

ROYAL AIR FORCE
BOMBER COMMAND

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SQUADRON PROFILES

NUMBER 98



434 (BLUENOSE) SQUADRON
ROYAL CANADIAN AIR FORCE

IN EXCELSIS VINCIMUS

RESEARCHED, COMPILED AND WRITTEN
BY
CHRIS WARD

**ROYAL AIR FORCE
BOMBER COMMAND
SQUADRON PROFILES**

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434 SQUADRON



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GENERAL NOTES

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GENERAL NOTES

This profile is a reference work on the activities of the squadron during the Second World War. Bomber Command operated exclusively from stations in the UK, and used overseas bases purely for shuttle operations, or as advanced staging posts for specific purposes. For this reason, periods spent on detachment, or permanent postings to overseas Commands, do not fall within the scope of this work.

This profile is not intended to serve as a comprehensive squadron history, but to provide as much information as possible in a non-anecdotal form. The brief history narrative is basically an account of Bomber Command's war, with the individual squadron's involvement interwoven into it. The publications listed in section 5 are not only recommended reading, but represent the best available sources of information for serious students of the subject. The operational record is based almost entirely on the figures provided in *The Bomber Command War Diaries* by Martin Middlebrook and Chris Everitt, and I am indebted to Martin Middlebrook for allowing me to use them.

An aircraft is included in section 3 if; a) it spent time on squadron charge, no matter how briefly, and irrespectively of whether or not it operated. b) the type was used operationally by the squadron. Where a squadron has a Conversion Flight involving a type with which it is intending to re-equip, but then does not, as in the case of 101 and 460 Squadrons, these have been included, on the basis that they sometimes found themselves on operations. Information is restricted in most cases to; where from, where to, unless it completed its service with the squadron, in which case, some detail of its demise appears. Aircraft which failed to return have the date and target recorded. Where no information follows the serial number of a type still in use when the squadron departed Bomber Command, or at war's end, it can be assumed that the aircraft was still on squadron strength. However, where there is a blank space following the serial number of a type which has been withdrawn from service with Bomber Command, it signifies that I don't know its ultimate fate. An absence of information does not imply that the aircraft flew no operations during its time with the squadron.

Those squadrons which served with the AASF in France between the outbreak of war and the fall of France, were not technically part of Bomber Command from January 1940. Nevertheless, their service is deemed to be on behalf of Bomber Command for the purpose of the relevant Profiles, and their experiences are, therefore, detailed, and their aircraft listed. The Blenheim squadrons of the AASF are also treated as if under Bomber Command.

Finally, information has been drawn from a variety of sources, ranging from Records Branch to individuals with squadron connections, and I am grateful for their contributions. There will inevitably be errors and omissions when dealing with a subject as vast as Bomber Command, and I am happy to be corrected and/or updated by readers.

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SECTION 1



BRIEF HISTORY

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434 (BLUENOSE) SQUADRON

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434 Squadron Royal Canadian Air Force was born out of Article XV of the British Commonwealth Air Training Plan (BCATP) Agreement, which was signed on the 7th of January 1941, and called for the formation of twenty five Canadian squadrons by May 1942. All such units were to be numbered in the 400 - 450 series. 434 Squadron was formed on the 13th of June 1943 as the thirteenth Canadian unit in Bomber Command after 405, 408, 419, 420, 425, 424, 426, 427, 428, 429, 431 and 432 Squadrons. Most of those listed began life in 4 Group, and were transferred to Canada's own 6 Group on its formation on New Year's Day 1943. 434 Squadron's first home was at Tholthorpe, where it became the first Canadian squadron to form on four engine heavy bombers, the others having been equipped initially with Wellingtons. The name Bluenose derived from the nickname given by Canadians to Nova Scotians, and the Rotary Club of Halifax adopted the squadron. W/C Harris was installed as commanding officer on the 15th of June. He was a Canadian with a fine record of service behind him, and had commanded 88 Squadron in 2 Group from November 1941 to June 1942. There he had overseen the introduction of the Boston as a replacement for the Blenheim.

The formation of 434 Squadron came during the fourth month of the Ruhr campaign, although this would have concluded by the time the Bluenoses were declared operational. Most of the main force enjoyed almost two weeks off following the final operation in May, which had been launched with devastating effect at the Barmen half of Wuppertal, but some of the Wellington units were called into action for mining duties during the period. At around 23.00 hours on the 11th of June over 780 aircraft set off for Düsseldorf, while seventy-two 8 Group crews took part in a massed H2s trial at Münster. An errant Oboe marker fourteen miles from the main target inevitably caused some bomb loads to be wasted in open country, but the bulk of the effort fell into the city's central districts, where around forty square kilometres were severely affected by fire. Over fourteen hundred separate large fires were recorded, dozens of factories suffered a complete or partial loss of production, and eight ships were either sunk or damaged in the inland port. In human terms almost thirteen hundred people lost their lives, while a further 140,000 were bombed out of their homes. The death toll among the bomber crews was also high, as the losses equalled the campaign's highest to date of thirty-eight. On the following night Oboe enabled the centre of a cloud-covered Bochum to be accurately bombed, and this resulted in an estimated 130 acres of destruction. A further seventeen aircraft were missing from an all-Lancaster heavy force, which pounded Oberhausen on the 14/15th, and this amounted to a hefty 8.4% of those dispatched. 1, 5 and 8 Groups delivered a moderately useful attack on Cologne on the 16/17th, and then it was the turn of the Lancasters to stay at home, while Halifaxes and Stirlings of 3, 4, 6 and 8 Groups attempted the precision bombing of the Schneider armaments works at Le Creusot in France on the 19/20th. This had been the scene of an epic daylight raid by 5 Group in the previous October, when only moderate success had been achieved against the factory buildings. A second target, the nearby transformer station at Montchanin, had been targeted then by a small formation led by W/C

Guy Gibson, who was commanding 106 Squadron at the time, but it escaped virtually intact. In 1943 main force crews were not used to bombing small targets, however, and found great difficulty in identifying their aiming points. The result was that only 20% of the bombs hit the factory at Le Creusot, while the crews of the second force misidentified the transformer station, and it again remained intact.

A hectic round of four operations in five nights began at Krefeld on the 21/22nd, when over seven hundred aircraft were dispatched. The Pathfinder marking was flawless, and most of the 619 main force crews delivered a total of 2,300 tons of bombs with great accuracy and concentration within three miles of the aiming point. The central districts became a raging inferno, which consumed 47% of the city's built-up area, and more than five and a half thousand houses were destroyed. A thousand people were killed on the ground, but the attackers also suffered heavy losses at the hands of night fighters, which found their prey easily in the moonlight. Forty-four aircraft were shot down, a new record for the campaign, and six of them were from 35 Squadron, one of only two Pathfinder units equipped with Halifaxes. The following night saw 557 aircraft set off for Mülheim, where another outstandingly accurate attack developed, which left devastation in central and northern districts, and in the eastern districts of the neighbouring town of Oberhausen. Over eleven hundred houses were destroyed, a further twelve thousand were damaged to some extent, and scores of industrial and public buildings were also hit, disrupting war production and city administration. 64% of Mülheim's built-up area was estimated as destroyed, but the Command again paid a heavy price for its success, the losses amounting on this night to thirty-five.

After a night's rest, and a month after the destruction of Wuppertal's Barmen, over six hundred aircraft turned their attention upon its twin, Elberfeld. Despite a modest creep-back the majority of the main force crews exploited the accurate Pathfinder marking, and their bombs destroyed three thousand houses and 171 industrial premises. Thousands of other buildings were severely damaged, and the death toll reached eighteen hundred people. When the smoke had cleared, photographic reconnaissance revealed that at least 90% of the town had been reduced to rubble, but on the debit side the Command lost another thirty-four aircraft and crews. The run of successes came to an end at the oil town of Gelsenkirchen on the 25/26th, when, in an echo of the past, bombs were sprayed liberally around the Ruhr. It had always been among the most elusive of targets, and on this occasion malfunctioning Oboe equipment contributed largely to the failure, which cost another thirty aircraft. There were no major operations over the succeeding two nights, as Harris prepared for a three raid series against Cologne spanning the turn of the month. A force of 608 aircraft took off for the Rhineland Capital late on the 28th, and despite cloud cover over the target, the failure of Oboe equipment in five out of the twelve Mosquitos and the use of skymarking, which was late in starting, Cologne was subjected to its most destructive assault of the war. The degree of devastation far exceeded that inflicted by the Thousand Force a year earlier, and, in fact, almost twice as many buildings were completely destroyed. The death toll of over 4,300 people was a thousand more than the previous highest, recorded at Barmen a month before. The second Cologne raid involved 650 aircraft and took place on the 3/4th. This attack was aimed at that part of the city situated on the east bank of the Rhine, and it was again

stunningly successful, reducing a further 2,200 houses to ruins, along with twenty industrial premises. Thirty aircraft were lost, to add to the twenty-five missing from the earlier raid. The series against Cologne concluded at the hands of an all-Lancaster force on the 8/9th. This attack reduced over 2,300 houses and nineteen industrial premises to rubble, and later, when the city authorities were able to assess the results of these three raids, they documented more than eleven thousand buildings destroyed, five and a half thousand people killed, and 350,000 others bombed out of their homes. The mini campaign had cost the Command sixty-two aircraft and crews, at an average of almost twenty-one per operation, which, in the light of recent experiences, was relatively modest.

Another disappointing operation was played out at Gelsenkirchen on the 9/10th, and although two more operations to the region would take place in the final week of the month, this effectively brought the Ruhr offensive to an end. Harris could look back upon the past five months with a genuine sense of achievement, and take particular satisfaction from the performance of Oboe. Much of Germany's industrial heartland now lay in ruins, and it must have been clear to the civilian population that this was only the start. There was so much slack in the German industrial capacity, however, that production could still increase dramatically over the next twelve months. That apart, the disruption had been massive, and would be further exacerbated by the dispersal of industry to safer regions of the Reich. Losses to the Command of aircraft and crews had been grievously high, but the factories and flying training schools were more than keeping pace with the rate of attrition, and even allowed for an expansion in many squadrons by the addition of a third flight. Buoyed up by his success, Harris sought an opportunity to deliver a knockout blow against one of Germany's premier cities, to send shock waves to rock the foundations of Nazi morale. Having been spared by the weather from hosting the first thousand-bomber raid at Cologne's expense, Hamburg now presented itself as the ideal objective for the aptly named Operation Gomorrah.

In the meantime, an all-Lancaster force raided Turin to good effect on the 12/13th, before Halifaxes, Wellingtons and Stirlings formed the main force for an attack on Aachen on the following night. This was another highly successful operation, which resulted in the destruction of almost three thousand buildings. On the 15th 431 Squadron departed 4 Group and completed its move to Tholthorpe, where it joined the fledgling 434 Squadron in learning the ways of the Halifax, although it would now remain off the order of battle until early October. On the 15/16th an all-Halifax force was sent to Montbeliard in south-eastern France to attack the Peugeot motor works. Sadly, the target indicators were not accurately placed, and most of the bombs fell into the town of Sochaux, of which Montbeliard was a suburb. This was an ever-present danger, despite a relatively low bombing altitude, and in the pre-invasion campaign from March to June 1944 such "friendly fire" incidents would be frequently re-enacted.

There now followed a lull in main force operations as preparations continued for the forthcoming assault on Hamburg. Many factors had to be considered when mounting a series of operations, not least of which was the reason behind it. The morale of Germany's civilian population had been a documented War Cabinet priority since July 1941. To achieve maximum effect throughout the Reich, rather than simply locally, the objective required

political status beyond the norm. Berlin, as the Capital, clearly satisfied that requirement, but Harris was not quite ready to take on such a massive undertaking at this juncture. As Germany's Second City, Hamburg was next in line, particularly as Cologne, its third great city, had only recently been devastated. There were, however, other considerations of a more operational nature, which pointed to Hamburg as the ideal choice. Firstly, it was a major industrial city, and was particularly important to Germany for its ship and U-Boat construction. Secondly, it could be approached from the sea without the need for the bomber stream to traverse great tracts of hostile territory. It was also close enough to the bomber stations to allow a large force to get in and out in the few hours of darkness afforded by mid summer. Thirdly, situated as it was beyond the range of Oboe, which had proved so decisive at the Ruhr, it boasted the wide River Elbe through its centre to provide a strong H2s signature for the navigators high above. The final week of July had become the traditional time to attack Hamburg, and so it was now, and as the crews prepared for the first operation on the afternoon of the 24th, a new device was being loaded into their aircraft. Window had actually been devised a year earlier, but its use had been vetoed in case the enemy copied it for use against Britain. Ironically, the German scientists had already developed their own version known as Düppel, which had also been withheld for the same reason. It consisted of aluminium-backed strips of paper packed in bundles, which, when released into the air stream, floated slowly to earth in giant clouds. This swamped the enemy radar system with false returns, making it impossible for night fighter, searchlight and flak crews to identify and lock on to a genuine target. Windowing would begin at a predetermined point over the North Sea on the way in, and continue throughout the raid until a second point was reached on the way out.

A force of 791 aircraft stood ready for take-off in the late evening of the 24th, and the outward flight was relatively uneventful, as the bombers made little or no contact with enemy night fighters. A number of aircraft were shot down during this stage of the operation, but each was off course, and outside of the protection of the bomber stream. The efficacy of Window was immediately apparent to the crews on their arrival in the Hamburg defence zone, where the usually efficient co-ordination between the searchlights and flak batteries was absent. The defence was accordingly random and sporadic, thus giving the Pathfinder crews a rare, almost unhindered run at the aiming point. The markers were a little scattered, but most fell close enough to the city centre to provide a strong reference point for the main force crews, and over the next fifty minutes, almost 2,300 tons of bombs were delivered. The bombing began near the aiming point, but a pronounced creep-back developed, which cut a swathe of destruction from the city centre along the line of approach across the north-western districts, and out into open country, where a proportion of the effort was wasted. Never the less, it was a highly destructive attack, in which fifteen hundred people lost their lives, and this was the highest death toll at a target beyond the range of Oboe. An added bonus for the Command was the loss of a very modest twelve aircraft, for which much of the credit belonged to Window. At a stroke the device had rendered the entire enemy defensive system impotent for the time being. An advantage was rarely held for long, though, before a counter-measure was found, and this would eventually see the balance swing back in the enemy's favour. Harris decided to switch his attention to Essen on the following night to take advantage of the body blow dealt to the enemy's defences by Window. The result was another highly accurate and concentrated

assault on this city, where the Krupp complex sustained its heaviest damage of the war, and over 2,800 houses and apartment blocks were destroyed.

After a night's rest 787 aircraft took off to return to Hamburg for round two of Operation Gomorrah. What followed their arrival over the city was both unprecedented and unforeseeable, and was the result of a lethal combination of circumstances. A period of unusually hot and dry weather had left tinderbox conditions in parts of the city, and the initial spark to ignite the situation came with the Pathfinder markers. These fell two miles to the east of the planned city centre aiming point, but with unaccustomed concentration into the densely populated working class residential districts of Hamm, Hammerbrook and Borgfeld. The main force crews followed up with uncharacteristic accuracy and scarcely any creep-back, and delivered most of their 2,300 tons of bombs into this relatively compact area. The individual fires joined together to form one giant conflagration, which sucked in oxygen from surrounding areas at hurricane velocity to feed its voracious appetite. Such was the ferocity of this meteorological phenomenon, that trees were uprooted and flung bodily into the flames, along with debris and people, and the temperatures at its seat exceeded one thousand degrees Celcius. The inferno only began to subside once all the combustible material had been consumed, and by this time, there was no one left within the firestorm area to rescue. It would actually be weeks before many of the burned-out buildings had cooled sufficiently to allow access to basements, where some of the more gruesome finds would be made, and an accurate assessment of casualties could begin. At least forty thousand people died on this one night alone, and on the following morning the first of an eventual 1.2 million inhabitants began to file out of the tortured city.

Another night's rest preceded the third Hamburg raid, for which a force of 777 aircraft took off. Early returns had reduced the numbers to 707 by the time the target was reached, but these carried another 2,300 tons of bombs to deliver onto the city centre. The Pathfinders were again two miles east of the aiming point with their markers, which fell a little to the south of the firestorm area. The main force approached the markers on a north-south heading, and a creep-back developed as some crews bombed the first markers or fires they encountered. This took the bombing across the firestorm devastation of two nights earlier, before it fell onto other residential districts beyond, where a new area of fire was created, although of lesser proportions. The city's fire service was already exhausted, while access to the freshly afflicted districts was denied by rubble-strewn and cratered streets, and there was little to be done other than to allow the fires to burn themselves out. The defences were beginning to recover from the shock of Window, however, and as they did so the bomber losses began to rise. Twenty-eight aircraft failed to return on this night, on top of the seventeen resulting from the firestorm raid. On the following night, the 30/31st, a relatively modest force of under three hundred Halifaxes, Stirlings and Lancasters, in roughly equal numbers, devastated the previously unbombed Ruhr town of Remscheid, destroying over three thousand houses, laying waste to 83% of its built-up area and killing eleven hundred inhabitants, and this operation brought down the final curtain on the Ruhr offensive.

Operation Gomorrah was concluded on the night of the 2/3rd of August, when 740 aircraft departed their stations and headed into violent electrical storms on the route to northern

Germany. This persuaded many crews to abandon their sorties, and either jettison their bombs over the sea or drop them on alternative targets. Some crews pressed on to Hamburg, but the bombing was scattered in the absence of target indicators, and little further damage was inflicted upon the city. There were no further operations during the first week of August, but something of future significance for Canadian squadrons took place in their homeland on the 6th. This was the day selected for the naming ceremony of the very first Canadian built Lancaster, KB700. The occasion was turned into a massive media event with live coverage on the radio, and a commentary provided by the actor Lorne Greene. The minister for munitions and supply declared the Lancaster the “greatest weapon of destruction that Canada had produced during the war.” The name, Ruhr Express, was bestowed upon the aircraft by Mrs C G Power, wife of the minister for National Defence for Air, and the impression was given by the general hype, that it would immediately take-off for England and war against tyranny. Ruhr Express did, indeed, take off, with S/L Reg Lane at the controls, he having returned to Canada at the completion of his second tour of operations and term as flight commander with 35 Squadron. Far from flying to England, however, KB700 was barely able to fly anywhere. She was short of vital instruments and equipment, but in a country seeking to demonstrate its industrial prowess, and in view of the publicity, a postponement of the show was unthinkable. Lane flew the Lancaster to Dorval, Quebec, where the outfitting was completed, and he would indeed, in time, fly KB700 to England.

The second week of August began with the first of a series of raids on the major cities of Italy, which was now teetering on the brink of capitulation. Bomber Command’s involvement was designed to help nudge it over, and elements of 1, 5 and 8 Groups began the process on the night of the 7/8th with attacks on Genoa, Milan and Turin. On the 9/10th over 450 crews took off for a raid on Mannheim on the east bank of the Rhine in southern Germany. A solid marking effort contributed to a highly effective attack, which destroyed thirteen hundred buildings, and caused loss of production at forty-two factories for the modest loss of nine aircraft. Twenty-four hours later it was the turn of Nuremberg to suffer its most effective raid to date at the hands of around six hundred aircraft. Considerable damage resulted in central and southern districts, where preserved medieval houses were destroyed, and a large area of fire developed. The Italian campaign continued at Milan and Turin on the 12/13th, and returning crews claimed heavy and concentrated attacks. 434 Squadron launched its operational career at the former, and all of its aircraft returned, although four landed away from base because of a shortage of fuel. Milan was hit again on the 14/15th and 15/16th, and the campaign concluded at Turin on the 16/17th. This was a 3 and 8 Group show, but despite the enthusiastic claims at debriefing it was an inconclusive raid. The weather on return forced many 3 Group crews to divert to other airfields, and a goodly number would not regain their stations until quite late on the 17th, too late to take part in one of the most important operations of the war that night.

Since the start of hostilities, intelligence had been filtering through concerning German research into rocket weapons. Through the interception and decoding of signals traffic the centre for such activity was found to be at Peenemünde, an isolated location on the island of Usedom on Germany’s Baltic coast. Regular reconnaissance flights helped to build up a picture of the activity there, and through listening in on signals, the brilliant scientist, Dr R V

Jones, was able to monitor the V-1 trials being conducted over the Baltic, and gather much useful information on the weapon's range and accuracy. Churchill's chief scientific adviser, Professor Lindemann, or Lord Cherwell as he became, steadfastly refused to give credence to rockets as weapons, and even when confronted with a photograph of a V-2 on a trailer at Peenemünde, taken by a PRU Mosquito as recently as June, he stubbornly remained unmoved. It required the urgings of Dr Jones and Duncan Sandys to persuade Churchill of the need to act, and it was finally agreed that an operation should be mounted at the first available opportunity. This arose on the night of the 17/18th of August, for which a detailed plan was meticulously prepared.

The Peenemünde research and development establishment consisted of three main areas, the housing complex where the scientists and workers lived, the assembly buildings, and the experimental site. Because of this the operation was to take place in three waves, each wave assigned to a specific aiming point, beginning with the housing estate, and the Pathfinders were charged with the heavy responsibility of shifting the point of aim accordingly. 3 and 4 Groups were to go in first, followed by 1 Group, while 5 and 6 Groups would bring up the rear at the experimental site. The entire operation was to be controlled by VHF by a Master of Ceremonies, or Master Bomber, in the manner pioneered by Gibson at the Dams, and the officer selected was G/C Searby of 83 Squadron, who had been Gibson's successor as commanding officer of 106 Squadron. Two deputy Master Bombers were appointed to assist Searby, and to take over if he was lost or forced to return early. W/C Fauquier was the first deputy, and he would be flying 405 Squadron's first Lancaster sortie. W/C John White, a highly experience Pathfinder and flight commander with 156 Squadron, was the second deputy, sadly, a man with only three months to live. All three Master Bombers and their crews would be required to remain in the target area throughout the raid within range of the defences, directing the marking and bombing, and exhorting the crews to press home their attacks. A spoof raid on Berlin by eight Mosquitos of 139 Squadron an hour before zero hour at Peenemünde was intended to draw off the enemy night fighters, and provide the crews with a clear run at the target, where the bombing would be conducted from medium to low level.

