A DAYLIGHT TO THE

DORTMUND – EMS

– AND RETURN

Version 2 - (all footnotes deleted)

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DORTMUND – EMS

- AND RETURN

A Bomber Command Aircrew's

experiences during a

World War II Operation over Europe

– the navigator's account

A tragic example of sacrifice were the losses suffered by Australian crews of R A F Bomber Command, who comprised just two percent of the Australians enlisted in World War II, yet accounted for 20 percent of deaths in combat of all Aussies across the three services. –

Chief of Air Force, Air Marshall A. Houston, - March-2002

Acknowledgements

In writing this chronicle I gratefully acknowledge the following for their assistance given to me in my collection of information either over the years or of more recent times –

Sam Nelson

Les Court

Jim Jay

Ernie Wilson

Ernie Biddescombe

Bert Adams

Pieter Driesen

Ron Putz – Holland

Dawn Dreger - and the Bache family

Mr W Willemsen and Mr H van Daal of Venray, Holland – for their knowledgeable information and personal attention willingly given during the short visit by my wife and myself to Overloon in 1982.

- and to Ray Leach (ex-Squadron Leader RAF – Waddington), whose recent short magazine article "New Year Resolve" provided added incentive for me to finally complete this account.

My special thanks go to my wife Dot, daughter Barbara and to our close friends, the Evans family for proof reading and constructive comments etc – and particularly to Brenda Evans who has spent much time and effort in setting up my information and producing it on her computer in its final form. The form of presentation of the text and the map, diagram and photo reproduction and layout are largely the result of her labours rather than what would have been my somewhat inferior efforts!

Preface

That which follows is a "story within a story". The reason for writing it was basically to chronicle the events involving the Bache crew that took place during a period of less than one hour – between about 1110 hrs and approximately 1200 hrs on the 1st January 1945.

The remainder of what is written "sets the scene" and covers the consequences of what happened during that period.

As the events unfurl, it becomes apparent that from the moment that our aircraft was hit by the bursts of flak which holed the port No 1 fuel tank and then set the port inner engine on fire just after we dropped our bombs on to the target, we ceased to be a part of the RAF Bomber Command force of 102 aircraft and entered a separate world of our own – in which our only aim was to "beat the odds" against us either becoming prisoners of war or being killed in our attempt to get out of Germany. Odds, which initially seemed to be heavily stacked against us.

From that moment until we met up again on the ground in Holland – each of us, though we were members of a closely knit crew and near to each other in the same aircraft, went through our own set of experiences – some of which were shared with other members of the crew, some not.

Our immediate (and in some cases, longer term) responses to these experiences necessarily reflected the individual circumstances as we each saw them at the time.

The net result – much of course being due to Merv's efforts – was that we just made it to Allied territory – but if every one of us was to later write the story of what was going on during those 40 minutes or so – then I feel that each would have described the crew's experience in somewhat different terms.

This, then, is my account of the events as they took place – either as remembered, some still vividly – or from my reading of what I pencilled shortly afterwards and later on various sheets of paper - and on 17 pages of my diary while the experience was still fresh in my mind, or as told to me, based on what was in letters which I had sent home from the UK.

The account also makes use of details that I have been able to find out over the years and especially over the last 12 months from others of the crew and from various sources of World War II information, including the navigator's flying logsheets and plotting chart for that Operation which were produced by Bert Adams (who was at that time also on No. 467 Squadron) – photocopies of which have just recently been received from him.

Bert has been kind enough to allow me to use information from these to supplement that in my diary etc as a record of our journey to the target and of the few minutes afterwards until we were left behind by the main group of Lancasters.

Because my logsheets and plotting chart were lost with our aircraft, Bert's play an important part in ensuring that this section of the story contains facts which allow a much more accurate assessment of events taking place during that period than would otherwise have been possible.

Author – Lyle E Patison
Wollongong, N.S.W.,
Australia.

Contents

Preamble

The Objectives

When it came to transcribing what was handwritten in my diary and on separate sheets of paper to cover the sixteenth of our crew's Bomber Command Operations into a more readable format, I realised that to do so would leave much unsaid in the way of –

- How each of us in our crew came to be on No.467 RAAF Squadron at Waddington.

- Why and how such an Operation was carried out by Bomber Command and the crews who flew on it.

- What other event may well have influenced the eventual success of this particular Operation – and certainly had a profound influence on our crew's survival and eventual safe return to England.

- And finally, I guess, to tell a little of what we Bomber Command aircrew navigators did as preparation for an Operation – and then while in the air, often under much less favourable weather conditions and wind changes than are described here.

So the content was considerably expanded in an attempt to deal with these matters – hopefully in a way that will interest and not confuse the reader – but if they would prefer to limit their reading only to (i) the crew's experiences during the actual Operation and up until our return to the squadron - and (ii) of the immediate consequences of our experiences on 1st January 1945 (both before our return and during the period shortly after our return) then it is recommended that they read the section commencing at –"The Daylight Operation to the Dortmund-Ems Canal"–on page 20 and up to "Summary"–on page 78

OR - if they would rather read only what happened while we were actually in the air, then read from *" Take Off"* – on page 29 to *"Hitting the Ground - Hard"* – on page 57

Accessing additional sources of information to those contained in the main text of this version of the Chronicle of events which befell the Bache crew during and shortly after the Operation on 1-1-45.

My Chronicle of events, as initially produced, contained footnotes on various pages of the main text – most of which indicated where additional information on a specific item or items on that page was to be found. However a few of the footnotes were complete in themselves and thus more lengthy.

When the format of the Chronicle of events was being discussed about the time that the original (footnoted) version had been substantially completed, some members of my family, (for which it is basically intended) - indicated that they would prefer to read a second version – in which all footnotes had been deleted. They felt that, by so doing, there would be absolutely no interruption to the "flow" of the narrative from page to page – even though information in a few of the footnotes may be lost.

Readers of this, the second version, will therefore not have the benefit of footnotes to direct their search for additional information on specific items in the main text.

Should they wish to learn more about an item they will have to conduct their own search in the Appendix, Supplementary Notes, Glossary, Bibliography etc, where such information may be found.

Details of the Crew

The Bache Crew

The members of the crew (rank as at 1st January 1945) were

Flying Officer M G 'Merv' Bache	Pilot (and Captain)
Flying Officer L E 'Jack' Patison	Navigator
Flight Sergeant S H 'Sam' Nelson	Bomb-aimer
Flight Sergeant C J 'Cec' Dreger	Wireless Operator
Flight Sergeant L C 'Les' Court	Mid Upper Gunner
Flight Sergeant J M 'Jim' Jay	Rear Gunner
Sergeant E R 'Ernie' Wilson	Flight Engineer

Each member of our crew – with the exception of the English flight engineer, Ernie – had either enlisted as trainee aircrew, or had transferred from elsewhere in the RAAF, or from another Australian Service.

Merv had been on active service with the Australian Army in North Africa – and Sam had seen active service in the RAAF as a nursing orderly with No.75 Squadron, near Milne Bay in New Guinea – from which they had each requested transfers (involving loss in rank) to trainee aircrew.

Cec, Les, Jim and I had each enlisted in the RAAF as trainee aircrew.

We had each completed our aircrew specialist training course(s) either in Australia, or after being sent to Canada to carry out our main training course(s) there.

Each had then been posted to the UK – and some had received further specialist training in the "English environment" – which was much different from that experienced in either Australia or Canada. At that stage each of us may have finished up in any one of the several RAF Operational Commands.

However, each of we Australians knew for sure that "the die had been cast" when he received his next posting.

Training for Operations

The Crew's early Bomber Command training

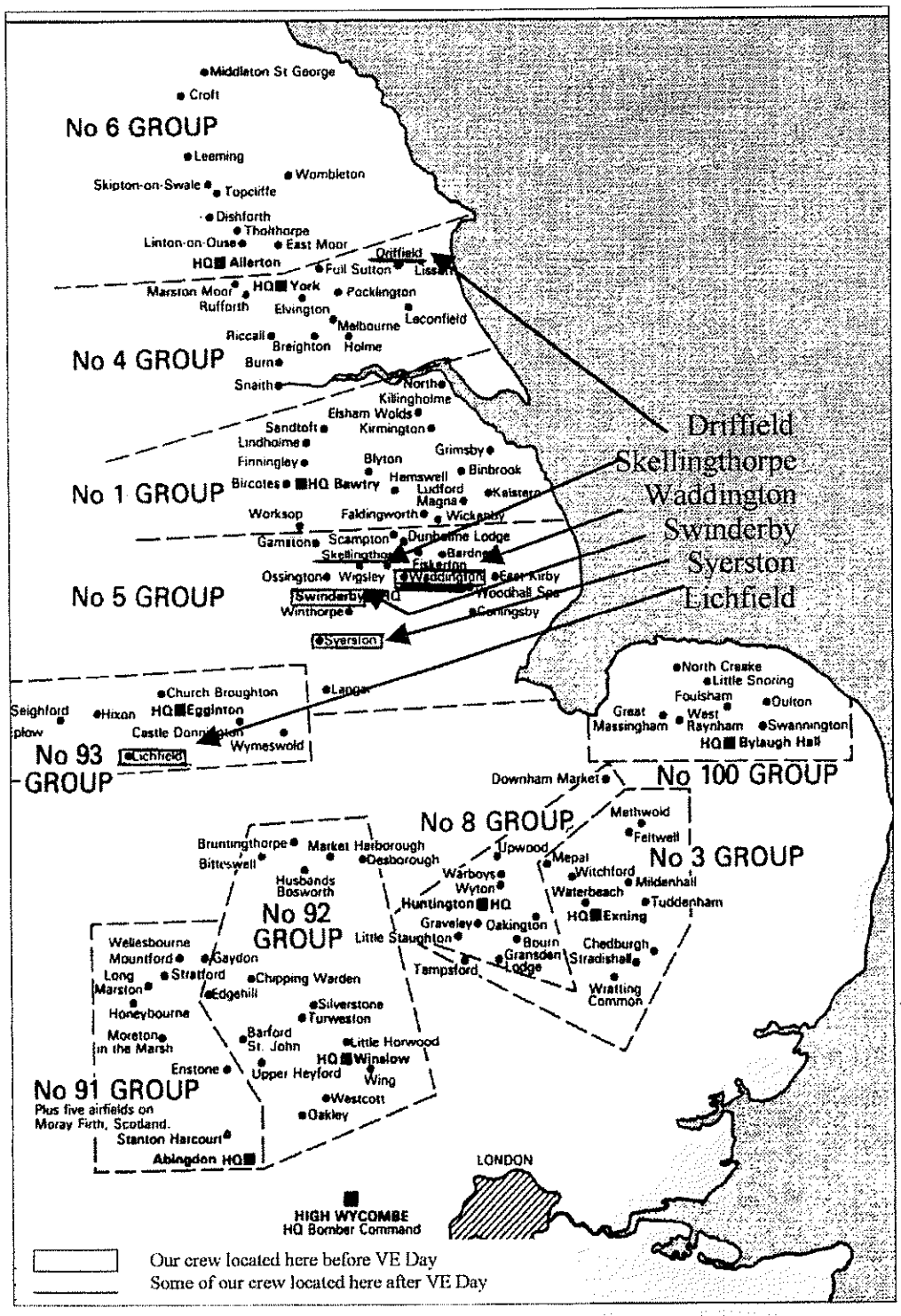
The Australian members of the crew first came together in England shortly after each of us had been posted to an Operational Training Unit (OTU), which, in this case was RAF Bomber Command's No.27 OTU, located 3 miles north east of Lichfield.

A few days after our arrival in June 1944 we were assembled in a hangar and were invited to go through the then standard procedure of we, as individuals, forming ourselves into a crew of six.

We then commenced our crew training, with Merv Bache as pilot, flying in twin engine Wellington bomber aircraft.

From Lichfield we proceeded to the Heavy Bomber Conversion Unit (No 1660 HBCU) at RAF Swinderby, 9 miles south west of Lincoln in Lincolnshire, where we picked up our seventh and final crew member, Ernie, an English RAF trained flight engineer – as a preliminary to us being trained to fly 4 engine Stirling heavy bombers.

RAF Bomber Command Groups and Stations 1944-45



We then converted to the more modern Lancaster 4 engine heavy bombers during a short period at the No 5 Group Lancaster Finishing School at RAF Syerston, about 5 miles south west of Newark upon Trent.

This was a prelude to a posting to the No 467 RAAF Bomber Squadron, which operated with its sister RAAF squadron - No 463 – flying Lancasters from RAF Waddington – a No 5 Group Bomber Command Station, located at No 53 Base which was 5 miles south of Lincoln, in Lincolnshire.

Bomber Command Squadron

No 467 RAAF Squadron – Waddington – our Operational Squadron

Waddington was (and in the year 2002 still is) a permanent RAF Station which had been established during the First World War, in 1917. As such it offered many advantages, particularly in regard to accommodation and Messing facilities etc, over a temporary wartime RAF Operational Station.

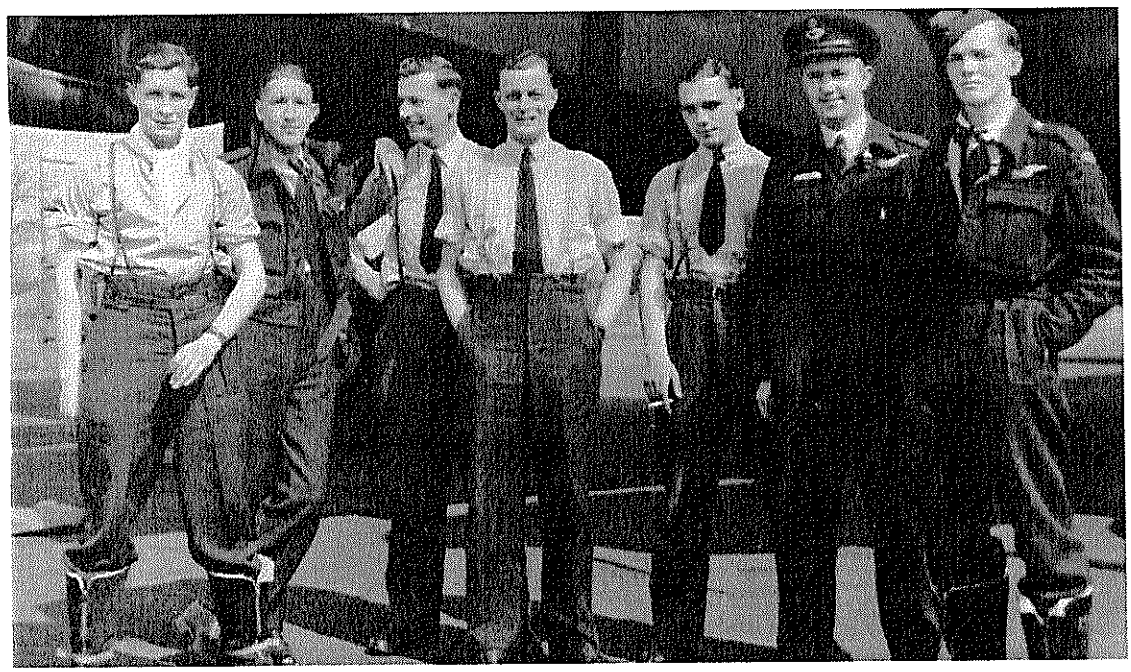
Brief details of our Operational experience up to 1st January 1945 and afterwards

We arrived on No.467 Squadron on 18th October 1944 and just over a week later – after several days squadron flying training – Merv Bache flew, on the night of 28/29 October, on his pilot's obligatory sortie to introduce him to Operational flying, as second pilot (actually "supernumerary pilot") with F/O Frank Douglas and his crew on that crew's thirtieth operation, which was to Bergen in Norway.

Two days later, on 30th October 1944, we were detailed for our first wartime Operation as a crew, our target being the gun batteries at Flushing (Vlissingen) on the Dutch island of Walcheren in the Scheldt estuary in Holland.

In all, the Bache crew – with the exception of Cec, who missed out on the nine Ops which followed that of 1st January 1945 – were to fly on twenty-five Operations before the end of hostilities in Europe.

The Bache Crew while on Ops on No.467 Squadron



L to R - Les Court, Cec Dreger, Sam Nelson, Merv Bache, Ernie Wilson, Jack Patison(me), Jim Jay

The crew had completed the first half of our Operational tour by the end of 1944. However our 16th Operation, on 1st January 1945, was particularly well remembered, with good cause, by me as the crew's navigator ("Jack" Patison as I was known in the RAAF) – and warranted a special 17 page entry in my diary which was written-up a few days later.

Now, after more than 57 years, old memories are being stirred up by the discovery of sources of information which have provided background details not known to the crew at the time. These have been used to supplement the diary entries and other notes made at the time to record the events of those few days.

In conjunction with my diary, this additional information also reveals a little more of the extremely important role played by the Royal Air Force in achieving Allied victory over Germany in World War II.

The episode to be described is also an example of the survival of aircrews who carried out operations over enemy territory in Europe being dependent on many things, including not only their Operational experience, training, skill, perseverance and teamwork, but also – and to a large measure, to what we thought then was our luck on the day – but now I sometimes wonder?

