area soon obscured by thick smoke, many crews concluded that the attack at Amiens was not particularly successful, although High Wycombe later claimed that much damage had been done to the yards. For the fourth successive raid No 6 Group suffered no casualties as a result of enemy action, but two machines were lost in flying accidents on the way home.99

Amiens was the target again the next night, when 130 Halifaxes, Stirlings, and Mosquitos did considerable damage with no losses. But such easy operations could not be taken for granted. The sixth raid of the series, mounted against Laon, southeast of Amiens and northeast of Paris, on 23/24 March, went poorly (the average bombing error at one of the aiming points was over a mile) and the four Canadian squadrons involved did not hesitate to express their frustration and disappointment both with the failure of the raid itself, and with what was in their judgment, the cause of the failure—the unsatisfactory performance of the Pathfinders despite clear skies and easily visible ground detail. No 431 Squadron’s diarist recorded that Pathfinder flares were non-existent, and after much circling and vain waiting, our aircraft returned ... The English Channel took a terrific weight of bombs. Other more daring crews brought their bombs back to base.’ His commanding officer, while admitting that ‘two out of eight markers is not a very good show’ and not happy about the four orbits he had done around the target area trying to find something to bomb on, was nevertheless willing to accept that ‘there may have been extenuating circumstances.’ A report from Laon, meanwhile, observed that half the bombs dropped hit the railway yards, but the remainder were scattered up to three kilometres from the target. Two aircraft were lost on this raid—nightfighters were stationed at Laon—but all No 6 Group’s aircraft returned safely.100

Two nights later, on 25/26 March, every Canadian squadron except No 433 contributed to an attack on Aulnoye, midway between Amiens and Liège, close to the Belgian border. After the strain of venturing deep into Germany, those squadrons flying Lancasters and Halifaxes viewed this mission almost as light relief. No 426 Squadron, for example, offered ‘five sprog [totally inexperienced] crews, the target being an easy one in France ... All five took off, bombed the target and returned without incident.’ Bombing from an average height of only 7000 feet and in good visibility—a welcome change from raids over Germany, where pilots strived for altitude and often battled heavy cloud—most could see the ground clearly and, keeping the well-concentrated target indicators in their sights as they released their bombs, they concluded that Aulnoye had been well pranged for the size of the raid.’ That was also the
view of Air Vice-Marshal McEwen, who had flown as second pilot with a crew from No 431 Squadron. On 26/27 March, when the selection of Essen as the Lancasters’ and Halifax III’s main target caught the Germans by surprise, 102 Stirlings and Halifax IIs and Vs made for the railway yards at Courtrai, 150 miles away in Belgium, which they attacked without loss. In keeping with the precedent set by the AOC the night before, Air Commodore C.R. Slenom, No 6 Group’s senior air staff officer, flew as the second pilot with Wing Commander W.F.M. Newsom of No 431 Squadron and was happy to report that the raid had been a success. He was probably optimistic. A number of crews with more operational experience noted that the markers had been ‘slightly scattered,’ and one pilot from No 419 Squadron reported that of the ‘3 TIS seen, only one ... appeared to be at [the] A[iming]/P[oint].’ Similarly, a crew from 428 Squadron estimated that two of the three target indicators it saw were northeast of the aiming point ‘in a line about a mile apart.’ If these assessments were correct, neither the markers nor the bombing could have been concentrated on the marshalling yards, and that, in fact, was the case. Damage spread into the town, where 313 buildings were destroyed, including the jail and the school, and 252 civilians were killed. But there was a positive side – several prisoners were able to escape from the damaged jail, including a butcher who had been caught aiding downed airman.

After the raid on Courtrai, Bomber Command had attacked all six of the French railway targets included in Portal’s directive, and two, Le Mans and Amiens, had been bombed twice. Before the month was over, however, Harris ordered one additional raid, and on 29/30 March seventy-six Halifaxes and eight Mosquitos attacked the railway yards at Vaires, near Paris, in bright moonlight. The bombing was accurate and, by chance, caught two ammunition trains in the yards. They blew up, killing some 1200 German troops. The Canadian group contributed fifty of the machines sent to Vaires and, although annoyed once again that the late arrival of the Pathfinders had forced them to orbit the target, most were satisfied they had hit the aiming point on their second run. Despite weak opposition, one crew failed to return from the raid, the first from No 6 Group to be lost on these early transportation operations, and it is sadly appropriate that it should have come from No 434 Squadron, still the RCAF’s hard-luck unit or ‘chop’ squadron.

The next night, of course, Bomber Command would suffer terribly on the way to and over Nuremberg. From 1 April on, however, although area raids would continue to be mounted, High Wycombe’s effort would increasingly be in support of Operation Overlord. In this respect there could be little doubt that, with bombing errors generally running less than seven hundred yards, the nine March raids on French railway targets had been outstandingly successful – demonstrating, at times, ‘an accuracy and concentration ... far exceeding that ... achieved by the American heavies by day.”

* After the war, the United States Strategic Bombing Survey estimated that, bombing visually by day in clear weather, the Eighth Air Force was able to get half its bombs within one-third of a mile of the aiming point; bombing non-visually by day, in heavy cloud, it got only one-half its bombs within 3.9 miles of the aiming point.
Indeed, four objectives (Trappes, Vaires, Le Mans, and Amiens) were considered by Eisenhower’s staff to have been sufficiently damaged as to require no further attention in the immediate future. While still able to function, the remaining three (Laon, Aulnoye, and Courtrai) had nevertheless sustained significant damage, and it was felt they could be put out of action relatively easily during April and May. Moreover, Bomber Command had achieved these results while inflicting far fewer casualties on the French civilian population – and at far lower cost to itself – than had been anticipated. The death toll in France was probably under four hundred, and only seven crews had been lost through enemy action. Harris’s prediction that Bomber Command would not be able to cut rail lines ‘could not,’ the air staff concluded, ‘have been further from the truth.’ Indeed, in his memoirs Sir Arthur recalled the surprise with which he learned of his crews’ successes: ‘I myself did not anticipate that we should be able to bomb the French railways with anything like the precision that was achieved.’ From 25 March 1944, by which time Eisenhower’s staff had seen the results from these early raids, there was no turning back. ‘Everything he had read,’ the supreme allied commander announced, ‘convinced him that apart from the attack on the G[erman] A[ir] F[orce], the transportation plan was the only one which offered a reasonable chance of the air forces’ making an important contribution to the land battle during the first vital weeks of Overlord.’

Two days later the Allied chiefs of staff made their decision and as a result, all of No 6 Group would soon be attacking railway targets all over Western Europe.
Although Sir Arthur Harris was far from enamoured of the new chain of command, the first bombing directive issued by General Eisenhower’s headquarters gave him considerable (and unexpected) leeway in determining how Bomber Command would conduct its operations. To be sure, the AOC-in-C was reminded that ‘all possible support must ... be afforded to the Allied Armies ... to assist them in establishing themselves in the lodgement area’ in France. But, the directive continued, ‘in view of the tactical difficulties of destroying precise targets by night,’ his crews would ‘continue to be employed in accordance with their main aim of disorganizing German industry ... [except that] where tactical conditions allow ... targets will be selected so as to give the maximum assistance in the aims of reducing the strength of the German Air Force, and destroying and disrupting enemy rail communications.”