597 aircraft answered the call for a maximum effort, the numbers somewhat depleted by the unavailability, as already mentioned, of a proportion of the Stirling brigade. Most aircraft got away between 21.00 and 22.00 hours, and set course in clear conditions for southern Denmark. The initial marking of the housing estate went awry, when the first markers fell onto the forced workers camp at Trassenheide, more than a mile beyond the intended aiming point. This inevitably attracted a proportion of the 3 and 4 Group element, and about a third of them delivered their bombs here, inflicting heavy casualties upon the friendly foreign nationals trapped inside their wooden barracks. W/C White, the second deputy Master Bomber, used his reserve markers at this stage to help pull the bombing back on track. Once rectified, this phase of the operation proceeded according to plan, and a number of important members of the establishment's technical staff were killed. The 1 Group attack on the assembly sheds was hampered by a strong crosswind, and such was the layout of the establishment, that bombs either found the mark, or fell harmlessly among dunes or into the sea. Ultimately, this area too sustained severe damage, leaving just the experimental site for 5 and 6 Groups.

It was at this point, that the night fighters arrived belatedly from Berlin, and proceeded to take a heavy toll of aircraft both in the skies over Peenemünde, and on the route home towards Denmark. The 5 Group crews were authorized to adopt their "time and distance" method of bombing if the target became obscured by smoke, and some did so, although this was perhaps the least effective part of the operation. W/C White had used his target indicators at a critical time during the operation, but W/C Fauquier retained his, and delivered his bombs in the final minute of the raid. During his time in the target area he made seventeen passes, and exhorted the crews to press home their attacks. Forty aircraft failed to return home, and twenty-nine of these were 5 and 6 Group aircraft from the final wave. Among the early casualties, though, in fact the second aircraft to go down, was 434 Squadron's EB258. Observers watched this Halifax become ensnared in a master searchlight, and it was immediately hit by flak over the island of Sylt. It went straight down, and only the flight engineer and navigator managed to save themselves by parachute, one of them landing on the runway of Westerland airfield. F/S Piper and the remainder of his crew were killed in the ensuing crash. The two survivors were joined in captivity by three more from DK260 and six from EB276, both of which were shot down by night fighters over Germany. They were captained by F/L Colquhoun and Sgt Johnston respectively, who were killed. These three failures to return represented a 33⅓% loss rate for the squadron on only its second operation. The attack on Peenemünde was sufficiently successful to set back the development programme of the V-2 by a number of weeks, and the testing was ultimately moved eastwards into Poland. The vulnerability of Peenemünde to air attack caused a major rethink by the German authorities, and it was decided to move the production of secret weapons underground. Almost immediately, construction of an underground factory began at Nordhausen, and once completed, it would be manned by forced workers.

Harris had long believed, that Berlin, as the seat and symbol of Nazi power, held the ultimate key to victory. He maintained the belief that bombing alone could win the war, and if this could be achieved, it would remove the need for the kind of protracted and bloody land campaigns that he had personally witnessed during the Great War. At the time it was a perfectly reasonable theory, and Harris was the first commander in history in a position to put it to the test. It is only in the light of recent conflicts, that we know with absolute certainty of the necessity to physically occupy the enemy's territory, in order to gain complete submission. Before embarking on the first phase of what would be the longest and most bitterly fought campaign of the war, Harris sent 460 aircraft to Leverkusen in the Ruhr, where the IG Farben factory was the aiming point. Problems with Oboe led to a scattered and ineffective raid, which afflicted many neighbouring towns. 434 Squadron's EB255 was shot down by a night fighter over Belgium, and there were no survivors from the eight-man crew of Sgt Harrison. The seven-month long campaign against Berlin began on the night of the 23/24th, and nothing before or after would come closer to breaking the Command's spirit. 727 aircraft took off for the Capital in mid evening, but five 434 Squadron crews turned back early for a variety of reasons. On arrival at the target the Pathfinders were confronted by the usual difficulties of trying to identify the city centre from the jumble of images on their H2s screens. In the event, they marked the southern outskirts of the city, and some of the main force crews approached from the south-west instead of a more southerly direction, thereby depositing many bomb

loads onto outlying communities and open country. This would be a feature of the entire campaign, but at least on this night, considerable damage was inflicted on the southern districts, where 2,600 buildings were destroyed or seriously damaged, and this represented the best result yet at the "Big City". On the debit side the loss of fifty-six aircraft was a new record. Among them was DK261, which was shot down by a night fighter on the way home over Denmark, killing three of the crew. The pilot, S/L McLernon, evaded capture, while the three other survivors fell into enemy hands.

In a desperate measure to counter the effects of Window the Luftwaffe had begun to employ single engine day fighters over the target, using the light from burning cities and searchlights to pick out the bombers. This "Wild Boar" system would eventually be combined with a running commentary for the standard night fighters, known as "Tame Boar", to produce a highly effective and lethal defence for the German homeland and its occupied territories. A four-night break from operations allowed a little respite before the next major outing for the heavy squadrons, which was to Nuremberg on the 27/28th. This was not a successful operation, despite accurate early marking by the Pathfinders. A creep-back developed, which could not be corrected because of communications difficulties and problems with H2s sets among the 8 Group contingent. As a result most of the bombing hit open country, although there was a scattering across the south-eastern and eastern suburbs, and thirty-three aircraft failed to return. 434 Squadron was represented by DK258, which fell to a night fighter over Germany, killing F/S Thould and one of his crew. Six others escaped with their lives to become PoWs, but one of these, Sgt Mallory, was killed in a PoW camp, when struck by a very low-flying JU88. The twin towns of Mönchengladbach and Rheydt provided a much less distant objective for over six hundred aircraft on the 30/31st, and it was the first heavy assault on these frontier towns. It required the Pathfinders to shift the aiming point from one to the other during the course of the attack, and this was done without a hitch, enabling more than 2,300 buildings to be destroyed. For the sixth operation running 434 Squadron registered the failure to return of one of its aircraft. LK894 crashed in Belgium without survivors from the eight-man crew of F/S Leaver. It was back to the Capital for a force of over six hundred aircraft twenty-four hours later, with take-off around 20.00 hours. The presence of some cloud in the target area combined with H2s equipment failures to prevent accurate marking, and the target indicators fell well to the south of the intended city centre aiming point. An extensive creep-back extending some thirty miles back along the line of approach further reduced the effectiveness of the bombing, and the result was a disappointing attack. Less than a hundred buildings were destroyed, while a ferocious defence claimed forty-seven aircraft, although none from 434 Squadron on this occasion.

The squadron opened its September account with involvement in a mining operation around the Frisians on the 2/3rd, although all of its aircraft returned early with unserviceable navigation aids. The current phase of the Berlin offensive was concluded by an all-Lancaster force on the 3/4th of September, when four Pathfinder Mosquitos dropped spoof flares some distance from the route to attract night fighters as the force approached the city from the north-east. The Pathfinders again mostly undershot the aiming point, and the main force crews inevitably did likewise, but some of the bombing did hit residential districts and the industrial suburb of Siemensstadt, where a number of war industry factories suffered a serious loss of

production. In the absence of Stirlings and Halifaxes, which generally suffered higher percentage casualties, twenty-two Lancasters were shot down, and this represented almost 7% of those dispatched. Harris called a halt to the campaign at this point, possibly in response to the loss of 125 aircraft in just three operations.

With Berlin off the menu there were still plenty of other industrial cities in Germany to keep the crews busy, and on the 5/6th it was the turn of Mannheim and Ludwigshafen, facing each other from the east and west banks of the Rhine respectively. Their location provided a perfect opportunity to use creep-back to good advantage, by approaching from the west, and marking the eastern half of Mannheim. A highly successful attack ensued, which proceeded exactly according to plan, and resulted in massive damage in both of the target cities. A thousand houses were destroyed in Ludwigshafen alone, and the important I.G Farben chemicals factory, which was engaged in synthetic oil production, was severely damaged. Bomber losses were again high, however, and reached thirty-four on this night, although 434 Squadron came through unscathed. It was sometime during the early part of the month that S/L Lane ferried the first Canadian-built Lancaster, KB700, to England with the assistance of a ferry pilot. Lane had volunteered for a third tour of operations, despite having already completed fifty one sorties up to returning to Canada in July, and he would be joining 405 Squadron in October. A raid of moderate size against Munich on the 6/7th was rendered inconclusive by cloud, most crews having to bomb on estimated positions after a timed run from a lake south-west of the city. 434 Squadron posted missing two crews, those of Sgt Tovey in DK251 and Sgt Olmstead in DK262, both of which came down in Germany without survivors. There were no further operations for the main force crews until the night of the 15/16th, when 369 crews from 3, 4, 6 and 8 Groups were briefed for an attack on the Dunlop Rubber factory at Montlucon in central France. W/C "Dixie" Dean of 35 Squadron controlled the operation as Master Bomber, and he presided over an accurate attack, which left every building in the factory complex damaged. 434 Squadron took part without loss, and S/L Thompson had the 6 Group AOC, "Black Mike" McEwan, on board as second pilot. On the following night a similar force tried to repeat the success at the important railway yards at Modane on the main route into Italy. The location of the target in a steep valley thwarted the crews' best endeavours, however, and the operation failed.

A series of four operations against Hanover began on the night of the 22/23rd. They would be spread over a four-week period, and it would prove to be a tough campaign. Over seven hundred aircraft took part in this first raid, and despite clear skies over the target the operation failed through a stronger-than-forecast wind, which drove the markers and bombing towards the south-eastern corner of the city. A diversionary raid by a small force of Pathfinder Lancasters and Mosquitos on Oldenburg near Bremen involved the dropping of much Window and many flares, and this possibly reduced the losses from the main raid. Even so, twenty-six aircraft were lost. LK909 was the 434 Squadron casualty, and this crashed in Germany without survivors from among the eight-man crew of Sgt Green. On the following night Mannheim hosted its second heavy assault of the month, this one aimed at its northern districts, which had escaped relatively lightly two and a half weeks earlier. Another heavy blow was delivered, which left over nine hundred houses, twenty industrial premises and a number of public buildings in ruins. Sadly, a small 8 Group diversionary raid on Darmstadt

could not prevent the loss of thirty-two aircraft, but at least 434 Squadron welcomed all of its crews home. The next Hanover raid was undertaken by 678 aircraft on the 27/28th. The bombing was well concentrated, but inaccurately forecast winds caused it to be concentrated five miles north of the city centre, where it was wasted on outlying communities and open country. The disappointment was compounded by the loss of thirty-eight aircraft, plus another from a diversionary raid on Brunswick. It was a bad night for 434 Squadron, which had three empty dispersals to contemplate after all of its surviving aircraft had returned from their diversion airfields later on the morning of the 28th. LK648 crashed into the sea, while LK917 and LK919 went down over Germany, and there was not a single survivor from among the twenty-three men comprising the crews of F/L Lord, Sgt Lytle and Sgt Smith respectively. An effective attack on Bochum by over three hundred aircraft on the 29/30th concluded the month's operations, but 434 Squadron's appalling loss rate continued with the failure to return of two more of its aircraft. DK259 fell to a night fighter while outbound over Holland, and two members of the crew lost their lives. 2Lt Clary of the USAAF managed to evade capture, but four members of his crew were soon in enemy hands. F/O Popplewell and four of his crew perished in LK634, while the two survivors became PoWs.

There was a hectic start to October for the Lancaster squadrons, which were involved in six major operations during the first eight nights. The month's account opened at Hagen in the Ruhr on the 1/2nd, an outstandingly accurate attack based on Oboe skymarking, and forty-six industrial concerns were completely destroyed. On the following night over three hundred buildings were destroyed at Munich in a partially effective raid, while elements of 434 Squadron joined forces with 431 and 432 Squadrons to mine the waters around Heligoland and in the Baltic. Halifaxes and Stirlings joined in at Kassel on the 3/4th, when the blind markers overshot the aiming point, and pushed the main weight of the attack into the city's western suburbs and beyond. Two aircraft factories were hit, however, and one suburb became a sea of flame. 434 Squadron's LK638 crashed in Germany, killing F/O Germain and two of his crew, while four survivors joined the growing ranks of Bluenoses on extended leave in PoW camps. Frankfurt suffered its first really destructive raid on the 4/5th at the hands of almost four hundred aircraft. The eastern half of the city and the inland docks sustained extensive damage, and an area of fire raged out of control, claiming many public and commercial buildings near the city centre. The frightening attrition of 434 Squadron aircraft continued with the loss of DK250, which went into the Channel, taking with it the crew of F/O Allan.

A two-night break preceded an all-Lancaster attack on Stuttgart on the 7/8th, for which 1 Group's 101 Squadron operated its night fighter communications jamming ABC Lancasters for the first time in numbers. The operation was moderately effective, and the loss of a very modest four aircraft suggested a successful debut for the radio counter-measures element. From this point on a number of 101 Squadron Lancasters would be included in every major operation, even after the formation of 100 Group, which would be dedicated to the role from November. The third raid on Hanover took place on the night of the 8/9th, and for once at this target everything proceeded according to plan. A devastating attack ensued, in which most of the bombs fell within two miles of the city centre aiming point, destroying almost four thousand buildings, while thirty thousand others were damaged to some extent, and twelve

hundred people lost their lives. Most of the Bluenose crews landed at Shipdam, but LK647 was not among them, having been shot down by a night fighter over Germany on the way home. P/O Small and five of his crew lost their lives, and the navigator was taken prisoner.

The final Hanover raid took place on the 18/19th after a nine-night break for the heavy squadrons, and was an all-Lancaster affair. It became another failure when cloud prevented the Pathfinders from accurately pinpointing their position, and most of the bombs found open country at a cost of eighteen Lancasters. Two nights later another all-Lancaster force of 350 aircraft took off for the first major raid on Leipzig in eastern Germany. The weather conditions were appalling, and the results were inconclusive. On the 22/23rd, and for the second time during the month, a force of over five hundred aircraft set out for Kassel in central Germany. This was 434 Squadron's first operation for thirteen nights. The raid began with a degree of overshooting by the H2s blind markers, but the visual markers were able to correct the error, and deliver their target indicators onto the city centre aiming point. The main force bombing was highly accurate and concentrated, and the hapless city and its inhabitants became engulfed in a firestorm. Its intensity was less than that experienced at Hamburg in July, but was never the less devastating in its effects, and more than 4,300 apartment blocks were reduced to rubble or shells. Almost six and a half thousand others sustained damage to some extent, and thus 63% of the city's entire living accommodation was rendered uninhabitable in just one night. The death toll almost certainly exceeded six thousand people, and bodies were still being recovered from the ruins many months later. The defenders fought back to claim forty-three bombers, among them four from 434 Squadron. EB218 was lost without trace with the crew of F/S Fry, and the circumstances of EB217's demise are uncertain. It is known that F/L Bryan and one of his crew were the only survivors, and they were taken into captivity. LK663 and LK666 both crashed in Germany, the latter after being hit by flak and finished off by a night fighter. F/S Nadeau and all but one of his crew were killed in this Halifax, while S/L Thompson and three of his crew died in the wreckage of the other. This concluded operations for October, but ahead lay November, which was to herald a new intensity as Harris turned his gaze once more upon Berlin.

The first half of November would be less frenetic than the start of October, and only one major operation was mounted against a target in Germany. Düsseldorf provided the main fare on the 3/4th, for which almost six hundred aircraft took off, and central and southern districts suffered extensive damage. 434 Squadron lost another aircraft, EB257, to a crash in Germany, and F/S Dunlop died with three of his crew. Two other crews reported being hit by flak, and two Halifaxes were damaged by falling incendiaries. Earlier in the day Harris had sent a memo to Churchill, in which he asserted that, "we can wreck Berlin from end to end if the USAAF will come in on it. It will cost between us 400-500 aircraft. It will cost Germany the war." The Americans, of course, were committed to victory by land invasion, and there was never the slightest chance of enlisting their support for an all-out air assault on Germany's Capital. Undaunted as always, Harris would go it alone, and put preparations in hand for the campaign's resumption later in the month. On the 6th the three former 6 Group Wellington squadrons, 420, 424 and 425 returned to Bomber Command after their tour of duty in Tunisia, and they all began converting to Halifaxes, although it would be mid February before they attained operational status. During the lull in operations over Germany over three hundred

Lancasters of 5 and 8 Groups attempted to rectify September's failure at the Modane railway yards in southern France. The operation took place on the night of the 10/11th, and enough of the bombing was sufficiently accurate to cause serious damage. On the following night an attempt to further disrupt the railway link with Italy failed, when a predominantly Halifax force missed the marshalling yards at Cannes.

Harris rejoined the long and rocky road to Berlin on the night of the 18/19th, for which over four hundred Pathfinder and main force Lancasters were detailed. A further four hundred Halifax, Stirling and Lancaster crews drawn from 3, 4, 6 and 8 Groups were briefed to carry out a diversionary raid on the twin cities of Mannheim and Ludwigshafen in an attempt to split the defences, or at least to confuse the enemy night fighter controller. The crews found Berlin to be completely cloud-covered, and it was impossible to assess the results of the raid. It had, in fact, been only modestly effective, lacking any concentration, and only four of the 173 buildings completely destroyed were industrial. A fairly modest nine Lancasters failed to return, possibly because of the diversion, from which a further twenty-three aircraft were missing. 434 Squadron posted missing the crews of F/S Smith in LK693 and P/O Ellis in LK893. F/S Smith was the sole fatality from his crew, and just one man was lost in the latter aircraft, all twelve survivors falling into enemy hands. A Halifax and Stirling attack on Leverkusen on the 19/20th scattered bombs all around the region, and only one bomb found its way into the target city. 434 Squadron lost another two aircraft shot down over Germany, and three others returned with flak damage. EB254 was a night fighter victim, and one crew member was killed in the engagement, while Sgt Hukes and the remainder of his crew abandoned the Halifax and were captured. F/O Winning and his crew also abandoned their LK990 to become PoWs, but the pilot later succumbed to his injuries.

Round two of the Berlin offensive came on the 22/23rd, when 764 aircraft took off for the Capital, among them KB700, the Ruhr Express, on its maiden operation. Not only was it carrying the crew of F/S Floren, who hailed from Weyburn, Saskatchewan, but also a reporter and a photographer to record the first bombing operation by a Canadian-built Lancaster. Sadly, engine problems began to develop during the outward flight, and although some bombs were jettisoned, height could not be maintained, and the sortie was abandoned some sixty miles short of Berlin. The remaining crews were again denied a sight of the massive urban sprawl below, as 10/10ths cloud continued to lie across the northern half of Germany. They were only able to speculate about the accuracy of the attack at debriefing, although the consensus was that the marking and bombing had found the mark. What they did not know, was that they had inflicted upon Berlin its most devastating assault of the war, which left three thousand houses in ruins along with twenty three industrial premises in an area stretching from the city centre westwards. A number of firestorm areas were reported, and a pall of smoke rose over the city to a height of more than eighteen thousand feet. Around two thousand Berliners lost their lives, while a further 170,000 were rendered homeless in return for bomber casualties amounting to twenty-six aircraft. 434 Squadron was again represented among the missing, as its fortunes continued to plummet. LK702 was lost without trace with the crew of F/S Tedford, and LK953 crashed in Germany killing three of F/O Savage's crew.

On the following night Harris dispatched an all-Lancaster main force to Berlin, and guided by the glow of fires still burning beneath the clouds the crews were able to deliver another devastating blow, which destroyed over two thousand more houses and a handful of industrial premises. The death toll on the ground was around fifteen hundred people, while twenty Lancasters failed to return. The posting missing of crews was a sad but routine affair, and a necessary adjunct of warfare. Within hours of a crew's loss all personal belongings would have been removed from billets, and telegrams sent to relatives, these to be followed by a letter from the commanding officer. He would describe the missing son or husband as a popular member of the squadron who would be missed, and offer the crumb of comfort that he may be safe in enemy hands. There was nothing more to be done. During a three-night break for the Lancaster crews the Halifax brigade carried out a scattered raid on Frankfurt on the 25/26th. There must have been joy on the 434 Squadron side of Tholthorpe, when all of its crews returned, but the station lost two 431 Squadron aircraft. An all-Lancaster heavy force was prepared on the 26th for the fourth trip to Berlin since the campaign's resumption. Over four hundred aircraft were detailed, and they set a course over northern France accompanied by a Halifax diversionary force, which peeled off for Stuttgart when Frankfurt was reached. The skies over Berlin were clear as the Lancasters approached from the south, but the Pathfinders overshot the city centre, and marked an area well to the north-west. Fortunately for the outcome of the raid, industrial districts lay below, and thirty-eight war industry factories were completely destroyed. The bomber stream became scattered as it withdrew from the target area, and night fighters were able to pick up individual Lancasters during the return flight. Twenty-eight failed to return home, while a further fourteen were written off in crashes in England. 434 Squadron was involved in the Stuttgart operation, and again came through without major incident.