But firstly, as the Dortmund-Ems Canal in Germany was to be our target on 1st January 1945, some background information on this canal and also on the Ems-Weser Canal as Bomber Command targets may be of interest – as would be some details of the German Luftwaffe's Operation Bodenplatte, which was carried out on the morning of 1st January 1945 – the consequences of which probably contributed greatly to the safe return of the Bache crew to Waddington a few days later.

The Target

The Dortmund-Ems and Ems-Weser Canals as Bomber Command targets

The Dortmund-Ems Canal has been, for many years, a vital link in the major water transport system which connects the extensive complex of manufacturing and other heavy industry in the Ruhr region of south-west Germany with the mining, industrial areas and seaports in the north west of that country – and, at a point near to its northern end – via the Ems-Weser (Mittelland) Canal and other canals and rivers, to cities as far away as Berlin and beyond

In the latter part of World War II, when concentrated Allied air attacks on the German railway and road systems had reduced their condition to one of chaos, the movement of heavy materials, such as coal, coke, munitions, heavy machinery and manufactured equipment – (including such items as submarine sections manufactured in the Ruhr for assembly at the north western seaport cities) – which were vital to the Reich's war effort – relied almost exclusively on the country's water transport system being fully available.

For example, in the first eight months of 1944 an average of some 1,400,000 tons of goods per month were being moved by large motorised barges through the Dortmund-Ems Canal.

Sporadic attempts were made by RAF Bomber Command during the first two years of the war to interrupt traffic flow through the Dortmund-Ems Canal at one of the points where it was conveyed by aqueducts over rivers – and was thus above the level of the immediate countryside.

Initially this was achieved by breaching the canal banks or blasting holes in its concrete floor where it was conveyed by two separate branches, each via its own aqueduct, over the River Ems at a location approximately 7 miles north of the city of Munster. If the attack was successful a section of the canal would be drained, probably for a period of some weeks before intensive repair work made it usable again.

After several attacks on the canal at this point by various Bomber Command squadrons, that which was carried out at low level on the night of 12/13 August 1940 by five Hampdens of No 5 Group's No.49 Squadron was of special note.

In one of the aircraft Squadron Leader R Learoyd pressed home his attack with great determination at a height of 200 feet in the face of heavy fire from light anti-aircraft guns which damaged his Hampden in many places and shot away its hydraulic system. His bombs were dropped with great precision, holing one of the aqueducts, thus draining that section of the canal. For this courageous action he was awarded the VC.

Two of the five aircraft were lost.

The next attempt to drain a section of the canal was not made until the night of 15/16 September 1943, when eight Lancasters of No. 617 Squadron (the "Dambusters") of No.5 Group carried out an attack using the newly developed light case (not the later Tallboy type) 12,000lb bombs fitted with time delay fuses (ie each bomb weighing nearly 6 tons) and dropping them on the canal at the point where it is conveyed by two aqueducts over the River Glane, near Ladbergen .

This place is approx. 7 miles north of the location of previous attacks on the canal, including that of 12/13 August 1940.

The operation in September 1943 was thwarted by mist around the target, so the aircraft descended to a height of about 150 feet and some bombs were dropped, unfortunately without breaching the canal.

Following the loss of five of the eight aircraft during this operation, including that of their new squadron commander, Squadron Leader G Holden, it was decided that low-level attempts to breach this canal were not viable.

However, in September 1944, with severe damage having been caused and continuing to be inflicted by the Allied air forces to the German rail and road transport systems, RAF planners realised that, not only had water transport via the Dortmund-Ems Canal now become vital to the German war effort, but that the RAF also now had the means of effectively rendering this canal inoperable for periods of several weeks at a time.

No 5 Group Bomber Command, which had achieved an excellent record for accurate pinpoint bombing, was therefore given the task of permanently disorganising regular traffic flow through the canal.

Despite the high losses suffered during the attack in September of the previous year it was still considered that the best place to disrupt canal traffic would again be at the aqueducts over the River Glane at a spot near Ladbergen – and 13 miles north of the city of Munster.

So, on the night of 23/24 September began the first (on which 14 aircraft were lost) of seven attacks at this spot, during a period of a little over 5 months, by an average of 160 Lancasters from a good proportion of the squadrons in No 5 Group.

Five of these attacks breached the canal by either destroying sections of its banks near to the aqueducts where the canal was above the level of the surrounding land near the River Glane - or by blasting holes in the concrete floor of the aqueducts of its two branches where they passed over the river – which in both cases drained the water from the canal.

This damage resulted in the canal being emptied of water over distances of up to 10 miles, depending on which sets of lock gates could be quickly closed by the Germans in order to contain the loss of water – the lock gates near to the aqueducts over the river sometimes being rendered inoperable during the attacks.

The attack on 1 January 1945, in which the Bache crew participated (the second of our three visits to the Dortmund-Ems Canal at this location), was the first of only two daylight incursions to this target. The second daylight attack, on 24 February 1945, had to be abandoned after arrival at the canal target point because of low cloud cover over the area.

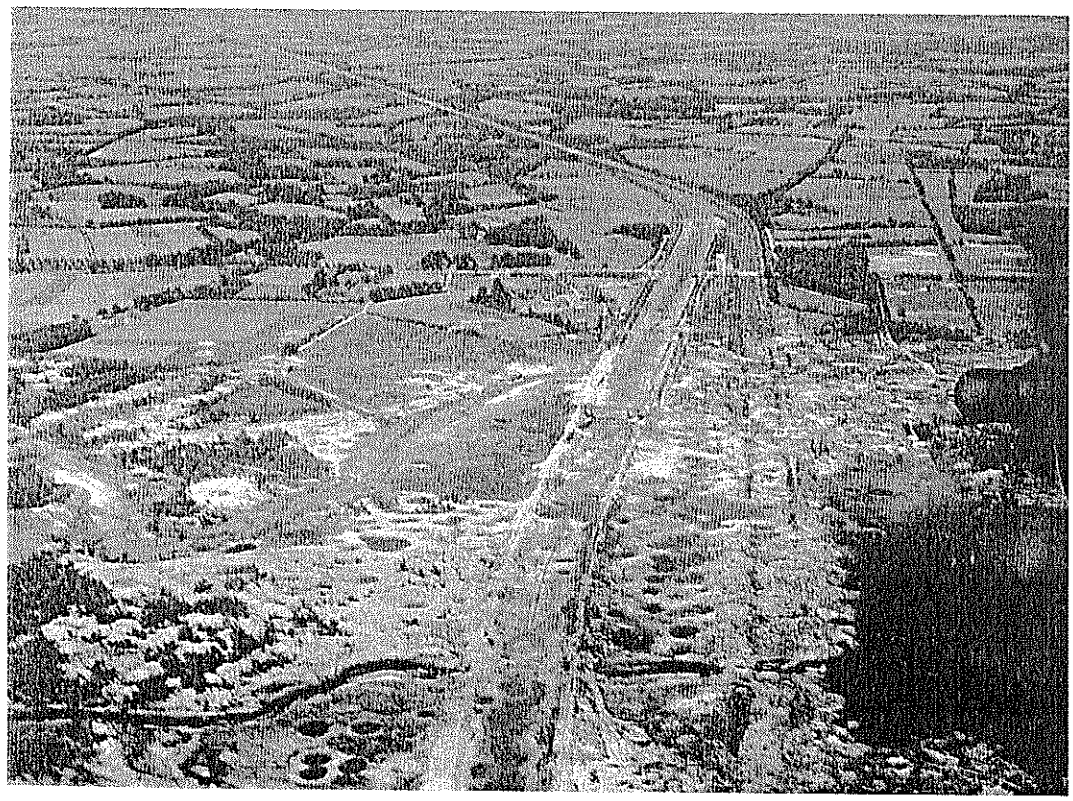
For his actions during the attack on 1 January 1945 F/S G Thompson (wireless operator) of a Lancaster crew of No 5 Group's No.9 Squadron was awarded the VC (posthumously). He had suffered extreme burns during his efforts to save two of the crew members of his aircraft from a fire caused by flak damage to the fuselage of their Lancaster shortly after the bombs were released.

Our skipper, Merv Bache, was awarded an immediate DSO for his part in events which took place during this Operation – and which will be described later.

On each occasion that a section of the canal had been emptied by its banks being breached or the aqueducts over the River Glane being holed by bomb blasts, an army of German workers (ie slave labourers) set-to and made repairs as rapidly as possible. The section was then quickly refilled with water – and, as soon as the first few barges had gone through, "The Canal-Busters" – as we were dubbed in Chaz Bowyer's book "Bomber Group at War"- obligingly emptied it again!

Finally, the attack on the night of 3/4 March 1945 put the canal out of action until after the end of the war in Germany.

Dortmund-Ems Canal where it passes over the River Glane nr Ladbergen



Bomb damage to the main and bypass sections of the canal, which was still empty when I took this photo from a No.466 Squadron Halifax Bomber after the war was over, on 2 June 1945

As a published example of the effectiveness of No 5 Group's attacks on the Dortmund-Ems Canal – on all of which No.467 and 463 Australian Squadrons, based at Waddington, participated – in January 1945 only 25,000 tons of material was transported through the canal – just 1.8% of the former monthly average of 1,380,000 tons over the 8 months of 1944 prior to the commencement of this series of attacks.

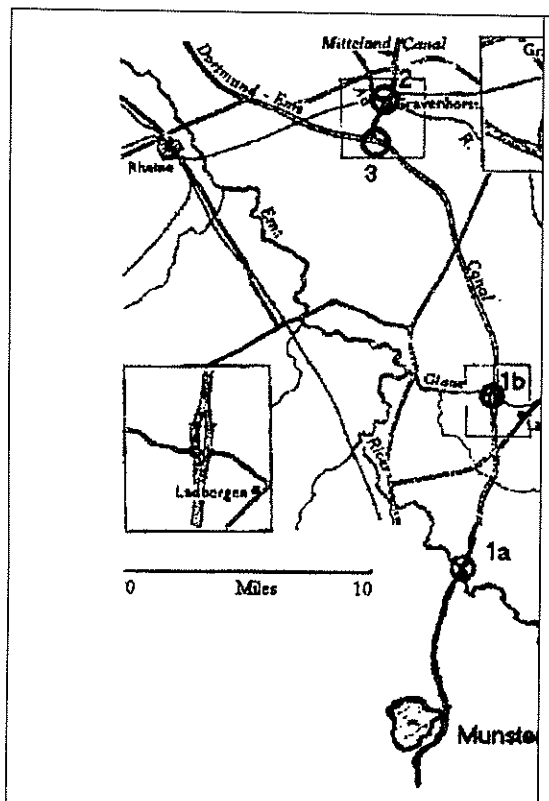
Over the same period as the Dortmund-Ems Canal was being repeatedly breached at the River Glane near Ladbergen by No.5 Group Lancasters, they were also carrying out a similar operation on the Ems-Weser (Mittelland) Canal not far from where it joined the Dortmund-Ems Canal near Gravenhorst – to ensure that the water link which it provided from the northern end of the Dortmund Ems Canal to the eastern parts of Germany would also be broken.

The Ems-Weser Canal was attacked five times between the nights of 6/7 November 1944 and 21/22 February 1945 at a point where it passed via an aqueduct over the River Aa near Gravenhorst – its banks being breached and water drained from a section of the canal on three of the five attempts.

Nos 463 and 467 Squadrons were involved in every attack on this canal except that on the night of 21-22/11/44, because on that night all of the available aircraft from each squadron had been sent on the simultaneous No 5 Group attack on the Dortmund-Ems Canal.

The Bache crew was also involved in two of the five attacks on the Ems-Weser Canal.

The Canal Targets



!. Dortmund-Ems Canal Targets

(**1a**)-Where the Canal passes over the River Ems, 6 miles north of Munster – Attacks carried out prior to 1944.

(**1b**)-Where it passes over the River Glane, near Ladbergen – Attacks carried out between 23rd/24th Sept 1944 and 3rd/4th Feb 1945

2. Ems-Weser (Mitteland) Canal Target

Where the Canal passes over the River Aa near Gravenhorst – Attacks carried out between 6th/7th Nov 1944 and 21st/22nd Feb 1945.

3. Where the Canals join together.

Showing the location of the junction of the Ems-Weser (Mitteland) Canal with the Dortmund-Ems canal - in relation to Munster.

Losses suffered by No 463 and No 467 Squadrons during the Canal attacks and results achieved

The two squadrons sent a total of 267 aircraft to cover the 11 attacks on the canal targets in which they participated , seven on the Dortmund-Ems and four on the Ems-Weser Canal – of which a total of 16 Lancasters were lost – to give an average loss rate of 5.9% – which was over 5 times the average of that for other targets at this stage of the war.

In our squadron, No 467, the average loss rate for the 7 attacks carried out on the Dortmund-Ems Canal where it passed over the River Glane near Ladbergen was also 5.9%

Albert Speer – the German Minister for War Production – stated at his post-war interrogation that these No.5 Group attacks on the canals in 1944-45, made by a force which averaged only 160 aircraft – together with the damage to the rail services, caused greater disruption to the German war production at that stage of the war than from any other type of bombing.

The book "The Strategic Air Offensive against Germany 1939-45" Vol. 3 – referring to the No.5 Group canal raids, states that – "It may be doubted whether the accuracy, regularity and effectiveness of those brilliant operations had ever, in combination, been approached by any air force in the previous history of bombing".

As far as I am aware, the Dortmund-Ems Canal was the only Bomber Command target of this type at which actions by individual members of aircrews which formed part of a relatively small number of aircraft and over relatively few operations (compared to those involved in the major attacks) – were awarded two VC's during World War II. The only other cases known to me were for two of the many "more generalised city targets" which were the object of most of the Bomber Command attacks in Germany over the duration of the war.

I don't think that the Bache crew would have called the canals our favourite type of target, though we visited them more times than any other – (leaving one aeroplane behind on the way out of Germany in the process! – but more of that later).

Being such a small but, to the Germans at that stage of the war, such an important target area – to which, it quickly became obvious to all concerned, we would be returning as soon as the damage was repaired – they left no stone unturned to ensure that our reception would be as unpleasant as possible. Therefore we were greeted on each visit by a continuously increasing concentration of very accurate flak – through which we had no choice but to fly if we were to obtain an aiming point target photo.

Luftwaffe Activity on The Day

The second matter of interest, which certainly affected the survival of the Bache crew on that day was designated by the Luftwaffe "Operation Bodenplatte" - which also took place on the morning of 1st January 1945 – ("Bodenplatte" meaning "Base plate" in English).

Operation Bodenplatte

Operation Bodenplatte was the all-out attack, by as many fighters as the German Luftwaffe could muster from all over Germany, on sixteen Allied airfields in Holland, Belgium and one in northern France.

It had been planned over several months as a means of reaping havoc on the Allied fighter aircraft and any other aircraft which happened to be on the ground at the time, as well as on ground installations of the airfields in these areas. It was to have taken place before the end of 1944 but unsuitable weather and other factors caused it to be postponed to 1st January 1945 – the first sufficiently clear day for some time.

In the event, some 900 fighters from various locations around Germany took part, having been assembled in secret over the few days previously at those airfields in western Germany which were as close to the Dutch, Belgium and northern French borders as possible.

It was planned that simultaneous attacks be carried out during a number of low-flying incursions by large groups of fighters, each of which would reach the intended target airfields at about 9.20am local time (0820 hrs GMT), hoping of course to take their occupants completely by surprise.

They would continue to attack aircraft on the ground, ground installations and any Allied fighters which became airborne – until the attacker's ammunition was expended or fuel ran low, then they were to return to their bases as quickly as possible.

Werner Girbig, in his book "Six Months to Oblivion", published by Schiffer Military History, concluded that the result was a disaster for the Germans.

Girbig's book covers the operation in some detail from the German perspective – as opposed to that in Norman Franks' book "The Battle for the Airfields", published by William Kimber, London – which is written about that day's operation from the Allied point of view.

There were several reasons for the result being assessed as a "disaster", not the least of which was that many of the Luftwaffe's own anti-aircraft batteries in the vicinity of their intended tracks in Germany and Holland had not received information about the raid prior to groups of German fighter aircraft appearing low overhead.

The German anti-aircraft guns shot down almost 100 of their own aircraft on that day!

This section of Girbig's book is a compelling account of "an air operation gone wrong".

Records indicate that the Luftwaffe lost fewer planes than the Allied air forces. Claims vary considerably but some German reports indicate approx. 500 Allied fighters destroyed compared to approx. 300 German, whereas Allied reports indicate a lesser figure for Allied

losses.

Be that as it may, the Allies lost far fewer pilots than the Germans and their lost aircraft were replaced within a few weeks, whereas the Luftwaffe lost approx. 214 pilots, including many of their most experienced ones – for which, at that stage of the war, there was simply no substitute.

Girbig, in summing up, described it as a total defeat from which the Luftwaffe never recovered, and called it "the end of German Air Defence".