Whenever Harris had seen such permissive language before – as in the Pointblank directive, for instance – he had usually hastened to make the most of it. Confident that Bomber Command could do great damage to Berlin within reasonable margins of safety and survivability, he had made the German capital, and not the enemy’s factories and refineries, the focal point of attack over the winter of 1943-4. Then, flaunting hopeful damage assessments and lurid newspaper reports in front of the nay-sayers, he had for the most part successfully stood up to his critics. Schweinfurt, it will be recalled, was not bombed until 24/25 February 1944, months after it had been singled out as a priority target because of its ball-bearing production.

Now, however, although still convinced that German civilian morale would not ‘stand many more heavy night attacks,’ the AOC-in-C was not nearly so sanguine about what might be achieved through routine area raids. In recent weeks bombing accuracy had fallen off, while the casualty curve suggested that the night offensive ‘could not in the long run be sustained’ unless wastage rates could somehow be reduced. In fact, future prospects were probably bleaker than that. With the approach of summer’s shorter, brighter nights, the likelihood that the Luftwaffe would inflict ‘very severe losses’ had to be taken into account. Weather permitting, rather than risk a running fight like that on the approach to Nuremberg when fighters had been called in from all over
Europe to engage a single bomber stream, henceforth each night’s effort would involve multiple routes to several objectives.2

It had taken some considerable time, but High Wycombe had at last recognized that, with Himmelbett eclipsed by other forms of night-fighting, dispersion no longer played so directly into the enemy’s hands. Rather, as they struggled to organize pursuit operations based on electronic eavesdropping, the German controllers were likely to be hard-pressed by the simultaneous appearance (aided and abetted by all sorts of spoofs and diversions) of several widely dispersed bomber streams, increasing the odds that some attackers might slip through unmolested. Not everyone would be so lucky, however, and that was what worried Harris. Complaining that the three squadrons of Mosquitoes then on strength with No 100 Group lacked even ‘nuisance value,’ he repeated his request that the number of night-fighters assigned to bomber support be increased. Initially rebuffed for security reasons, the AOC-in-C was eventually allocated another five squadrons, but none were operational before D-Day.3

The Germans were also making adjustments to correct a number of the problems and deficiencies that had come to light in the later stages of the battle of Berlin. Besides closing the radar gap in the south with both fixed and mobile installations, they moved a number of freelance fighters to the Rhine to permit their earlier insertion into the bomber stream, and a few were stationed in France – but only a few, it having been decided that the Paris-based Luftflotte 3, still an independent command, would not be reinforced until after the invasion, which OKW anticipated would come later that spring or summer. Indeed, so as not to confuse Luftflotte 3’s controllers, fighters based in the Reich were ordered not to fly into France.4

Within Germany, meanwhile, there was a general consolidation of the air-defence organization when, on 1 April, I Jagdkorps, the Wilde Sauen, all day-fighter units and Flak batteries, and the air raid reporting service were brought together under a single headquarters, Luftflotte Reich, located in Berlin, creating for the first time an integrated air-defence command at the strategic level. Taking advantage of the as-yet-unjammed Ypsilon (Benito) and Egon communications systems, however, control of the night battle at the operational level was increasingly left to subordinate formations, both to make it more difficult for Bomber Command to fool the entire night-fighter organization on any given night and to improve the response against the kind of dispersed attacks Harris was now contemplating.5

Somewhat uncharacteristically, but perhaps with recent loss rates in mind, High Wycombe did not take full advantage of Eisenhower’s offer to continue with the area offensive while remaining ‘on call’ for other things in the spring of 1944. Between 17 April and 6 June there were only thirteen main-force raids into Germany as against almost one hundred on railroads, coast-defence instal-

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1 Not wanting the new Mark X AI radar to fall into enemy hands, the Air Ministry initially restricted its use to the air defence of Britain despite the limited threat of attack on the United Kingdom.
ADDITIONAL SORTIES

No 100 Group Dortmund

No 7 Group Cologne 0156 hrs

GROUPS

NIGHT OPERATIONS
20/21 APRIL 1944


Reproduced by Mapping and Charting Establishment. ©Compiled and drawn by the Directorate of History.
lations, and airfields in France and the Low Countries. As had been anticipated, the number of casualties fell, far enough for Harris to ask that sorties to France, Belgium, and Holland should not count as a full 'trip' towards completion of the normal thirty-mission operational tour. Otherwise, he warned, 'some aircrews must inevitably finish their operational tour having experienced far less risk and strain than others, which is obviously undesirable.' Once the Air Ministry agreed, each formation was left to do its own pro-rating, and in No 6 Group a point system was eventually adopted that differentiated between easy and difficult targets. The result was that the average operational tour now required about thirty-five sorties and remained at that number until March 1945 when, because of a surplus of crews, it fell again to thirty.

With all Halifax Is and Vs withdrawn from operations over Germany, No 6 Group participated in just eight of the thirteen raids over the Reich, losing twenty-three of 560 sorties, or 4 per cent. Fourteen of its losses came in the space of three days. Eight crews (including three from No 433 Squadron) failed to return from Düsseldorf (22/23 April), while six were lost at Karlsruhe on 24/25 April. The casualty rate at Düsseldorf was in line with that suffered by the rest of Bomber Command, but why Canadian losses should have been so high at Karlsruhe (4.3 per cent) compared with the rest of Bomber Command (2.6 per cent), when RCAF crews reported night-fighter activity to have been 'on the whole negligible,' is difficult to explain unless it is attributed to simple bad luck.

The Luftwaffe's continuing lack of navigation aids, de-icing equipment, and a reliable IFF device for its Würzburgs went a long way in determining the extent of its success or failure at this time. On 20/21 April, for example, the air-defence organization had timely radio and radar warning of the Cologne raid; but because a small formation of German bombers was returning from attacks on Hull, Bristol, and Portsmouth along approximately the same track as that on which Bomber Command forces were approaching the Continent (and could not be reliably distinguished from the latter because there was no IFF), most of the fighters scrambled were not committed to battle. At Düsseldorf (22/23 April) and Friedrichshafen (27/28 April), in contrast, the German effort was effective. The radio intelligence service identified the bomber stream while it was still over England, and route interception began early - a pattern that was repeated in May, when the five raids on German targets cost Bomber Command ninety-seven of 1700 sorties (5.7 per cent) and No 6 Group eight of 118 sorties (6.7 per cent). Less than a month before D-Day, despite all the jamming and other counter-measures available to Bomber Command (and despite heavy daytime attacks by American forces against the German aircraft industry), the enemy's ability to defend its own air space at night, at least when the weather was good, had been eroded scarcely at all.

Indeed, the potential of Luftflotte Reich to do damage at night was growing in May. Almost one thousand SN2 airborne interception radars (still undiscovered by High Wycombe and now being modified to operate on more than one wavelength) had been delivered by the end of the month, while Neptun, also unjammed, was being fitted to the Wilde Sauen's FW 190s. Nachtjagd-
geschwader 6’s experiments with Ypsilon and Egon control to guide groups of fighters into the bomber stream had proved so successful that they were being copied by other formations, and German signals intelligence was beginning to read centimetric Mark II Oboe. (It had been jamming Mark I since November.) That not only gave additional early warning of attack but, on occasion, could also be exploited to identify Bomber Command’s specific target—a fact that was recognized by the air staff with understandable horror in July.  