December began as November had ended, with an all-Lancaster main force rejoining the hazardous road to Berlin on the night of the 2/3rd. The 440 strong heavy contingent was supported by eighteen Pathfinder Mosquitos to lay route markers. Wrongly forecast winds led to a scattering of the bomber stream during the outward flight, and made it difficult for the Pathfinders to pinpoint the planned aiming point. As a result the marking spread over the southern half of the city, and much of the bombing hit the suburbs or fell into open country, although some useful damage was inflicted on industrial areas in western and eastern districts. It was a bad night for the Command, the forty missing aircraft making it the worst against Berlin since the opening two raids of the offensive back in August. On the following night over five hundred Lancasters and Halifaxes took off for Leipzig, a city last attacked ineffectively in foul weather conditions back in October. The force headed directly for Berlin to mislead the night fighter controller, and then, as it turned towards Leipzig, a Mosquito feint continued on to Berlin to maintain the deception. The ploy had the desired effect, and the main operation was relatively unmolested by night fighters. Accurate marking and bombing led to the most destructive attack of the war on this eastern city, in which housing and industry suffered alike. Had the bomber stream not strayed into the Frankfurt defence zone on the way home the losses would have been light, but in the event, twenty-four aircraft failed to return. It was a disastrous night for 431 Squadron, which awaited in vain the return of four of its Halifaxes. In some sort of compensation 434 Squadron lost only one Halifax, LK683, which had been damaged by flak and was ditched in the Channel by F/S McQueen. He and his crew

suffered no injuries, and all were rescued. This was the last operation by 434 and 431 Squadrons from Tholthorpe as they prepared to move to Croft. There were no major operations thereafter until mid month, and it was left to the Mosquitos of 8 Group's Light Night Striking Force to maintain the pressure on Germany by nightly raiding one or more targets in the Ruhr. 431 Squadron completed its move to Croft on the 10th, when A Flight commander S/L Higgins led the crews away after lunch, performing the traditional low pass across the airfield as a farewell gesture. 434 Squadron followed the Iroquois in to Croft next day, W/C Harris leading a "beat-up" of the control tower at Tholthorpe as they departed on their way north. The two units would share the station at Croft until the end of hostilities.

Operations resumed on the night of the 16/17th, when Berlin was selected as the objective for an all-Lancaster heavy force numbering over 480 aircraft. The enemy night fighter controller was becoming accustomed to the direct route across Holland adopted by the bombers, and was able to start infiltrating his aircraft into the stream at the Dutch coast. Combats took place all the way to the target area, and the majority of the twenty-five losses occurred during the outward flight. Complete cloud cover over Berlin necessitated the use of skymarking, but much of the bombing still fell within the city, although without achieving any significant degree of concentration. The bombers returned via a northerly route over Denmark, and thereby avoided a further confrontation with the enemy, but many crews, particularly those from 1, 6 and 8 Groups, still faced their sternest test of the night. By the time they arrived in home airspace their stations were shrouded in a blanket of impenetrable low cloud, and few, if any, had sufficient reserves of fuel to divert to other areas. The minutes between midnight and 02.00 witnessed the frantic search by exhausted crews for somewhere to land, and many aircraft came to grief as they stumbled around in the murk. Some flew into the ground, while others collided with obstacles or other aircraft. A few crews opted to take to their parachutes as their fuel ran out, and they were generally the fortunate ones. Twenty-nine Lancasters were lost in these cruellest of circumstances, and around 150 airmen lost their lives when so close to home and safety. The Command remained on the ground for the following three nights.

In the late afternoon of the 20th almost 650 Lancasters and Halifaxes took off for Frankfurt, accompanied by a small force of 1 and 8 Group Lancasters and Mosquitos bound for Mannheim as a diversion. The enemy night fighter controller was again able to plot the bomber stream's progress, and many combats took place before the target was reached. Unexpected cloud hampered the Pathfinders' attempts to mark, and decoy fires and markers on the ground lured some of the bombing away from the city. The creep-back from this fell within Frankfurt, however, and over four hundred houses were destroyed, while almost two thousand other buildings in the city and neighbouring towns sustained serious damage. It was a bad night for the bombers, though, and forty-one failed to return home, twenty-seven of them Halifaxes, representing a 10.5% loss rate for the type. If 434 Squadron was hoping for a change of fortunes with its change of address, it was to be disappointed. There were two 434 Squadron aircraft among the missing, LK686 and LK970. The former crashed off the Dutch coast without survivors from the crew of W/O Ferrier, but all eight men escaped with their lives from the latter, P/O Austin and his crew falling into enemy hands. Three nights later over 360 Lancasters provided the majority of the effort for yet another assault on Berlin, when a Mosquito feint at Leipzig was partially successful in delaying the arrival of the night fighters.

Technical problems with their H2s equipment prevented the Pathfinders from taking advantage, and the marking was scattered. Most of the bombing fell into the south-eastern corner of the city, where almost three hundred buildings were destroyed, while sixteen Lancasters failed to return home.

The last but one wartime Christmas came and went in relative peace, but business as usual resumed on the 29/30th, when a force of seven hundred aircraft was made ready for the final operation of the year to Berlin. It was also to be the first of three trips to the Capital in the space of five nights spanning the turn of the year, a concentration of effort bearing down most heavily on the Lancaster crews. Taking off either side of 17.00 hours the bombers took a different route on this night, passing south of the Ruhr and approaching Leipzig before swinging towards Berlin. Mosquito diversions over the Ruhr, Magdeburg and Leipzig helped to keep the night fighter controller guessing, and few night fighters made it to the target area. Again the main weight of bombs fell into the southern and south-eastern districts, while some was wasted beyond the eastern city limits. Almost four hundred buildings were destroyed in return for the loss of twenty aircraft, amazingly none of them from 434 Squadron for a change, but P/O Pratt and crew underwent a testing time. Their Halifax was hit by flak on the outward flight, which damaged both starboard engines and the port-outer, and the fuselage was badly holed. The flight engineer was killed and the pilot slightly injured, so the second pilot, Sgt Stinson, took over the controls and continued on to the target and back to a safe landing at Woodbridge. It had been a tough year all round, but generally speaking a successful one, during which Bomber Command had developed into a weapon of awesome power. When this might was directed accurately, it could reduce cities to ruins. Standing in its way, however, were two powerful enemies, the weather and the Luftwaffe night fighter force, and during the first quarter of 1944, they would combine to test the bomber crews to the absolute limit.

1944

As the New Year dawned the toll of repeated operations to Berlin, eight since the resumption of the campaign, began to tell on the crews, particularly those of the Lancaster squadrons. They had been involved in every one, while the Halifaxes had been used sparingly, and the Stirlings, after a period of sustained heavy losses, had been withdrawn from operations over Germany altogether following the highly successful raid on the Capital on the 22/23rd of November. The effect of the campaign was also being felt by the inhabitants of Berlin, who had witnessed the destruction of 25% of their city's living accommodation, and seen evidence of the mounting death toll. There is little doubt, that they and the crews of Bomber Command shared a common wish for the New Year that Berlin would cease to be the main focus of attention. In any event, Harris's belief that he could break the spirit of a people who were Berliners first and Germans second was ill founded. They were a hardy breed, and just like their counterparts in London during the blitz of 1940, they bore their trials with fortitude and humour, and got on with the business of daily life as best they could. The bombing served only to strengthen their resolve to withstand whatever Bomber Command could throw at them, and they joined together in a common bond of unity. During this, their "winter of discontent", they paraded banners through the shattered streets proclaiming, "you may break our walls but not our hearts". They took solace in the words of the most popular song of the

day, Nach jedem Dezember kommt immer ein Mai, After every December comes always a May, a sentiment which hinted at a change of fortunes with the onset of spring. As events were to prove, this was precisely how long both beleaguered camps would have to wait before their wishes were fulfilled.

Before New Year's Day was done, the first Lancasters were taking off, and by the time that the 2nd of January was an hour old over four hundred of them were heading for the Capital via an almost direct route over Holland. Not all reached their objective, twenty-nine turning back for a variety of reasons, while around sixteen others fell victim to night fighters and flak. The remainder found the city covered by cloud, and the skymarking soon deteriorated in the face of a strong wind. The bombing was spread over seventeen miles from wooded country in the south-west to districts in the east, but nowhere was significant damage inflicted. The failure was compounded by the loss of twenty-eight aircraft, a goodly number of them carrying highly experienced Pathfinder crews. Many of the crews who collapsed wearily into bed at breakfast time on the 2nd found themselves back in the briefing room later in the day, incredulous and angry at the prospect of a back-to-back trip to the "Big City", and the third in five nights. No diversionary measures were planned for this operation, and the route was again straight in over Holland, with a dogleg south-east of Bremen to bring the bomber stream to a position north-west of Berlin for the final approach. 362 Lancasters took off, along with nine Halifaxes and a dozen Mosquitos, but the strain and weakening morale manifested itself as crew after crew turned back with problems of some kind. The force was depleted by sixty aircraft in this way, and while "boomerangs" were a fact of life for very genuine reasons, some of those aborting their sorties on this night would almost certainly have pressed on under different circumstances. The enemy night fighters failed to make contact with the bomber stream until Berlin was reached, but there they took a heavy toll. Bombs were again scattered over all parts of the city, and damage was only marginally greater than twenty-four hours earlier, amounting to around eighty houses destroyed. The cost of this failure was twenty-seven Lancasters, ten of them Pathfinders, 156 Squadron alone losing five to add to the four it had posted missing on the previous night, and in less than two weeks time it would lose five more raiding Brunswick. Such losses were beginning to bleed the Pathfinders dry of quality crews, and sideways postings between the squadrons became common to maintain a leavening of experience.

The surviving crews had two nights off before the next briefing was called on the afternoon of the 5th. The target was Stettin, at the eastern end of Germany's Baltic coast, for which 350 Pathfinder and main force Lancasters were accompanied by ten Pathfinder Halifaxes from 35 Squadron. It was another very late take-off, and as the bomber stream headed for the Baltic, a mosquito diversion at Berlin played its part in keeping the main operation largely free of night fighters. Over five hundred houses were completely destroyed, along with twenty industrial premises, while almost twelve hundred other buildings were seriously damaged, and eight ships were sunk in the port. On the debit side sixteen aircraft failed to return home.

There now followed a welcome eight-night break from operations, which allowed the hard-pressed squadrons an opportunity to recover from the four long-range trips in the space of eight nights. When the crews gathered for briefings on the 14th, there must have been a sense

of relief as the curtains were drawn back from the wall maps, revealing that Brunswick and not Berlin was the target for the night. Situated about fifty miles beyond Hanover, the city that had proved to be a difficult and costly nut to crack in a four raid series during the autumn, Brunswick had not hosted a major operation before. 498 aircraft, all but two of them Lancasters, took off either side of 17.00 hours, and headed for a landfall at the German coast near Bremen. There the bomber stream was met by a strong force of enemy night fighters, which were able to remain in contact all the way to the target and back as far as the Dutch coast. They scored steadily throughout, and by the time the survivors reached home airspace after a dismally disappointing raid, which had mostly afflicted outlying communities, thirty-eight of their number had been brought down. The Pathfinders had again sustained heavy casualties, this time amounting to eleven aircraft.

Another five-night lull prepared the crews for the next operation, a maximum effort to Berlin on the 20/21st, for which 769 aircraft took off. After three weeks away from the operational scene 434 Squadron returned to action on this night with fifteen Halifaxes. The bomber stream crossed the German coast at the narrow neck of land south of the Danish border and opposite Kiel, where a small Mosquito feint failed to impress the night fighter controller. Almost immediately night fighters made contact and began their deadly work, as the bomber stream pressed on for a north-westerly approach to the target. Berlin was completely cloud covered, and it was impossible to make an assessment of the raid from the air. In fact, most of the bombs had fallen in an eight-mile swathe from north to south across the city's hitherto less severely damaged eastern districts, and there was much damage to housing, industry and railway installations. It was another night of heavy losses, however, and twenty-two of the missing thirty-five aircraft were Halifaxes, three of them from 434 Squadron. LL135 was a victim of flak in the target area, and just two men from the crew of F/O Brest got out with their lives. There were no survivors at all from the crew of P/O Clinkskill in LL141, which crashed in Germany. LL179 was shot down by a night fighter while still on the way home over Germany, and Sgt Mould died with three of his crew. LK656 was hit by flak twice, sustaining damage to the fuselage, bomb bay, rudder control and oxygen and electrical systems. Once over Yorkshire F/S Johnson ordered his crew to bale out, which they did safely near Driffield.

Like the recently raided Brunswick, Magdeburg had never been attacked in numbers before, and on the night of the 21/22nd it would face the remains of a force of 648 aircraft that had departed their stations either side of 20.00 hours. The enemy night fighter controller plotted the progress of the bomber stream across the North Sea, and had to distinguish between the main raid and a small 5 and 8 Group diversion to Berlin. The first contact was made before the German coast was reached, and a running battle ensued from there to the target, which was reached ahead of time by some aircraft through stronger than forecast winds. Anxious to get away from the target area as quickly as possible, some crews bombed before the Pathfinder markers went down, and the resulting fires combined with decoy markers to draw off a proportion of the main force attack. The Pathfinders were not able to recover the situation, and the bombing lacked accuracy and concentration, falling predominantly outside of the city. A massive fifty-seven aircraft failed to return, the majority of them victims of night fighters, and this represented a new record casualty figure. The Halifax squadrons once more sustained the heavier losses, amounting to thirty-five aircraft. 434 Squadron's LK699 crashed in Germany,

and there were no survivors from the crew of F/S Kerr. Five Bluenose crews landed at Feltwell on return.

The squadrons were given a five-night rest to lick their wounds before the next round of operations began, and this was to be a three-raid assault on the Capital in the unprecedented space of just four nights. An all-Lancaster heavy force of 515 aircraft took off either side of 18.00 hours on the 27th, and flew a south-easterly course across northern Holland and into Germany, before turning north-east to a point west of Berlin. Elaborate diversionary operations pinned down a proportion of the night fighter force, and activity around the bomber stream was less intense than of late. The city was cloud covered, and a strong tail wind drove the markers across the city along the line of approach. Bombs fell in many parts of Berlin, although more in the southern half, but dozens of outlying communities were also afflicted. The operation was moderately successful, if expensive, with thirty-three Lancasters falling victim to the defences, most of them to night fighters arriving on the scene as the raid was in progress. Many of the surviving crews were back at briefing later in the day to learn that Berlin was again to be their destination that night. The inclusion of Halifaxes allowed a force of 677 aircraft to take off around midnight on the 28/29th, including twelve from 434 Squadron, and they were routed over Denmark to approach the target from the north-west. Mosquitos bombed Berlin earlier in the evening, in the hope that this would persuade the night fighter controller that the main force was heading elsewhere. Other extensive diversionary operations were mounted, and although the outward flight was relatively free of night fighter encounters, a hot reception awaited the bombers over the target. Single and twin engine fighters accounted for twenty-seven aircraft here, but despite this, the marking and bombing were accurate and concentrated, and much damage was caused within the southern half of the city. Around 180,000 people were rendered homeless on this night, and many public and administrative buildings were damaged in south-central districts. The bomber casualties had reached forty-six by the time the survivors landed, and Croft was missing eight Halifaxes. Five of them were from 434 Squadron, and this made it the worst disaster yet for the Bluenose unit. LK649 crashed in Germany killing F/S Stanley and his crew, LK740 was brought down by flak over Germany with total loss of life among the crew of S/L Linnell, LK916 was lost without trace with the crew of P/O Devaney, and a night fighter shot down LL134 in the target area with fatal consequences for the eight man crew of S/L Hockey. In addition to these EB256 came back on three engines, having lost the use of its port-outer just before the target was reached. The bombs were released from a lower altitude than that used by the rest of the main force, and by the time the Yorkshire coast was reached on the way home the fuel state had become critical. The starboard-inner quit as a result, and P/O Flewelling ordered his crew to bale out. All did so, but sadly, the rear gunner's parachute failed to deploy and he was killed.

The loss of both Flight commanders was a bitter blow to the squadron, and two more would be lost as a result of the next two operations, although these would not take place until mid February. After a night's rest 534 aircraft set out again for the Capital, arriving over the city shortly after 20.00 hours. It was a predominantly Lancaster force, but eighty-two of the new and much improved Hercules powered Mk III Halifaxes also took part. The night fighters failed to meet the bomber stream over the North Sea, and only made contact deep inside

German airspace. From then until well into the return flight south of Brunswick and Hanover, they took a heavy toll of bombers, eventually achieving a score of thirty-three, all but one of them Lancasters. On the credit side, Berlin suffered a bruising raid, in which large areas of the centre and south-western quarter were engulfed in flames, and at least a thousand people lost their lives. This series of raids on Berlin at the end of January had undoubtedly hurt the city grievously, while not achieving the level of destruction of the November raids, but nowhere were there signs of imminent collapse. Berlin was no Hamburg with densely populated, confined housing areas and narrow streets in its old centre. It was a modern city of concrete and steel with wide thoroughfares and open spaces to act as natural firebreaks. Each new swathe of destruction created more firebreaks and applied the law of diminishing returns. Ultimately, Berlin was just too big, too incombustible and too far, and this at a time when the Luftwaffe was a much more efficient and lethal adversary than in pre-Window times. As events were to prove, this was the last concerted effort of the campaign, and although two further large-scale operations would take place, they would be in isolation and six weeks apart.

As it happened, the first of these would be the very next operation to confront the crews after the two-week stand-down at the start of February brought about by the moon period and inhospitable weather conditions. During this period civilian contractors descended upon Croft to carry out modifications to the Halifaxes' tailplanes. Rudder lock had caused quite a number of aircraft to lose control and crash, and the original triangular fin and rudder arrangement was being replaced by a square one to improve stability. W/C Harris was posted to Dalton on the 6th to take over the 6 Group Battle School, and W/C Bartlett was installed as his successor. There was an early briefing on every main force and Pathfinder station on the 15th, as preparations were put in hand for what would be the penultimate raid of the war by RAF heavy bombers on Berlin. It was to be a mighty effort, involving the largest non-1,000 force to date of 891 aircraft, and it would be the first time that over five hundred Lancasters and three hundred Halifaxes had operated to a single target. Among them would be a contingent from 420 and 424 Squadrons on their maiden operation since rejoining the Command back in November on their return from Tunisia. Together with the extensive diversionary operations, which included Mosquito attacks on enemy night fighter airfields in Holland, mining in Kiel Bay and a small 8 Group Lancaster raid on Frankfurt-an-Oder to the east of Berlin, more than a thousand aircraft were to be in action. The main operation began with a few departures before 17.00, but the vast bulk of the giant armada got away between 17.00 and 18.00, swinging north over Denmark before setting an almost southerly course to the target. The night fighter controller observed the progress of the bomber stream, but held his response back until it crossed Denmark's Baltic coast a little north of Flensburg. The now familiar running battle ensued all the way to the target, and around twenty aircraft in the rear half of the stream were brought down. Consequently, Berlin was spared these bomb loads, and those of the seventy-five early returns. Even so, almost eight hundred aircraft remained, and they carried in their bomb bays a record 2,640 tons of bombs. Much of this was deposited squarely into the central and south-western districts of the city, causing almost twelve hundred medium and large fires and destroying a thousand houses and hundreds of temporary wooden barracks. Many important war industry factories were also hit, but as happened on all of the Berlin operations, scores of outlying communities found themselves in the firing line, and many

bombs were wasted in this way. The bombers withdrew to the south and headed for northern Holland, making their way to the North Sea via the IJsselmeer, but forty-three aircraft would not be coming home. 434 Squadron's LK971 was lost without trace with the eight-man crew of S/L Carter.

The survivors were allowed three nights off before the next operation, which was to Leipzig on the 19/20th. This was the night on which 425 Squadron, the third of the returnee Canadian units from Tunisia, launched its new operational career on Halifaxes. It was to be a late take-off either side of midnight, and extensive diversionary operations were again laid on. The enemy night fighter controller was not deceived, and reserved most of his strength to meet the main raid as it crossed the Dutch coast. The two forces remained in contact all the way into eastern Germany, where some aircraft arrived early through stronger than forecast winds. They were forced to orbit in the target area until the Pathfinder markers went down, and around twenty of them fell victim to the local flak batteries, while four others were lost through collisions. The attack was inconclusive in the face of complete cloud cover and skymarking, but what was not in question was the scale of the mauling inflicted on the Command. When all of the returning aircraft had been accounted for, there was a massive shortfall of seventy-eight, by far the heaviest casualty rate to date. The Halifax loss rate was over 13% of those dispatched, and Harris immediately withdrew the Mk II and V variants from future operations over Germany, a move of significance for the Croft squadrons. 434 Squadron posted three crews missing from this, its last operation over Germany for four months. LK945 was heading across Germany towards the target when it was shot down by a night fighter, and S/L Cameron died with two of his crew. LL257 suffered an identical fate with the loss of P/O Beames and three of his crew, while F/O Murray and his crew perished in the wreckage of LL255. LK703 was attacked by JU88s during the outward flight, and lost two engines. The bomb load was jettisoned, and a safe landing was carried out at Croft.

Despite the horrendous losses and the withdrawal of the older Halifaxes, almost six hundred aircraft were made ready on the following night for the first of three heavy raids over a three-week period on Stuttgart. Departure was shortly before midnight, and for once the night fighter controller was deceived by the diversionary measures, thus leaving the bomber stream largely unmolested during its time over enemy territory. Despite cloud cover and scattered bombing much damage was caused in the city's central districts, and also to areas in the north-west and north-east. A modest nine aircraft failed to return.

A new tactic was introduced for the next two operations in an attempt to reduce the prohibitive losses of recent weeks. It was decided to split the bomber force into two distinct waves, separating them by two hours in the hope that the enemy night fighters would be caught on the ground refuelling and re-arming as the second wave passed through. The system was tried first during an operation to the ball bearing town of Schweinfurt on the night of the 24/25th, the first wave of 392 aircraft taking off between 18.00 and 19.00 hours, and the second wave of 342 aircraft departing their stations between 20.00 and 21.00 hours. Both phases of the attack suffered from undershooting, and the operation was a failure in that respect. However, the second wave lost 50% fewer aircraft than the first in an overall casualty figure of thirty-three, and this suggested some merit to the system. 434 Squadron joined others

from the Group still equipped with the Mk V to provide a tactical diversion over the North Sea, and all returned safely. Shortly after taking off for an air-test on the 25th LK907 was struck by a seagull, and the pilot, P/O Pollard, was injured. Another member of the crew took over the controls and crash-landed the Halifax without further injury to the nine men on board. The experiment of splitting the force was continued that night at Augsburg, the beautiful and historic city in southern Germany. It had been the scene of the epic daylight raid by 44 and 97 Squadron Lancasters in April 1942, for which the since killed-in-action W/C Nettleton had been awarded the Victoria Cross. It was Augsburg's misfortune to be the victim of one of those relatively rare occasions, when all facets of the operational plan came together in perfect harmony. The unusually concentrated marking and bombing, with scarcely any creep-back, devastated the old centre of the city, obliterating forever centuries of cultural history. Over 2,900 houses were destroyed, five thousand others were damaged to some extent, and up to ninety thousand people were rendered homeless. During the second phase of the attack some of the bombing did eventually spread into the industrial areas in the north and east, and damage was caused to at least one war industry factory. Twenty-one aircraft failed to return from this operation, during the course of which 434 Squadron joined others in a mining foray in Kiel Bay.