From my reading of the above books – and correspondence with Ron Putz of the Dutch Airwar Research Group, it appears that between about 10.30am and 11.20am local time (0930 hrs and 1020 hrs GMT) on 1st January 1945, the 600 or so of the German fighters that survived were arriving back at their bases.

The various bases used by the German fighter wings JG26, JG27 and JG54 for Operation Bodenplatte were located in a cluster to the east, north-east and north of Osnabruck. The aircraft from each of these bases would have, on their homeward routes from their target airfields, flown over the area of our Lancaster's route from the No. 5 Group target on the Dortmund-Ems Canal to where we baled out of the aircraft near Overloon in Holland.

Most, but by no means all of these German fighters would probably have been nearly out of ammunition and by the time they reached this area, also getting low on fuel.

So what may they have all been doing while we were struggling out of Germany between 11.20 hrs and 11.55 hrs GMT? Most likely being refuelled and rearmed.

After what they had just gone through on that morning, the German fighter pilots were probably just not quite ready again at that time to go chasing after a single crippled Lancaster, flying low and slowly across the German countryside in bright sunshine on its way westwards.

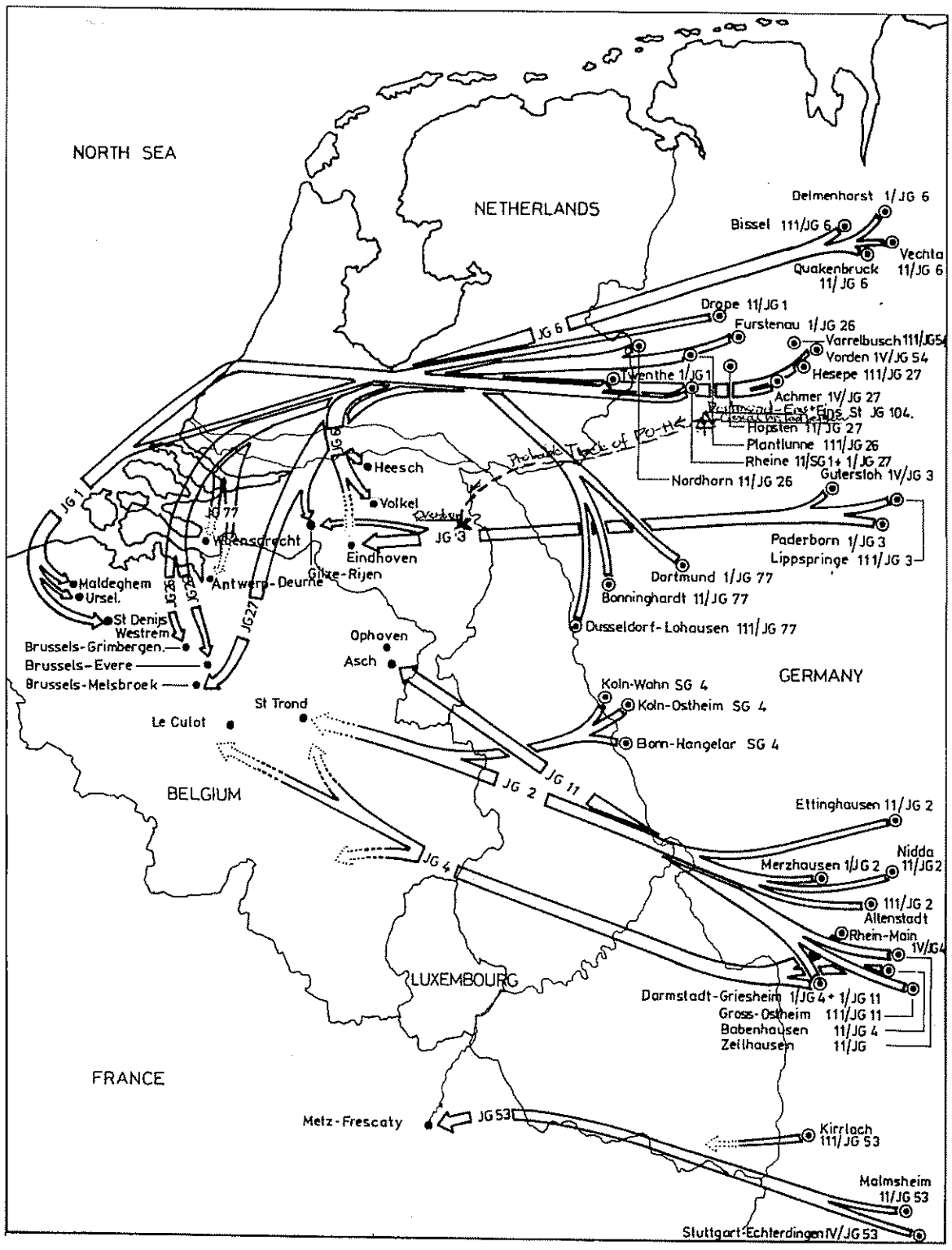
Perhaps this was the major factor in the survival of the Bache crew on that day.

Ron Putz, who has spent the last 5 years or so researching Operation Bodenplatte and has written a book on the subject which is due to be published shortly – commented to me that "Operation Bodenplatte exhausted most of the Luftwaffe fighter force that morning and scarcely any other large-scale fighter operation was carried out around the same time."

He then added "Guess you were lucky" – an observation, which events on the day provided us with little choice but to agree wholeheartedly!

Bert Adams added that his crew saw a few German fighters flying East (below us) ... returning from Operation Bodenplatte ... one of them a new jet-fighter ... they were obviously low on fuel ~~be~~ not wanting to have a go at the gaggle of about 200 Lancasters coming home empty.

Operation Bodenplatte 1st January 1945



Routes taken by German fighter aircraft to their target Airfields. The dashed line shows the route followed by us from our target on the Dortmund-Ems Canal back to Overloon in Holland.

The Daylight Operation to the Dortmund–Ems Canal

--- A Bomber Command navigator's account of his experiences – and some of what happened to others of his crew over the period 1st to 5th January 1945

Preparations for the Operation

As a member of one of the No.467 Squadron crews who were on the "War List" for that New Year Day's Operation, I was woken very early (about 3.30am) and got out of bed feeling refreshed from a good night's sleep – not like those of our crew who had been up until after midnight, celebrating at New Year's Eve parties in the Messes at Waddington, or in Lincoln.

Fortunately for me (this, perhaps with a little "tongue-in-cheek"?) I tended to subscribe to the axiom – "Be Prepared -while on Operations the Navigator shall ensure that he has a clear head at all times" – so I tried to get adequate rest before an Op.- and never found it essential that I take any of my Operational issue of "Wakey Wakeys"

The day started for those of us on the War List having our special Pre-Ops breakfast, (usually two eggs and bacon – REAL eggs and bacon – a rare delicacy in wartime England, unless one lived on a farm) – then I was off in the darkness to the early morning Operational Briefing – complete with a full navigator's equipment bag and my sextant.

Navigators Briefing and preparation of Log Sheets and Charts etc

For me the first part of the briefing procedure was the Navigator's Briefing, which was carried out by our squadron navigation leader, F/L Larry Foley with the assistance of the station met officer – and was held in the main briefing room.

I liked to arrive a little before the set-down time so that I could select the table in the room which by now, should we be on an Op, we considered to be our crew's table – and hung the "F/O Bache" sign above it. This table was fourth from the front on the right hand side of the room, next to the defended areas map – and sitting there we considered gave us a good start to the Operation. (ie the first step in finally returning safely from it).

At the appointed time for the Navigator's Briefing to commence, and with all of the navigators seated at their selected crew tables, Larry commenced our briefing by placing on the large blackboard in front of us the navigational details of the Operation about to be undertaken.

NOTE: From here on in the narrative, all times are given in GMT (shown as 0815 hrs, or simply 0815), except where the time is shown as, for example, 11.20am – this being local time in Germany, Holland, Belgium etc – which was one hour ahead of GMT (Greenwich Mean Time), as used by the RAF.

The following information is similar to the basic details of this, our crew's 16th Operation, which we were given at this briefing – and which I would have entered, using much the same format, at the top of the pre-flight route planning section on the first of my

Navigator's Log Sheets -

Operation date – 1 January 1945 **Target-- Dortmund-Ems Canal (near Ladbergen)**

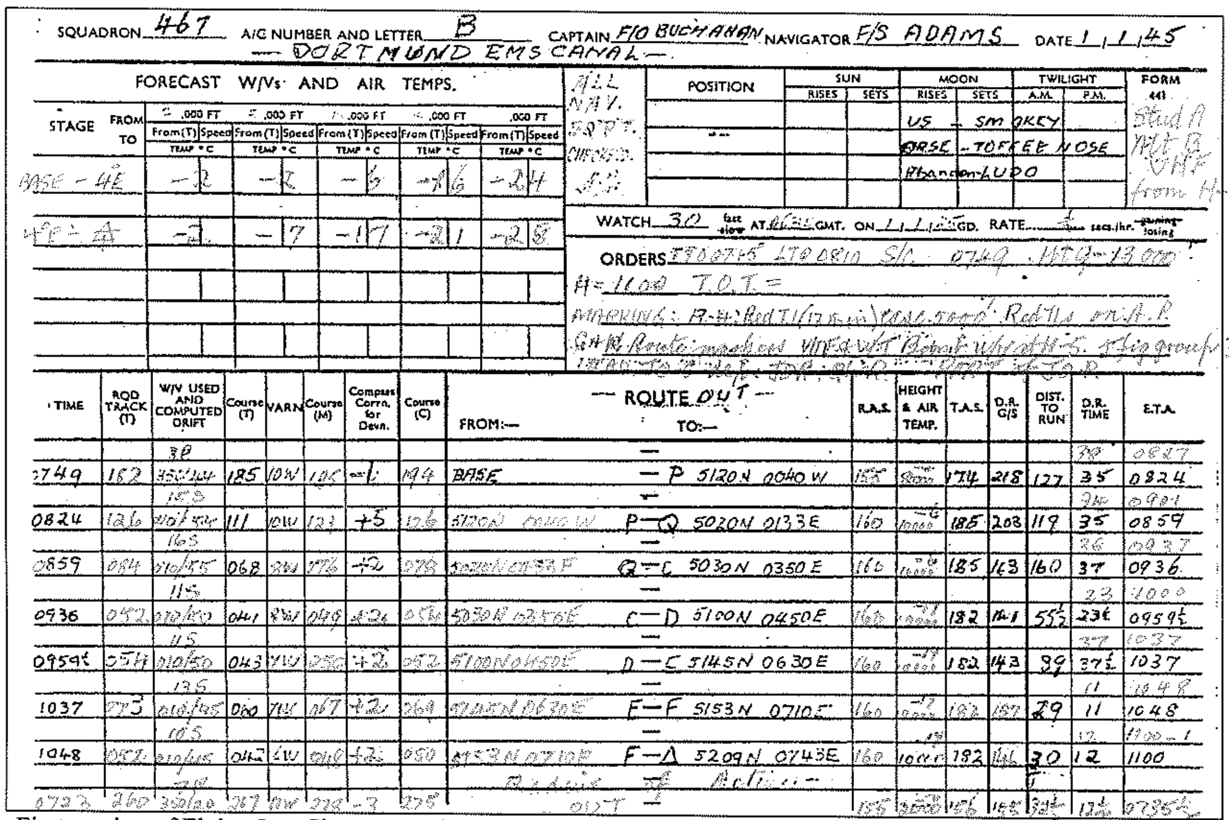
- **Our Aircraft – PA 169, PO-H** **Bomb load – 11 x 1000lb SAP (Semi Armour Piercing)**

Take-off time – 0730hrs **Time on Target – 1100hrs** **Bombing Height – 11,100ft**

At the Navigators Briefing we were also provided with the Flight Plan for the route to and from the target and much other navigational information such as forecast winds for different parts of the route, from which each navigator would calculate the required courses to be flown and associated airspeeds. Then these and other relevant items would have been written into the pre-flight planning section of his Navigator's Flying Log sheets – on to which he was required to enter his navigational flight record during the course of the Operation. (See the copy of Bert Adams' completed Flight Plan for the Dortmund-Ems Operation on 1st January 1945, on next page.)

Also at this briefing, or immediately after the main briefing was completed, we each had to draw the track (route) details on to our Navigational Plotting Chart which covered the area over which we were to fly – as well as planned time of arrival at the various turning points etc. On this chart I also made it a habit (for my own benefit) of indicating such items as heavily defended areas along the way, which we hoped to skirt. After this, we entered our planned tracks on our Gee charts.

Flight Plan for Dortmund-Ems Canal Operation 1 January 1945


SQUADRON 467 A/C NUMBER AND LETTER B CAPTAIN F/O BUCHANAN NAVIGATOR F/S ADAMS DATE 1.1.45

— DORTMUND EMS CANAL —

FORECAST W/Vs AND AIR TEMPS.

STAGE FROM TO	,000 FT	,000 FT	,000 FT	,000 FT	,000 FT
BASE – 4E	-2	-2	-5	-16	-24
4E – A	-1	-7	-17	-21	-28

POSITION	SUN RISES	SUN SETS	MOON RISES	MOON SETS	TWILIGHT A.M.	TWILIGHT P.M.
			US – SM	OKEY		
			ORSE – TOF	FEE	NOSE	
			Abandon – LUDO			

FORM 441

WATCH 30 fast AT GMT. ON 1.1.45 GD. RATE secs./hr. losing

ORDERS

A = 1100 T.O.T. =

TIME	RQD TRACK (T)	W/V USED AND COMPUTED DRIFT	Course (T)	VARN	Course (M)	Compass Corrn. for Devn.	Course (C)	FROM	ROUTE OUT TO	R.A.S.	HEIGHT & AIR TEMP.	T.A.S.	D.R. G/S	DIST. TO RUN	D.R. TIME	E.T.A.
		38													38	0827
0749	162	350/44	185	10W	195	-1	194	BASE	— P 5120N 0040W	155	[illegible]	174	218	127	35	0824
		165													34	0901
0824	126	310/52	111	10W	121	+5	126	5120N 0040W	P—Q 5020N 0133E	160	[illegible]	185	203	119	35	0859
		165													36	0937
0859	084	310/55	068	9W	076	+2	078	5020N 0133E	Q—C 5030N 0350E	160	[illegible]	185	143	160	37	0936
		115													23	1000
0936	052	310/50	041	8W	049	+2	051	5030N 0350E	C—D 5100N 0450E	160	[illegible]	182	141	55½	23½	0959½
		115													37	1037
0959½	054	310/50	043	7W	050	+2	052	5100N 0450E	D—E 5145N 0630E	160	[illegible]	182	143	89	37½	1037
		135													11	1048
1037	073	310/45	060	7W	067	+2	069	5145N 0630E	E—F 5153N 0710E	160	[illegible]	182	157	29	11	1048
		105													12	1100 - 1
1048	052	310/45	042	6W	048	+2	050	5153N 0710E	F—A 5209N 0743E	160	10000	182	146	30	12	1100
								[illegible]	[illegible]							
0723	260	350/20	267	9W	276	-3	273		OUT	155	[illegible]	156	155	32½	12½	0735½

First section of Flying Log Sheets contained the Flight Plan information provided at the Navigators' Briefing – including Take off time, Target, Time on Target, Turning Points, Heights to be flown, Forecast Winds etc The required Tracks, Courses to be flown, Air speeds required, Times at various Turning Points etc were calculated by each Navigator and entered into his Flight Plan – together with other relevant information required for that particular Operation.

Other Specialist Briefings

The pilot, bomb-aimer and wireless operator of the crews involved each commenced their own specialist briefings for the Operation in other rooms at times which ensured that they would all finish shortly before the main crew briefing was due to start – at which time they all joined us in the main briefing room, to which the flight engineer and the two air gunners of each crew also reported for the main briefing.

Main Briefing for the Operation

Normally we, the navigators, would still be entering information on to our charts etc when the time came for the Main Briefing to commence – shortly before which, the squadron duty officer would arrive – as well as the pilots and the other members of our crew, one by one, to join us at each of our crew tables.

When all the crews had settled down at their tables – some members probably wishing on this occasion that they were still in bed after injudicious participation in New Year's Eve activities – each crew captain confirmed to the squadron duty officer that all of his crew was present.

At the designated time for Main Briefing the squadron navigation leader and station met. officer were joined by our squadron commander, Wing Commander Keith Douglas, together with the "A" and "B" flight commanders, bombing leader, wireless section leader, gunnery leader and the intelligence officer – after which the squadron commander announced the basic details of 467 Squadron's job for this particular day – which was, in our aircrew parlance – "A Daylight to the Dortmund-Ems".

The main briefing then proceeded – with each of the briefing officers adding to the information needed by all members of the crews involved (such as the positions and details of the heavily defended areas in the vicinity of our laid down track, method to be used by our No 5 Group Target Markers to mark the target aiming point etc) – and us making notes as required, until all was complete, watches were synchronised and W/C Douglas added his usual "Good Luck" to those participating.

On this occasion our squadron commander and his crew were not participating in the Operation – but they did on two other attacks on this target, on the second of which, on the night of 7/8 February 1945 – they were shot down and he, together with two of his crew, were killed – four, one of whom was supernumerary, were taken prisoner of war – and one succeeded in evading capture.