These improvements were not extended to the skies over France. Since Berlin had limited the Luftwaffe’s night-fighter strength there, for most of the spring Bomber Command faced only elements of III/NJG 1 at Laon, the inexperienced crews of NJG 4 working under equally inexperienced controllers at Luftflotte 3 in Paris and the Me 410s of Kampfgruppe 51, a bomber-intruder unit based at Calais whose crews also flew Wilde Sauen operations. To some considerable extent, that was the payoff for earlier decisions to limit night-fighter production. At the same time, the strict separation between Luftflotte Reich and Luftflotte 3 was frustrating to the German-based Gruppen which, having to scramble every time the alarm sounded but prohibited from flying into France, were suffering casualties for that reason alone. But when Jagdkorps asked permission to station some of its units on forward bases in France and allow the rest access to French air space, Oberkommando der Luftwaffe denied Josef Schmid’s request.  

The first April raid by No 6 Group against a transportation target came on Easter Sunday, when 160 crews were sent to the marshalling yards at Lille and Villeneuve St George. None was lost to enemy action (although two collided on the way to the target) and the damage was spectacular. At Villeneuve the repair shops were especially hard hit, while at Lille ‘an ammunition train blew up in the reception siding.’ Civilians died in both cities: ninety-six at Villeneuve and 456 at Lille, where almost 5000 houses were destroyed. The railway yards at Tours, Tergenier, Ghent, Aulnoye, and Laon, as well as the airfield at St Cyr, were targets the next night, and there were civilian casualties at all six places. No 6 Group dispatched eleven squadrons to Ghent, where, with good marking, the Merelbeke sheds were heavily damaged, but so was the residential area southwest of the aiming point, and four hundred Belgians were killed.  

Winston Churchill’s concerns about friendly casualties were not unfounded. Tergenier, Rouen, Juvisy, and Noisy-le-Sec (Paris) were the objectives on 18/19 April, No 6 Group concentrating on the latter, where ‘the locomotive sheds, repair shops, trans-shipment sheds, reception sidings, sorting sidings, road bridge, passenger station, and goods depot were all seriously affected. Many tracks were cut and much rolling stock was destroyed.’ In addition, some two hundred delayed-action bombs continued to explode in the weeks following the raid, obstructing repair work and distracting those doing it. Nearly a thousand houses were knocked down and 464 civilians killed. Of the four RCAF crews who failed to return only one was credited to a fighter, while two ‘probably collided’ near the target and the fourth fell to Flak.  

As two dozen Lancasters from Nos 408 and 426 Squadrons joined the raid on Cologne the next night, and the other groups attacked the marshalling yards
at La Chapelle, Chambly, and Ottignies, 158 RCAF crews made up the entire main force sent to Lens. It was a successful night for the Canadians. Cologne and Lens were both heavily hit and only one crew went missing, but two of fourteen crews detailed by No 428 Squadron crashed on their return to England, killing three crew members and injuring four.\footnote{15}

Laon, attacked on 22/23 April by Halifax squadrons while the Lancasters were busy at Düsseldorf and Brunswick, cost High Wycombe nine of the 181 aircraft dispatched; probably because they were in the first wave, No 6 Group lost only one of forty.\footnote{16} Five days later at Montzen, where the overall loss rate was 11.36 per cent, the Canadians lost ten crews from fifty-five sorties (18.2 per cent). No 431 Squadron suffered most heavily, losing four of eleven, while No 434 (which had been doing better recently) lost two of sixteen. Both squadrons had been assigned to the later waves, which were attacked as soon as they crossed the Dutch and Belgian coasts and then again from St Trond to halfway across the Channel on the return route, by some of the three hundred fighters scrambled.\footnote{17}

One pilot of No 431 Squadron (who had not been to Nuremberg) was shaken by the ferocity of the enemy response. 'More aircraft seen shot down than on any other trip,' he reported after the raid, 'too many to log by Navigator.' His commanding officer, Wing Commander W.F.M. Newson, who would take over No 405 Squadron in November and lead it until April 1945, was equally dismayed by the heavy casualties but was also unhappy with the way in which the raid had been planned. 'It is felt that this attack was technically unsound,' he observed in the impersonal passive voice common to official reports,

due to these three factors: (1) The number of aircraft employed were spread over a long period of time, consequently concentration in time and space was not achieved, thus enabling controlled fighters to be vectored on to each individual aircraft throughout the whole route. (2) It is considered that the zero hour should have been one hour later, due to the height and brilliance of the moon. (3) It is considered that P[ath] F[inder] F[orce] should not have opened attack so early before zero hour. In so doing, this enabled fighter concentration in this area to be vectored into the stream, there being too long a period for the number of bombers in the attack.\footnote{18}

No 405 Squadron lost a single Lancaster at Montzen from which Squadron Leader E.M. Blenkinsop, deputy master bomber for the operation, was the sole survivor. Succoured by the Belgian 'underground' Resistance, Blenkinsop elected to continue the fight with them rather than attempt a return to England. He was finally captured by the Gestapo in December 1944 while participating in an attempt to blow up a house used by the Germans. Never identified as a downed airman, he was eventually sent to Neuengamme concentration camp where he died of heart failure on 23 January 1945, perhaps, it has been suggested, as the result of a lethal injection.\footnote{19}

Because Blenkinsop had worked with the Resistance and was engaged in sabotage while wearing civilian clothes, he had forfeited whatever rights he
may have had as a captured airman and no ‘war crime’ was committed against him. The treatment accorded another crew member from 405 Squadron, shot down over Belgium on 27/28 April, was more difficult to judge. Of the eight men aboard the Lancaster, six were killed outright, one escaped, and the last, Flight Lieutenant G.J. Smith, who was bleeding steadily from the nose, mouth, and ears, was taken to the German hospital at Diest, where he died. After the war Allied investigators were told that ‘the German doctor in charge ... is known to have given strict orders that Smith not be touched in any way and that the door to his room be at all times locked’ – a clear case, it seemed, of criminal neglect. When it was learned, however, that ‘there is ... local Continental medical opinion that patients with serious head injuries ... should be given "complete rest," which precludes even the taking of X-Rays,’ the initial assessment was called into question. When the Canadian director of medical services subsequently reviewed the case he concluded that the doctor had, in fact, been guilty of ‘gross negligence’ and charges were filed with the United Nations War Crimes Commission. By then, however, it was too late to follow up stale leads.20

Sometimes there were fewer doubts. It was almost certain, for example, that Flying Officer W.S. Sewell of No 434 Squadron shot down over Kassel on 22/23 October 1943 ‘had been ... hanged by the civilians in Kassel, on landing.’ And it was even clearer that Flying Officers H.W. Birnie and D.S. Jamieson of No 426 Squadron, who would be shot down over France on 28/29 June 1944 and would try to return to allied lines in civilian clothes, had been executed by the Gestapo.21

Any mistreatment of bona fide prisoners of war by service personnel, the police, or civilians is, like the murder of the fifty who escaped from Stalag Luft III in March 1944, to be despised and condemned. But these incidents, deplorable as they otherwise might have been, need to be placed in context. The RCAF had just over 2,400 aircrew taken prisoner (and Bomber Command some 11,000), yet the number believed to have died in unacceptable circumstances is very low – perhaps about a dozen in the RCAF’s case including those who took part in the ‘Great Escape.’ Given the horrific conditions that existed in German cities after the heavier and more successful raids, that is a remarkable statistic.