The dawning of March brought the final month of the long and increasingly bitter winter campaign. Thereafter would come a new offensive to prepare the way for the invasion of Fortress Europe. Matters, though, were already well in hand in this regard, and the first salvoes of Bomber Command's contribution, the Transportation Plan, would be fired before the new month was a week old. In the meantime, the second raid of the series on Stuttgart was mounted on the 1/2nd by a force of 557 aircraft, made up predominantly of Lancasters, with 129 Mk III Halifaxes in support. Dense cloud on the route to the target prevented night fighters from making contact with the bomber stream, but also hampered the Pathfinders in their marking. No assessment of the raid by the crews was possible, but it had been a successful attack, which left further extensive damage in central, western and northern districts where housing was the main victim, although a number of important war industry factories were also hit. The operation was concluded for the remarkably low loss of just four aircraft. Most of the main force Lancaster squadrons remained on the ground for the next two weeks, and it was during this period that Halifaxes of 4 and 6 Groups, particularly the restricted Mk II and Vs, took the main role in opening the Transportation Plan. This called for the systematic dismantling by bombing of the French and Belgian railway networks ahead of the invasion, to prevent their use by the Germans to bring forces to the front. Before these operations began, however, the Croft squadron contributed eleven Halifaxes to a low-level attack on the SNCA aircraft factory at Meulan-les-Mureaux on the 2/3rd, and all returned safely. Halifaxes opened the new campaign at Trappes marshalling yards on the 6/7th, after the marking had been carried out by Oboe Mosquitos. A successful operation left track, rolling stock and installations severely damaged, and all from 434 Squadron returned safely. Similar success was gained at Le Mans railway yards on the following night, when 434 Squadron dispatched eleven aircraft again without casualty. The squadron also sent aircraft as part of a mining effort off Terschelling on the 11/12th, when LK682 was attacked and severely damaged by a night fighter in the target area. A number of crew members sustained wounds, and F/S Wood eventually landed the Halifax at the American base at Molesworth. A second

attack by 4 and 6 Groups on the Le Mans yards took place on the 13/14th, and this time fifteen locomotives and eight hundred wagons were destroyed, while collateral damage resulted to two nearby factories. Both Croft squadrons contributed fourteen aircraft, and again all came home.

The Command returned to the fray in numbers on the 15/16th, when 863 aircraft, the second largest non-1,000 force to date, took off to return to Stuttgart. The route, which took the bomber stream along the length of France almost to the Swiss border, delayed the inevitable contact with night fighters, but they caught up shortly before the target was reached, and began to take a heavy toll. Strong winds played a part in a disappointing marking performance, and although some bombs hit central districts, the majority fell short and into open country. Thirty-seven aircraft were missing from this operation, while 434 Squadron took part in a simultaneous attack on railway yards at Amiens. As 431 Squadron's LL152 landed, a hung-up bomb fell out of the bomb bay onto the tarmac and exploded, killing both gunners and injuring to some extent the remainder of the crew. This incident rendered the main runway unusable, and 434 Squadron's LK696 came to grief without crew injury while landing across wind on another runway in the hands of F/S Goulet. The two squadrons returned with others to Amiens on the following night with eleven aircraft each, and all returned safely on this occasion. Another massive force of 846 aircraft set out during the early evening of the 18th for the first of two raids in four nights on Frankfurt. Part of the enemy night fighter response was drawn to the north to face a mining diversion, which included a 434 Squadron contingent off Heligoland. The remainder made contact with the bomber stream as it bore down on the target. Accurate Pathfinder marking preceded a concentrated attack, which fell mainly into central, western and eastern districts, destroying or seriously damaging over six thousand buildings. Although housing accounted for most of this total, industrial, commercial and public buildings also figured prominently, and the loss of twenty-two aircraft was a relatively modest price to pay for the scale of the success. Returning from its mining sortie 434 Squadron's LL178 crashed in Yorkshire in poor visibility, and the eight-man crew of F/O Evans lost their lives.

The end of the Croft squadrons' enforced absence from main force operations was in sight, as a Mk III Halifax had by now arrived at Croft to be fitted with dual controls, and within a month 431 Squadron would be the first to re-equip and become operational on the type. On the 22/23rd over eight hundred aircraft again took off for Frankfurt, and delivered an attack that was even more devastating than the first. Although all parts of the built-up area were afflicted, the western districts received the greatest concentration of bombs. Half of the city was left without water, gas and electricity for an extended period, and the old Frankfurt, which had developed from the Middle Ages, was obliterated. Despite the failure of the bulk of the night fighter force to make contact, thirty-three aircraft failed to return, and one must assume that the flak batteries enjoyed a successful night. 434 Squadron was engaged in another mining operation on this night in Kiel Bay, from which F/S Spence returned early after flak holed a fuel tank. The squadron took part in an attack on railway yards at Laon on the following night, but in the event only two of the fourteen Bluenoses bombed, the remainder bringing their war loads home on instructions from the Master Bomber.

The time had arrived for Harris to launch the final assault of the campaign on Berlin. It would be the nineteenth since he began back in August, and the sixteenth since the resumption in November. For some 5 and 8 Group squadrons, which had participated in the diversion to Berlin on the night of the Magdeburg raid, it would be the seventeenth since then. It would also be the final raid of the war by RAF heavy bombers on the Capital, which would then be left to the Mosquitos of 8 Group's Light Night Striking Force to harass right up to the moment that Russian troops arrived in the suburbs. 811 crews took part on this momentous occasion, the aircraft departing their respective stations either side of 19.00 hours on the 24th, and taking a wide swing over Denmark before crossing Germany's Baltic coast. The main feature of the outward flight was a wind of unprecedented strength from the north, which scattered the bomber stream and drove aircraft continually south of their intended track. The windfinder system, whereby selected crews assessed the wind strength and direction to pass back to Group HQs for re-broadcast to the bomber stream, was unable to cope with the situation. The loss of cohesion denied the attack any meaningful chance of concentration, and as so frequently happened at Berlin, many bomb loads were wasted on over a hundred outlying communities. Sufficient housing was destroyed to leave twenty thousand people homeless, but industry escaped reasonably lightly. There had been little night fighter activity before the target was reached, but fourteen bombers were shot down by fighters in the Berlin defence zone. The bomber stream became even more dispersed on the return flight, and instead of passing south of Hanover and north of the Ruhr, many aircraft were driven by the wind into the Leipzig area and over the Ruhr itself. This provided the predicted flak batteries with their biggest bag of the war, and an estimated two-thirds of the seventy-two missing bombers were credited to them. It had been an exhausting campaign against Berlin for all concerned, and some squadrons had suffered disproportionately heavy casualties.

The railway campaign continued at Aulnoye on the 25/26th, but the Pathfinders were unable to mark accurately and most of the bombing fell wide of the mark. 434 Squadron took part, and, like all the other participating units, came through almost unscathed. LL225 was hit by an unidentified something over the target, which caused structural damage, and F/S Spence carried out a crash-landing at Friston with only slight injury to one member of the crew. The Berlin offensive may now be over, but the winter campaign still had a week to run, and two further major operations for the crews to negotiate. Essen provided the target for a force of seven hundred aircraft on the 26/27th, and the sudden switch to the Ruhr probably caught the defenders by surprise. Within range of Oboe, the decisive factor in the Ruhr offensive a year earlier, the city wilted under another highly effective attack, which destroyed over seventeen hundred houses, and seriously damaged almost fifty industrial buildings for the modest loss of nine aircraft. The Croft squadrons, meanwhile, went to the railway yards at Courtrai and sustained no casualties. A 4 and 6 Group Halifax force, which included both Croft squadrons, attacked the railway yards at Vaires near Paris in excellent bombing conditions on the 29/30th, and blew up two ammunition trains in the process, reportedly killing over twelve hundred German soldiers. The final operation of the winter offensive was to be against Nuremberg, a city, which thus far, had escaped the worst ravages of a Bomber Command assault. At briefings on the 30th crews were given a forecast of protective cloud at cruising altitude, but later, a 1409 Met Flight Mosquito crew reported that this was unlikely to materialize. Despite the warning the operation was given the green light, allowing 795 aircraft to take off in the

late evening, and head towards the greatest disaster to afflict the Command during the entire war. A conference earlier in the day involving the Group commanders had decided upon a 5 Group inspired route, which would take the bomber stream in a long, straight leg from a point over Belgium to about fifty miles north of the target, from where the final run-in would commence. AVM Bennett, the brilliant Pathfinder AOC, was utterly and violently opposed to the plan and although predicting a disaster, he was overruled.

It was not long before the crews began to note some unusual and alarming features in the conditions, which included uncharacteristically bright moonlight, combined with crystal clear visibility. This enabled them to observe the other aircraft in the stream, something to which they were rarely accustomed. The forecast cloud did, indeed, fail to appear, but formed instead beneath the bomber stream as a white backdrop, silhouetting the aircraft like flies on a tablecloth. If this were not enough, condensation trails began to form in the cold, clear air, further advertising the bombers' presence. The final insult was the reappearance of the jetstream winds, which had so adversely affected the Berlin raid a week earlier. On this night they blew from the south, breaking the cohesion of the bomber stream, and driving aircraft well to the north of their intended track. Again, the windfinders were unable to cope with the speed of the wind, and modified their findings before transmitting them back to HQ. Here the figures were disbelieved, and were again modified before being sent back to the aircraft. The result was, that many crews, through either failing to detect the effects of the wind, or refusing to believe the evidence, wandered up to fifty miles north of track, and consequently, turned towards Nuremberg from a false position. Perhaps of greater significance, was the fact that the disputed route passed close to two night fighter-holding beacons, and this, together with the conditions, handed the bomber force on a plate to the waiting enemy. The carnage began over Charlerois in Belgium, and continued all the way to the target, the burning wreckage on the ground of RAF bombers sign-posting the way. Eighty-three aircraft were lost during the outward flight and around the target area, and these massive losses together with the fifty-two early returns dramatically reduced the numbers available to attack the city. Other absentees from the target were around 120 crews, most of which had probably been unaware of their true position when turning towards Nuremberg. At the appointed time they found themselves over a built-up area, and on seeing a number of target indicators, they took this to be the target. It was, in fact, Schweinfurt, some fifty miles to the north-west, and it was only on their return, that the majority discovered their error. In the event, Schweinfurt escaped lightly, as did Nuremberg, but the surviving aircraft did at least face a considerably reduced level of opposition on the way home. When all the accounting had been done, an unbelievable ninety-five aircraft were found to be missing, while others were written off in crashes at home, or with battle damage too severe to repair. A few crews from Croft took part in a mining operation off Heligoland while the main raid was in progress, and there were no losses.

That which now faced the crews was in marked contrast to what had been endured over the winter. The frequent deep penetration forays into Germany on dark, often dirty nights were to be replaced by mostly shorter-range hops to France and Belgium in improving weather conditions. An added bonus was that these targets, unlike Berlin, Frankfurt, Nuremberg, Schweinfurt, Augsburg, Leipzig and Stuttgart, would fall within the range of Oboe. The main fly in the ointment as far as the crews were concerned was a dictate from on high, which

decreed that most such operations were worthy of counting as just one third of a sortie towards the completion of a tour. Until this flawed and ridiculous policy was rescinded, mutterings of discontent pervaded the bomber stations. The view from the top, that operations against French and Belgian targets would be a "piece of cake" would not be borne out, and they would require of the crews a greater commitment to accuracy, to avoid as far as possible friendly civilian casualties. Now that the entire Command was available to concentrate on the Transportation Plan, it would proceed apace, and despite the prohibitive losses of the winter, the bomber force was in remarkably fine fettle to face its new challenge. Harris was now in the enviable position of being able to achieve that which had eluded his predecessor, namely to attack multiple targets simultaneously with forces large enough to make an impact. He could assign targets to individual Groups, to Groups in tandem, or to the Command as a whole, as dictated by operational requirements, and whilst pre-invasion considerations dominated, Harris was never going to entirely shelve his favoured policy of city-busting.

April began with minor operations, and the new offensive did not get under way in earnest until half way through the second week. First though, 434 Squadron dispatched twelve aircraft on a mining operation to Terschelling on the night of the 1/2nd, and all returned without major incident. It was on the night of the 9/10th that two operations were mounted against railway targets in France. 239 aircraft from 3, 4, 6 and 8 Groups, including a contingent from 434 Squadron, attacked the Lille-Delivrance goods station to excellent effect, destroying in the process over two thousand items of rolling stock, and extensively damaging track and buildings. The success of the operation was marred only by the heavy casualties among French civilians in adjacent residential districts. Around five thousand houses were destroyed or damaged, and 456 people were killed. It was a fact of life that bombing, until the advent of laser guidance, was indiscriminate and required saturation to cope with precision targets like railway yards in built-up areas. F/O Wright returned with a claim of an enemy aircraft destroyed. The night's other operation at the Villeneuve-St-Georges railway yards in Paris was conducted by elements from all the Groups, and this also resulted in civilian deaths, although on a much smaller scale. On the following night four railway yards were targeted in France and one in Belgium, and the Bluenoses were assigned to the latter, at Ghent. Severe damage was inflicted upon the Merelbeke-Melle railway yards, but almost six hundred buildings were destroyed in adjacent districts and 428 Belgians were killed. On the 11/12th Harris sent over 350 Lancasters and Mosquitos from 1, 3, 5 and 8 Groups across the German frontier to attack Aachen. It was the town's worst night of the war, and it was left with massive damage to buildings and communications, while over fifteen hundred of its people were killed. On the following night 434 Squadron contributed to a mining effort around Heligoland, and there were no losses.

There were no main force operations during the following week, and it was during this period, on the 14th, that Bomber Command officially became subject to the dictates of SHAEF for the pre and post-invasion campaigns. It would remain thus shackled until the Allied armies were sweeping towards the German frontier at the end of the summer. Also on this day 431 Squadron completed its re-equipment with Mk III Halifaxes. Its debut on the type, however, came after the welcome rest, when operations resumed on the night of the 18/19th. Four railway yards were attacked, 6 Group concentrating on those at Noisy-le-Sec, for which 431

Squadron contributed ten aircraft. Damage to the yards, locomotive sheds and workshops was extensive, and it would be long after the war before repairs were completed. Delayed action bombs made the area unsafe for a further week, but a through line was established within days. It was another tragedy for the local population, however, and over 460 French civilians lost their lives as 750 houses were destroyed. Elements of 434 Squadron spent the night mining in Baltic waters. On the night of the 20/21st, while an all-Lancaster force was raiding Cologne to devastating effect, the Croft squadrons took part without loss in an attack on the railway yards at Lens. Bombing was accurate, and the engine sheds and carriage repair shops in particular sustained heavy damage. On the 22/23rd almost six hundred aircraft took part in an area raid on Düsseldorf, which left extensive damage mostly in northern districts. Night fighters infiltrated the bomber stream, and twenty-nine bombers were shot down. On the same night 434 Squadron took part in a raid on railway yards at Laon, and twenty-four hours later went mining again in the Baltic. P/O Doran and crew came home with a claim of a JU88 destroyed.

Karlsruhe was the main force target for an old-fashioned area attack on the 24/25th, while 5 Group, now referred to in 8 Group circles somewhat disparagingly as the "Independent Air Force", went to Munich. Over six hundred aircraft were involved in the main operation, on a night when cloud over the target and strong winds helped to push the marking and bombing away from the city centre and over open country, and only the northern districts sustained serious damage. 434 Squadron continued with its mining duties, and on this night sent ten aircraft to French waters and the Frisians. The night of the 26/27th was one of heavy activity involving three major operations at widely dispersed targets. Almost five hundred aircraft attacked Essen to good effect, while Halifaxes and Mosquitos of 4, 6 and 8 Groups continued the railway campaign with a successful assault on the yards at Villeneuve-St-Georges. 5 Group was again operating independently, and on this occasion failing to make an impression on Schweinfurt. 434 Squadron was present at the second-mentioned, and all of its crews returned home, F/O Wright and crew to claim a JU88 as damaged. The squadron also sent six Halifaxes on mining sorties to Texel, but they were recalled. The following night saw 6 Group involved in three operations, one with 1 and 3 Groups on the highly industrialized town of Friedrichshafen, another at Montzen in Belgium with elements of 4 Group which failed to effectively dismantle the railway yards, and the third against a similar target at Aulnoye. The Croft squadrons were assigned to Montzen in the second wave, and it became something of a disaster for the station as six crews failed to return. 434 Squadron lost two Halifaxes, LL243 and LL258, both of which crashed on the Dutch/Belgian border after encounters with night fighters. The latter had actually been borrowed from 431 Squadron by W/O Vigor and his crew, and they all died in its wreckage. F/O Maffre and three of his crew were killed in the latter, while two of the survivors ultimately evaded capture. F/O Wright and crew claimed a JU88 as a probable as they continued their personal battle with the Luftwaffe Nachtjagd, and now had a destroyed, a probable and a damaged to their credit in the space of three weeks. Two nights later the squadron joined 428 Squadron on a mining operation to the Frisians. The month ended for 6 Group with a raid on the railway yards at Somain on the night of the 30th. Much of the early bombing fell into open country after some inaccurate marking, but later arrivals caused some damage for the loss of just four Halifaxes, none of which was from 434

Squadron. Some other Bluenoses were sent mining off French ports, and they also all returned safely.

On the 1st of May Croft and Middleton-St-George were designated 64 Base. The month began with six small to medium-scale raids on the 1/2nd against railway installations and factories in France and Belgium. A 6 Group main force delivered a highly accurate attack on the marshalling yards at St Ghislain, from which the 434 Squadron element returned intact. Thereafter, the squadron remained off the order of battle for the next six nights as mostly minor operations were carried out by the Command. One exception was the operation by 1 and 5 Groups against a panzer training camp and motor transport depot at Mailly-le-Camp on the 3/4th. The raid was ultimately successful, but communications difficulties in the target area between the marker leader, Master Bomber and the main force element led to a delay in the opening of the attack, and night fighters took advantage of the situation to score heavily. Forty-two Lancasters failed to return, and controversy abounds to this day concerning who was to blame. It was at this time that coastal batteries were added to the growing list of targets to be attacked in preparation for the invasion. It was important to maintain the enemy belief that the main landings would take place in the Calais area, and consequently, almost every attack on a heavy gun position up to the eve of the landings took place over the Pas-de-Calais. It was not even necessary to hit them, although this was always the intention, as long as the impression was given, that they were important pre-invasion targets. A coastal battery at St Valery-en-Caux was the target for a 6 Group attack on the 7/8th, while 434 Squadron went mining in the Frisians with 428 Squadron. On the 8/9th a 6 Group element was assigned to the railway yards at Haine-St-Pierre, where half of the yards and the locomotive sheds sustained serious damage. 431 Squadron took part, but 434 Squadron sat this one out and prepared to receive its Mk III Halifaxes.

While 431 Squadron enjoyed the next two nights off, 434 Squadron participated in attacks on seven coastal batteries in the Pas-de-Calais on the 9/10th. Then it too was rested while other elements of the Command attended to railway targets at five locations on the 10/11th. 6 Group crews were briefed for Ghent, where, sadly, the bombing killed almost fifty Belgian civilians, while there were no losses among the attacking force. On the 11/12th a 6 Group main force bombed railway yards at Boulogne-sur-Mer, where the attack was again not entirely accurate, and almost 130 French civilians died. The Croft squadrons were back in action on this night without loss, before the Bluenoses were stood down for two weeks to undergo conversion. In their absence on the 12/13th elements of the Group conducted a raid on the railway yards at Louvain, which was being hit for the second night running. Unlike the previous night's 3 and 8 Group assault, this one was highly effective, although heavy casualties were caused in adjacent residential districts.

When heavy operations resumed on the 19/20th after a week of relative inactivity, most of the effort was directed at railway yards, although two coastal batteries and a radar station were also attacked. A year and one week after the last major assault on Duisburg Bomber Command returned to the Ruhr city on the 21/22nd. Over five hundred Lancasters from 1, 3, 5 and 8 Groups were accompanied by twenty-two Mosquitos, and despite cloud cover, Oboe allowed an accurate attack to be delivered. 350 buildings were completely destroyed, and

many hundreds of others sustained serious damage. The Ruhr, however, remained fiercely protected, and in an echo of the past twenty-nine Lancasters failed to return. On the 22/23rd Dortmund hosted its first heavy raid since the Ruhr campaign, and sustained heavy damage at the hands of 1, 3, 6 and 8 Groups. On the same night elements from 6 Group attacked the railway yards at Le Mans. The bombing was accurate, and this time casualties among civilians were avoided. On the 24/25th over four hundred aircraft from all but 5 Group were sent to Aachen to attack the railway yards at Aachen-west and Rothe Erde in the east. Both targets were hit, but as the operation was over Germany, the attack soon developed into an area assault. As a consequence, much damage was inflicted upon the town and villages adjacent to the railway installations. 434 Squadron had not operated since Boulogne, and returned to the fray on this night with its Mk III Halifaxes to attack a coastal battery at Trouville. Over eleven hundred sorties were launched by the Command on the 27/28th, the largest force attending to the military camp at Bourg-Leopold, which had escaped serious damage during an abandoned 5 Group assault two weeks earlier. 434 Squadron provided crews for an operation against a coastal battery at Le Clipon and suffered no casualties. On the last night of the month over two hundred aircraft from all but 5 Group carried out a two-wave attack on the railway yards at Trappes. The operation was successful, as was a small-scale 6 Group effort against a coastal transmitting station at Au Fevre. Meanwhile, 431 and 434 Squadrons put up twenty-seven Halifaxes between them to attack a target at Leubringhen in France. Many crews from the night's operations returned to comment on the violence of the thunderstorms en-route.