His replacement squadron commander, Wing Commander Eric Langlois and four of his crew were killed and two taken POW while participating in a subsequent successful attack on the same point on the Dortmund-Ems Canal on the night of 3/4 March 1945.

This was Bomber Command's final attack of the war on a canal target, as the Dortmund-Ems Canal remained unusable until after the surrender of Germany in May.

No 5 Group had thus successfully accomplished another difficult and costly assignment.

Post-Briefing Preparations

On completion of the main briefing the members of the various crews, with the exception of their navigators, departed to put on their flying gear. We remained to finish adding briefing information to our logs and charts then left individually to join our crews at our lockers in the flying equipment room (known as the Crew Room) where each of us donned our flying boots, put on our parachute harness over our battledress jacket (plus thick white "aircrew jumper" in winter). We then picked up our flying helmet/oxygen mask and flying gloves and each received "flying rations" (a few sweets etc) and an "Escape Pack" which was enclosed in a flat plastic pack, small enough to fit in a pocket of the jacket – as was our packet of "Escape Photos".

Other "odds and ends" which we carried or wore during an Operational flight included important things such as a lucky mascot – or a lucky scarf or girl friend's (or maybe wife's) silk stocking, worn around one's neck.

My lucky mascots were "Eustace", a small toy koala bear which my sister, Yvonne, had sent to me – "to see that you come home safely" – a small badge in the form of a kangaroo, which I wore under the collar of my battledress – and for good measure, a white silk scarf which my mother had given me before I went overseas- and I will never forget her saying to me, in all seriousness, "Son, keep this around your neck while you are flying and don't forget to keep the aeroplane's windows shut – I don't want you catching a cold"!!

Eustace, "my official lucky mascot", was about 6" by 4" (15mm by 10mm) in size and when I was on an Operation I would take him out to the aircraft with all the equipment in my navigator's bag and then put him in a secure place near to the navigator's chart table before we took off. However on this occasion he must have known that if he went with us he would not be coming back with me! (He was too large to fit inside my battledress jacket under my parachute harness and chest type parachute pack). When I reached my position in the aircraft and looked for him in my nav. bag he was not there!

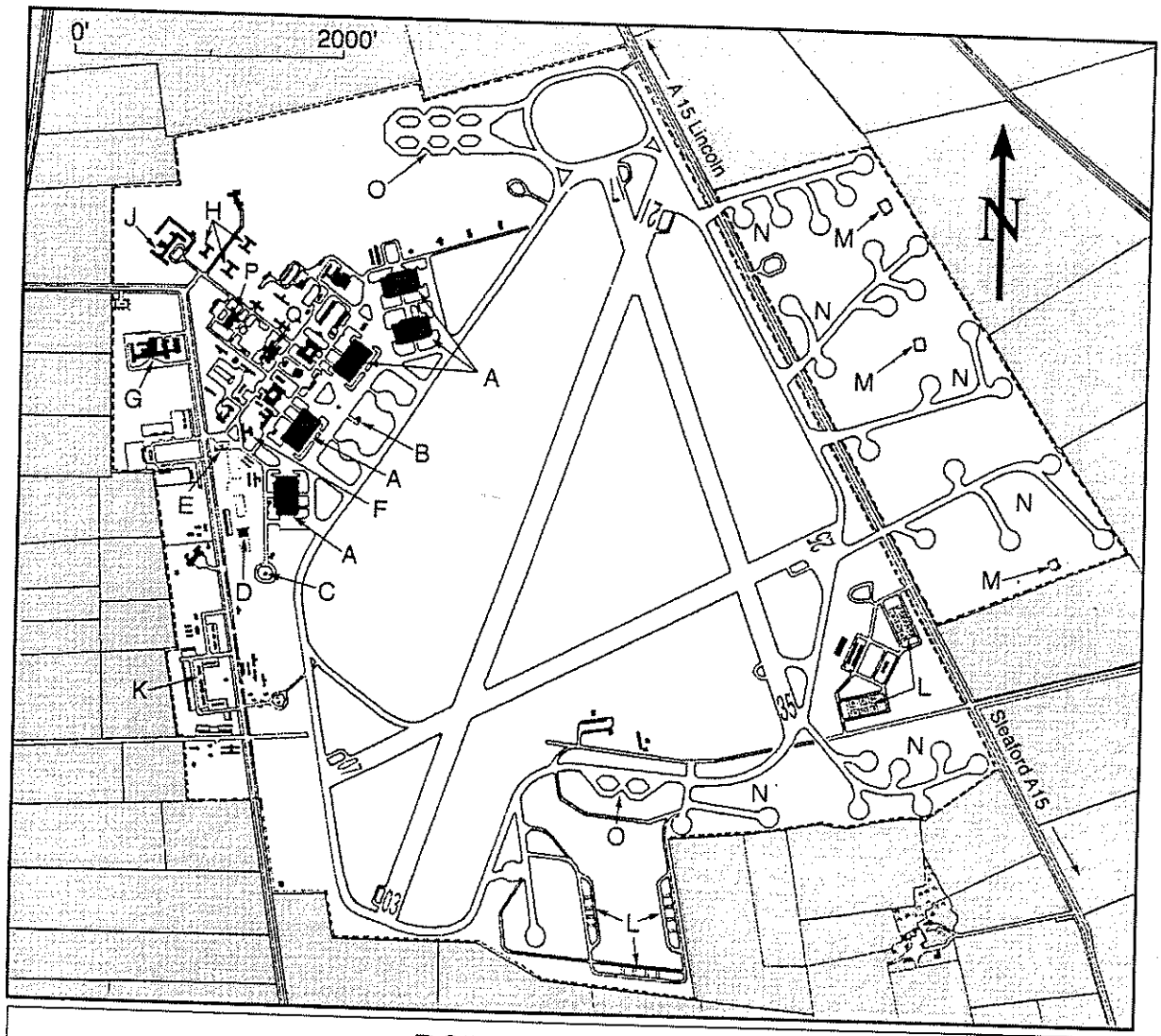
We were told that before leaving the Crew Room we must empty our pockets of any personal items which, if we were captured by the enemy, may be of assistance to them – but I must confess that on one or two occasions I did take my camera (loaded with unexposed film) on a daylight Operation – though I found it most difficult to find time to take any interesting "shots".

Finally, each of us went to the parachute room counter and picked up our parachute pack – "seat type" for the pilot and rear gunner and "chest type" for the rest of the crew – the chest type parachute not being worn in the aircraft except in case of emergency.

While there we also picked up our yellow "Mae West" flotation vest – which meant that we navigators were well loaded up for our trip out to the kite – usually getting another member of the crew to help us carry some of the items.

Having left the Crew Room, all seven members of each crew stayed together as a composite unit – next being picked up and transported by covered van together with perhaps one other crew to our separate Lancasters, which were located in the No.467 Squadron part of the aircraft dispersal areas, on the far sides of the perimeter of the airfield (See Plan of R A F Waddington)

Plan of R.A.F. Waddington - 1944



ROYAL AIR FORCE
WADDINGTON
1944
MAP KEY

A - 12 Bay Type C Hangar 300' x 150'
B - 'Villa' type Control Tower
C - Bulk Fuel Store
D - Half of 1916 Pattern 170' x 85' GS Shed
E - Guardroom
F - Station Headquarters
G - Officers' Mess
H - Airmans' Accomodation
J - SNCO's Mess
K - Married Quarters
L - Bomb Stores
M - Subsidiary bomb store
N - Main dispersals
O - Spectacle type dispersal
P - Raven Club
Q - Airmen's Mess

Why Lancaster PA 169, PO-H?

Now, our crew had done four of our previous fifteen Operations in Lancaster JA 909, PO-E – which we were beginning to regard as "our" aircraft, but it had done over 90 Operations by the end of 1944 (a great number for an operational Lancaster!) and despite the utmost loving care that its ground-crew could lavish on it – had become so slow that we had been finding great difficulty in getting to bombing height and to the target on time. It was therefore "pensioned off" shortly after our Op in it on the night of 18th December 1944 to Gdynia in Poland, where we attacked German battleships in the harbour. As its replacement had not yet arrived on the squadron we were doing our Operational sorties in various other 467 Squadron aircraft for the time being.

For this Operation on 1st January 1945 it was to be Lancaster PA 169, PO-H, which had been on the Squadron for only a little over 3 months and was in "tip top" condition. It was the aircraft in which our "A" flight commander Squadron Leader, Eddie Broad and his crew had flown for the last eight of their most recent Operations – and had now chosen it as "their own". They had apparently gone to some trouble to get it "just right" for their use, but Eddie had said to Merv that we could borrow it for an Op. on which they were not involved – provided we guaranteed not to scratch or bend it.

This was the fourth time that we were to make use of it, but little did he know just what we would do to "his pride and joy" on this occasion – not to forget the anguish caused to the PO-H ground crew who looked after it, and whose aircraft it "really was"!!

I guess that we should have considered ourselves very lucky that we had such a "willing horse" in view of the trauma that it would have to face and the demands placed on it before the morning was out. Had it been the old "E-Easy" in which we were flying when it was subjected to the events which occurred in the target area, let alone those that followed a little later, then I probably would not have been here writing this!

Pre-Operational Aircraft Checks

Having arrived at our aircraft's dispersal area and chatted to the ground-staff of PO-H about its readiness, Merv did an external check of the aircraft by the light of his torch – making sure, in particular, that the airspeed pitot-head cover had been removed ready for take-off.

When he had completed this inspection, we all climbed aboard via the short portable access ladder at the main entrance doorway near the rear of the fuselage, with our flying equipment – my navigator's bag containing the Flying Logsheets with associated Plotting chart, maps and Gee charts for this Operation. Also in the bag was my Dalton navigation course and wind speed plotting "computer" and my other instruments. Then there were the navigator's "tools of trade" - made up of pencils, pencil sharpeners, erasers, straight edge, protractor, etc. and in its separate case, my Sextant, with its associated Air Navigation Tables.

The Infamous Main Spar

Each of us went to his own flying station in the aircraft – those of us who were positioned over, or ahead of the wings having to scramble over the main spar, which presented quite an obstacle to a crew member such as the bomb-aimer, who was dressed in full flying gear – and also the navigator carrying his navigational instruments to his position, a padded bench or swivel-type seat in front of the navigator's table which was located along the port side of the fuselage just behind the pilot's seat.

We each then switched on our small compartment lights – where fitted, then set up our gear and did pre-flight checks of the different aircraft instruments and equipment for which we were responsible

Once inside, the crew grope their way along the dark narrow fuselage. Here, the wireless operator negotiates the main spar, with which many a shin lost an_argument.

Because it was still dark I made sure that I pulled the "blackout curtain" across the opening between navigator's compartment and the pilot's cockpit – so that the pilot's and the flight engineer's night vision would not be affected by the light from the small Anglepoise lamp which was located above my navigator's chart table.

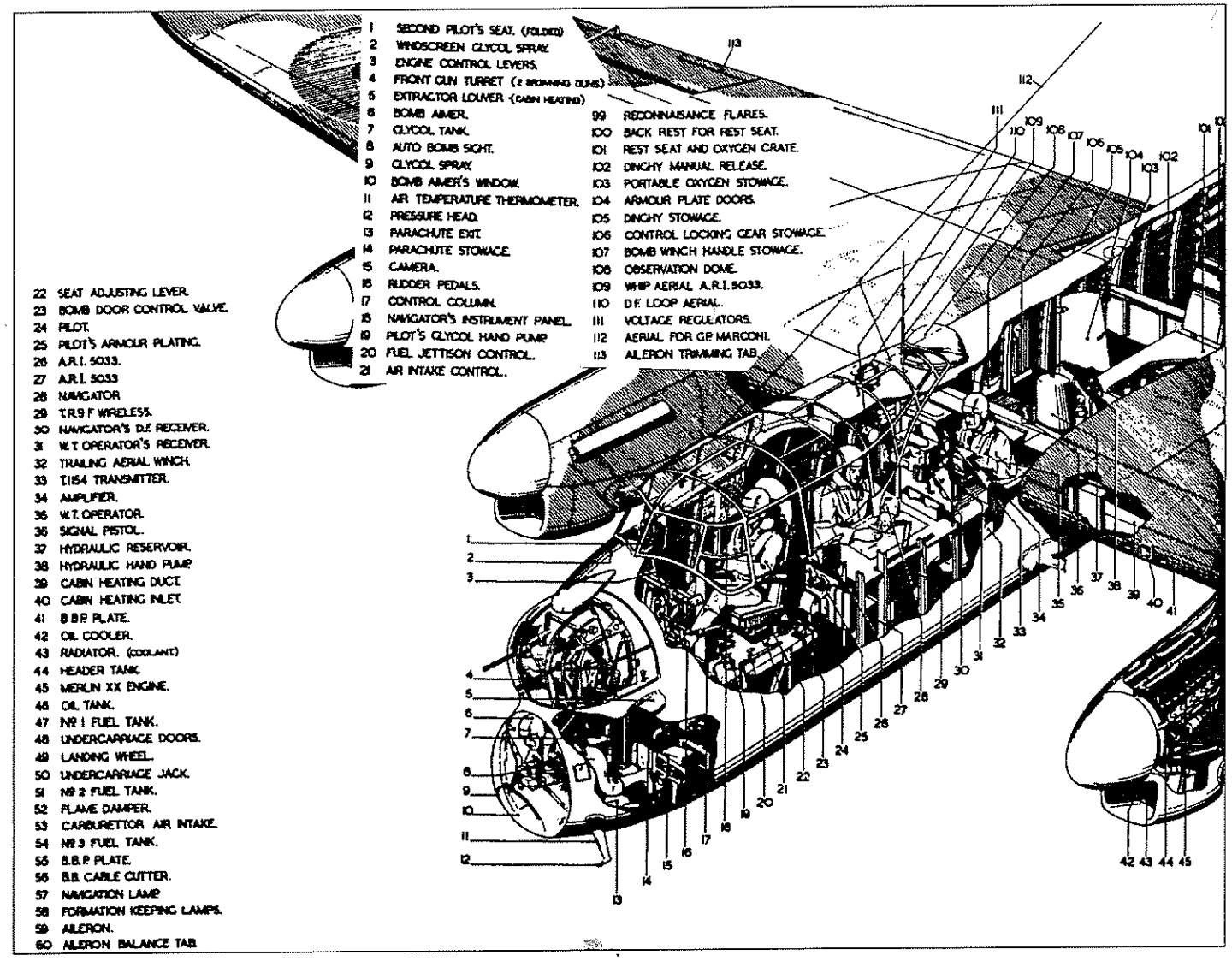
Then I unloaded my navigator's bag of my plotting chart which I pinned down firmly onto the table, then placed all my other paraphernalia (except, on this occasion, for Eustace) in their allocated places, some being stowed where, hopefully, they would not become dislodged - even if I did - should the aircraft, as regularly happened, be subject to a violent change in flying attitude.

Not having Eustace with us on this Operation gave me a most uneasy feeling, but it was too late to do anything about it now – so I kept the absence of this most important member of our crew to myself. No point in unsettling the others by mentioning that we would be leaving on an Operational sortie without him for the first time – so it was on with my other pre take-off jobs, trying not to think of this "bad omen".

At the appropriate time, Merv, with the assistance of flight engineer, Ernie, who was at that time standing in his position in the cockpit to the right of the pilot's seat – and also that of our aircraft's ground-crew, who were located under and near PO-H – ran up the four engines, starting them one after another, then warmed them up. When all was ready, Merv then carried out the list of mandatory "start-up" tests on each engine, including a magneto "rev drop" test. (An essential test which, if the "engine speed drop" was too great with only one of its two magnetos selected for operation – then the aircraft was declared unserviceable).

The "Up Front" Section of a Lancaster Bomber

Showing Crew Positions for Bomb-Aimer, Pilot, Navigator and Wireless Operator. NOTE: The Flight Engineer is not shown (perhaps he was down "back-end" at the Elsan Toilet at the time?) He was normally located next to the pilot and had a "Drop-down" seat (hinged to the starboard side of the fuselage) – which was provided for his use when required, sitting facing forward. The Flight Engineer's instrument panel is shown just to the left of the pilot's head in the sketch.



Waiting to go

When Merv was satisfied that all was OK the engines were shut down and we left the aircraft and stood around on the ground next to it (and most to have a last smoke before takeoff – as cigarette smoking was not condoned in an operational aircraft fitted with fuel tanks containing up to 2,154 gallons of 100 octane petrol!)

We waited - on some Operations visited briefly by the Squadron Commander "to see that all was OK with the crew" - until it was almost time for the Station's aircraft to taxi to the end of the runway, ready for takeoff.

During this period we sometimes received a message by courier that the Operation had been scrubbed (ie cancelled) for any of a number of reasons. However on this occasion, as no such message had been received we commenced to reboard our aircraft – at which point many crews performed what they considered to be their most important good luck procedure for departure on an Operation – each member to have a "pee" against the tail wheel of the Lancaster!

The Operation gets underway

After everyone had acknowledged that they were in place and ready to go, the engines were restarted – by which time there was an increasing volume of sound from other Merlin engines starting and running up on Lancs around the dispersal area.