With 1 Jagdkorps still barred from French air space, the Luftwaffe could not manufacture many nights like Montzen. Indeed, Bomber Command’s loss rate over France and the Low Countries in April 1944 was negligible compared with that sustained over Germany and well below the figure likely to cause concern at High Wycombe or the Air Ministry. But April’s missing rate over occupied territory was also more than double that experienced in March; and if nothing else it said something about the enemy’s defensive capabilities when Flak and a small number of fighters, stationed well forward (where their reaction time was short) and under the guidance of inexperienced controllers, could achieve so much. One wonders what might have happened had 1 Jagdkorps been allowed to participate (see tables 8 and 9).22
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TABLE 8
Losses on Bomber Command Operations, March–May 1944

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorties to German targets</td>
<td>6,038</td>
<td>4,188</td>
<td>2,453</td>
</tr>
<tr>
<td>Losses against German targets</td>
<td>270 (4.5%)</td>
<td>121 (2.9%)</td>
<td>102 (4.15%)</td>
</tr>
<tr>
<td>Sorties to non-German targets</td>
<td>2,837</td>
<td>5,014</td>
<td>7906</td>
</tr>
<tr>
<td>Losses against non-German targets</td>
<td>18 (0.6%)</td>
<td>76 (0.5%)</td>
<td>165 (2.1%)</td>
</tr>
<tr>
<td>Minelaying sorties</td>
<td>518</td>
<td>854</td>
<td>826</td>
</tr>
<tr>
<td>Minelaying losses</td>
<td>2 (0.4%)</td>
<td>19 (2.2%)</td>
<td>9 (1.15%)</td>
</tr>
</tbody>
</table>

TABLE 9
Bomber Command Loss Rates by Group, March–May 1944

<table>
<thead>
<tr>
<th>Group</th>
<th>March</th>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>No 1 Group</td>
<td>4.7</td>
<td>2.9</td>
<td>4.5</td>
</tr>
<tr>
<td>No 3 Group</td>
<td>2.8</td>
<td>2.2</td>
<td>2.4</td>
</tr>
<tr>
<td>No 4 Group</td>
<td>3.9</td>
<td>2.3</td>
<td>1.8</td>
</tr>
<tr>
<td>No 5 Group</td>
<td>3.4</td>
<td>2.4</td>
<td>3.1</td>
</tr>
<tr>
<td>No 6 Group</td>
<td>2.8</td>
<td>2.1</td>
<td>1.8</td>
</tr>
<tr>
<td>No 8 Group</td>
<td>1.8</td>
<td>1.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

* No 2 Group had been assigned to 2nd Tactical Air Force.

The focus of Bomber Command's attack shifted even more dramatically over the next month. Between 1 May and 5 June about three thousand sorties were flown against German targets (with losses slightly above 5 per cent), while there were nearly 9000 (including Gardening missions) over occupied Europe. Just over two hundred crews failed to return from the latter, a missing rate of 2.3 per cent – higher than April's figure but still acceptable. No 6 Group contributed 2826 of these sorties, two-fifths of the total, but lost only twenty-four, 0.85 per cent, considerably less than the average.24 The RCAF's worst night came on 8/9 May at Haine St Pierre, when six of seventy-five crews – 8 per cent – failed to return. The skies had been clear, which helped the enemy, and it was thought that the Canadians had taken insufficient care to discharge Window at the prescribed rate; but they had also been sent to the one objective out of five which, for no discernible reason, the Luftwaffe had singled out for attention. Fighters pounced on the bomber stream long before it reached the target and pursued it forty miles over the English Channel on the return route.25

Although the AOC of No 5 Group, Air Vice-Marshal R.A. Cochrane, always maintained that his group's low-level target-marking produced significantly better bombing results than those of other groups, the scientists who studied the photographs from April's and May's transportation raids discovered that No 6 Group's data were almost as good – just under half its crews appeared to have bombed within five hundred yards of the aiming point, and three-fifths within seven hundred – and much better than those turned in by Nos 1 and 3.
No 6 (RCAF) Group Headquarters
Allerton Hall
As of June 1944

- No 61 Training Base (Topcliffe)
  - RCAF Station
  - 1659 Heavy Conversion Unit (HCU)
  - 2805 Anti-Aircraft (AA) Sqn
  - Station Park Machine Gun Range
  - Pickering Bombing Range

- No 62 Base (Linton-on-Ouse)
  - RCAF Station
  - 408 Sqn
  - 420 Sqn
  - 2799 AA Flt
  - 9420 Svc Ech

- No 63 Base (Leeming)
  - RCAF Station
  - 427 Sqn
  - 429 Sqn
  - 2794 AA Flt

- No 64 Base (Middleton St. George)
  - RCAF Station
  - 431 Sqn
  - 434 Sqn

BASE STAFF AND SERVICES:
- Operations
- Intelligence
- Navigation
- OP-SG Room
- Photo Interpretation
- Armament
- Engineering - Technical
- Servicing
- Equipment
- Signals
- Transport
- Medical
- Catering
- Women’s Division

STATION STAFF AND SERVICES:
- Operations
- Flying Control
- Armament
- Servicing Wing - Repair and Inspection
  - Workshop
  - Daily Servicing
- Equipment
- Signals
- Transport
- Medical
- Catering
- Women’s Division

SOURCE: Compiled from organization charts and narratives in DHIST files 181.009(04206), 72/360, and 72/383.
Groups. The reason, they explained, was that Canadian navigators, like those in No 4 Group, were using the revised wind values broadcast by Bomber Command to check their own readings, while Nos 1 and 3 Groups left wind-finding entirely up to individual crews, who often got it wrong. When this trend continued in June and July, High Wycombe finally had to act. Although reluctant to interfere with the prerogatives of AOCs, all groups were directed to follow the Nos 4 and 6 Group procedure.

Despite its superior performance, neither Air Vice-Marshal McEwen nor his senior air staff officer, Air Commodore Slemon, were entirely satisfied with No 6 Group’s effort and they continued to look carefully at what was going wrong on those occasions when results were significantly worse than the norm. They found that Bomber Command’s winds were sometimes wrong, but there was also powerful evidence that veterans of the battle of Berlin in particular, but also those of area bombing in general, had become afflicted with a ‘general carelessness’ about operations that had everything to do with their previous experience, when accurate bombing hardly mattered at all. The Ghent raid of 10/11 April, when just 7 per cent of bombs fell in the target area, four hundred Belgians were killed, and almost 1600 buildings were damaged and destroyed, was a case in point. ‘Many aircraft ... in complete disregard of the orders issued ... bombed when no ground markers were burning,’ unmistakable evidence of ‘bad discipline.’ Senior squadron officers were also responsible because of their ‘failure to stress sufficiently at briefings the absolute necessity for crews adhering to the bombing heights, headings, and airspeeds laid down.’