The first week of June was dominated by preparations for the impending invasion, and was characterized by unsettled weather. Most of the 6 Group Halifax squadrons joined the action on the night of the 2/3rd in an operation against a gun battery at Neufchatel, while the Croft squadrons stayed at home. The Bluenoses opened their month's account on the 4/5th against a coastal battery in the Pas de Calais, and did so without loss. The Group was out in force on D-Day Eve, the 5/6th, when over a thousand aircraft were aloft to attack ten coastal batteries ahead of the invasion force. More than five thousand tons of bombs were delivered onto the aiming points, a new record for a single night, and most of the effort was aimed at Oboe sky markers in the face of complete cloud cover. 434 Squadron was part of a 6 Group force assigned to one of these targets, and bombing took place from between 9 – 12,000 feet. There was no direct reference to the invasion at briefings, but crews were ordered to observe strict flight levels, and were prohibited from jettisoning bombs over the sea. Aircraft were taking off throughout the night, and some of those returning in dawn's early light were rewarded with a sight of the giant invasion armada, as it ploughed its way sedately across the Channel below. D-Day Night brought another thousand aircraft into action, including a 434 Squadron element, this time against road and railway communications targets at Coutances and Conde-Sur-Noireau, towns on the approaches to the beachhead. The following night brought attacks on four railway targets by over three hundred Halifaxes and Lancasters, while elements of 1, 5 and 8 Groups went for a six-way road junction in the Foret de Cerisy between Bayeux and St-Lo. Among the former were Acheres and Versailles, targets for 6 Group aircraft, including those from Croft. The assault on enemy railway communications continued on the 8/9th at five locations, but the Croft units stayed at home. The following night was devoted to attacks on four airfields situated south of the beachhead, which might be used by the enemy to bring up reinforcements. All were successfully dealt with by elements of 1, 4, 6 and 8 Groups, which

included 434 Squadron at Le Mans. Four railway objectives occupied over four hundred aircraft on the 10/11th, 6 Group returning to the locomotive sheds at Versailles. 434 Squadron lost its first Mk III Halifax as a result of this operation, LW684, which crashed in France killing P/O Doran and six of his crew, while a seventh succumbed to his injuries soon after being admitted to hospital.

A new campaign beginning on the night of the 12/13th would be prosecuted right through to the end of the war. With Germany now firmly on the back foot a concerted effort was to be made by both Bomber Command and the American 8th Air force against its synthetic oil industry. Three hundred Lancasters and Mosquitos of 1, 3 and 8 Groups carried out a stunningly accurate attack on the Nordstern refinery at Gelsenkirchen, hitting it with fifteen hundred bombs, and halting all production for a number of weeks. This deprived the German war effort of a thousand tons of vital aviation fuel for each day of the stoppage. While this was in progress over six hundred aircraft drawn from 4, 5, 6 and 8 Groups bombed six communications targets leading to the Normandy front. It was during the 6 Group attack at Cambrai, that Canadian P/O Andrew Mynarski earned the posthumous award of the Victoria Cross for his heroics in a 419 Squadron Lancaster. 434 Squadron was engaged at Arras, meanwhile, where the force met a fierce night fighter response. If it had been hoped and expected that Mk III Halifaxes would bring an end to the squadron's prohibitive losses of the past, there would be disappointment. This night brought three failures to return, one of which was LW173, the aircraft containing the commanding officer and his crew. W/C Bartlett and all but one of those on board were killed when they were shot down by a night fighter over the Pas de Calais. MZ293 crashed near Dunkerque without survivors from the crew of P/O Tandy, but all but the pilot, P/O Wood, survived the loss of LW713, four of them to evade capture. P/O Hawley and crew were attacked by a JU88, and both starboard engines caught fire, although the flames were extinguished. The rear gunner shot the assailant down, and a safe landing was ultimately carried out at West Raynham on two engines. W/C Watkins took over command of the squadron later on the 13th.

The first daylight operations by Bomber Command since the departure of 2 Group a year earlier were conducted against Le Havre on the evening of the 14th. The port was home to E-Boats and other fast, light naval craft, which posed a threat to Allied shipping serving the beachhead. The two-phase operation was opened by a 617 Squadron attack on the concrete pens with Tallboys, closely followed by a predominantly 1 Group force. 3 Group completed the assault at dusk, and few if any marine craft escaped the carnage unscathed. As this was in progress, elements of 4, 5 and 8 Groups were concentrating their efforts against enemy troop and transport positions at Aunay-sur-Odon and Evrecy. Other elements of 4, 6 and 8 Groups, including the Croft squadrons, attended to railway installations at Cambrai and St Pol. The evening of the 15th was devoted to the bombing of Boulogne in a repeat of the previous night's operation against Le Havre, and this effort by elements of 1, 4, 5, 6 and 8 Groups was equally effective, although the town itself suffered its worst experience of the war. The Croft squadron played their part, and all of the crews returned safely.

A second new campaign opened on the night of the 16/17th, this one against flying bomb launching and storage sites. 1, 4, 5, 6 and 8 Groups committed four hundred aircraft between

them to attacks on four targets in the Pas-de-Calais. Meanwhile on this night a second force from 1, 4, 6 and 8 Groups continued the oil offensive at Sterkrade/Holten, but failed to inflict more than slight damage in the face of complete cloud cover. The night became a disaster for Croft, where eight empty dispersals provided the grim testimony of the fortunes of both squadrons, each of which had lost four aircraft and crews. It would be learned later, that fifty-six men had made the ultimate sacrifice. The 434 Squadron casualties all crashed in Holland, two of them, LK792 and LK801, definitely as a result of encounters with night fighters. There were no survivors from the crew of P/O McQueen in the former, while only one man died in the latter, as W/O Laffin and four of his crew fell into enemy hands, and another evaded. F/O Dwyer and his crew all died in the wreckage of MZ297, and there were three fatalities in LW433. The pilot of this aircraft, F/S Haldenby, was taken prisoner along with two of his crew and another evaded. The Croft squadrons were stood down for a few days, while railways were the principal objectives for others on the 17/18th. Also on this night over a hundred aircraft from 6 and 8 Groups bombed a constructional site at Oisement/Neuville-au-Bois in the Abbeville area. While some squadrons went to another site at St Martin L'Hortier by daylight on the 21st, the Croft squadrons returned to action at a similar target at Oisemont, although only one of fifteen 434 Squadron crews bombed because of complete cloud cover. Later that night 5 Group embarked on its first involvement in the current oil campaign, when sending one force to the oil refinery at Wesseling, on the west bank of the Rhine south of Cologne, and another to Scholven/Buer near Gelsenkirchen. Those bound for the former were picked up by night fighters as they made their way across the frontier region of Holland and Belgium, and a bitter battle ensued. By the time the badly mauled survivors reached home, thirty-seven Lancasters had fallen victim to the defences, mostly to night fighters. Four 5 Group squadrons, 44, 49, 57 and 619, had each lost six aircraft, although one of the 57 Squadron crews was plucked from the sea off Yarmouth without injury.

From this point on daylight operations were to become increasingly common as the summer progressed, while night operations continued unabated. The target for some 6 Group squadrons on the 23/24th was a V1 site at Bientques, one of four flying bomb sites assigned to forces from 3, 4, 6 and 8 Groups. On the following day three more sites were hit, 434 Squadron joining in at Bonnetot. The Bluenoses were in action again on the following day to hit a site at Gorenflos, and continued their part in the campaign against a similar target in the Foret de Eawy on the 27/28th, when over seven hundred aircraft were involved at six separate aiming points. While some 6 Group squadrons were stood down for the month, operations continued for others. The railway yards at Metz provided the target for 6 Group on the 28/29th, while Blainville was the objective for 4 Group. Both targets were hit, but a combined total of eighteen Halifaxes were shot down, along with one Lancaster from each operation. It had been a busy month for the whole Command, and 434 Squadron had taken part in fourteen operations. The month ended with a raid on a road junction at Villers-Bocage on the evening of the 30th. It provided access for a German counter attack at a weak point in the Anglo-American lines, but after accurate bombing by the 3 and 4 Group main force crews, who were brought down by the Master Bomber to four thousand feet, the planned German attack was scrubbed.

July and August were to be Bomber Command's most hectic months of the year, as the side-by-side campaigns against communications, oil and flying bomb sites all demanded attention. To this was about to be added tactical support for the ground forces as they broke out of the beachhead into Normandy, but the main emphasis during the first two weeks of July was unquestionably on flying bomb sites. Some 6 Group squadrons, including those from Croft, opened their July account on the afternoon of the 1st at Biennais, one of three sites to be targeted. Bombing had to be conducted on Oboe skymarkers in the face of almost complete cloud cover, and results could not be assessed. Following a two-night rest the squadron returned with others to Biennais by daylight on the 4th, and other units from the Group operated that night against railway yards at Villeneuve-St-Georges. Yet another attack on Biennais involved the squadron on the night of the 5/6th, after which most Bluenoses landed away at Mepal and other stations because of the weather conditions at base. The Croft squadrons sat out operations on the 6th, when over five hundred aircraft were sent against five V-1 storage sites, four of which were clear of cloud. The first major operation in support of the ground forces was mounted on the evening of the 7th by 467 aircraft drawn from 1, 4, 6 and 8 Groups. The target was the northern rim of Caen, behind a series of fortified villages from where enemy units were facing British and Canadian forces. W/C Daniels of 35 Squadron acted as Master Bomber, and the attack was accurate, if ultimately counter-productive, as few enemy troops were killed and eventual passage through the town was rendered difficult by rubble-blocked streets. 434 Squadron was not called into action on this day, and had two further days off before its next outing. Briefings took place at 3, 4, 6 and 8 Group stations on the 9th for six flying bomb sites, for which over two hundred aircraft from 4, 6 and 8 Groups were to be involved. The 6 Group targets were a storage dump at Thiverny, and launching sites at Mont Candon and Ardouval, but the month's persistent cloud cover led to a lack of concentration at some of the aiming points. Almost two hundred Halifaxes from 4 and 6 Groups attacked four sites on the night of the 12/13th, those from 6 Group having Bremont and Acquet as their aiming points, and there were no losses. A similar target at Anderbelck occupied a 6 Group contingent on the 14/15th, but the Croft squadrons were enjoying another break at the time.

The Command returned to the fray in numbers in the early hours of the 18th, to help provide tactical support for the British Second Army. The ground forces were about to launch Operation Goodwood, an armoured attack on enemy positions around Caen, and over nine hundred aircraft were to deliver a major assault on five fortified villages. American bombers also participated, but RAF aircraft carried 5,000 of the 6,800 tons of bombs delivered onto the aiming points. The operations were a stunning success, and in the absence of enemy fighters, only six aircraft were lost to flak. Some 431 Squadron crews were briefed for an aiming point at Mondeville, while most joined forces with 434 Squadron to attack the railway yards at Vaires. That night brought much further activity, including an attack by elements of 1, 6 and 8 Groups on the oil refinery at Wesseling near Cologne. The Croft squadrons did not take part in what developed into a highly effective operation for the loss of a single 425 Squadron Halifax. A V1 site in the Pas-de-Calais provided the target for a 6 Group contingent on the 20th, including some Halifaxes from 434 Squadron, which all returned safely.

There had been no major operations against a German city target since Dortmund in May, while the Normandy landings and consolidation of the Allied foothold had been the overriding considerations. Now, on the night of the 23/24th, Harris launched an attack on Kiel by over six hundred aircraft, all but 110 of them Lancasters. The force appeared suddenly and with complete surprise from behind a Mandrel RCM screen laid on by 100 Group, and inflicted heavy damage on the town and the port area, where all of the U-Boat yards were hit. While this operation was in progress, another involving 434 Squadron took place against oil storage facilities at Donges. This was followed on the 24/25th by the first of three major raids on Stuttgart over a five-night period involving a force of over six hundred aircraft. Stuttgart had always proved a difficult target to hit because of its location in a series of valleys, although extensive damage had been inflicted upon it during the three raid series in February and March. The central districts became heavily damaged on this night for the loss of twenty-one aircraft. The Croft squadrons stayed at home on this night, while other elements from the Group carried out an attack against a flying bomb site at Ferfay. 550 aircraft set out to return to Stuttgart on the following night, and delivered what would prove to be the most devastating of the three attacks. This time both Croft squadrons did take part, and 431 Squadron lost its commanding officer, W/C Dow, who survived in enemy hands.

An all-Lancaster force from 1, 3, 5 and 8 Groups returned to Stuttgart on the 28/29th, while elements of 1, 6 and 8 Groups targeted Hamburg. The night soon degenerated into a disaster for the Command, as night fighters intercepted the Stuttgart bound bomber stream over France in bright moonlight, and others caught the Hamburg force on the way home. Thirty-nine and twenty-two aircraft respectively were the numbers brought down, and 431 Squadron had to post missing five of its seventeen crews from the Hamburg raid, while 434 Squadron lost two. LW437 was lost without trace with the crew of P/O Sawyer, and LW596 crashed into the sea without survivors from the crew of F/O Alexander. In the early morning of the 30th almost seven hundred aircraft took off to attack six German positions facing predominantly American ground forces in the Villers Bocage - Caumont area. 434 Squadron stayed at home while other elements of the Group attacked an aiming point at Amaye-sur-Suelles from between 1,500 and 4,000 feet. It had been a hectic but generally rewarding month for the Command, but it had also been expensive, and many squadrons had sustained heavy casualties.

The first week of August was dominated by the campaign against flying bomb sites, and over seven hundred and fifty aircraft were involved in daylight operations on the 1st. In the event, weather conditions over the numerous aiming points appear to have been unsuitable for accurate bombing, and less than eighty crews bombed before the Master Bombers called a halt. All of the 434 Squadron crews were sent home from Acquet with their bombs. The squadron remained on the ground on the following day, when clear conditions allowed four sites to be attacked by almost four hundred aircraft. Over eleven hundred aircraft were involved in attacks on the same targets and others in the Foret de Nieppe and at L'Isle Adam in the early afternoon of the 3rd. 434 Squadron was assigned to the former, and all of its aircraft returned. 6 and 8 Groups went back to the Bois-de-Cassan and Trossy-St-Maximin sites on the 4th, delivering effective attacks in clear conditions, and a modest four aircraft were lost from the 291 dispatched. 434 Squadron took part at the former, and crews reported heavy flak over the target. LW436 failed to return having crashed in France, and F/O Lang survived

with two of his crew to evade capture. On the 5th more than seven hundred aircraft pounded the storage sites in the Foret de Nieppe and at St-Leu-d'Esserent. 434 Squadron was employed at the latter without loss.

From mid evening on the 7th aircraft began taking off to attack five aiming points ahead of Allied ground forces in the Normandy battle area. The 434 Squadron crews were briefed for an aiming point at La Hoque, but two of them failed to get away after a take-off accident. LK799 swung off the runway and hit LW176, but there were no casualties among the crews of F/S Hart and P/O Hegseth respectively. The Croft squadrons put up a maximum effort as part of a force of over a thousand heavy bombers, but because of the close proximity of Allied troops the attacks were carefully controlled by the Master Bombers, and only two thirds of the aircraft were actually called in to attack. 434 Squadron was among those allowed to bomb, and all returned safely. The squadron was up again later on the 8th for a raid on fuel and oil storage facilities in the Foret de Chantilly, and the target was left burning. The 9th saw 434 Squadron contribute aircraft to a raid on the V1 site at Le Neuville, while oil storage facilities at La Pallice were targeted on the night of the 10/11th. The 12/13th was to be particularly busy, with over eleven hundred sorties being launched on various major and minor operations. In one of them 380 crews of the main force were briefed for a raid on Brunswick, in which no Pathfinder aircraft were to take part. The intention was to gauge the ability of crews to locate and bomb an urban target purely on the strength of H2s. Meanwhile, almost three hundred aircraft would split the defences by attacking the Opel motor works at Rüsselsheim in southern Germany, 144 others were to bomb German troops and a road junction at Falaise, and a small raid by forty Halifaxes from Croft and Leeming would take place against flying bomb targets at La Breteque and La Neuville. 434 Squadron was involved in both the first and last-mentioned operations. In addition, numerous other sweeps, mining and support activity would keep the enemy night fighter controller on his toes, and make it more difficult to decide upon a response. Generally, apart from the Falaise operation, the night's huge effort was not rewarded with great success. At Brunswick, the bombing was scattered across the town and up to twenty miles distant, thus demonstrating that Pathfinders remained a necessity. Even so, their presence at the attack on the Opel works did not prevent much of the bombing from being wasted on open country, and the damage inflicted on the factory was insufficient to cause a loss of production. Twenty-seven and twenty aircraft respectively were lost, however, and this was a high price to pay for the poor return. LW175 failed to return from Brunswick after an encounter with a night fighter over Germany, but F/O McIntyre and all but one of his crew survived in enemy hands. Also involved in this operation were F/L Imrie and his crew, who claimed an enemy aircraft as destroyed.

The time was now fast approaching when Harris could claim that he had discharged his obligation to SHAEF, and could turn his attention once more upon industrial Germany almost to the exclusion of all else. However, tactical support for the ground forces was still required, and the afternoon of the 14th was devoted to large-scale operations in the Falaise area under Operation Tractable. Eight hundred aircraft were involved in the bombing of seven aiming points ahead of the Third Canadian Division, each controlled by a Master Bomber and deputy. 434 Squadron was involved, and most of the bombing was accurate, although some fell amongst Canadian troops in a quarry, killing thirteen men and injuring over fifty.

Recriminations abounded thereafter over who was to blame, and some commanding officers were carpeted after their crews bombed too early. It seems, though, to have been a genuine accident brought about as much by events on the ground as in the air, and in truth, this was one of very few "friendly fire" incidents to involve Bomber Command while conducting ground support operations. F/L Wright returned early with undercarriage problems, and crash-landed at Carnaby without injury to the crew. In preparation for his new night offensive against Germany Harris launched a thousand aircraft on the morning of the 15th to attack nine night fighter airfields in Holland and Belgium. 6 Group attended to those at Brussels and Soesterberg, and the impression was of successful operations.

Now was the time for a gentle start to a new offensive against Germany, which, once in full swing, would continue without let-up or mercy until there was nothing significant left to bomb. On the night of the 16/17th over eight hundred aircraft set out for northern Germany, 348 of them containing crews briefed to attack the port of Kiel, among them a contingent from 434 Squadron. The remainder, all Lancasters, carried on eastwards to the Baltic port of Stettin, where a highly accurate raid ensued, in which over fifteen hundred houses and twenty-nine industrial premises were destroyed, and five ships were sunk in the harbour for the modest loss of five Lancasters. The attack on Kiel was moderately successful, and caused severe damage to the docks area and shipyards, but many bomb loads also fell outside of the town. LK796 was hit by flak five miles short of the target, but F/O Wagman pressed on to bomb before turning for home. The Halifax was losing fuel as it flew westwards across the North Sea, and the tanks ran dry thirty miles off Scarborough on the Yorkshire coast. A successful ditching was carried out, and the crew gained the sanctuary of the dinghy to await rescue. Later on the 17th a number of 434 Squadron aircraft were dispatched on a sea search to look for the missing crew. F/L Browning and P/O Isenberg spotted the dinghy at 14.30, and circled until a rescue launch arrived on the scene to pick up the Wagman crew.

Between 21.00 and 22.00 hours on the 18th almost three hundred aircraft set out for Bremen, the objective for countless raids over the preceding years, including the last of the thousand bomber raids in June 1942. The force on this night was not particularly large, and the bomb tonnage delivered was only half that used in any one of the Gomorrah raids on Hamburg, but the damage it inflicted was extreme. Over eight and a half thousand houses and apartment blocks were gutted by fire in central and north-western districts, the port area was devastated, and eighteen ships were sunk. It was impossible to list the number of industrial and commercial buildings reduced to ruins, or precisely how many people had been killed, but the latter figure certainly exceeded a thousand. This notable success was gained for the loss of just one aircraft. Most Bluenose crews landed away at Lincolnshire stations on return because of the weather conditions at Croft. Simultaneous operations were mounted against the synthetic oil refinery at Sterkrade by a predominantly 4 Group force of over two hundred aircraft, and railway yards at Connantre.