Shortly afterwards the lead aircraft indicated that it was moving off – and we commenced to taxi slowly out of our dispersal bay to join the long stream of dimly visible Lancasters moving around the perimeter track in the near darkness of an English early winter morning, towards the take-off position at the designated end of the selected runway.

The Flight to the Target

Take-off

As the lead aircraft took off the next in line moved into its place and so on, until it was our turn to take our position on the runway near to the airfield aircraft dispatcher's van.

On Operational take-offs in daylight I would normally stand up at this point and look out through the side of the cockpit canopy for a few moments – to see and acknowledge the usual group of well-wishers (including the Squadron or Station Commander and various air crew and ground staff officers, airmen of many trades, WAAF's from many parts of the station etc) who came out to wave us off

However on this occasion the dawn was just breaking as we started to roll forward– (the sun would not rise at ground level at this time of the year until 0815 hrs) – and as many were probably still in bed suffering from the effects of last evening's New Year's Eve celebrations, I did not bother!

A No.467 Squadron Lancaster about to take off on an Operation

Station Ground Staff farewell another crew "about to go to War"

Airborne and on our way

Then came the green light from the dispatcher's van – Merv immediately revved the engines, released the brakes and we moved off down the runway, at first slowly because of our heavy bombload, then increasingly faster until the tail lifted. I kept reading my airspeed indicator and calling our airspeed to Merv via our intercom system– and at about 100 miles per hour he pulled back gently on the control column and we felt the aircraft leave the ground – to begin a slow climb away from near the far end of the runway – and I entered "0734" in

my log as our takeoff time.

This was one of the most hazardous periods during normal flight, as, should an engine falter with the aircraft carrying combined maximum bomb and fuel load and flying at such a low airspeed, it would be very difficult for Merv to reduce our angle of climb by a sufficient amount quickly enough to regain sufficient airspeed to prevent it from stalling and plunging into the ground – as, unfortunately, did happen from time to time to some luckless crew.

Once at a safe height of about 500 feet he was able to raise the flaps and we entered our normal climbing mode – which we continued, flying in the direction of the town of Reading which was located about 35 miles west of the centre of London.

At our first turning point (and "marshalling point"), which was about 15 miles south-east of Reading, we were at 11,000 feet – the approximate height to be maintained on the way to the target. We then circled the marshalling point with other Lancs from Waddington which had taken off a little earlier and arrived previously, waiting for the remainder of the aircraft from No 463 and 467 Squadrons to take off, gain height and join us

At the appointed time we all set course on the next leg of our planned track – and between the first turning point and the South Coast of England, as the light became adequate, we gradually slid into a position in the developing "gaggle" formation behind the Waddington Base Leader, guided by his red Verey flares – Merv making sure that we finished up in a good position just below and behind the leading aircraft.

Note The following bracketed entry and similar bracketed entries are from Ernie Biddescombe's No.467 Squadron Navigator's Logsheet for the Operation. Each one is prefaced by his initials – "E B"

(E B "0838 Midway between London and Brighton, snugly in formation.")

Across the English Channel

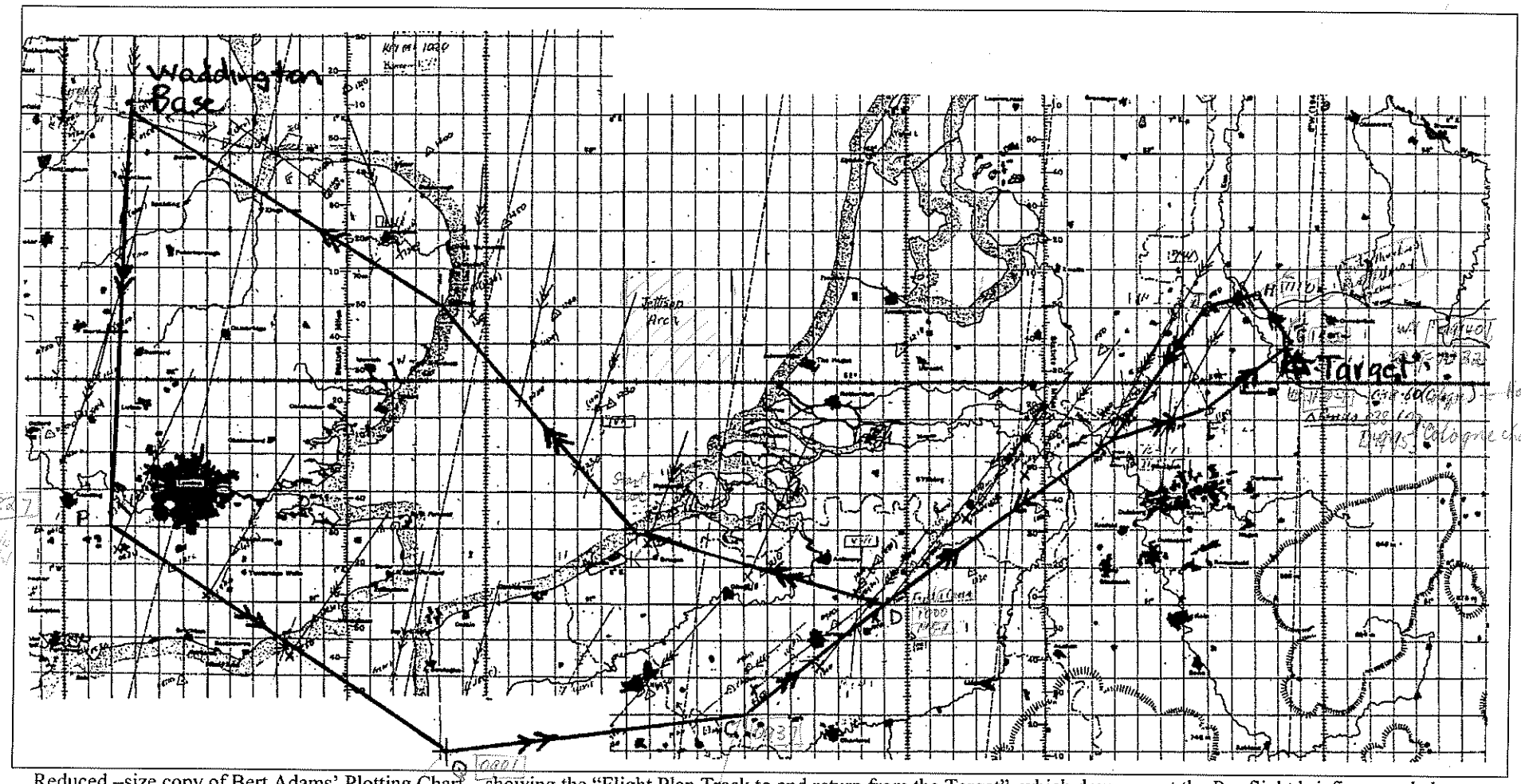
It was next across the English Channel and into France, where the visibility was excellent – the French countryside stretching beneath us like a topographical map.

Gee was bang-on and the winds which I was calculating were pretty well as Met. had predicted. Their predicted and actual direction on this morning was from the north-east, which was quite unusual as they were normally from a more westerly direction.

This unusual direction proved to be very important in the light of subsequent events!

The plan (as provided to us at the pre-operational briefing) was to fly to a "marshalling point" near the city of Reading, then to the second turning point on the French coast, across northern France and into the southern part of Belgium to the third turning point (shown as turning point "C" on Bert's flight plan and chart). From here we would proceed in a north-easterly direction, passing about 7 miles to the east of Brussels and on until we crossed the south-east tip of Holland and continued over the German border until we reached our turning point (shown as "E") at the River Rhine. We were then just to the north-west of the heavily defended area which encompassed the German industrialised region of the Ruhr Valley. We would skirt just to the north of these defences on the way to the final turning point (shown as "F" on the plotting chart) – from which we would run the last 30 miles into the target.

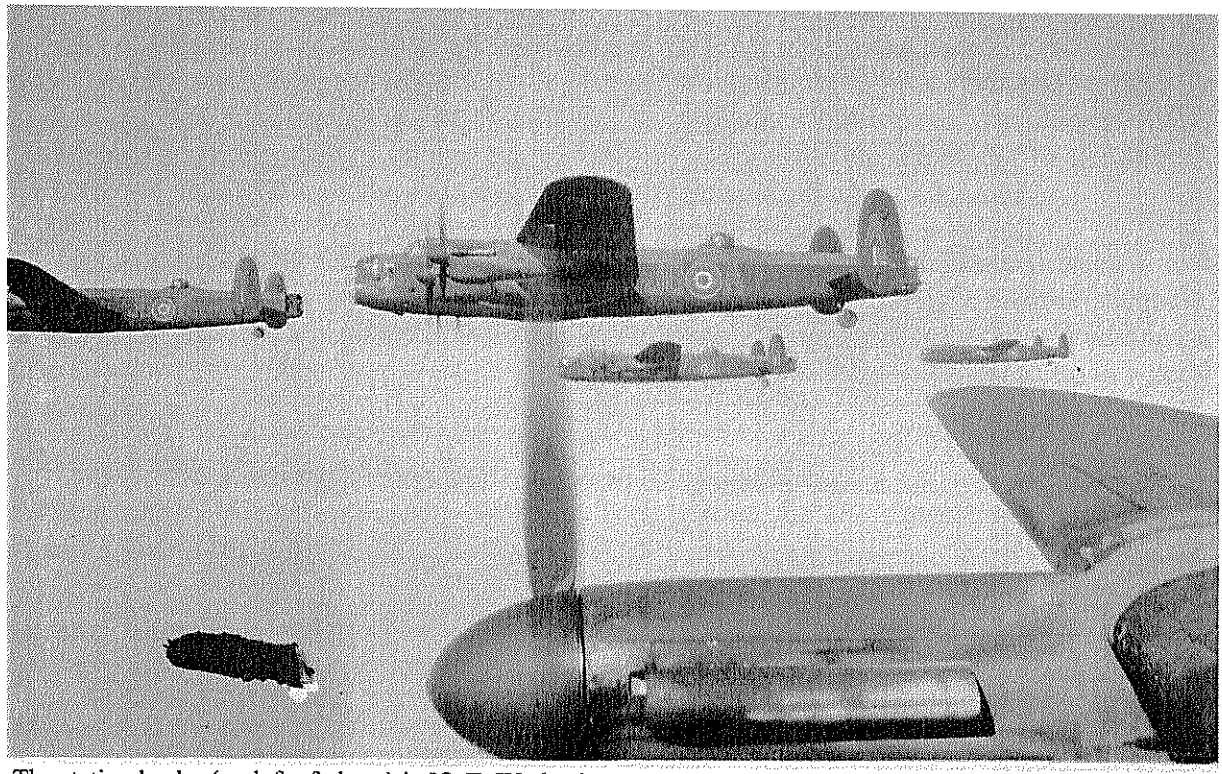
Section of Plotting Chart used by Bert Adams for the Dortmund-Ems Canal Operation on 1 January 1945



Reduced –size copy of Bert Adams' Plotting Chart – showing the "Flight Plan Track to and return from the Target", which drawn up at the Pre-flight briefing – and also Bert's computations for winds etc, using Gee fixes and Dead Reckoning navigation, used to ascertain the aircraft ground position at regular intervals during the sortie. The actual track followed would be indicated by a line drawn through each of the Gee fixes (x) as far as the River Rhine - and return from just before there.

While on our way across France the Waddington gaggle joined up with the remainder of the No 5 Group formation, (being well toward the rear of the Group formation) – until the whole mass of 102 Lancasters formed what was known as the main bomber stream (which was thus made up of a series of closely spaced gaggles).

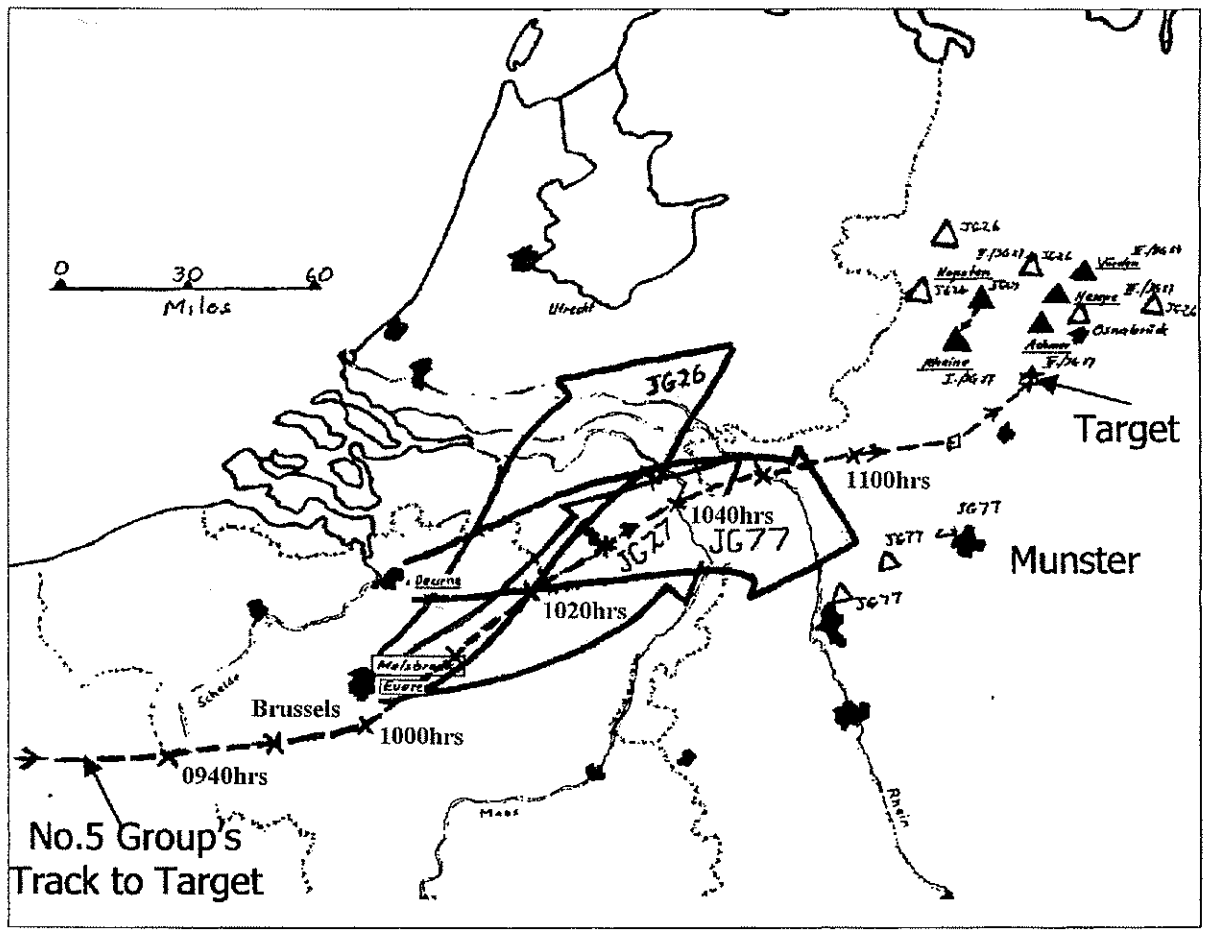
Gaggle Formation of Waddington Aircraft



The station leader (on left of photo) is JO-T. We lead No.463 Squadron in PO-E, while PO-S (directly below JO-A in photo) leads the No.467 Squadron aircraft. (JO-A has "pulled up" beside us at the time that this photo was taken by me from the cockpit of PO-E)
The target for this operation was a railway bridge over the River Weser near Bremen – at which we were hit several times by flak. The formation was then attacked by a number of ME 262 jet fighters over Germany on the way back to base. During this engagement, our aircraft came very close to being shot down.

As the target was on the Dortmund-Ems Canal at a point near the town of Ladbergen – just north of the city of Munster, this meant that we would have to penetrate further into Germany than we had ever been before on a daylight Operation. Therefore we were now joined by an escort consisting of a large number – said at the time to be 15 squadrons – of Allied Spitfire and Mustang fighters, probably from bases in northern France, which were to provide protection against the expected enemy fighter attacks all the way to the target and back at least as far as the German border. Our escorting fighters were a very welcome sight!

No.5 Group's Route through Bodenplatte area to the Target



Smoke from damage caused by Operation Bodenplatte

We were heading into Belgium when we first noticed columns of smoke rising from the ground some way ahead of us, seemingly from around the Brussels area, but we were at a loss to identify the reason for them.

Little did we know that they were an indication of the damage which had just been inflicted by German fighter attacks on the three Brussels airfields of Grimbergen and to a greater extent at Melsbroek – and much more so at Evere where thick pillars of black smoke were reported by German pilots as rising into the clear sky over the airfield from fires burning in the tightly packed rows of fighters and a large number of 4 engine bomber aircraft which were parked on the ground. It was also reported that refuelling tankers were exploding, hangars blazing and aircraft melted into glowing heaps of scrap metal!