Mistakes like that were out of the ordinary, however, and by 5 June 1944 Bomber Command had done practically everything asked of it by General Eisenhower. Of the thirty-seven railway targets assigned to Harris, twenty-two were ‘sufficiently damaged to require no more attention until further notice,’ fifteen were ‘seriously damaged’ and, as the Germans themselves admitted, the whole transportation system linking France and the Reich had been ‘most seriously crippled.’ Only around Paris was the rail network still functioning because, for political reasons, targets close to the centre of the French capital were not subjected to intense attack. In addition, heavy cratering was seen on seven of the twelve enemy airfields assigned to Harris, and a number of radar and radar stations had also been knocked out. Mount Couple, a site housing almost sixty transmitters but measuring just 300 by 150 yards, was obliterated by Nos 6 and 8 Groups on 31 May, while a slightly smaller installation at Au Fèvre was damaged. Ammunition dumps (and 21st Panzer Division) had been hit in early May by Nos 1 and 5 Groups, while thirty coastal batteries were attacked over the whole month. Finally, 2198 minelaying sorties, 854 by No 6 Group, had been launched as part of the prelude to Overlord in March, April, and May, with special emphasis (as D-Day drew nearer) on protecting the flanks of the invasion corridor. Harris, who had never believed that his command was capable of such precision, was amazed, and he was not the only one. ‘The U.S. air forces, who specialise in precision visual attacks by day, are in
particular astonished at the results,' he informed his crews; 'You have in fact wiped their eye for them at their own game.'

After a nerve-wracking day's delay (which gave five Canadian squadrons the chance to bomb Calais again without loss, contributing nicely to Fortitude, the overall D-Day deception scheme), Operation Neptune, the assault phase of Overlord, began the night of 5/6 June. Bomber Command sent 1135 crews to attack ten artillery batteries covering the invasion beaches, No 6 Group (which provided about one-fifth of the total) making for Merville, Franceville, Houlgate, and Longues for the loss of only one crew. Most reported that they had bombed their primary targets using Oboe and H2S blind-marking, but because of cloud the results of their attack were not immediately known. As it turned out, they did not measure up to the claims that were made. While the garrison at Merville was apparently shaken, it was not too dazed to resist when British paratroopers attacked the battery at dawn. One of the guns at Longues was put out of action, but the other three, and the battery at Houlgate, continued to fire on the British and Canadian beaches until suppressed by naval gunfire.

No 100 (Bomber Support) Group, formed originally to deceive the German night-fighter force, came into its own as part of the immediate D-Day cover and deception plan. 'Five Fortresses of 214 Squadron,' Canadian pilot Murray Peden recalled,

together with a force of about three times as many Lancasters, were to establish a strong patrol line some 80 or 90 miles north-east of the beaches, protecting the left flank of the great assault from aerial interference. We would be dropping WINDOW continuously, to maintain the threat of other heavy bomber forces thrusting inland, and blanketing with a continuous and impenetrable curtain of jamming every channel of communication used by the German night fighters ...

We steered for our appointed patrol line, situated just north and east of Dieppe, and began our run inland almost perpendicular to the coastline. We were flying well above the Lancasters at 27,000 feet, and our orders called for us to Window and carry the jamming barrier inland some 80 or 90 miles.

Our orders were to patrol our lengthy beat eight times (counting the inbound and outbound legs separately); so, for seven hours we plied black and forth in the darkness, WINDOWING and jamming for all we were worth ... On the last leg we began to descend towards the coast ... We left the French coast behind, continuing our descent, and headed back towards England. It was not yet daylight, but the darkness had begun to soften. Suddenly we saw a sight that brought a lump into my throat.

Sometime earlier that night, schoolboy John Keegan had heard hundreds of aircraft flying low over his house (see chapter 9). Now Murray Peden saw them. 'A tremendous, awesome aerial armada was passing us in extended formation a mile or two on our left side. They were going in. We were coming out. For a minute I watched them sailing silently onward to their date with destiny. I thought of the men squatting nervously inside and felt like a slacker. After five or six hours in the air we were on our way home, heading back to a good breakfast and a clean bed. They were only a quarter of an hour away
from going in by parachute or glider — to face what? We flew in silence for some time.\(^{\text{29}}\)

Along with Window and Airborne Cigar, No 100 Group was also employing Mandrel, a counter-measure originally introduced in 1943 for use against early-warning radars but quickly withdrawn when the enemy greatly expanded the number of Freya frequencies. Subsequently (and substantially) modified to increase its power and range as well as the spectrum of frequencies that could be blotted out, the 1944 Mandrel variant required as many as forty transmitters to be carried and operated by the crew of a single aircraft, and its reintroduction was delayed until the invasion to maximize its effect during the most critical military operations yet undertaken by the Western allies. On the night of 5/6 June, then, just twenty aircraft from Nos 199 and 803 Squadrons were able to produce an electronic screen ‘behind which aircraft could operate unseen.’ After the beachhead was secure and the Royal Navy had withdrawn its objections to the routine use of Mandrel over the English Channel (for fear that it would inadvertently cover the approach of German forces), the equipment would be employed in support of almost all bombing operations. Besides reducing the effective range of the German early warning radar chains, it also greatly facilitated the carrying out of spoofs and diversions.\(^{\text{30}}\)

When the target to be bombed lay in southern Germany, for example, the plot might shape up like this. Just before dusk, a dozen or fourteen MANDREL aircraft would fly out and take up their stations off the enemy coast, strung out in pairs in a great line so as to shield our bases completely from observation. At the appointed moment, the operator in each aircraft would switch on MANDREL, blanketing all of the FREYA’s screens with snow. The central German fighter controller would thus have no early information on which to base his preliminary concentrations ... After some considerable time, however, an attacking British force would suddenly come thrusting through the northern portion of the MANDREL screen and begin to be discernible to the FREYA ... But as the controller well knew, at least after the first time Bomber Command did it ... the powerful bomber stream reported to be heading for the Frisians ... might only be a handful of Fortresses dropping WINDOW ... while at the same time, Main Force, which had gone into France at low level ... suddenly appeared on the German radar screens far to the south.\(^{\text{31}}\)

But Mandrel was not the be-all and end-all of electronic counter-measures. Provided the Window anti-jamming kits developed for their large Würzburg Riesen were working, the Germans could still identify the bomber stream while it was fifty miles out to sea, which offered at least some early warning, while undisciplined use or testing of H2S was always a dead give-away of the stream’s location. And, since the Germans were able to monitor both Mark I and Mark II Oboe, it was possible for them to penetrate the jamming even when Mandrel was present — although whether they would always react correctly was a different question. Accordingly, No 100 Group undertook to exploit the enemy’s understandable anxiety to see through the jamming — and its equally understandable propensity to believe that whatever appeared on its
radar screens when electronic counter-measures were not present had to be
genuine. They began to 'simulate the breakdown of the Mandrel screen,'
giving German controllers a tantalizing glimpse of what seemed to be an
approaching bomber stream but was actually a sham. After two or three
spoofs based on this pattern, by which time the enemy was probably condi-
tioned to accept these bogus penetrations as Bomber Command's latest decep-
tion gimmick, High Wycombe would allow the genuine main force to be
revealed behind the Mandrel screen in the hope that the Luftwaffe would
ignore it.32