After a week's lull in main force operations the renewed assault on Germany continued on the night of the 25/26th, when a record 1,311 sorties were flown on major and support operations. The main effort was by over four hundred Lancasters of 1, 3, 6 and 8 Groups, whose crews were briefed to attack the Opel motor works at Rüsselsheim, which had escaped a telling blow

two weeks earlier. Although the factory was quite severely damaged on this night, production of lorries was barely affected, and fifteen Lancasters were lost. Meanwhile, 5 Group was failing to deliver an effective attack on Darmstadt, and the Croft squadrons were contributing to a 4, 6 and 8 Group raid on coastal batteries at Brest. The 434 Squadron crews were diverted to Thorney Island on the south coast on return. On the following night Kiel received its second heavy raid in less than two weeks, this time at the hands of around 350 Lancasters of 1, 3 and 8 Groups. Smoke screens created difficulties for the marker force, but heavy and widespread damage was inflicted upon the town's central and surrounding districts, and strong winds fanned the fires. On the 27th the Command launched its first major daylight raid over Germany since August 1941. The target was the Rhein-Preussen synthetic oil refinery at Meerbeck near Homberg, and the force of 220 Halifaxes and thirteen Lancasters from 4 and 8 Groups was escorted on the outward flight by nine squadrons of Spitfires. The attack was delivered through partial cloud cover on Mosquito-borne Oboe markers, backed up by Pathfinder heavies. Some accurate bombing was claimed, but the operation was generally inconclusive. Seven squadrons of Spitfires covered the withdrawal, and no aircraft were lost. 434 Squadron was also active during the day as part of a force sent against the V-Weapon site at Mimoyecques. The final operations against the flying bomb menace were mounted on the 28th, when twelve sites were attacked by small numbers of aircraft employing the Oboe leader system. The Croft squadrons were assigned to Anderbelck, where the crews encountered flak over the target. Within a few days of these operations the Pas-de-Calais was in Allied hands. W/C Watkins relinquished command of the squadron on the 29th, and handed over the reins to W/C Blackburn. Stettin hosted its second heavy raid of the month on the 29/30th, when four hundred aircraft again inflicted heavy damage on the port city, with particular emphasis on areas not previously hit. Over fifteen hundred houses were destroyed along with thirty-two industrial premises, a two thousand ton ship was sunk, and more than a thousand people lost their lives. In the early hours of the 30th 434 Squadron's MZ626 crashed near Croft during a training flight, and P/O Todhunter was killed with his crew. The squadron closed its August account with participation in an attack on a coastal battery at Ile de Cezembre near St Malo on the 31st.

As the Allied ground forces advanced, the need for port facilities became pressing to maintain a steady supply line. Much of September would be devoted to the liberation of the major French ports still in enemy hands, principally Le Havre, Boulogne and Calais, and in preparation for this six enemy airfields in southern Holland were bombed by daylight on the 3rd. The assault on Le Havre began on the 5th, when over three hundred aircraft from 1, 3 and 8 Groups attacked enemy strong points around the port. While a similar operation was conducted on the following day, elements of 6 and 8 Groups, including 434 Squadron, carried out the final raid of the war on Emden, a target that had been left in peace for more than two years. A successful operation ensued, which left a sea of flames in its wake, and a fighter escort helped to restrict losses to a single Lancaster. 1, 3 and 8 Groups returned to Le Havre in bad weather on the 8th, and only a third of the three hundred-strong force released their bombs, doing so more in hope than expectation. Another operation was mounted against Le Havre on the 9th, but the continuing poor weather caused the Master Bomber to send the force home without bombing. Almost a thousand aircraft returned on the following day to pound eight enemy strong points, and then two hundred aircraft concluded the series on the 11th. The

German garrison surrendered to British forces a few hours later. Also on the 11th other elements of the Command raided synthetic oil plants at Castrop-Rauxel, Kamen and Gelsenkirchen by daylight, each force operating under the umbrella of a strong fighter escort. 434 Squadron had four aircraft hit by flak, and F/O Ecclestone bombed Dortmund as an alternative after failing to identify the target indicators. F/O Halcro's aircraft was hit by flak, and the rear gunner was killed. Similar targets were attacked at Dortmund, Scholven-Buer and Wanne-Eickel on the 12th, the two latter in the face of an effective smoke screen. Three 434 Squadron aircraft were hit by flak at the last-mentioned, but all of its crews got home.

Also on the night of the 12/13th a two-pronged attack was mounted against southern Germany. 378 Lancasters of 1, 3 and 8 Groups returned to Frankfurt for the first time since the devastating raids in March, while a predominantly 5 Group force of two hundred Lancasters targeted Stuttgart. The former resulted in severe damage to the city's western districts, at a time when a large part of its fire brigade was absent helping to quell the fires at nearby Darmstadt, which had suffered the ordeal of a firestorm at the hands of 5 Group on the previous night. For Frankfurt this would prove to be the last raid of the war by RAF heavy bombers. It was a similar story of destruction at Stuttgart, where the north and west-central districts were ravaged by a firestorm, and over eleven hundred people were killed, all for the modest loss of four Lancasters. A 6 Group Halifax main force carried out a daylight raid on Osnabrück on the 13th, while an intended raid by the Group on Wilhelmshaven on the 14th was recalled, because the fighter escort was unable to take off in the weather conditions. The night of the 15/16th brought a typical raid on Kiel, with much damage within the town, but a large wastage of bombs outside. 434 Squadron took part in this operation, and all of its crews returned without major incident. The ill-fated Operation Market Garden began on the morning of the 17th in the wake of attacks on enemy airfields and gun positions by elements of 1, 3 and 8 Groups during the night. Back in England, by breakfast time the first of over seven hundred aircraft had taken off to begin the liberation of Boulogne. A total of three thousand tons of bombs was delivered onto enemy positions around the port, and shortly afterwards Allied ground forces began their advance. Within a week Boulogne was returned to Allied hands.

A small 6 Group main force of Halifaxes from Croft and Lancasters from Middleton-St-George took off for Walcheren at the mouth of the Scheldt on the 18th to bomb the gun battery at Domburg, which was blocking access to the much needed Belgian port of Antwerp. In the event the Master Bomber abandoned the raid in the face of poor weather conditions, and fifteen Bluenoses landed at Tholthorpe on return. Bremerhaven wilted under its first heavy raid of the war that night at the hands of a 5 Group force of two hundred Lancasters. Accurate low level marking by the Mosquito element led to the destruction of over 2,600 buildings, as the central and port areas in particular were razed by fire. A second attempt on the Domburg battery was recalled on the 19th, and while waiting to land MZ908 shed its starboard-outer propeller. It flew off with such force, that it took off the starboard-inner propeller as well, and a decision was taken to bale the crew out. The pilot, P/O Lees, stayed with the aircraft intending to land at Milfield, but control was lost south of Berwick, and he was killed in the ensuing crash.

The first operations in the campaign to liberate Calais took place on the 20th and involved over six hundred aircraft, including a contingent from 434 Squadron. They bombed German positions accurately in clear visibility, but further attacks would be required before the port was surrendered. Most Bluenoses landed at Silverstone in Northamptonshire on return. A third effort against the Domburg gun battery was mounted on the 23rd by elements of 1 and 6 Groups when weather conditions were finally favourable. The main fare that night was an attack on Neuss in the Ruhr by over five hundred aircraft drawn from 1, 3, 4 and 8 Groups, while 5 Group operated elsewhere. Over eight hundred aircraft departed their stations either side of 19.00 hours for their respective targets, and the bombing of Neuss, close by Düsseldorf, was concluded successfully for the loss of seven aircraft.

Later on the 24th operations continued against enemy positions around Calais, but were hampered by low cloud, and a third of the force was unable to bomb. Most of those doing so came below the two thousand feet cloud base, exposing themselves to the lethal light flak, which claimed eight of them. It was a similar story on the 25th, and only a third of more than eight hundred aircraft were able to bomb through breaks in the cloud. This was 434 Squadron's first outing since the 20th, and there were no casualties. Conditions improved on the 26th, and over seven hundred aircraft concentrated their bombing on three aiming points near Calais and four gun emplacements at Cap Gris Nez. The 27th brought yet another tilt at German positions around Calais by 1, 3, 4 and 8 Groups, along with attacks on oil refineries at Bottrop and Sterkrade by 6 and 8 Groups. 434 Squadron was involved at the latter and came through without casualties. The last assault on Calais took place on the 28th, when six gun batteries at Cap Gris Nez were again bombed. Shortly afterwards Canadian ground forces moved in and took the surrender of the enemy garrison. The 30th brought further operations against the oil installations at Sterkrade and Bottrop, but the Croft squadrons had completed their month's work and stayed on the ground.

October was to be characterized by an unprecedented concentration of bombing on German cities, and a second Ruhr campaign would begin at the end of the first week. Ports were still a pressing priority, however, as the need for supplies increased to keep the Allied advance mobile, and Bomber Command was to play its part in weakening enemy resistance. The efforts to neutralize the batteries on Walcheren had proved ineffective, and it was decided instead to breach the sea walls to inundate the gun positions, and also create difficult terrain for the defenders when the land offensive began. During daylight on the 3rd eight waves of thirty Lancasters each attacked the sea defences at Westkapelle, and the fifth wave created a breach, which was widened by those following. 617 Squadron aircraft were on hand with Tallboys, but in the event they were not needed. Many 6 Group squadrons, including those from Croft, opened their October account on the 4th with a daylight raid on the port of Bergen in Norway. The closure to the enemy of the Biscay ports had resulted in a concentration of U-Boats at that location, and the majority of the attacking force of 140 aircraft was assigned to the concrete pens, which were in the process of being enlarged, while a smaller element was to bomb individual vessels. The operation was successful, but collateral damage in the town caused the deaths of sixty children in a school basement. The night of the 5/6th was devoted to the first raid on Saarbrücken for two years, which involved over five hundred aircraft from 1, 3 and 8 Groups. The raid was of the saturation variety, and almost six thousand houses were

destroyed for the loss of just three Lancasters. This high return-low loss outcome would be repeated throughout the month and on to the end of the war, with only isolated occasions on which the defences gained the upper hand. During the afternoon of the 6th over three hundred aircraft took off to raid the oil refineries at Sterkrade and Scholven-Buer. The operations were carried out in clear conditions, and the predominantly 4 Group crews produced good bombing on accurate Pathfinder marking. The new Ruhr offensive opened at Dortmund on the 6/7th, when over five hundred aircraft from 3, 6 and 8 Groups pounded the city, causing extensive damage to housing, industry and communications for the loss of five of their number. The Croft squadrons put up thirty-nine Halifaxes between them, and all returned without major incident, although the 434 Squadron element had to land at Mildenhall and Newmarket because of the weather conditions around 6 Group stations.

Following the failure of Operation Market Garden the Allied right flank had become exposed to a possible danger from enemy forces approaching through the frontier towns of Cleves and Emmerich. On the afternoon of the 7th both towns were left extensively damaged by forces of over three hundred aircraft. 1, 4, 6 and 8 Groups delivered a scattered and ineffective raid on Bochum on the 9/10th, in which 434 Squadron took part. On the 12th 6 Group's Halifax brigade raided the oil refinery at Wanne-Eickel, but the marking and bombing were not accurate on this occasion, and the refinery escaped damage, although a nearby chemicals works was destroyed. The Croft squadrons stayed at home, and there were no major operations that night or on the following night, as Harris marshalled his forces for a spectacular twenty-four hours on the 14th. This was the day selected to launch Operation Hurricane, a demonstration to the enemy of the overwhelming superiority of the Allied air forces ranged against it. Before first light on the 14th over one thousand aircraft took off for Duisburg, arriving overhead shortly after breakfast time to deliver around 4,400 tons of high explosives and incendiaries under the protection of a large fighter escort. To be over the Ruhr in daylight was still a dangerous practice, and the flak defences claimed fourteen aircraft before being overwhelmed. That night similar numbers returned to Duisburg to press home the point about superiority, and thus 2,018 aircraft had been dispatched against the city in around eighteen hours, and something like nine thousand tons of bombs had been dropped for the loss of twenty-one aircraft. MZ920 had an engine catch fire on the way out, and was forced to abandon its sortie. Two members of the crew baled out safely, while F/L Wood and the remaining four crewmembers remained with the aircraft to attempt a landing at Church Lawford. Sadly, the Halifax crashed during the approach, and all on board lost their lives. It is remarkable, that the enormous effort at Duisburg was achieved without the inclusion of any 5 Group aircraft. They were consequently available for other duties, and took advantage of the night-time activity over the Ruhr to finally devastate Brunswick, which had escaped relatively lightly during four previous attacks in 1944.

On the night of the 15/16th over five hundred aircraft took part in the last heavy raid of the war on Wilhelmshaven, and both Croft squadrons took part. Four nights later, after a rest for the heavy squadrons, elements of 1, 3, 6 and 8 Groups carried out a two-phase assault on Stuttgart, with four and a half hours between waves. The bombing was not concentrated, but severe damage was nevertheless inflicted upon central and eastern districts, and an important Bosch factory was hit. After a week off 434 Squadron joined the largest Bomber Command

force of the war, amounting to 1,055 aircraft, which took off between 16.00 and 17.00 on the 23rd to deliver Operation Hurricane's message to Essen. In view of the destruction already inflicted upon the city, and the likelihood that there was little left to burn, the bulk of the 4,500 tons of bombs was high explosive. Six hundred buildings were destroyed, while a further eight hundred sustained serious damage in a city that had already surrendered its status as a major centre of war production. F/O Harvie's aircraft was hit by a 1,000 pounder, and severe damage to the port wing included a failed inner engine, despite which a safe landing was made at base. Only minor operations took place on the following night, and then, on the afternoon of the 25th the Hurricane force returned to Essen with over seven hundred aircraft, and destroyed a further eleven hundred buildings. The Krupp complex was among the industrial concerns badly damaged, and parts of it would remain out of action for the remainder of the war. Most of the city's surviving industry had been dispersed to other parts of Germany by this point, but its location within easy reach of Germany's western frontier would ensure further attention from Bomber Command, particularly as the ground action approached close to the end. While this operation was in progress, the Croft squadrons were supporting a 6 Group Halifax raid on the Meerbeck oil plant at Homberg. The target could not be seen through the complete cloud cover, and this prevented any assessment of the outcome. During the course of the month Mk X Lancasters had been arriving at Croft for 431 Squadron's conversion.

Cologne's turn to face the Hurricane force came first in the late afternoon of the 28th at the hands of over seven hundred aircraft. More than 2,200 apartment blocks were destroyed in districts north-east and south-west of the city centre, and much damage was inflicted upon power, railway and dockland installations. MZ420 suffered an engine fire while trying to land at Linton-on-Ouse, and had to be abandoned by Sgt Hart and his crew. Operations against Walcheren had been ongoing throughout the month, and 5 Group carried out the final attacks on the 30th. The ground forces arrived on the following day to clear enemy resistance, and after a week of heavy fighting the island was taken. Even so, it would be a further three weeks before the approaches to Antwerp had been sufficiently cleared of mines to allow access for shipping. Later on the 30th nine hundred aircraft returned to Cologne and dropped four thousand tons of mostly high explosive bombs onto what remained of the city, causing massive damage. This was 431 Squadron's final Halifax operation, and it was concluded by both Croft units without loss.

November began with the Croft squadrons operating against Oberhausen on the night of the 1/2nd as part of a force of almost three hundred aircraft from 6 and 8 Groups. It was a scattered attack delivered through cloud, and other Ruhr towns probably felt the effects. NR114 became 434 Squadron's first failure to return since late August, and it resulted in the deaths of F/O Badgley and four of his crew. NR144 was hit by flak, killing the wireless operator and wounding the bomb-aimer, navigator and flight engineer. The Hurricane force went to Düsseldorf on the evening of the 2nd with almost a thousand aircraft, and they pounded the northern half of the city, leaving over five thousand houses destroyed or seriously damaged. As events were to prove, this was the final heavy raid of the war on this much-bombed city. Bochum was the target for over seven hundred aircraft from 1, 4, 6 and 8 Groups on the 4/5th, and here too damage was immense, amounting to more than four thousand buildings

destroyed or severely afflicted, with almost a thousand people killed. German night fighters made contact with the bomber stream, and twenty-eight aircraft, most of them Halifaxes, were shot down. Four Bluenose crews reported being attacked by night fighters, and F/L Boyle's crew claimed a JU188 as damaged. Gelsenkirchen became the next Ruhr town to face a heavy Bomber Command assault, its ordeal coming by daylight on the 6th. The Nordstern synthetic oil refinery was the aiming point, and over five hundred aircraft bombed in its general area, while almost two hundred others attacked the town. An attempt by an all-Lancaster main force to bomb the oil refinery at Wanne-Eickel on the 9th was thwarted by heavy cloud, which extended up to 21,000 feet. The Master Bomber ordered the more than two hundred crews to bomb any built-up area, although the town of Wanne-Eickel reported very little damage.

A lull in major operations for all but the now largely independent 3 Group took the Command through to the 16th, when a massive assault on the three small Rhineland towns of Heinsberg, Jülich and Düren was launched. They lay in an arc from north to east respectively of Aachen, and the attacks were to help an American advance towards enemy lines between Aachen and the Rhine, by cutting communications to the front. 1,188 Bomber Command aircraft were committed to the destruction of the towns, 1 and 5 Groups forming the largest force of almost five hundred aircraft with Pathfinder support to attack Düren. The assault took place in mid afternoon in good bombing conditions, and over three thousand people were killed as the built-up area was levelled. Jülich was assigned to over four hundred Halifaxes and Lancasters of 4, 6 and 8 Groups, for which 434 Squadron contributed aircraft. Meanwhile 3 Group dealt with Heinsberg, and both towns, like Düren, were left severely damaged. On the 18th over 450 aircraft from 4, 6 and 8 Groups delivered a scattered attack on Münster, while later that evening a 1 Group raid was mounted against the oil refinery at Wanne-Eickel. Some additional damage was caused, and a nearby colliery was put out of action. 1, 6 and 8 Groups raided the oil refinery at Castrop-Rauxel on the 21/22nd, and the plant is believed to have been put out of action for the remainder of the war. The general decrease in operational activity during November allowed most of the heavy squadrons to enjoy a rest period over the ensuing few days. The target on the 27/28th was Neuss, where the eastern districts received most of the bombs causing moderate damage, and many 434 Squadron aircraft landed at Methwold on return because of the weather conditions at base. On the last night of the month 434 Squadron joined a large force from 1, 4, 6 and 8 Groups to attack Duisburg, where, despite complete cloud cover, over five hundred houses were destroyed.

December began for the Bluenoses with a heavy raid on Hagen in the Ruhr on the 2/3rd when almost five hundred aircraft from 1, 4, 6 and 8 Groups pounded central, eastern and southern districts, leaving over sixteen hundred houses and ninety industrial buildings destroyed or seriously damaged. Two nights later 1, 6 and 8 Groups delivered a heavy raid on Karlsruhe, which turned into another crushing blow on a German city target, carried out simultaneously with the 5 Group destruction of the unimportant and hitherto unmolested town of Heilbronn, where seven thousand people died under the bombs. Almost five hundred aircraft from 1, 4, 6 and 8 Groups targeted Soest on the 5/6th, a town just north of the by now famous Möhne Dam. The northern districts were hardest hit, where the railway installations were situated, and a thousand houses were destroyed. NR143 failed to return from this operation, and it was later established that none had survived from the crew of F/O Kowalchuk. A busy night on the 6/7th

saw three major operations and many of a minor nature, which in total involved over thirteen hundred sorties. 1, 3 and 8 Groups raided the oil refinery at Leuna near Merseburg in eastern Germany, while 5 Group attacked Giessen and a predominantly 4, 6 and 8 Group assault took place at Osnabrück. While 434 Squadron now enjoyed eleven days off the order of battle to undertake Lancaster conversion training, the last heavy night raid on Essen was delivered by over five hundred aircraft on the 12/13th. The Krupp complex was in the centre of the bombing pattern, and nearly seven hundred houses were also destroyed.

A three hundred strong Lancaster heavy force drawn from 1, 6 and 8 Groups targeted two I.G. Farben chemicals factories at Ludwigshafen and nearby Oppau on the 15/16th, and caused serious damage at both sites. The ancient city of Ulm was earmarked for its first and only raid of the war on the evening of the 17th. Unlike Freiburg and Heilbronn, however, it did contain targets of industrial significance, principally two large lorry factories. 317 Lancasters from 1 and 8 Groups provided the battering ram, and in twenty-five horrific minutes over fourteen hundred tons of bombs rained down, laying waste to 80% of the city's built-up area. Fortunately, an evacuation of women and children had taken place earlier in the day, but even so, seven hundred people lost their lives. A simultaneous operation by over five hundred aircraft from 4, 6 and 8 Groups on Duisburg saw the return to action of 434 Squadron, and this too was a highly destructive raid. NR118 failed to return, and there was just one survivor from the crew of F/L Parrott. On return the Wagman crew reported shooting down a BF109 in flames. The final third of the month involved the squadron in five more operations, three of them against railway installations. On the 21/22nd Lancasters and Halifaxes of 4, 6 and 8 Groups attacked the Nippes railway yards at Cologne, but poor weather conditions rendered the operation ineffective. 434 Squadron contributed four Halifaxes to what was its final operation with the type. Over three hundred aircraft from 4, 6 and 8 Groups attacked Lohausen and Müllheim airfields on the 24th, and this was the Bluenoses' first Lancaster operation.

The final wartime Christmas Day was celebrated peacefully on the stations, but the Boxing Day festivities were curtailed for some crews from each Group when the Command called for attacks on troop positions around St Vith following the German break-out in the Ardennes on the 16th. 6 Group carried out an inconclusive raid on the railway yards at Opladen on the 27/28th, and then there was a mid afternoon take-off for crews on the 29th, as they joined up with elements of 1 and 8 Groups to form a force of more than three hundred aircraft bound for the Ruhr. The target was the oil refinery at Scholven-Buer, where around three hundred high explosive bombs found the mark. Over three thousand others landed in the town and its environs, causing damage to property and two collieries. The Croft squadrons took part in their final operation of the year on the evening of the 30th, when over 450 aircraft attacked the Kalk-Nord railway yards at Cologne. The size of the 4 and 6 Group main force suggested that this was an area raid on that part of the city containing the yards. Cloud made precision difficult, but the target was severely damaged, along with two adjacent passenger stations. Two ammunition trains are reported to have blown up, and road communications were also disrupted.

It had been a testing year for 434 Squadron, which included a number of nights of disproportionately heavy casualties, while its withdrawal from operations over Germany after Leipzig during the winter offensive probably kept losses artificially low. As the German Ardennes offensive faltered, it was clear that the coming year would bring victory, although much remained to be done before the tenacious and courageous enemy forces finally laid down their arms. Some squadrons would sail through the final four months of the bombing war with barely a scratch, while others would sustain heavy casualties.