Though we did not realise it, we were headed towards what had been, less than half an hour ago, one of the most devastating attacks of the war carried out by German fighters on the Allied airfields in Holland and Belgium, as part of Operation Bodenplatte

V2 Rocket Trails

The next unusual event (for us at least) was to see the white trails of two V2 rockets,

continuing upwards to a great height and clearly etched against the blue sky - way to the north of us.

A pretty picture for us, but carriers of death and suffering to some poor folks in London in just a few minutes time.

Flying through the Bodenplatte Area

The No.5 Group formation next reached the area in which 55 German fighters of JG4 who were engaged in Operation Bodenplatte had been flying about "looking for targets of opportunity". They had failed to locate their target, the Allied airfield at Le Culot, some 20 miles to the east of Brussels, and had then broken formation and ranged over a large part of south-eastern and eastern Belgium, shooting up various ground targets (and about 20 of JG4-IV which finished up at Melsbroek and joined in the attack there) before those which had not been shot down returned to their bases.

Fortunately for us they had left the area before we arrived. However we were next to make a much closer approach to where about 230 enemy fighters, also engaged in Operation Bodenplatte, had been attacking the Allied airfields in the vicinity of Brussels.

According to a Gee fix shown on Bert Adams' navigator's plotting chart, at 1000hrs GMT we were just 8 miles to the south of the centre of Brussels and, after passing about 7 miles east of the centre of the city, we would have been 6 miles due east of the Allied airfield at Evere at 1005hrs GMT – just an hour after 10.05am (local time), when about 90 German fighters of JG26-II and JG26-III had completed their attacks on it.

Two minutes later, at 1007 hrs GMT, we would have been a similar distance east of the aerodrome of Melsbroek, about 67 minutes after 10.00am (local time), when the last of some 95 fighters of JG27 and JG54-IV had completed their strafing attacks there – the second of those on the three aerodromes near Brussels.

The third airfield in this area which had been attacked (all three attacks commencing at about 9.20am) was Grimbergen, which received the attention of some 40 fighters of JG26-I and JG54-III. However they found it to be almost empty of Allied aircraft when they arrived.

Although JG77's target airfield at Deurne (near Antwerp) was not, itself, close to the No5.Group track to our target, their route back to their home bases intersected our track through Holland at an acute angle over a distance of some 50 miles

As soon as the German fighters of JG26, JG27, JG54, JG77 (and those of JG4-IV which had joined in the attack on Melsbroek) had completed their attacks, they all headed for home in more or less the same north-easterly direction as we took a little later (according to Bert's six gee fixes plotted between 1010 and 1100 hrs GMT).

So it was about the hour's time difference between Greenwich Mean Time which we were using, and local (Continental) time which they were using, which saved the likely loss of a number of our No.5 Group's Lancasters to those of this portion (about 300) of the German fighters involved in Operation Bodenplatte that had some of their ammunition left.

As shown on the map "No.5 Group's Route through the Bodenplatte area to the Target" (on page 33) - interception could have been possible while we were flying in southern Belgium, and much more so just to the north east of Brussels, then on across the northern

border of Belgium and across Holland as far as the German border and beyond. Then, if the German fighters had chosen to keep harassing us – from there into Germany and on to our target on the Dortmund-Ems Canal. If they had done so, then there were a number of airfields in that part of Germany where they could have landed afterwards and refuelled for the remainder of the journey back to their bases. So we were lucky that day.

Into Germany

After crossing the Dutch-German border at about 1045hrs GMT, we crossed the German front line defences in an area where they caused us no problems, and reached the River Rhine at turning point "E", where (according to my diary) we could see the German countryside spread underneath and ahead of us, seemingly peaceful and blanketed in snow.

Then, having skirted the heavily defended area around the large industrialised cities of Duisberg, Essen, Dortmund and the adjacent part of the Ruhr without difficulty, we headed on up towards Munster – and the large formation bunched up closely for mutual protection.

Still no opposition and (not being aware of Operation Bodenplatte) we began to wonder why.

(E B "1100 Still 18 or 19 minutes from target. Running that much late. One or two pilots in our formation causing some anxious moments by see-sawing backwards and forwards")

I was at work calculating my last winds before the target when our bomb-aimer, Sam, spoke of accurate flak ahead, but as we were now only 15 miles from the target this was more or less expected.

(E B "1112 The lead planes are starting to bomb – and whoof! – the first bursts of flak are right amongst them.")

(Merv said at the debriefing of our crew on return to England "We saw a Lanc hit and on fire in the bomb bay. It was last seen spiralling to port and turning back against the bomber stream." Would that have been the No 9 Squadron Lanc. which passed us later?)

Into the Target – First Flak damage

We continued on into the target area at a height of 11,000ft.

Suddenly there were a couple of flak bursts right in front of our Lanc, PO-H – followed immediately by two more which hit us in the bomb bay (damage to bomb bay doors etc?) and one in the port wing root, but these did not seem to affect the aircraft's flying characteristics nor our ability to drop our bombs.

From then on we were busy with our final preparations for the run in over the target.

(E B "1115 We have reached the "hot" area. Black puffs curling and expanding exactly at our altitude, some splinters rip a hole in the port mainplane, the acrid odour of cordite permeates the cabin.")

By now we were right in the target area, so I had a quick look outside – to see lots of flak and, quite clearly on our starboard beam, a section of the canal with several barges on it.

After a moment it was back to my position – ready for the actual bombing run, which fortunately was undisturbed by any more flak strikes to our aircraft.

Bombs Away

Guided by our bomb-aimer, Sam, Merv positioned the aircraft for the commencement of the final run in to where the two branches of the canal crossed the River Glane and, after a few minor course corrections requested by the bomb-aimer to make the target as seen through his bombsight graticule move down its marker line, we felt the Lanc lift sharply as the eleven 1000 pounders went on their way.

I immediately started to count the 25 seconds for which – at this height and airspeed – Merv had to hold the aircraft's course steady while the bombs fell to the ground - at which time the aircraft camera was set to take a single photograph of the area directly beneath us at the instant that the bombs should hit. This was known as our target photo and should show just how close to the exact target position our bombs actually struck.

As I said "Camera" to indicate that the 25 seconds was up, Sam, who had been watching the bombs all the way down, saw their explosions straddle the canal at the aiming point and gave an involuntary exclamation of pleasure at an apparent direct hit!

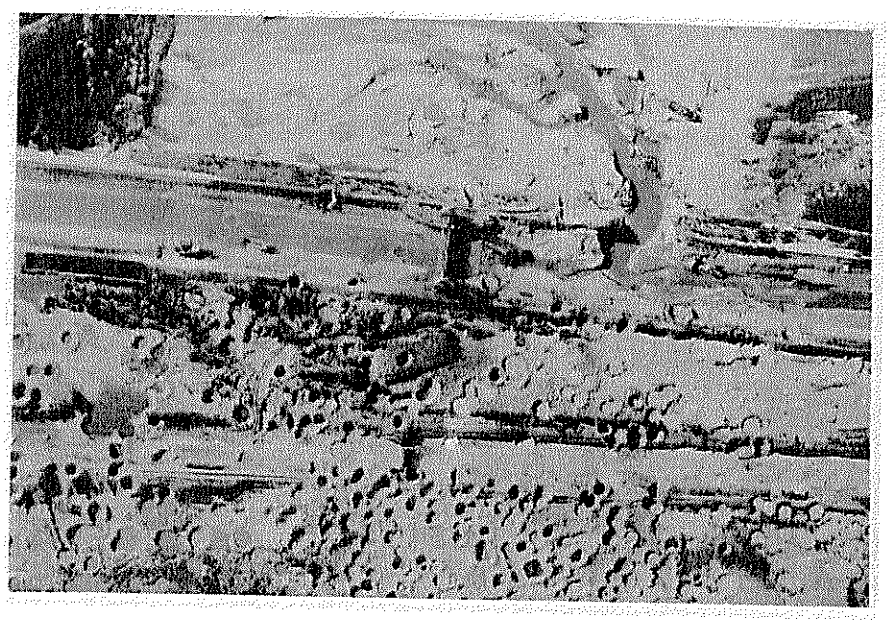
According to Bert Adams' flight log, they bombed at 1120½hrs – and on checking back, Ernie Biddescombe's diary info. suggests that they may have logged their bombing time as about 1118½hrs. The "Official" information attached to Laurie Baker's Target Photo states that he bombed at 1120hrs (from a height of 11,000ft).

As each of the above three were in No.467 Squadron aircraft – which were all in the same section of the gaggle and in the vicinity of our aircraft, our bomb release time could be taken as about 1119½hrs and our bombing height as 11,000ft

Target Photo–Dortmund-Ems Canal near Ladbergen 1st January 1945 467 Squadron, PO-Q

Bombs falling on target from "Q" – Queenie – F/O Baker

Dortmund-Ems Canal Target after one of our Visits



Bypass canal no longer in use – NOTE: barges in and outside the empty canal

Struggling out of Germany

Severe Flak Damage to PO-H

No sooner had Sam uttered his exclamation of pleasure at his excellent bombing result, than things began to happen!

We were hit in the No.1 petrol tank which was located inside the port wing just inboard of the port inner engine, by a flak shell which travelled upwards through the under surface of the wing and the tank, then tore a hole which looked to be about 2ft 6 ins (approx 750mm) in diameter through the top surface of the wing.

The fuel immediately poured out of the holes in the bottom of the tank and in the under surface of the wing, vaporising in the air streaming past the fuselage and tail of the aircraft.

Ernie (flight engineer) immediately fed all engines off the holed port No 1 tank, which had a capacity of 580 gallons, to use as much fuel as possible from it, but it ran dry after a minute or so, so he isolated it and fed the engines from the port and starboard No 2 tanks.

Engine on Fire

While Ernie was feeding the engines from the port No.1 tank, flak hit our port inner engine, which caught on fire, so he immediately shut it down and feathered its propeller.

While he was doing this Merv pressed the engine's Graviner fire extinguisher switch and the fire was soon extinguished, but the remnants of the fuel were still streaming behind the aircraft from the hole in the port No1 tank (immediately inboard of the port inner engine) at the moment that flames started issuing from that engine, so he immediately increased the power output from the port outer engine to help compensate for the loss of the port inner.

More Severe Flak Damage to Aircraft

The centre section of the port wing between the inner and outer engines was then hit by flak and several holes torn in it – then the port outer engine was hit, tearing away much of the inner side of the engine nacelle – and its speed dropped back to about 2000 revs, causing it to lose much of its power output.

About this time the port side tail fin and port side rudder were also badly damaged, the port side elevator trim was shot away – and the barrel of one of the twin guns in the front turret was bent by shrapnel from a flak burst immediately in front of the aircraft, which also holed the perspex in the turret and deposited some pieces of it on the floor of the bomb-aimer's compartment.

Aircraft out of Control

All of this caused the aircraft to go out of control and to lose height quickly from 11,000ft down to 7,000ft.

(E B "1120 'H-How'(PO-H), immediately astern is losing height, the port engine on fire")

While our aircraft was descending rapidly from a height of over 11,000 feet it was also dropping back in the formation and was starting to veer and roll to port, but Merv, by applying full right rudder and aileron control and by pulling back on the control column, commenced to right it – and by giving both starboard engines full power (+9psi boost and 2850rpm) while allowing the aircraft's speed to fall to 120 – 125 mph, decreased its rate of descent to about 80 – 100 feet/minute.

How lucky we were that Merv had chosen, initially, to pick a position in the formation just behind and below the leader instead of behind and above him – had we been in the "top layer" of aircraft we may well have collided with another which was beneath and behind us when we immediately lost speed, veered and rolled to port and descended rapidly.

Control regained by Pilot at 7000 feet, but aircraft in abnormal flying attitude

At this point Merv had PO-H reasonably under control at a height of just under 7,000 feet, while being banked at an angle of 30 – 40 degrees with its port wing upwards and with full right rudder applied to what portion remained of our rudder assembly – and ailerons in the "bank to starboard" position.

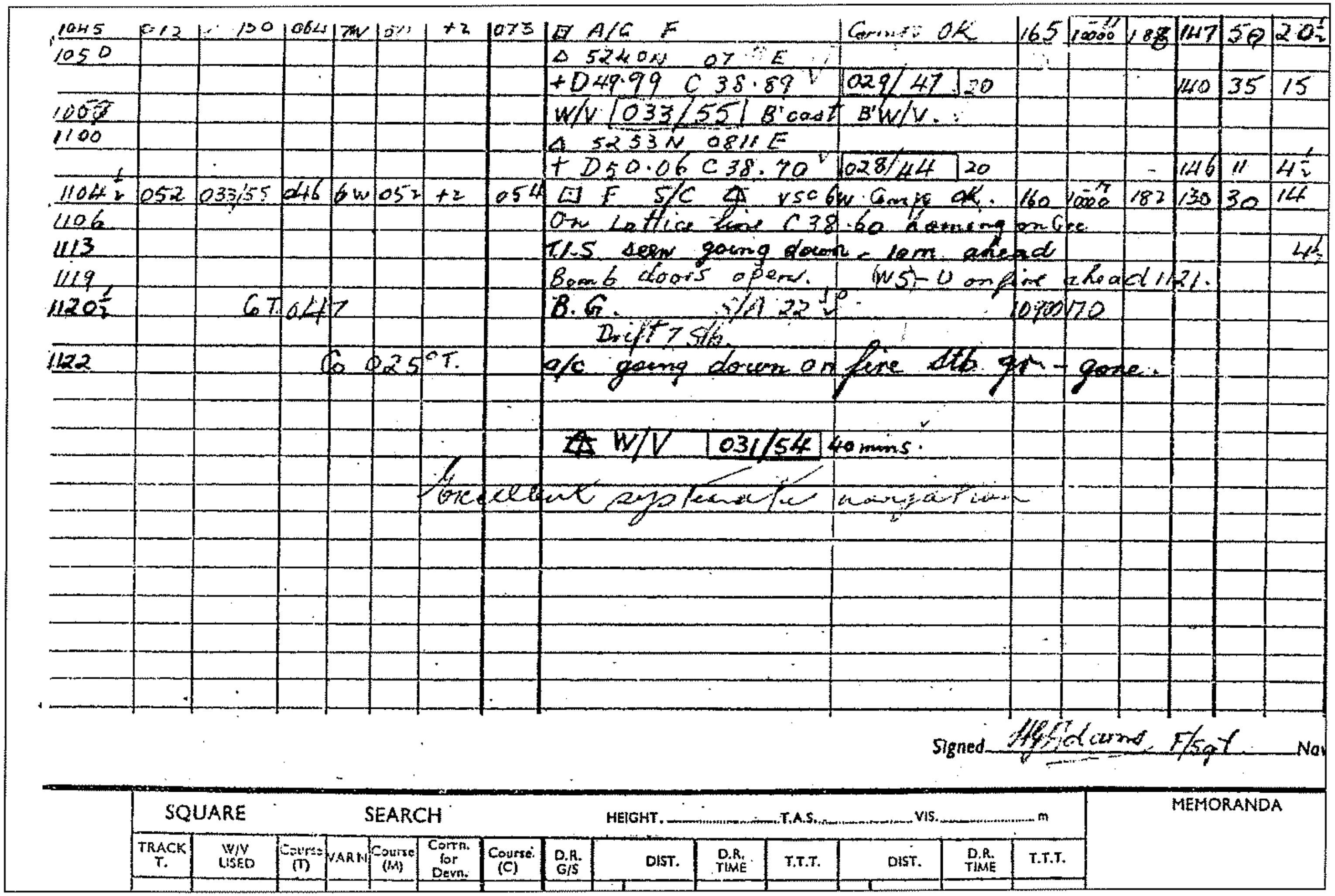
These were all required to keep the badly damaged aircraft flying on a reasonably straight course rather than continuing to veer to the left – however the amount of bank needed was causing the aircraft to yaw to the right (a continuous "sliding sideways" movement to starboard caused by the excessive amount of starboard bank while the aircraft 's course was more or less straight rather than turning to the right). That we would have to put up with.

All in all, a most unusual flying attitude – and one which would have to be maintained, with great difficulty, throughout the remainder of the flight.

That he was quickly able to regain control of the aircraft after what had just happened was, in my view, a great tribute to Merv's fast reactions, quick thinking and flying ability.

Another few seconds and we may well have gone into a spin from which recovery would have been impossible.

"Aircraft Going Down – On Fire"



Entry made on his Flying Log Sheet by Bert Adams, navigator of the No.467 Squadron Lancaster PO-B, as they were leaving the target area at 11.22 hours. This entry referred to our aircraft, PO-H, which had been flying on their starboard quarter (i.e. to the right hand side and slightly to the rear of PO-B) when we were hit repeatedly by flak and our port inner engine caught on fire, etc.

Attempt to obtain Assistance from Escorting Fighters

We were still more or less directly behind the main force, but well below them and descending slowly, while they were rapidly receding into the distance – so Merv instructed Cec (wireless operator) to fire off Verey red flare cartridges to attract the attention of their fighter escort and to let them know that one of the Lancs was damaged and was lagging behind and needed their assistance – but there was no response.

For some reason this made me feel that we had been "abandoned to our fate"- but I had no time to dwell on the matter, because there was work to be done – and quickly.