Sometimes the technique worked perfectly. On 18/19 July No 6 Group lost
only one of 154 crews in a low-level approach (2500 feet) to the synthetic oil
plant at Wesseling, a little south of Cologne, an area that was usually heavily
defended. The Canadians were ignored, however, because they were identified
as spoofers when they emerged from the Mandrel screen.33

After D-Day Bomber Command continued to attack targets selected by Eisen-
hower's headquarters. Indeed, although the US Eighth Air Force was to have
been equally involved in the assault on the French railways, the fact that
American crews had little blind-bombing experience meant that its operations
were often cancelled because of low cloud and inclement weather. Bomber
Command, however, simply continued with its well-tried Pathfinder marking
techniques using Gee, Oboe, and H2S. The first post-invasion raids on rail
centres in the Paris area took place on 7/8 June. With crews flying well below
10,000 feet, heavy Flak accounted for most of the twenty-eight sorties lost (8.3
per cent of the 337 dispatched), but all targets were hit heavily and accurately.
For its part, No 6 Group contributed one hundred crews, of whom six returned
early, four were lost, and one crashed on landing. (One of those returning early
did so with only three men on board, the other four having baled out without
their captain's knowledge after their aircraft had been damaged by anti-aircraft
fire.)34

Flak would remain the main threat to the bomber stream by day, when the
German gunners did not have to rely upon radar to see what they were shoot-
ing at. At the same time, however, now that the invasion had taken place, the
Luftwaffe moved a number of fighter units into France and western Germany
– although not so many as had been called for in April's plan. There was also
further decentralization of command to improve the response against multiple
shallow penetrations. More importantly, the old line of demarcation between
Luftflotte 3 and Luftflotte Reich was erased completely, and the Germans were
soon mounting a strong and resolute defence over France, Belgium, and Hol-
land. On 12/13 June fighters, not Flak, accounted for most of the twenty-three
aircraft lost (3.4 per cent) in Bomber Command's operations against transpor-
tation targets, and most again of the fifteen (8.2 per cent of those dispatched
and including three each from Nos 408, 419, 427, and 434 Squadrons) lost by
No 6 Group over Arras and Cambrai. Similarly, three weeks later night-fighters
took advantage of clear skies and a 'virtually full moon' to shoot down nine
of the 102 crews (8.8 per cent) No 6 Group sent to Villeneuve St George.35
While the scale was decidedly different, the similarities with the Nuremburg raid of 31 March 1944 are striking.

It was on the night of 12/13 June that the only Victoria Cross awarded to a No 6 Group airman was earned. Pilot Officer Andrew Mynarski was the mid-upper gunner of a No 419 Squadron Lancaster X which was ‘attacked from below and astern by an enemy fighter.’

As an immediate result of the attack, both port engines failed. Fire broke out between the mid-upper turret and the rear turret, as well as in the port wing. The flames soon became fierce and the captain ordered the crew to abandon the aircraft.

Pilot Officer Mynarski left his turret and went towards the escape hatch. He then saw that the rear gunner was still in his turret and apparently unable to leave it. The turret was, in fact, immovable, since the hydraulic gear had been put out of action when the port engines failed, and the manual gear had been broken by the gunner in his attempts to escape.

Without hesitation, Pilot Officer Mynarski made his way through the flames in an endeavour to reach the rear turret and release the gunner. Whilst so doing, his parachute and his clothing, up to the waist, were set on fire. All his efforts to move the turret and free the gunner were in vain. Eventually the rear gunner clearly indicated to him that there was nothing more he could do and that he should try to save his own life. Pilot Officer Mynarski reluctantly went back through the flames to the escape hatch. There, as a last gesture to the trapped gunner, he turned towards him, stood at attention in his flaming clothing and saluted, before he jumped out of the aircraft. Pilot Officer Mynarski’s descent was seen by French people on the ground. Both his parachute and his clothing were on fire. He was found eventually by the French, but he was so severely burnt that he died from his injuries.

Thrown clear when the Lancaster hit the ground, Flying Officer G.P. Brophy, the rear gunner whom Mynarski had been trying to save, had a miraculous escape. Delivered to the Resistance by French civilians, he was back in Britain by September to tell his, and Mynarski’s, story.

Although there would be seventeen more attacks on railway targets before the end of the month, after which the volume of all French rail traffic had been reduced to 20 per cent of January’s levels, the real damage had been done by the end of the second week of June. ‘All main lines’ had been broken, authorities in Berlin observed; ‘the coastal defences have been cut off from supply bases in the interior [and] large-scale strategic movement of German troops by rail is practically impossible.’ In London, meanwhile, the air staff drew some satisfaction from the fact that Harris’s pessimistic prediction that he could best support the invasion by intensifying his attacks on German cities had proved to be ‘very far ... from the truth’ – and even more parochial glee from the evidence that Bomber Command’s ‘accuracy and concentration on small targets [exceeded] that ... achieved by the American heavies by day.’

Once the railways had been cut – No 6 Group had provided about a third of all transportation plan sorties – and with Allied intelligence estimating that the Wehrmacht’s total fuel reserve had dwindled to about two months’ supply,
Part Four: The Bomber War

it was only to be expected that petroleum refining would now re-emerge as a priority target system. Portal and Sir Norman Bottomley, the deputy chief of air staff, were both convinced of its importance, while Harris, who had once regarded oil as the 'panacea of panaceas,' had arrived at an informal agreement with Air Chief Marshal Sir Arthur Tedder, Eisenhower's deputy, to take on the enemy's synthetic petroleum industry whenever the tactical situation in Normandy permitted.38

Since these synthetics were used primarily to produce aviation fuel for the Luftwaffe, the bomber forces would be helping their own cause – and to an extent they might not have considered possible just a few months before. 'Precision bombing on markers dropped by Oboe in average weather proved far more effective than we had any right to expect,' Harris observed after the fact, and the Americans became increasingly proficient with H2X (their version of H2S). As a result of the combined assault, monthly output of synthetic oil was reduced from 436,000 to 152,000 tonnes between May and September, while production of aviation fuel fell from 156,000 to 10,000 tonnes a month over the same period (and to 1000 tonnes in February 1945) at a time when the Luftwaffe required about 320,000 tonnes a month. The strategic reserve fell from 314,000 tonnes to a paltry 30,000 tonnes over the same period (although the decline was at least partially attributable to the amount of fuel set aside for the forthcoming German offensive in the Ardennes).39

On 16/17 June, when the refinery at Sterkrade was the target, the Luftwaffe was disappointed with its effort as weather grounded many of its crews. Yet, despite the full functioning of the Mandrel screen, No 6 Group crews reported that fighter activity had been 'rather intense.' All told, thirty-two aircraft failed to return (10 per cent), including twelve of the one hundred from No 6 Group (among them four each from Nos 431 and 434 Squadrons, the latter again having a spell of heavier-than-normal casualties). As had happened before, and for reasons that are no longer discernible, the bomber stream had passed very close to one of the beacons around which a large number of night-fighters were orbiting. Beyond that, however, now that the Germans were using as many as nine voice and two Morse channels simultaneously to broadcast their running commentaries, and changing frequencies every half hour, even Bomber Command’s extensive and sophisticated repertoire of electronic counter-measures could not frustrate all the German controllers. 'The effort was concentrated on those channels which were considered to be most dangerous,' signals intelligence reported, but even so one of them ‘remained readable’ in England.40