1945

Over on the continent the New Year started with a bang, as the Luftwaffe launched its ill-conceived and ultimately ill-fated Operation Bodenplatte at first light on New Year's Morning. The intention to destroy Allied aircraft on the ground at the recently liberated airfields in France, Holland and Belgium was only modestly achieved, but at an unacceptably high price. The entire day fighter strength was committed to low level bombing and strafing attacks into the teeth of the airfield flak defences, and the survivors then had to run the gauntlet of Allied fighters to make their escape. Around 250 aircraft failed to get home, with approximately 150 of their pilots being killed, wounded or taken prisoner, and this was a setback from which the Luftwaffe would never recover. The operation also produced some very jittery American anti-aircraft gunners, who, for the remainder of the day and night, fired at anything that flew, and a number of Bomber Command aircraft fell victim to "friendly fire" incidents. The major priorities for the Command in these final months of the bombing war were the continued dislocation of Germany's railway network, and the assault on her oil production. Both had been ongoing for a long time, but the offensives would now gain momentum. Any city with a functioning railway or an oil-related production site was to be area bombed, and the familiar names of the past would continue to feature.

Two major operations were mounted on the night of the 2/3rd, the larger an all-Lancaster assault on Nuremberg involving over five hundred aircraft from 1, 3, 6 and 8 Groups. For almost the first time at this target an accurate and concentrated attack was delivered, in which over 4,600 houses, most of them apartment blocks, were destroyed, along with two thousand medieval houses and four hundred industrial buildings. More than eighteen hundred people lost their lives on the ground, and in return the defenders claimed five Bomber Command aircraft. Ludwigshafen was also heavily bombed on this night by a force of almost four hundred aircraft, most of them 4 and 6 Group Halifaxes, and two of the synthetic oil producing I G Farben chemicals works were severely damaged, as were a number of railway installations. 434 Squadron took part in the former, and all of its crews returned. Six hundred aircraft from 1, 4, 6 and 8 Groups undertook the last large-scale area raid of the war on Hanover, and the first against the city since October 1943, on the night of the 5/6th. 434 Squadron contributed aircraft to a successful attack, which left almost five hundred apartment blocks in ruins. The same Groups pounded Hanau and its railway yards on the 6/7th, as elements of 1 and 3 Groups did likewise at Neuss. On the 7/8th elements from all but 4 Group carried out the final heavy raid of the war on Munich, and returning crews claimed a successful attack.

There was little activity for the heavy squadrons thereafter until the 13th, when two operations were mounted against the railway yards at Saarbrücken, the first by 3 Group, and the second by 4, 6 and 8 Groups. 434 Squadron did not operate on this night, but supported a highly destructive two-phase assault by 1, 5, 6 and 8 Group Lancasters on the synthetic oil plant at Leuna on the following night, while the Halifaxes concentrated on the railway yards at Grevenbroich. KB832 was attacked by a twin-engine enemy aircraft, which F/O Purnell and his crew observed to crash in flames. On the 16/17th 434 Squadron joined others from 1, 6 and 8 Groups to attack the Braunkohle-Benzin synthetic oil plant at Zeitz near Leipzig, part of which sustained heavy damage for the loss of ten Lancasters. Among the missing was KB850, in which F/L Kiehl Bauch and his crew lost their lives. The Halifax force, meanwhile, was pounding the city of Magdeburg in an operation claimed by the Command to be highly destructive. Minor operations held sway from then until 280 Lancasters from 1, 3 and 8 Groups attacked a benzol plant at Duisburg on the 22/23rd. The target was identified in the moonlight and severely damaged, as was a nearby steelworks belonging to the Thyssen concern. The only other significant raid before the end of the month came on the 28/29th against railway yards and an aero-engine factory on the northern edge and surrounds of Stuttgart. Six hundred aircraft took part, including a contingent from 434 Squadron, but cloud cover led to a scattered and inconclusive outcome, and most of the Bluenose crews landed on the 5 Group station at Spilsby.

The weather was not helpful during the first week of February, as large areas of Germany were concealed by cloud. This certainly affected the accuracy of the operations mounted on the night of the 1/2nd, which included raids on Ludwigshafen and Mainz. 434 Squadron took part in the former, which was a 1, 6 and 8 Group Lancaster affair, and considerable damage was inflicted upon housing and railway installations for the loss of six aircraft. Three heavy raids were mounted on the following night, 434 Squadron joining in a 1, 3, 6 and 8 Group Lancaster attack on Wiesbaden. A predominantly Halifax force, meanwhile, was at Wanne-Eickel, but the three hundred aircraft failed to find the oil refinery with their bombs through cloud. The Bluenoses were not in action on the 3/4th, but took part in an ineffective raid on Bonn by a mainly Halifax force of over two hundred aircraft on the 4/5th, while another largely Halifax effort failed in its attempt to hit a coking plant at Osterfeld. In preparation for an advance into Germany by the British XXX Corps in the Reichswald region the Command was ordered to bomb the frontier towns of Goch and Cleves, which formed part of the enemy defences. On the night of the 7/8th 4, 6 and 8 Groups attacked the former, and 1 and 8 Groups the latter, leaving both heavily damaged. The entire 434 Squadron contingent was sent home by the Master Bomber with their bombs still aboard. On the following night 475 Lancasters from 1, 5 and 8 Groups took off for Pölitz near Stettin to attack the oil refinery, and they put an end to all further wartime production. In contrast, a simultaneous raid on the refinery at Wanne-Eickel by 4 and 6 Group Halifaxes failed to find the mark, and little damage resulted. Like most of the other 6 Group units 434 Squadron did not operate after Goch until returning to the fray on a night that would unjustly define for many post war commentators the character of Bomber Command's war.

The night of the 13/14th brought the first of the Churchill inspired heavy raids on Germany's eastern cities under Operation Thunderclap. The target was the beautiful and historic city of

Dresden, which had not been attacked by the Command before, but was now to face a two-phase assault opened by 5 Group employing its low level marking method. A layer of cloud stretched across the target area, and this interfered to an extent with the precision of this part of the raid, in which 244 Lancasters delivered more than eight hundred tons of bombs. Fires gained a hold, however, and they acted as a beacon to the 529 Lancasters of 1, 3, 6 and 8 Groups following three hours behind. By the time of their arrival the skies had cleared, and a further eighteen hundred tons of bombs rained down onto the hapless city. The result was a firestorm of gigantic proportions, certainly equalling that at Hamburg eighteen months earlier, and there was no escape for the population, massively swelled by an influx of refugees from the eastern front. A figure of 35,000 fatalities has been settled upon, although some commentators would have us believe the figure to be substantially higher. 434 Squadron took part, and all of its crews returned without major incident. A second operation on this night took the Halifax brigade to Böhlen to attack the Braunkohle-Benzin oil plant. Conditions were very poor, and the bombing was consequently scattered and inconclusive, but at least losses amounted to just one Halifax. The following night was devoted largely to Chemnitz, but heavy cloud helped to spare the city from a fate similar to that of Dresden, and much of the bombing found open country. KB741 was borrowed from 431 Squadron by F/O McGrath and crew, who failed to return. The rear gunner was the sole survivor of this Lancaster's loss, and he became a PoW. A series of raids on the town of Wesel, which stood in the way of the Allied advance, began on the 16th, and by its conclusion in March there would be little of it left.

Among the operations during the remainder of the month were the last raids of the war on some familiar names. Dortmund experienced its final night raid on the 20/21st at the hands of five hundred aircraft, but it still had one major daylight ordeal to undergo in March. NG457 was attacked and seriously damaged by a JU88 and fuel tanks were holed. In addition the wireless operator was killed and the mid-upper gunner badly wounded, but a safe landing was carried out at Manston. One of the other operations in progress on this night involved 6 Group Halifaxes, which put an end to production at an oil refinery at Monheim. An area attack on Worms followed for the Halifaxes twenty-four hours later, which left almost 40% of the town in ruins, while Duisburg wilted under its last pounding, and more of its buildings were reduced to rubble by an all-Lancaster main force, which included a contingent from 434 Squadron. A daylight raid on the 23rd by Halifaxes of 4 and 6 Groups delivered three hundred high explosive bombs onto the Krupp works at Essen, while that night 1, 6 and 8 Group Lancasters carried out the only area bombing raid of the war on Pforzheim. In twenty-two horrific minutes an absolute catastrophe was visited upon the town and its inhabitants as a large part of the built-up area became engulfed in flames. Seventeen thousand people lost their lives, the third highest death toll at a German urban target. KB824 was attacked by an ME210, which had just shot down another Lancaster. Six feet of the starboard wing was shot off, but the aircraft got home safely, and F/L Buttle and crew claimed their assailant as damaged after it was seen to break away with its starboard engine on fire. 6 Group Halifaxes took part in a raid at Kamen on the 24th, where an oil refinery was the objective. Mainz provided the Bluenose target on the 27th, as part of a force of over four hundred aircraft, 75% of which were Halifaxes. Although there was a complete cloud cover, which necessitated the use of skymarkers and then prevented an assessment of the outcome, it was a devastating raid that

left over 5,600 buildings in ruins and killed eleven hundred people. 434 Squadron took off on the 28th to take part in a raid on Neuss, but all were recalled.

Mannheim's long and unhappy association with Bomber Command came to an end on the afternoon of the 1st of March, although its final ordeal was unobserved by the 1, 6 and 8 Group crews above the cloud cover. 434 Squadron welcomed its participating crews home, and then sent them out again on the 2nd of what would prove to be a surprisingly busy month, considering the enemy's hopeless situation. Two forces set out to bomb Cologne for the last time, the first, which included the 434 Squadron element, numbering seven hundred aircraft. They inflicted massive damage upon the already shattered city, but the second attack by 3 Group had to be abandoned after only fifteen aircraft had bombed, because of a fault with the G-H station in England. It hardly mattered, and the city fell to American forces four days later. Having escaped serious damage on the night after Dresden, Chemnitz eventually succumbed to Operation Thunderclap in a raid by over seven hundred aircraft on the evening of the 5th. Parts of its central and southern districts became engulfed in flames, and a number of important war industry factories were put out of action. Problems on this night began early on for 6 Group, whose aircraft encountered icing conditions within minutes of taking off, and many crashes occurred in this country as a result. 434 Squadron almost suffered a casualty over Germany, when KB842 collided with a Halifax that was in the process of being shot down by a night fighter just after bombing. The same night fighter then turned its attention upon the 434 Squadron aircraft, and inflicted damage to its starboard wing and hydraulics system before being driven off by return fire. P/O Kitchen and his crew brought the crippled Lancaster home to an emergency landing at Carnaby, where it was deemed to be damaged beyond repair.

The town of Dessau had to wait until this penultimate month of the bombing war to receive its one and only heavy raid, and this took place at the hands of over five hundred aircraft from 1, 3, 6 and 8 Groups on the 7/8th. The attack was almost certainly aimed at the railway installations, but it turned into another devastating area raid. Many 434 Squadron aircraft landed at Thorney Island on return, some because of a shortage of fuel. The Halifaxes of 4 and 6 Groups went to Hemmingstedt on this night, but missed the Deutsche Erdölwerke by at least two miles. The following night was devoted to Hamburg and Kassel, while 434 Squadron stayed at home. The former was attacked by a predominantly Halifax main force, which had the shipyards as its specific objective. These were assembling the new Type XXI U-Boats, which could remain submerged for extended periods, and would have been a serious threat had they been available to the Kriegsmarine earlier. In the event, Hamburg lay beneath a layer of cloud, and the bombing was not concentrated. Meanwhile, other elements of the Group spent part of the night mining around Heligoland.

A new record was set in the late morning of the 11th, when 1,079 aircraft took off for the final raid of the war on Essen. It was the largest force ever sent to a single target, and they contributed to another punishing assault on this ravaged city at the end of an almost personal battle spanning a little under five years. Even so, it had only been during the last two years, since the introduction of Oboe, that the bomber had prevailed. Many gallant crews had fallen during the various campaigns, but Essen now lay totally ruined, having lost seven thousand of

its inhabitants to air raids. The squadron's KB834 was brought down by flak in the target area immediately after bombing. It contained the second-tour crew of F/L Fern, and only the rear gunner survived, albeit severely wounded and in enemy hands. He would require many years of treatment to recover from his condition. The record set at Essen was short-lived, and was surpassed a little over twenty-four hours later, when 1,108 aircraft departed their stations in the early afternoon of the 12th to deliver the final raid of the war on Dortmund, an operation that effectively finished it as a functioning city. The Group's Lancaster squadrons rested on the 13/14th, while the Halifaxes joined their 4 Group counterparts in the bombing of Wuppertal-Barmen. Zweibrücken was another new name on a target list, and this town was attacked by over two hundred aircraft from 6 and 8 Groups, including a contingent from 434 Squadron on the evening of the 14th. The intention to block the through-passage of all enemy troops and equipment was achieved, and, in fact, every public building and 80% of the houses were flattened. Benzol plants at Bottrop and Castrop-Rauxel occupied Halifaxes of 4 and 6 Groups on the 15th, while that night 434 Squadron joined in on a destructive operation by Lancasters and Halifaxes of 4, 6 and 8 Groups at Hagen. KB835 was shot down by a JU88 over Holland, and F/O Stewart died with the others on board. The rear gunner had already baled out by this time over Belgium, and was safe in Allied hands.

On the 16/17th almost three hundred Lancasters and Mosquitos of 1 and 8 Groups carried out the final raid of the war on Nuremberg, the city that had been the target on the Command's blackest night a year earlier. A punishing blow was delivered, but the night fighter response was fierce, and twenty-four 1 Group Lancasters were shot down. As this operation was in progress, two hundred 5 Group Lancasters attacked the historic and minimally industrial city of Würzburg in central-southern Germany. In seventeen minutes of carnage, over eleven hundred tons of bombs were dropped with great accuracy, destroying 89% of the built-up area and killing between four and five thousand people. In the light of this and other similar catastrophes visited upon the German homeland at a time of imminent defeat, it is possible to comprehend, if not to condone, the murderous attitudes of a small minority of German officials, who took their vengeance upon downed Allied airmen. Two nights after Würzburg Witten was area-bombed by a predominantly Halifax force of three hundred aircraft from 4, 6 and 8 Groups, and around 60% of its built-up area was reduced to rubble. Oil refineries at Böhlen and Hemmingstedt were put out of action on the 20/21st, the latter by Lancasters of 1, 6 and 8 Groups including a contingent from 434 Squadron.

On the afternoon of the 22nd two hundred 1, 6 and 8 Group Lancasters attacked the railway yards at Hildesheim, and in the process reduced 70% of the town to ruins, destroying over 3,300 apartment blocks and killing more than sixteen hundred people. KB832 came to grief at the very start of the operation, swinging off the runway in response to a sudden gust of wind. The Lancaster raced across the grass and struck a 431 Squadron aircraft. A fire developed in an engine, which spread to the whole aircraft, and the bomb load went up thirty-five minutes after the accident. F/O Payne and his crew were long gone by this time, and no injuries resulted. At the same time a hundred 6 Group Halifaxes attacked Dorsten, a rail and canal centre on the approaches to the Ruhr, and followed this up two days later with a devastating raid on nearby Gladbeck, while 1 and 6 Group Lancasters provided the main force for an assault on the Mathias Stinnes oil plant at Bottrop. Münster was the objective for 4 and 6

Group Halifaxes on the 25th, when smoke prevented an assessment of the results, while the Lancasters of 1 and 6 Groups paid another visit to Hanover. On the 27th Paderborn was virtually erased from the map in a fifteen-minute rain of terror by an all-Lancaster heavy force, and on the 31st an attempt to hit the Blohm & Voss U-Boat yards at Hamburg resulted in further destruction within the city. This was 434 Squadron's final outing of the month, and it proved to be a testing experience for many of its crews as ME262 jet fighters swarmed among the bombers. Seven Bluenose aircraft were attacked by ME262s, and F/O Isenberg, and F/O Hawes each claimed one damaged, while F/O Dawson claimed a probable. KB911 failed to survive its encounter with an ME262, and crashed in Germany killing F/O Haliburton and two of his crew. The survivors were captured, and were the last from the squadron to fall into enemy hands. In all, eleven aircraft failed to return, and this was the last time that the Command's losses would reach double figures.

April, the final month of the bombing war, began for 434 Squadron with an operation against an oil refinery at Leuna on the 4/5th. W/C Mulvihill became the squadron's final commanding officer on the 8th, and that night Hamburg hosted its last major raid of the war, when over four hundred aircraft from 4, 6 and 8 Groups went for the shipyards. The Americans had attacked the same area earlier in the day, and it was impossible to distinguish the damage between the two operations. F/L Yuill claimed a JU88 as destroyed, after it blew up in the air. The following night was devoted to a 1, 3 and 8 Group Lancaster assault on Kiel, where almost six hundred aircraft damaged all three shipyards, capsized the Admiral Scheer pocket battleship, and hit the Admiral Hipper and the Emden. Under cover of the main raid twenty aircraft from 424, 427, 429 and 433 Squadrons slipped in to lay mines in Kiel Bay. Railway yards at Leipzig occupied a mixed force of 6 Group Lancasters and Halifaxes on the 10th, before 434 Squadron had a couple of days off. They returned to battle when 3 and 6 Groups got together on the 13/14th to provide the main force for an attack on Kiel's U-Boat yards, and most landed at Gaydon in Warwickshire on return. The last area-bombing raid of the war was directed at Potsdam on the 14/15th, and this was the first incursion by RAF heavy bombers into the Berlin defence zone since March 1944. The attack, which did not involve 434 Squadron, was accurate, although some of the bombing spilled over into Berlin itself. Two nights later elements of 6 and 8 Groups attacked the railway yards at Schwandorf in south-eastern Germany causing extensive damage, and this time 434 Squadron was present.

On the 18th, during another four-day break for 434 Squadron, almost a thousand aircraft presented themselves over the island of Heligoland, and left behind them a cratered moonscape. The bombing war ended for some squadrons at Bremen on the 22nd, on what proved to be the Command's penultimate day of operations. The south-eastern suburbs of the city were targeted ahead of the British XXX Corps assault, which was to follow two days later. Although over seven hundred aircraft were present, the Master Bomber called a halt after less than two hundred had bombed, when the target disappeared beneath smoke, dust and cloud. The long-awaited final day of heavy bomber operations dawned on the 25th to the sound of over 350 Lancasters from 1, 5 and 8 Groups taking off for the SS barracks at Hitler's Eaglesnest retreat at Berchtesgaden in the Bavarian mountains. It was almost a symbolic operation and the bombing appeared to be accurate. Later that afternoon elements of 4, 6 and 8 Groups attacked heavy gun positions on the island of Wangerooge in the German Frisians.

They were barring the approaches to the northern German ports, but little damage was done to them in their concrete housings. This proved to be a tragic final main force operation, after six aircraft were lost in the target area through collisions. Four of the aircraft belonged to 6 Group squadrons, and twenty-eight Canadians lost their lives. That night 5 Group carried out a raid on an oil refinery at Tonsberg in Norway, and then, for all but 100 Group and the 8 Group Mosquito squadrons, it was all over.

434 Squadron remained at Croft until the 10th of June, when it returned to Canada. It was disbanded at Dartmouth, Nova Scotia on the 5th of September.

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STATIONS

THOLTHORPE
CROFT

13.06.43. to 10.12.43.
11.12.43. to 09.06.45.

COMMANDING OFFICERS

WING COMMANDER C E HARRIS
WING COMMANDER C S BARTLETT
WING COMMANDER F H WATKINS
WING COMMANDER A L BLACKBURN
WING COMMANDER J C MULVIHILL

15.06.43. to 06.02.44.
07.02.44. to 12.06.44.
13.06.44. to 29.08.44.
30.08.44. to 07.04.45.
08.04.45. to 05.09.45.

AIRCRAFT

HALIFAX V/III
LANCASTER I/X

06.43. to 12.44.
12.44. to 09.45.

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SECTION 2



OPERATIONAL RECORD

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OPERATIONAL RECORD

OPERATIONS	SORTIES	AIRCRAFT LOSSES	% LOSSES
193	2597	58	2.2

CATEGORY OF OPERATIONS	
BOMBING	MINING
173	17

HALIFAXES

OPERATIONS	SORTIES	AIRCRAFT LOSSES	% LOSSES
152	2038	53	2.6

CATEGORY OF OPERATIONS	
BOMBING	MINING
135	17

LANCASTERS

OPERATIONS	SORTIES	AIRCRAFT LOSSES	% LOSSES
41 All bombing.	559	5	0.9

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TABLE OF STATISTICS

(Heavy squadrons)

Out of 59 Lancaster squadrons.

55th highest number of Lancaster overall operations in Bomber Command.
53rd highest number of Lancaster sorties in Bomber Command.
53rd equal (with 424Sqn) highest number of Lancaster operational losses in Bomber Command.

Out of 32 Halifax squadrons.

20th highest number of Halifax overall operations in Bomber Command.
18th highest number of Halifax sorties in Bomber Command.
11th equal (with 408Sqn) highest number of Halifax operational losses in Bomber Command.

Out of 15 squadrons in 6 Group.

14th highest number of overall operations in 6 Group.
11th highest number of sorties in 6 Group.
12th highest number of aircraft operational losses in 6 Group.

Out of 15 Halifax squadrons in 6 Group.

9th highest number of Halifax overall operations in 6 Group.
7th highest number of Halifax sorties in 6 Group.
3rd equal (with 408Sqn) highest number of Halifax operational losses in 6 Group.

Out of 11 Lancaster squadrons in 6 Group.

8th highest number of Lancaster overall operations in 6 Group.
6th highest number of Lancaster sorties in 6 Group.
7th equal (with 424Sqn) highest number of Lancaster operational losses in 6 Group.