Effects of damage on Aircraft Manoeuvrability

I had to make a rapid assessment of our situation from a navigational point of view so that I could give Merv some idea whether the aircraft might be capable of getting us out of enemy occupied territory in its present condition – and if so, what course he should steer.

A turn to starboard (ie to the right) would involve Merv having to cut back the power output of our two good starboard engines for the time necessary to complete the required change in direction – but to do this he would have to put the aircraft into a shallow dive so that it would not drop below its existing flying speed of a little over 120mph, which was not much above its stalling speed for its severely damaged condition and unusual flying attitude, according to Merv – and height was one thing of which we did not have any to spare.

Because of this, I considered that any intentional change in course in the starboard direction would definitely have to be made only as a matter of last resort and obviously we would not be able to carry out any of the escape manoeuvres required should we be attacked by an enemy fighter.

Fortunately after Merv had regained control of PO-H we found ourselves to be headed more or less in a north-westerly direction – and I was able to start thinking of the best means of making it into Allied held territory if this was possible.

Best way out of Germany?

My available options were for us to either continue to fly in the present direction, which was clearly not appropriate as there was no Allied held territory that way, or to make turns to port as needed to eventually take us out of enemy held territory.

But some little distance away to port (ie to our left) lay the heavily defended areas which we had skirted on the way to the target – and we would do well to try to keep clear of them! Fortunately my Plotting Chart's information for "heavily defended areas" did not show any such areas to the west of us (except of course those associated with the German front line defences) – but the limits of enemy held territory beyond the western borders of Germany, which were still a long way west of us, was <u>not</u> amongst the information then being given to us at our Operational briefings!

Location of Front Line between Allied and Enemy held Territory?

However after a few moments thought, I remembered looking at the current war situation map in one of the daily newspapers in the Officers Mess back at Waddington during

the previous evening – at which time I did not know where our next morning's target would be.

For some unknown reason (as I normally did not look at such details unless they were headline news!) – I had closely examined the position of the front line in Holland and noted that Allied held territory extended in an easterly direction as far as the western side of the River Maas where it ran parallel to and within a few miles of that part of the German border.

Also, that the northern boundary of Allied held territory extended along most of the southern bank of the Maas after it changed direction and ran westwards towards the sea, with the exception of a short stretch over which British and Canadian troops had advanced north from this river to form an east-west front which lay a few miles north of Nijmegen and extended for about 20 miles westward before returning to the southern bank of the river.

Now here I was in a crippled aircraft, having gained by pure chance just the information needed to enable us to possibly make it to friendly territory – if we were not shot down by enemy fighters or anti-aircraft guns – or ran out of height in the process.

Course to Fly?

The boundaries of Allied held territory that I had in mind set the limits to the location of my intended destination in both the westerly and northerly directions from our present position. Looking at my topographical map it appeared that the shortest distance for us to travel would be to some point just south of the north east corner in the Allied held territory in Holland – and, approaching from the east – just beyond the west bank of the river Maas.

Anywhere short of this or a fraction too far north and we would certainly not be getting out of German held territory – which from there northwards, extended all the way to the Dutch coast – and to the south, those heavily defended areas in the Ruhr.

Gee Navigational Equipment failure

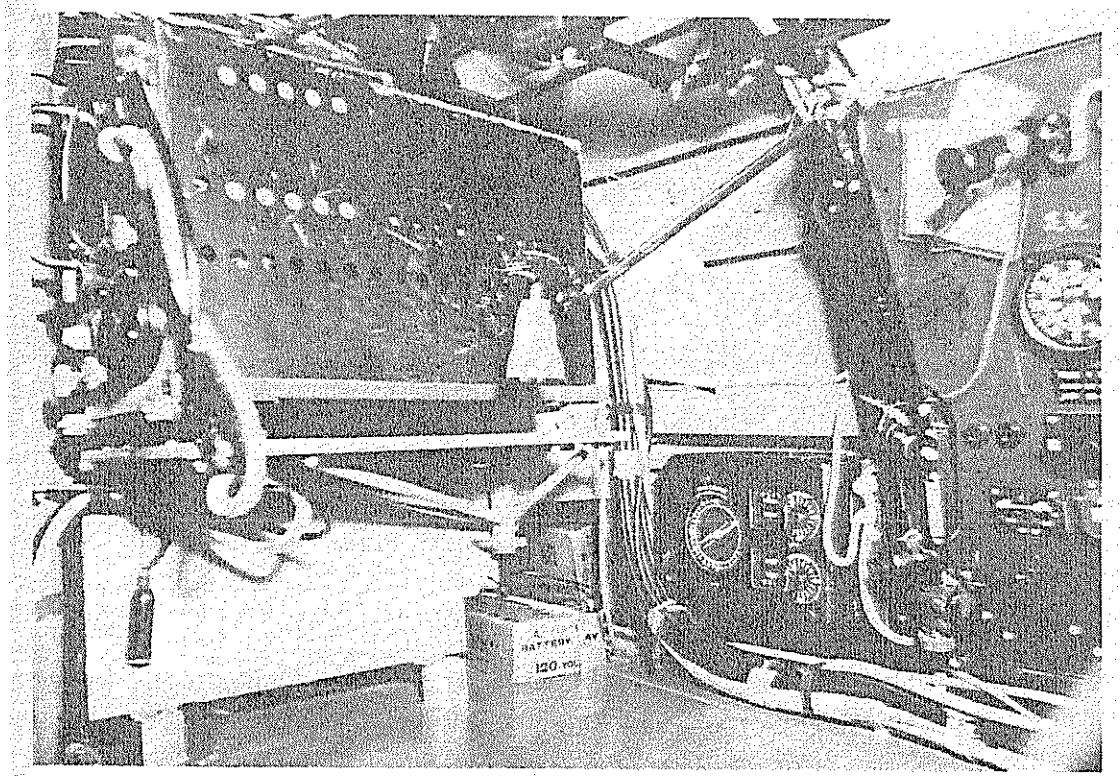
The next thing was to see if I could determine our present position by use of a Gee fix – then, knowing our present course, to use the "target wind" to determine the track which we were currently following – and, if necessary, to change course – hopefully to port – so that we were headed along a track which would take us out of enemy occupied territory over that shortest possible distance.

However when I attempted to take a Gee fix, using the Ruhr Chain (a portable Gee station system located in Allied held territory on the Continent) which was the only Gee Chain usable over the section of the route inside Germany prior to the target, I found that for some reason - not enemy jamming, which had a characteristic pattern - the signal trace on the screen was being obscured by indications of a very much greater radio noise level than that present on the Gee equipment Indicator Unit screen just prior to the target

This noise indication showed up as a thick mass of bright green vertical lines (known as "grass") which, which, in this case, completely covered any signal pulses which may have been present on the screen. Later investigation of the known damage to PO-H indicated that this problem was most likely the result of severe interference from the engine spark plugs getting into the power supply wiring for the Gee set due to flak fragments damaging the shielding of the cable between the special generator unit driven by the port outer engine and

the cable junction box in the fuselage.

Some of the Equipment at the navigator's position in a Lancaster



Facing the navigator were repeaters for the altimeter, airspeed indicator, and compass – the latter being one of three such which was run from the main gyro compass slung near the aircraft's rear entrance. Adjacent to these was the air position indicator (API), which indicated the latitudes and longitudes of the air position.

NOTE: Gee Indicator unit partly visible at LHS of photo.

Lack of Pinpoints on the Ground

Now the lack of my Gee navigation aid made things a little difficult unless I could use landmarks on the ground as position checks – and landmarks were non-existent over the wide flat area of German countryside, snow covered as it was, which was visible to us at that time. Certainly there were no cities which might be identified on this part of my map of the area.

Back to Dead-Reckoning Navigation

So it was back to dead reckoning navigation – using estimated winds and a D/R position "guesstimate" for our current ground position. At least we should now be not far from the target in a north-westerly direction – based on elapsed time since bombing and the present compass course reading.

On this basis I determined our "assumed ground position", then quickly worked out the

required track and time for us to reach my selected point on the River Maas where it ran in a north-south direction at about right angles to my intended track into Holland.

Setting off on required course for a point on the River Maas

All of the above did not take long – and produced the required change of course to port (which would be no problem to achieve), but when I gave Merv the course to fly and my estimated time to reach the River Maas, (based on us having a tail wind about 50mph – which would be the case if I used the wind found on the run in to the target) he did not seem very sure that we might make it at our current rate of descent, though my calculations led me to believe that we could just do so.

At any rate he turned PO-H to port immediately and we set off on the course that I had given to him.

Note *Although I did not know it at the time, if our change of course to the westward had taken place approximately three minutes later we would have flown on a track which would have soon taken us in sight of, if not directly over, the major German fighter base at Rheine.*

In that case, could one of the fighter pilots there have resisted the temptation? Certainly the anti-aircraft guns which protected the airfield would have given us a very lively reception while we were within range.

Managing Aircraft Damage Problems

Merv found after a while that he was not able to continuously apply enough pressure on the right rudder pedal with his foot to maintain the necessary "full right rudder" so asked for assistance. Fortunately I was able to find a gun loading cable which someone had left in the drawer under my navigator's table, so passed it up front to Sam, who hitched it around the right rudder pedal from his bomb-aimer's compartment side of the rudder bar – and pulled the pedal hard against its stop. By looping the cable around his hands and laying his weight back towards the nose of the aircraft while more or less in a standing position, he found that he was able to hold the pedal on to the stop – and so we proceeded, as best we could.

Because of PO-H's port engine problems, damage to the wing lifting surfaces and particularly as a result of the aircraft's unusual banked flying attitude, Merv found that – no matter what he tried – he had insufficient engine power (and what was available was mainly on the starboard wing) to keep it flying above its much-higher-than-normal stalling speed unless he continued to maintain the continuous slow descent of between 80 and 100 ft/min. which he had set earlier.

My Thoughts on Baling Out

By this time I had given some thought as to whether Merv could land PO-H in its present condition and had decided that this was most unlikely. We would have to bale out, either by choice or if forced to do so in an emergency.

(Kept these thoughts to myself though. It was up to Merv to make the decision as to whether he would try to crash land the aircraft in friendly territory – or not, if we made it that

far.) *For more information on baling out see Glossary – Baling out (Bale out)*

Pressing On

In any event, we pressed on, with our mid upper and rear gunners Les and Jimmy and all other available eyes anxiously scanning the skies around us for any sign of an approaching enemy fighter. Had one showed up then it would have been "quickly on with parachutes and jump" hopefully before the fighter started shooting, as we had no way of manoeuvring to escape from its fire while our two gunners, if they could, tried to dissuade it from getting close enough to open fire – at least for a little while.

As far as flak went – well, we were low and slow, and again not able to manoeuvre – so if flak shells were fired in our direction we would just have to take our chances and hope that luck may be on our side.

By now the main force had left us some distance behind and we were flying slowly over Germany by ourselves at a height around 6,000 ft. – on a day when the sun was bright, cloud cover was non -existent and visibility was almost unlimited. We must have been clearly visible to any aircraft observation post on the ground. But no sign of enemy fighters?

I continued to update my ETA (estimated time of arrival) at the River Maas in Holland and pass it on to Merv. These revised ETA's was based on my D/R (dead reckoning) calculations in which I was using decreasing wind velocity. (Which I thought appropriate to our slow reduction in altitude with distance travelled – hoping that when and if we reached the River Rhine, which I knew we must cross, that my predictions would be verified.)

When I recalculated our ETA for the River Maas, I also checked our current rate of descent and found that it had now decreased slightly and was now a little over 80 feet/min.

Use of Damaged Gee Equipment

I kept checking the Gee display, hoping that the position line traces would appear out of the "grass" on the screen – and, after a while one signal blip became barely discernable. It gradually improved in definition but the second signal blip never appeared.

As soon as I could I used the one trace that was visible in the grass to transfer a single position line from the Gee chart on to my navigators plotting chart. Unfortunately this position line intersected my intended route at an angle of only about 15 degrees, so was of virtually no use for determining the distance to go and time that it would take to reach my objective – the Allied held territory in Holland.

However, as the position line did indicate that we were a little northward of my desired track, I decided not to make a course change (to port) for the time being in case we were subjected to a future change in wind direction, which in itself may take us to the south of the desired track and thus start to lengthen the distance to go to reach the River Maas.

Need to keep clear of Heavily Defended Areas

As well as the necessity not to take any action which may lengthen the distance to go to

reach the River Maas, there was that heavily defended area to the south of us which consisted of a major concentration of heavy flak gun batteries in and around the cities and industrial regions of the Ruhr, shown on my Plotting Chart as a red coloured area – around which was a much wider area of groups of heavy flak as well as medium and light flak guns distributed generally about an area. shown on the Plotting Chart in green.

This large heavily defended area extended to within about 15 miles of my desired track over much of its length. Should we approach too close to it then the starboard turn needed to recover the situation in our present condition would not be possible without us losing a good part of what little height we had "left up our sleeve".

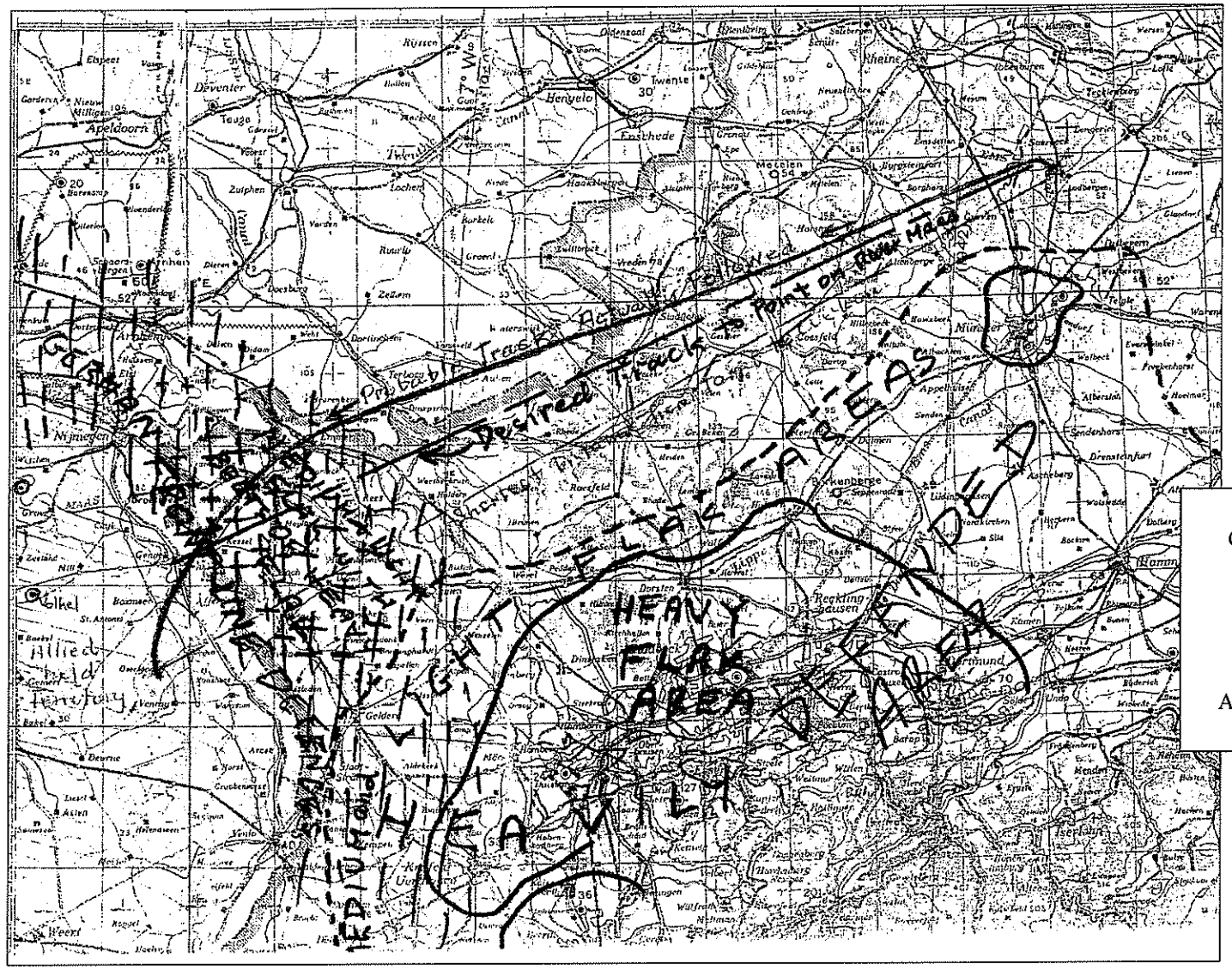
Staying inside northern limit of Allied held territory

So there was not much leeway for any excursion in that direction- nor for much divergence to the north of the desired track either, as in this case we could run out of height getting back inside the northern limit of Allied held territory along the River Maas to the west of Nijmegen.

The situation had to be watched closely.

Then I realised that my concern over absence of the Gee second position line which would give distance to run to the Maas was perhaps a bit academic – if I did not allow us to diverge too far from my desired track then we would either have enough height as we approached the River Maas– or we would not!