Although Harris would later remark that his time under Eisenhower’s command was a period of consistency and continuity in terms of the objectives he was given, the post-invasion bombing of France entailed considerably more than attacks on railways and oil refineries. A formal but sporadic campaign against the V-weapons launch sites (Operation Crossbow) had begun in December 1943, mostly by light bombers and fighter-bombers (as recounted in the Fighter War section of this book). When the first flying bomb (V-1) fell on the United Kingdom on 12/13 June, however, the attack on the launch sites was
intensified and High Wycombe was told to bomb storage and supply facilities as well. Although not entirely happy with these orders, Harris sent 405 crews to attack four V-weapon supply depots on 16/17 June, and followed that up with sixty-three separate raids before the end of August. Operating by night as well as by day, when crews were instructed to fly in 'broad and reasonably short' columns to allow fighter escorts to cover them, Bomber Command dropped 24,292 tons of bombs on Crossbow targets in July (two-fifths of its total effort for the month) and continued on at almost the same pace in the first two weeks of August. One such operation, against the V-1 storage site at St-Leu-D'Esserent on 5 August, saw No 6 Group deliver 1193 tons of bombs, the most it dropped on any one raid during the whole war. Results were nevertheless 'disappointing' despite the intense effort—in part because Crossbow sites were difficult to find, but also because it had been decided to deplete the large stocks of obsolete GP [General Purpose] bombs against them rather than employ the more modern and efficient 'middle capacity' bombs used against other precision targets, particularly oil refineries and synthetic plants.

Allied planners had anticipated that the Germans would make a concerted effort with their French-based destroyers, E-boats, and other light surface vessels against Allied ships sailing between England and Normandy. To that end, it was important to maximize damage to port facilities on each side of the Baie de la Seine and any naval vessels which might be using them. The Channel ports north of the River Orne were assigned to Bomber Command, and Harris, taking advantage of Allied air superiority, chose to attack Le Havre and Boulogne at twilight so as to limit collateral damage and casualties. No 6 Group joined the attack on 15 June, providing 162 of 297 crews sent to Boulogne. While there was some disagreement among the Canadians as to the placement of the markers, the bombing seemed to have been accurate and there would be less interference with cross-Channel shipping by E-boats sailing from that port. (Destroyers and E-boats were, however, active from Le Havre.) Although Harris undertook all these missions dutifully enough and boasted about their successes in his memoirs, at the time he was still inclined to regard them as a serious misapplication of strategic air power. 'I do not believe,' he told Tedder, 'that apart from the damage to the rocket firing sites and to supply dumps, any of this bombing has had a worthwhile effect ... while it has had the deplorable effect ... of taking virtually the whole of Bomber Command and much of the American effort off targets in Germany for 3-1/2 months.'

What worried him most, however, because General Eisenhower had never concealed his intention to use both the Eighth Air Force and Bomber Command as a kind of heavy artillery, was the likelihood that he would be called upon to support ground operations as a matter of course. And, indeed, the first such mission took place on 7/8 June, when elements of Nos 1, 5, and 8 Groups

* With General Spaatz objecting even more strenuously to any diversion of the American bombing effort, Bomber Command in fact took on most Crossbow targets. The US Eighth Air Force became involved only when 'it could not operate against German industry' and, in July and August, it contributed just over a quarter of all Crossbow sorties.
(with No 405 Squadron providing twelve Lancasters) were assigned the task of attacking a six-way road junction near the First US Army front. Unhappily, a stray marker which fell six miles from the aiming point attracted most of the 795 tons of bombs dropped. The next such attack, an attempt to cover the withdrawal of British armour from Villers-Bocage on 14/15 June, did not prevent the Germans from attacking on the 16th; but a similar raid against 9 SS Panzer Division in the same area on 30 June, for which No 405 Squadron provided ten target-markers, proved ‘most effective’ because ‘it delayed their attempt to take Cheux.’

Although Bomber Command carried out several more interdiction attacks – bombing enemy troop concentrations and supply lines behind the battlefront – by daylight, it was not until 7 July 1944, when General Montgomery asked for an aerial bombardment to assist in taking the city of Caen, that High Wycombe (and Allerton Hall) became involved in close support of ground operations. The attack on Caen was launched shortly before last light on the 7th, when 467 machines from Nos 1, 4, 6 and 8 Groups dropped more than 2500 tons of bombs in less than an hour on some two-and-a-half square miles of the northern half of the city. Eighty-seven crews from No 6 Group ‘were enthusiastic over the success of this raid,’ but Wing Commander J.E. Johnson, the top-scoring British fighter ace who was now leading No 144 (RCAF) Wing of Spitfire escorts, had his doubts.

It was quite apparent that a number of bombs had fallen well outside the target area.

As I watched the terrible destruction wrought on the French city, I could not help but wonder whether we were using a sledge-hammer to crack a nut. We were well aware of the military necessity to break the enemy at Caen so that our ground troops could eventually deploy into open country. But we were not so sure that this object could only be achieved by the wholesale destruction of Caen and the death of a great number of its inhabitants.

Some of the bombs were timed to explode up to six hours after the attack, so that there would not be too large a time lag before the ground force went in the next morning. Flying low on the fringe of the attack, I distinctly saw a German tank thrown into the air, like a child’s toy, and turning over and over before it fell to the ground.

The Canadian infantrymen, who had just succeeded in capturing part of Carpiquet airfield on the western edge of the city in two days of costly fighting, found the ‘smoke and flame wonderful,’ reporting that it had ‘improved their morale 500 per cent.’ No doubt it did much the same for the British troops on their left, half encircling the city. The enemy, however, found the bombing ineffectual. The senior staff officer of the 12th SS (Hitler Jugend) Panzer Division recorded that his formation ‘suffered only negligible casualties … Some tanks and armoured personnel carriers were toppled over or buried under debris from houses, but after a short while nearly all of them were again ready for action.’ Of course, the bulk of his troops, like the other defenders of Caen, were solidly dug in along an arc of villages and hamlets north of the city, where they escaped this intense bombardment; in order to limit the dangers of
friendly fire, 'it had previously been decided that pending further experience
the bombline should be 6,000 yards ahead of the nearest [Anglo-Canadian]
troops.' 

Indeed, there was little that was 'close' about this operation in terms of
either time or space. For reasons probably connected with 21st Army Group's
reluctance to assault by night, as well as Bomber Command's preference for
visual identification of aiming points when undertaking such a precise attack,
the bombardment was carried out at last light on the 7th, while the troops did
not begin to move until first light on the 8th – an interval of some six hours
during which those Germans who had been subjected to the bombing could,
and did, largely recover their poise. In the end, it took a day-and-a-half of
heavy fighting (that included naval fire support from the 16-inch guns of HMS
Rodney, out in the English Channel) to take Caen at a cost of 3500 casualties
– more than a thousand of them Canadian. 