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SECTION 3



AIRCRAFT LISTING

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HALIFAX.**From June 1943 to December 1944.**

DG361 To 1664CU.
DG385 To 1664CU.
DK248 To 1664CU.
DK250 IP-W FTR Frankfurt 4/5.10.43.
DK251 IP-F FTR Munich 6/7.9.43.
DK258 IP-X FTR Nuremberg 27/28.8.43.
DK259 IP-L FTR Bochum 29/30.9.43.
DK260 IP-M FTR Peenemünde 17/18.8.43.
DK261 IP-V FTR Berlin 23/24.8.43.
DK262 IP-R FTR Munich 6/7.9.43.
EB217 IP-A FTR Kassel 22/23.10.43.
EB218 IP-N FTR Kassel 22/23.10.43.
EB219 To 1667CU.
EB220 WL-B To 1664CU.
EB254 IP-D FTR Leverkusen 19/20.11.43.
EB255 IP-P FTR Leverkusen 22/23.8.43.
EB256 WL-S Crashed in Yorkshire on return from Berlin 29.1.44.
EB257 WL-E FTR Düsseldorf 3/4.11.43.
EB258 IP-T FTR Peenemünde 17/18.8.43.
EB276 IP-G FTR Peenemünde 17/18.8.43.
LK634 IP-T FTR Bochum 29/30.9.43.
LK638 IP-V FTR Kassel 3/4.10.43.
LK647 IP-C FTR Hanover 8/9.10.43.
LK648 IP-F FTR Hanover 27/28.9.43.
LK649 WL-X To 431Sqn and back. FTR Berlin 28/29.1.44.
LK656 WL-C From 429Sqn. Abandoned over Yorkshire on return from Berlin 21.1.44.

LK663 IP-F From 427Sqn. FTR Kassel 22/23.10.43.
LK666 IP-T FTR Kassel 22/23.10.43.
LK680 From 428Sqn. To 431Sqn.
LK682 WL-R To 1 FU.
LK683 IP-V FTR Leipzig 3/4.12.43.
LK685 To 431Sqn.
LK686 IP-L FTR Frankfurt 20/21.12.43.
LK693 IP-A FTR Mannheim 18/19.11.43.
LK694 WL-N From 429Sqn. To 1664CU.
LK696 WL-K/F Crashed on landing at Croft on return from Amiens 15.3.44.
LK697 To 429Sqn.
LK698 To 431Sqn.
LK699 WL-Z FTR Magdeburg 21/22.1.44.
LK702 IP-E FTR Berlin 22/23.11.43.
LK703 WL-W To 1664CU.

LK708 From 431Sqn. To 1659CU.
LK709 To 77Sqn.
LK739 To 428Sqn.
LK740 WL-V FTR Berlin 28/29.1.44.
LK764 WL-V/Z From 432Sqn. To 1659CU.
LK792 WL-N From 427Sqn. FTR Sterkrade/Holten 16/17.6.44.
LK796 WL-S From 425Sqn. Ditched in North Sea on return from Kiel 16.8.44.
LK799 WL-E From 429Sqn. Crashed on take-off at Croft when bound for La Hoque 7.8.44.

LK801 WL-D From 429Sqn. FTR Sterkrade/Holten 16/17.6.44.
LK871 WL-K From 426Sqn. To 1659CU.
LK878 WL-N From 426Sqn. To 1659CU.
LK886 WL-D From 426Sqn. To 1659CU.
LK887 From 426Sqn.
LK893 IP-U FTR Mannheim 18/19.11.43.
LK894 WL-K FTR Mönchengladbach 30/31.8.43.
LK898 From 431Sqn. Returned to 431Sqn.
LK907 WL-M Crash-landed after bird strike during an air-test 25.2.44.
LK909 IP-G FTR Hanover 22/23.9.43.
LK916 WL-P FTR Berlin 28/29.1.44.
LK917 IP-X FTR Hanover 27/28.9.43.
LK918 To 431Sqn.
LK919 WL-K FTR Hanover 27/28.9.43.
LK924 From 429Sqn. To 1664CU.
LK945 WL-O FTR Leipzig 19/20.2.44.
LK947 From 429Sqn. To 1659CU.
LK953 WL-C From 428Sqn. To 427Sqn and back. FTR Berlin 22/23.11.43.
LK965 WL-O From 429Sqn. To 1659CU.
LK970 IP-N FTR Frankfurt 20/21.12.43.
LK971 WL-Y FTR Berlin 15/16.2.44.
LK975 From 429Sqn. To 1667CU.
LK990 IP-X FTR Leverkusen 19/20.11.43.
LK992 WL-G To 1664CU.
LK995 To 429Sqn.
LL113 WL-J To 1659CU.
LL134 WL-U FTR Berlin 28/29.1.44.
LL135 WL-R FTR Berlin 20/21.1.44.
LL136 WL-E To 1659CU.
LL137 WL-D To 1664CU.
LL141 WL-H FTR Berlin 20/21.1.44.
LL142 To 431Sqn.
LL167 WL-M From 429Sqn. To 1659CU.
LL168 WL-S From 429Sqn. To 431Sqn.
LL170 WL-X From 431Sqn. To 1659CU.
LL171 WL-T From 429Sqn. To 1659CU.

LL177 WL-A From 431Sqn. To 1664CU.
LL178 WL-R From 429Sqn. Crashed in Yorkshire on return from a mining sortie to Heligoland 18.3.44.
LL179 WL-K From 431Sqn. FTR Berlin 20/21.1.44.
LL180 From 431Sqn. To 1667CU.
LL225 WL-L From 431Sqn. Crash-landed at Friston on return from Aulnoye 26.3.44.
LL232 From 431Sqn. To 1659CU.
LL233 From 431Sqn. To 1659CU.
LL240 WL-C To 1664CU.
LL241 WL-H To 1659CU.
LL243 WL-U FTR Montzen 27/28.4.44.
LL247 WL-Q To 1659CU.
LL255 WL-V FTR Leipzig 19/20.2.44.
LL257 WL-Z FTR Leipzig 19/20.2.44.
LL258 WL-W From 431Sqn. FTR Montzen 27/28.4.44.
LL283 WL-Z To 1664CU.
LL285 WL-K To 1659CU.
LL286 WL-V To 1664CU.
LL288 WL-P To 1659CU.
LW169 To 424Sqn.
LW170 To 424Sqn.
LW171 WL-M To 520Sqn.
LW173 WL-K FTR Arras 12/13.6.44.
LW174 WL-G/R To 192Sqn.
LW175 WL-Q FTR Brunswick 12/13.8.44.
LW176 WL-J Written off at Croft when struck by LK799 taking off for La Hoque 7.8.44.
LW385 From 431Sqn. To 190Sqn.
LW389 WL-F From 420Sqn.
LW433 WL-W From 424Sqn. FTR Sterkrade/Holten 16/17.6.44.
LW436 WL-Y From 426Sqn. FTR Bois de Cassan 4.8.44.
LW437 WL-Y From 432Sqn. FTR Hamburg 28/29.7.44.
LW596 WL-Z From 432Sqn. FTR Hamburg 28/29.7.44.
LW684 WL-O From 429Sqn. FTR Versailles/Matelot 10/11.6.44.
LW689 WL-A From 51Sqn. To 1659CU.
LW713 WL-P From 429Sqn. FTR Arras 12/13.6.44.
LW714 WL-H From 429Sqn. To 1659CU.
MZ291 To 427Sqn.
MZ293 WL-S FTR Arras 12/13.6.44.
MZ295 To 427Sqn.
MZ297 WL-Z FTR Sterkrade/Holten 16/17.6.44.
MZ358 WL-R To 192Sqn.
MZ405 WL-C/F From 431Sqn. To 158Sqn.
MZ420 WL-F Abandoned over Yorkshire on return from Cologne 28.10.44.
MZ421 WL-A To 408Sqn.

MZ435 WL-D From 429Sqn. To 408Sqn and back. To 426Sqn.
MZ447 WL-B From 429Sqn. To 462Sqn.
MZ495 To 408Sqn.
MZ626 WL-T From 420Sqn. Crashed near Croft while training 30.8.44.
MZ681 To 431Sqn.
MZ682 To 426Sqn.
MZ683 To 425Sqn.
MZ716 WL-V To 1659CU.
MZ749 WL-P/W To 1659CU.
MZ807 To 433Sqn.
MZ808 To 433Sqn.
MZ846 WL-O/T/W To 158Sqn.
MZ852 WL-P To 192Sqn.
MZ853 Crashed on landing at Croft 1.8.44.
MZ876 WL-Y To BCIS.
MZ878 WL-E To 1659CU.
MZ881 From 431Sqn. To 158Sqn.
MZ907 From 408Sqn. To 431Sqn.
MZ908 WL-O From 408Sqn. Crashed in Northumberland on return from Walcheren 19.9.44.

MZ913 WL-J To 462Sqn.
MZ920 WL-C From 431Sqn. Crashed in Warwickshire on return from Duisburg 14.10.44.

MZ921 WL-Q To 158Sqn.
MZ922 To 431Sqn.
NA494 WL-B From 431Sqn. To 1659CU.
NA497 WL-C From 426Sqn. To 1659CU.
NA510 To 426Sqn.
NA516 From 432Sqn. Returned to 432Sqn.
NA528 Blew up on landing at White Waltham on return from Normandy 30.7.44.

NA550 From 432Sqn.
NA552 WL-U From 432Sqn. To 1659CU.
NP939 WL-W To 420Sqn.
NP959 WL-S From 431Sqn. To 420Sqn.
NP961 WL-N To 432Sqn.
NR114 WL-U From 424Sqn. FTR Oberhausen 1/2.11.44.
NR115 WL-K From 424Sqn. To 1664CU.
NR116 WL-H To 426Sqn.
NR118 WL-S/U From 427Sqn. FTR Duisburg 17/18.12.44.
NR121 WL-G/Y From 431Sqn. To 76Sqn.
NR124 WL-W From 427Sqn. To 408Sqn.
NR126 WL-T From 427Sqn. To 408Sqn.
NR134 WL-Z To 426Sqn.
NR140 WL-C To 415Sqn.

NR141	To 431Sqn.
NR143 WL-M	FTR Soest 5/6.12.44.
NR144 WL-V	To 426Sqn.
NR145 WL-L	To 432Sqn.
NR199	To 408Sqn.

LANCASTER. From December 1944.

KB741 SE-C	On loan from 431Sqn. FTR Chemnitz 14/15.2.45.
KB789 WL-V	From 428Sqn.
KB814 WL-S	From 428Sqn. To 419Sqn.
KB816 WL-G	From 431Sqn. To 428Sqn.
KB824 WL-E	From 419Sqn.
KB825 WL-A	From 428Sqn.
KB826 WL-K	From 428Sqn.
KB829 WL-C	From 428Sqn.
KB830 WL-D	From 419Sqn.
KB832 WL-F	From 419Sqn. Crashed on take-off at Croft 22.3.45.
KB833 WL-B	From 419Sqn.
KB834 WL-Y	FTR Essen 11.3.45.
KB835 WL-J	From 431Sqn. FTR Hagen 15/16.3.45.
KB836 WL-H	From 431Sqn.
KB840 WL-N	From 428Sqn.
KB842 WL-L	From 428Sqn. FTR Chemnitz 5/6.3.45.
KB843 WL-Q	To 428Sqn.
KB844 WL-W	From 419Sqn.
KB846 WL-P	To 428Sqn.
KB849 WL-T	From 431Sqn.
KB850 WL-O	From 419Sqn. FTR Zeitz 16/17.1.45.
KB852 WL-R	From 431Sqn.
KB853	To 431Sqn.
KB862 WL-M/J	
KB863 WL-P	
KB873 WL-G	
KB880 WL-L	
KB881	
KB882	To 428Sqn.
KB883 WL-S	
KB884	To 419Sqn.
KB885 WL-Q	From 431Sqn.
KB890 WL-X	
KB893	From 431Sqn.
KB895 WL-O	From 428Sqn.
KB902	
KB911 WL-U	FTR Hamburg 31.3.45.

KB914

KB920

No operations. To 428Sqn.

NG343 WL-U

NG344 WL-Z

NG345 WL-Q

NG497 WL-P

PA225 WL-O

PA226 WL-X

HEAVIEST SINGLE LOSS.

28/29.1.44. Berlin. 5 Halifaxes. 4 FTR. 1 crashed on return.

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SECTION 4



KEY TO ABBREVIATIONS

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KEY TO ABBREVIATIONS

A&AEE	Aeroplane and Armaments Experimental Establishment.
AA	Anti-Aircraft fire.
AACU	Anti-Aircraft Cooperation Unit.
AAS	Air Armament School.
AASF	Advance Air Striking Force.
AAU	Aircraft Assembly Unit.
ACM	Air Chief Marshal.
ACSEA	Air Command South-East Asia.
AFDU	Air Fighting Development Unit.
AFEE	Airborne Forces Experimental Unit.
AFTDU	Airborne Forces Tactical Development Unit.
AGS	Air Gunners School.
AMDP	Air Members for Development and Production.
AOC	Air Officer Commanding.
AOS	Air Observers School.
ASRTU	Air-Sea Rescue Training Unit.
ATTDU	Air Transport Tactical Development Unit.
AVM	Air Vice-Marshal.
BAT	Beam Approach Training.
BCBS	Bomber Command Bombing School.
BCDU	Bomber Command Development Unit.
BCFU	Bomber Command Film Unit.
BCIS	Bomber Command Instructors School.
BDU	Bombing Development Unit.
BSTU	Bomber Support Training Unit.
CF	Conversion Flight.
CFS	Central Flying School.
CGS	Central Gunnery School.
C-in-C	Commander in Chief.
CNS	Central Navigation School.
CO	Commanding Officer.
CRD	Controller of Research and Development.
CU	Conversion Unit.
DGRD	Director General for Research and Development.
EAAS	Empire Air Armament School.
EANS	Empire Air Navigation School.
ECDU	Electronic Countermeasures Development Unit.
ECFS	Empire Central Flying School.
ETPS	Empire Test Pilots School.
F/L	Flight Lieutenant.
Flt	Flight.

F/O	Flying Officer.
FPP	Ferry Pilots School.
F/S	Flight Sergeant.
FTR	Failed to Return.
FTU	Ferry Training Unit.
G/C	Group Captain.
Gp	Group.
HCU	Heavy Conversion Unit.
HGCU	Heavy Glider Conversion Unit.
LFS	Lancaster Finishing School.
MAC	Mediterranean Air Command.
MTU	Mosquito Training Unit.
MU	Maintenance Unit.
NTU	Navigation Training Unit.
OADU	Overseas Aircraft Delivery Unit.
OAPU	Overseas Aircraft Preparation Unit.
OTU	Operational Training Unit.
P/O	Pilot Officer.
PTS	Parachute Training School.
RAE	Royal Aircraft Establishment.
SGR	School of General Reconnaissance.
Sgt	Sergeant.
SHAEF	Supreme Headquarters Allied Expeditionary Force.
SIU	Signals Intelligence Unit.
S/L	Squadron Leader.
SOC	Struck off Charge.
SOE	Special Operations Executive.
Sqn	Squadron.
TF	Training Flight.
TFU	Telecommunications Flying Unit.
W/C	Wing Commander.
Wg	Wing.
WIDU	Wireless Intelligence Development Unit.
W/O	Warrant Officer.



SECTION 5



SOURCES OF INFORMATION

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SOURCES OF INFORMATION

- Air War over France. Robert Jackson. Ian Allan.
 Als Deutschlands Dämme Brachen. Helmut Euler. Motor Buch Verlag.
 At First Sight. Alan B Webb.
 Avenging in the shadows. Ron James. Abington Books.
 Avro Lancaster. The definitive record. Harry Holmes.
 Airlife.
 Avro Manchester. Robert Kirby. Midland Counties Publications.
 Battle-Axe Blenheims. Stuart R Scott. Budding Books.
 Battle Under the Moon. Jack Currie. Air Data.
 Beam Bombers Michael Cumming. Sutton Publishing.
 Beware of the Dog at War. John Ward.
 Black Swan. Sid Finn.
 Newton.
 Bomber Command. Max Hastings.
 Pan.
 Bomber Command War Diaries. Martin Middlebrook/Chris Everett. Viking.
 Bomber Group at War. Chaz Bowyer. Book Club
 Associates.
 Bomber Harris. Dudley Saward. Cassel.
 Bomber Harris. Charles Messenger. Arms and Armour Press.
 Bomber Intelligence. W E Jones. Midland Counties Publications.
 Bomber Squadron at War. Andrew Brookes. Ian Allan.
 Bomber Squadrons at War. Geoff D Copeman. Sutton Publishing.
 Bombers over Berlin. Alan W Cooper. Patrick Stephens Ltd.
 Bombing Colours 1937-1973. Michael J F Bowyer. Patrick Stephens Ltd.
 Confounding the Reich. Martin W Bowman/Tom Cushing. Patrick Stephens Ltd.
 De Havilland Mosquito Crash Log. David J Smith. Midland Counties Publications.
 Despite the Elements. 115 Squadron History. Private.
 Diary of RAF Pocklington. M Usherwood. Compaid Graphics.
 Each Tenacious. A G Edgerley. Square One Publications.
 Feuersturm über Hamburg. Hans Brunswig. Motor Buch Verlag.
 Forever Strong. Norman Franks. Random Century.
 From Hull, Hell and Halifax. Chris Blanchett. Midland Counties Publications.
 Gordon's Tour with Shiney 10. J Gordon Shirt. Compaid Graphics.
 Great Raids. Vols 1 and 2. Air Commodore John Searby DSO DFC. Nutshell Press.
 Halifax at War. Brian J Rapier. Ian Allan.
 Hamish. The story of a Pathfinder. Group Captain T G Mahaddie. Ian Allan.
 Heavenly Days. Group Captain James Pelly-Fry DSO. Crecy Books.
 In Brave Company. W R Chorley. P A Chorley.
 Joe. The autobiography of a Trenchard Brat. Wing Commander J Northrop DSO DFC AFC.
 Lancaster at War. Vols 1,2,3. Square One Publications.
 Lancaster. The Story of a Famous Bomber. Mike Garbett/Brian Goulding. Ian Allan.
 Bruce Robertson. Harleyford Publications Ltd.

Lancaster to Berlin. Walter Thompson DFC*. Goodall Publications.
 Low Attack. John de L Wooldridge. Crecy.
 Massacre over the Marne. Oliver Clutton-Brock. Patrick Stephens Ltd.
 Master Airman. Alan Bramson. Airlife.
 Melbourne Ten. Brian J Rapier. Air Museum Publications (York) Ltd.
 Mission Completed. Sir Basil Embry. Four Square Books.
 Mosquito. C Martin Sharp & Michael J F Bowyer. Crecy.
 Night Fighter. C F Rawnsley/Robert Wright. Collins.
 Night Flyer. Squadron Leader Lewis Brandon DSO DFC. Goodall Publications.
 Night Intruder. Jeremy Howard-Williams. Purnell Book Services.
 No Moon Tonight. Don Charlwood. Goodall Publications.
 On The Wings Of The Morning. RAF Bottesford 1941-45. Vincent Holyoak.
 On Wings of War. A history of 166 Squadron. Jim Wright.
 Only Owls And Bloody Fools Fly At Night. Group Captain Tom Sawyer DFC. Goodall
 Publications.
 Pathfinder. AVM D C T Bennett. Goodall Publications.
 Pathfinder Force. Gordon Musgrove. MacDonald and Janes.
 Reap the Whirlwind. Dunmore and Carter. Crecy.
 Royal Air Force Aircraft Serial Numbers. All Volumes. Air-Britain.
 Royal Air Force Bomber Command Losses. Vols 1,2,3,4,5,6. W R Chorley. Midland Counties
 Publications.
 Silksheen. Geoff D Copeman. Midland Counties Publications.
 Snaith Days. K S Ford. Compaidd Graphics.
 Start im Morgengrauen. Werner Girbig. Motor Buch Verlag.
 Stirling Wings. Jonathon Falconer. Alan Sutton Publications.
 Strike Hard. A bomber airfield at war. John B Hilling. Alan Sutton Publishing.
 Sweeping the Skies. David Gunby. Pentland Press.
 The Avro Lancaster. Francis K Mason. Aston Publications.
 The Berlin Raids. Martin Middlebrook. Viking Press.
 The Dambusters Raid. John Sweetman. Arms and Armour Press.
 The Halifax File. Air-Britain.
 The Hampden File. Harry Moyle. Air-Britain.
 The Handley Page Halifax. K A Merrick. Aston Press.
 The Hornets' Nest. History of 100 Squadron RAF 1917-1994. Arthur White. Square One
 Publications.
 The Lancaster File. J J Halley. Air-Britain.
 The Other Battle. Peter Hinchliffe. Airlife.
 The Pedulum and the Scythe. Ken Marshall. Air Research Publications.
 The Starkey Sacrifice. Michael Cumming. Sutton Publishing Ltd.
 The Stirling Bomber. Michael J F Bowyer. Faber.
 The Stirling File. Bryce Gomersall. Air-Britain.
 The Wellington Bomber. Chaz Bowyer. William Kimber.
 The Whitley File. R N Roberts. Air-Britain.
 The Squadrons of the Royal Air Force. James J Halley. Air-Britain.
 They Led the Way. Michael P Wadsworth. Highgate.

To See The Dawn Breaking.

W R

Chorley.

Valiant Wings.

Norman Franks. Crecy.

Wellington. The Geodetic Giant.

Martin Bowman. Airlife.

White Rose Base.

Brian J Rapier. Aero Litho Company (Lincoln) Ltd.

Wings of Night.

Alexander Hamilton. Crecy.

2 Group RAF. A Complete History.

Michael J F Bowyer. Crecy.

101 Squadron. Special Operations.

Richard Alexander.

207 Squadron RAF Langar 1942-43. Barry Goodwin/Raymond Glynn-Owen. Quacks

Books.

408 Squadron History.

The Hangar Bookshelf. Canada.

Most of the figures used in the statistics section of this work, have been drawn from The Bomber Command War Diaries by Martin Middlebrook and Chris Everitt, and I am indebted to Martin Middlebrook for allowing me to use them.

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SECTION 6



STOCK LIST

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