Although the cratering and rubble created by the bombing had made it
difficult for those fighting through the city, there was still much enthusiasm on
the part of most soldiers for this new kind of fire support. The mere sight of
a massive bomber attack quickened the spirit of troops who were, by now,
coming to rely upon overwhelming firepower for any success at all and who
realized, as postwar studies would confirm, that heavy bombers produced a
barrage 'out of all comparison with that attainable by any artillery concentra­
tion that can at present be contemplated.' Montgomery asked for 'the whole
weight of air power' to fall on the defended areas and strongpoints flanking his
proposed thrust as he planned Operation Goodwood – the second attempt to
unhinge the German defences south of Caen and open the way to Falaise.
What he got, on 18 July, was (in the words of Leigh-Mallory, penned the
following November) 'the heaviest and most concentrated air attack in support
of ground forces ever attempted.' This time Bomber Command, including
almost two hundred crews from No 6 Group, came in broad daylight, shortly
after dawn.

Again the troops forming up for the ground attack were properly impressed.
A soldier waiting to advance with the British armoured division that would
spearhead the ground assault watched the approaching air armada with awe.

High in the sky and away to our left a faint and steady hum caught our attention and,
as we watched, it grew into an insistent throbbing roar and the first aeroplanes
appeared high up in the pale sky. Then the whole northern sky was filled with them
as far as one could see – wave upon wave, stepped up one above another and spreading
out east and west until it seemed there was no room for any more ... The bombers
flew in majestically and with a dreadful, unalterable dignity, unloaded and made for
home; the sun, just coming over the horizon, caught their wings as they wheeled. Now
hundreds of little black clouds were puffing round the bombers as they droned inexor­
ably to their targets and occasionally one of them would heel over and plunge smooth­ly into the huge pall of smoke and dust that was steadily growing in the south ... Then
the guns took up in a steadily increasing crescendo the work which the bombers had
begun.
The airmen delivered over three thousand tons of bombs in forty-five minutes, and at some points the bombline was no more than nine hundred yards in front of the foremost British troops. The attack was directed against five fortified villages, two on each flank of the army’s line of advance and one – Cagny – directly in its path. Allocated to two of the five targets, those Canadians who bomber the one reported it ‘well plastered’ and those assigned to the other thought their bombing ‘well concentrated in the target area; they had, in fact, caused substantial damage and temporarily demoralized many of the enemy. But the army did not begin its advance until 0745 hours, ninety minutes after the heavy bombers had finished their work and time enough for the Germans to recover sufficiently to offer significant resistance. Despite having pierced the enemy’s defensive crust and advanced up to four miles, Montgomery’s armoured spearheads (and the 3rd Canadian Infantry Division on the right) ground to a halt, the roads behind them so congested that it was impossible to reinforce success.51

While the question of bomblines could be (as we shall see) an extraordinarily tricky one, it is hard to comprehend why the matter of timing could not have been coordinated more closely from the beginning, with the air attack concluding at the same prearranged moment that the soldiers began to move forward. Even so, Generalfeldmarschall Hans von Kluge (who had been appointed to command Army Group B after Rommel had been injured in a fighter-bomber attack on 17 August) found this new kind of heavy bombardment disturbing. ‘The psychological effect on the fighting forces, especially the infantry, of such a mass of bombs raining down upon them with all the force of elemental nature, is a factor which must be given serious consideration,’ he told Hitler.52

Montgomery’s next attempt to open the road to Falaise was planned and executed by Lieutenant-General Guy Simonds’s II Canadian Corps, with the British 51st (Highland) and Polish Armoured Divisions under command. A night operation, Totalize called for close support by heavy bombers despite Harris’s doubts about the ability of his crews to bomb accurately enough in the dark; and, indeed, although 1100 aircraft were dispatched, only 660 of them actually attacked, the others being called off by the master bomber as the target areas became obscured by smoke and dust. Altogether, 133 of 235 crews from No 6 Group squadrons were permitted to bomb, those who did reporting ‘very concentrated bombing’ in what they assessed as a ‘good attack.’53

Because the bombing ended early, the ground attack (which had been scheduled to begin half an hour before the last bombs fell on the most distant targets) actually began half an hour after the bombardment had concluded. Dust and smoke from the bombing, combined with darkness (and sadly inadequate map- and compass-reading) led many of the attackers to lose direction, but, even so, by dawn they had again created a distinct breach in the German defences. General Simonds intended to launch his two armoured divisions – the Polish and 4th Canadian – through that breach, sped on their way by more close support bombing, to be delivered in daylight by the US Eighth Air Force. Of 678 machines dispatched, 492 actually attacked, dropping nearly 1500 tons
of bombs. Unfortunately, twenty-four of them bombed wrongly, killing and wounding more than three hundred officers and men of the Polish armoured division and the 3rd Canadian Infantry Division, including the latter's commander, Major General R.F. Keller, among the wounded. The second phase of Totalize petered out.

Away to the southwest, meanwhile, the Americans were now lunging forward in a gigantic right hook that showed every prospect of trapping a vast German army in the so-called 'Falaise pocket' if only Montgomery's armies could push southeast, past Falaise, and join up with the Americans at Argentan. To that end another Canadian assault was mounted on 14 August, under the code-name Tractable, in which just over eight hundred aircraft from Nos 1, 4, 6, and 8 Groups hit at enemy concentrations and strongpoints about a mile in front of the start-line. No 6 Group provided 227 crews for the operation, of which 105 made for aiming point 23, on the northern fringe of the battlefield near Bons Tassilly, and the rest for aiming point 28, slightly to the south, at Aisy/Potigy. 'The area in which these aiming points lie,' crews were informed, is high ground infested with guns, tanks and defended localities and forms the main stumbling block between the Canadian Army and FALAISE. The intention of this attack is to remove this stumbling block by disorganising, neutralizing, and destroying everything in the area surrounding the Aiming Point and by using blast to force the survivors to keep their heads down while the Canadians attack to capture the key town of FALAISE. In this attack Bomber Command are adding their massive weight to the team that is steadily pulling tight the neck of the bag round the nearly trapped enemy divisions and their contribution, if successfully carried out, may well be the decisive factor in the completion of the first major victory over the German armies on French soil in this war.

The Bons Tassilly force, comprising crews from Nos 408, 415, 420, 425, 426, 432, and 433 Squadrons, was by and large able to 'map-read [its] way to the aiming point' despite only 'fair ... horizontal visibility'; most crews reported that they had 'bombed on concentration of T[arget] I[ndicator] s or centre

* No 415 Squadron, as we have seen earlier, was transferred to Bomber Command on 12 July 1944 at Ottawa's request because the Canadian government was not satisfied with the role it had been given in Coastal Command. In terms of personnel, only the groundcrew and headquarters staff went to No 6 Group, the Wellington and Albacore aircrews moving to other RAF squadrons. No 415 flew its first bomber mission on 28/29 July, when it bombed Hamburg. For the first month or so, however, perhaps because there were so many new aircrew, one pilot found No 415 to be 'a sloppy squadron with a morale problem,' something not helped when, in mid-August, a mid-air collision during practice flying killed the commanding officer and most of the other senior officers as the former attempted too tight a formation. Wing Commander J.H.L. Lecomte, the popular and successful CO of No 425 Squadron, was transferred to No 415 and immediately set his stamp on it by stepping up training and, letting the adjutant handle his paper work, flying as many operations as possible. When he was promoted to group captain and took over the station at Tholthorpe in November, No 415 Squadron had fully recovered.