PO-H Route from Target at Dortmund-Ems Canal near Ladbergen to Overloon 1st January 1945



German Front Line Defended Area

II Light & Medium Flak

++ Heavy Flak Batteries

Also used as Anti-Tank weapons etc.

Passed by another damaged Lancaster!

After a time we all received unexpected information from Les and Jim that another Lancaster was approaching us from behind and would overtake us somewhat above and on our starboard side.

As it went past us "at a great rate of knots" as Merv put it – we noticed that it seemed to have suffered fire damage to the fuselage and was flying on three engines. It was trailing an opened parachute, which was attached at its harness end to the aircraft somewhere inside the cockpit area from which it had escaped via a hole in the top of the cockpit canopy. It was a wonder that the parachute had not already been torn to shreds!

Award of the Victoria Cross to a Member of the Crew of the Lancaster which passed us

Later we were to learn that the Lancaster which passed us was a No 9 Squadron aircraft which had been with us in the attack on the Dortmund-Ems Canal – and that it had been hit on the underside of the fuselage and elsewhere by flak over the target, causing a fire to break out under the mid-upper gunner's position and engulf him in flames. The wireless operator, Flt. Sgt. George Thompson, had gone to the aid of the mid-upper gunner, dragging him out of his turret and beating at the flames with his bare hands amidst exploding ammunition. He then made his way to the tail gunner (ie rear gunner) whose turret was also starting to burn and pulled him clear. Although F/S Thompson was successful in eventually subduing the fire he was terribly burned in the process and later succumbed to his burns – as did the mid-upper gunner. The aircraft was eventually crash-landed by the pilot in Holland near Heesch – not very far to the north-west from where we were to bale out from PO-H.

For his bravery Flight Sergeant George Thompson was posthumously awarded the VC.

Merv's Decision that we Bale Out at 3500 feet

Shortly after this, Merv told us that he would not be able to land the aircraft in its damaged condition and flying attitude – the crew would have to start to bale out when it had descended a height above ground of 3,500 feet – (regardless of where we were at the time).

In addition to his Altimeter, the pilot had a "Rate of Climb/Descent" meter on the Instrument Panel in front of him and could continuously monitor this situation even more readily than I could. Now I had a definite minimum height at the River Maas to work with.

Based on my latest D/R position, I calculated that we could still make it, but with not a lot to spare!

Mid-Upper Gunner Sights Typhoon Fighters flying Eastwards above us

About five minutes before my estimated time for our crossing of the River Rhine our mid-upper gunner, Les, called over the intercom to tell us that he had just sighted four RAF Typhoon fighters somewhat above us on the starboard side. They were flying into Germany on a track nearly the reciprocal of ours and had continued on their way eastwards.

Despite a continuous and careful watch being maintained by both Les and Jim for other aircraft, particularly German fighters – these were – thanks to Operation Bodenplatte – the first and last fighter aircraft, Allied or enemy, that either of them saw between the time that we were left behind by our bomber group escort back near the target and when we abandoned our Lancaster, PO-H, over Holland.

Flak Ahead!

A minute after the Allied fighters were sighted, Sam called from the bomb-aimer's position to Merv "Flak ahead – dive port" – and someone who must have been able to see in that direction responded "Jesus Christ!" (had they then seen it too?) – Sam immediately realised what he was saying and followed it with "Hell we can't, we'll just have to take it" – and we did

(In my diary I stated that this expression ("Jesus Christ!") had been used as we were approaching the River Maas, but Sam later corrected this – saying that it happened when he called out at the above point "flak ahead – dive port")

Rear Gunner's Situation

Jim told me later that from his rear turret he could see the red flashes from the barrels of flak guns – and that there were many black bursts of flak seemingly nearby the tail of the aircraft – "those with the red flame in the centre" making the aircraft rock as it was struck by the blast from the explosions. These caused him to tense up automatically, expecting shrapnel to strike him without him able to do anything about it (and, if at the same time his intercom had been damaged, not being able to let the crew know that he was injured) Also he could not help wondering what was happening to the rest of the crew "up front". Obviously, it was a very stressful time for him.

Rear gunners did not have an enviable job.

Port Outer Engine Quits

Then the port outer engine decided to quit – so Merv attempted to feather its propeller to reduce drag but it wouldn't feather and continued to "windmill" in the slipstream. He immediately restarted the fire-damaged port inner in a desperate attempt to give us some engine power on the port side to counteract the resulting swing to the left – but its speed kept increasing, so at 4,000rpm our flight engineer, Ernie, insisted that he shut it down, for fear that it would "throw its prop".

My diary then states that, in any event, the short period of service obtained from the port inner engine may have just got us beyond the River Maas.

Flying with Two Dead Engines and other Problems

As both the port outer and inner engines were now dead and the port outer propeller was now windmilling, the already excessive drag to the port side was again increased significantly – and the aircraft, despite being flown with full right rudder and banked steeply to starboard - began once more to swing to port.

Merv then took the only action available to him to counteract the excessive amount of drag of our port props and damaged wing. He cut back the power output from each of the two starboard engines.

This reduced the aircraft's swing to port somewhat – but, in order to maintain sufficient airspeed for PO-H to remain above stalling speed, he had to increase its rate of descent to about 100 feet/min – (no doubt hoping that this would not cause PO-H to lose so much height that we would be down to 3500 feet before we reached the River Maas).

With the port outer engine now unserviceable, its engine driven generator that supplied power to my Gee navigation equipment was therefore non operational. The Gee set which, although it still had not been supplying me with fixes, had for a while at least provided me with that one Gee position line to show how far we were north of my intended track. But no more!

However I was not too concerned about this as we were, by my D/R navigation, approaching the River Rhine, where I expected that we should find some useful pinpoints.

Our height at this time would have been about 5,000 feet – and PO-H would have been flying with between 30 and 40 degrees of bank. All things considered, I felt that it should still have been veering sufficiently to the left to save me having to initiate any deliberate change of course to port to get us within the northern boundary of Allied held territory.

But our reserve of height necessary to get us across the River Maas had lessened!

Effect of Aircraft's curved Track on ability to make it out of German held territory

Had Merv not reduced starboard engine speed at all then our height would have been maintained better – but PO-H would have kept veering so quickly to port that it would have swung around in a much tighter arc in a southerly direction – an arc which would not have extended as far as the River Maas.

In addition to this – had the port outer engine failed just 4 minutes earlier than it did, then, as later events proved, the curved track which the badly damaged aircraft was forced to fly on two engines operating at reduced power output, would also not have taken us as far as the front line.

In either case we would have not, at this late stage, made it out of German held territory – and in fact, would have been faced with the extremely hazardous situation of baling out amidst the gunfire directed at us from the German front line flak and their soldiers!

Pinpoints establish Ground Position – Effect on Navigation

My diary goes on to say that a few minutes later Sam gave me two pinpoints, but it does not say where these pinpoints were. However I believe that the first one was the town of Emmerich, located on the east bank of the River Rhine and the other one was Cleve, a few miles further on to the west– as these were the only two large towns in the area positioned in this manner.

Knowing the spot where and when we crossed the Rhine would have allowed me to confirm that the distance which we had to travel to the River Maas from that spot would have been about 20 miles and therefore we should reach it in a little less than 10 minutes.

More importantly it would have confirmed my calculations that our track should now take us towards a place on the Maas which was – on its western bank, definitely inside Allied territory – provided that our aircraft's continuously curving track reached the river before starting to head back into Germany .

If we made it safely to the Maas from our crossing point on the Rhine then, allowing for the effects of the loss of both port engines and wing and rudder damage on the aircraft's flying ability, we would have succeeded in reaching Allied territory by the shortest possible route from the target – and in view of the height remaining to us at the Rhine – the only route short enough for us to have made it out of German held territory before having to bale out when we had descended to our minimum allowable baling out height of 3,500 feet.

Flying through intense Light Flak

We were apparently now well within the German Rhine defence area because, as we got past the River Rhine, I could feel what seemed like 20mm and 40mm light flak striking PO-H with sharp bumps and Merv said that "little mushrooms of metal were erupting from the port wing surface – and this wing did not have much lift anyway" – and also that they were erupting from the top surface of our good starboard wing.

We would have been at a height of about 4,500 feet at that time and, in addition to their heavy flak batteries, the German medium and light anti-aircraft gunners and troops in their front line defence area were having lots of good target practice – but we could not do anything about it, so just kept "pressing on regardless" and prayed that we would survive.

I wondered afterwards how much of the fuel may have been leaking from small holes in our wing tanks as a result of light flak hits during the time that we were over the German front line defences. Fortunately their larger calibre anti aircraft guns, with their slower rate of fire, probably did not have the best chance of finding us at this low height –and any holes made by bullets from small calibre weapons would mostly have been quickly sealed by the self sealing material applied to the surfaces of the tanks.

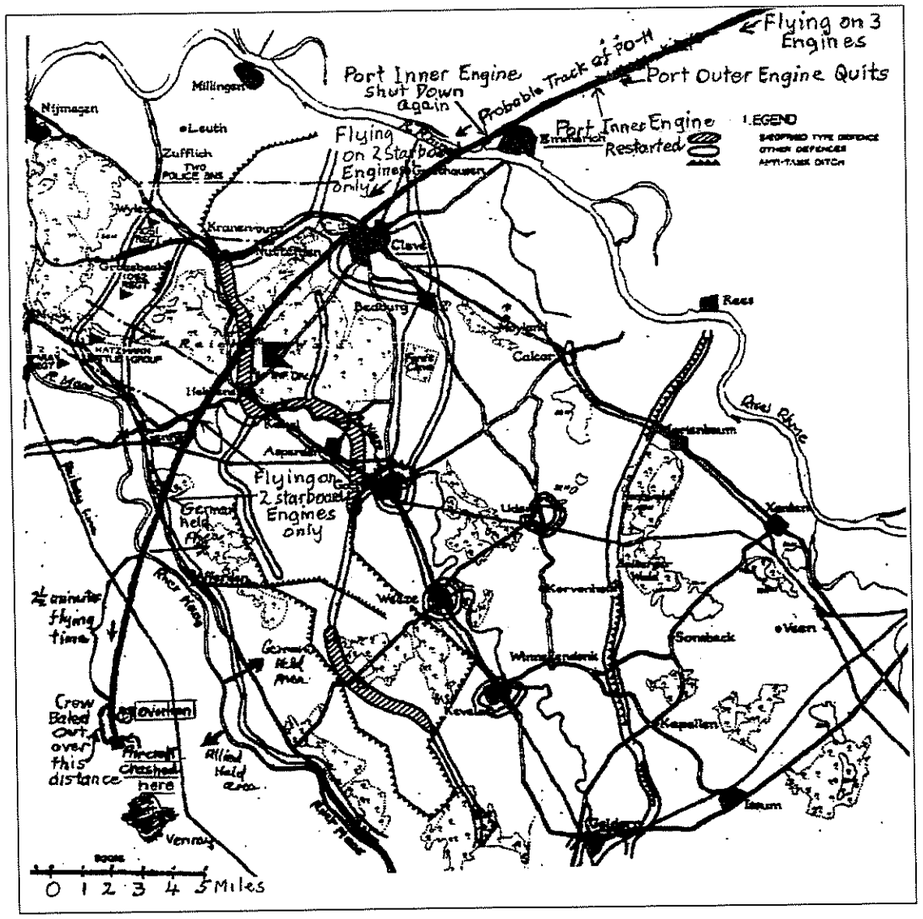
At that time, with us so close to our intended "destination", the loss of even a substantial portion of our remaining fuel would probably not have concerned us unduly!

Further Severe Damage to aircraft and Near Misses for Crew Members

PO-H was taking a lot of punishment – such as the small calibre shell which smashed Sam's bombing panel, immediately next to him and another which just missed his leg –and a bullet or splinter of flak which hit and damaged a strut which supported the wireless operator's table, just in front of Cec – all in addition to the stuff which could be seen hitting the wings and other parts of the aircraft.

Although PO-H continued to be struck by many projectiles from medium and light flak guns over a distance of over 20 miles (ie for about 10 minutes) – miraculously, not one of the crew was hit.

Final Stage of Flight from Target across German Front Line Defence Area



German Front Line Defences between River Rhine and River Maas – The Front Line is along the River Maas.

Approaching the River Maas – and preparing to bale out

When I thought that we should soon be reaching the River Maas, I asked Sam – and he said that "it looked to be about a minute away".

We were nearly there but our present track was converging at a steadily lessening angle to the river as the aircraft continued to veer to port, despite all that Merv could do to stop it from doing so.

As we were also getting close to Merv's previously set minimum height at which we must commence to bale out, he now directed those of us with chest "chutes" to put our parachutes on. He indicated that Ernie was then to immediately go down into the bomb-aimer's compartment, a few steps forward of where he was standing next to the pilot's seat – after which, I was to come up and to stand beside him (ie Merv) in the spot vacated by Ernie. *For information on chest type parachutes – see Glossary – Parachute pack (chest type)*

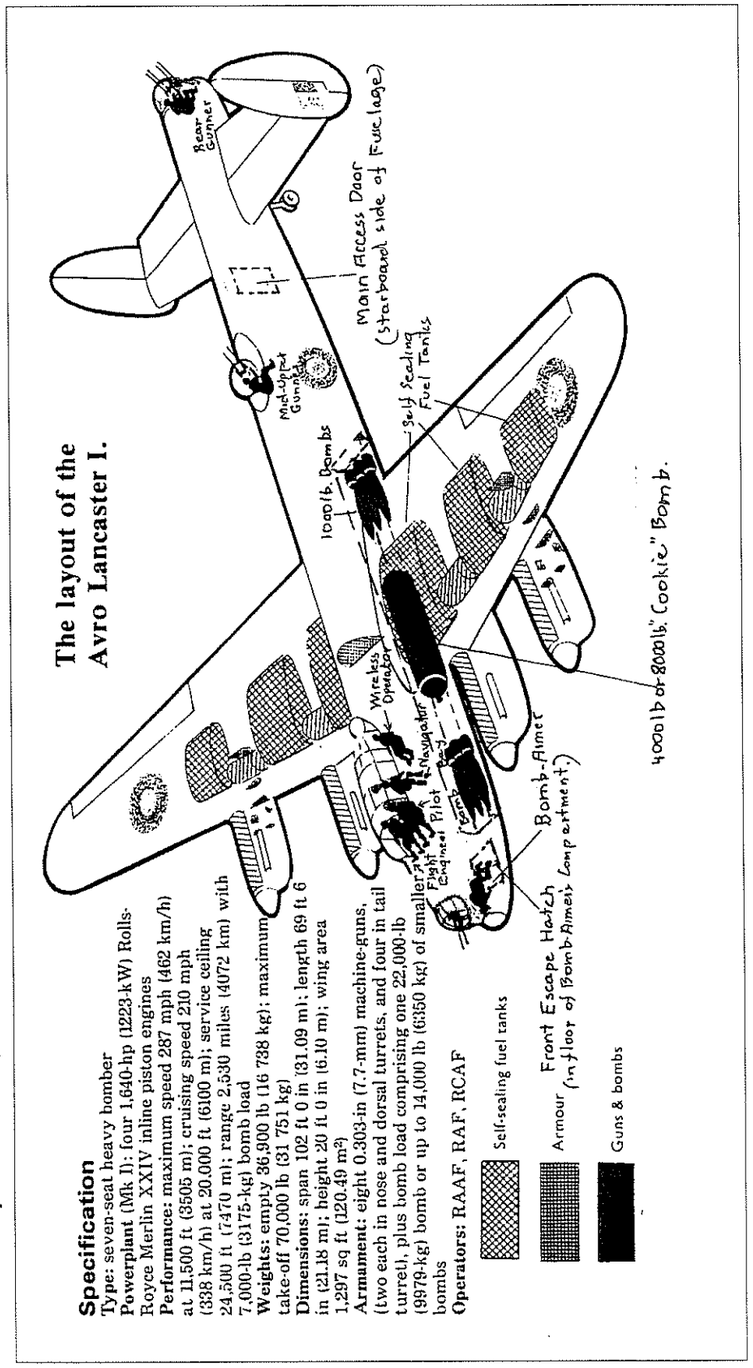
Cec and Les were then told to leave their positions and go to the aircraft's main entrance door, which was towards the rear and on the starboard side (right hand side) of the fuselage, just forward of the tail assembly. They would exit through this door by parachute, one after the other, rather than to follow Sam, Ernie and I out through the normal crew emergency exit, (which was the escape hatch in the floor of the bomb-aimer's compartment) – when we were given the command to do so by Merv – as this method of leaving would reduce the overall time needed for the seven of us to get out of the aircraft.

So we immediately proceeded to don our chutes and then to go to our designated places. (Merv, as in the case of all pilots, was already wearing his seat type parachute).

For information on seat type parachutes – see Glossary - Parachute pack(seat type)

Jim, who was also already wearing his seat type parachute, would leave directly from his seat in the rear turret – first of all rotating the turret, including its pair of entrance doors which were immediately at his back – until it was at right angles to its normal position – so that when the doors were opened they would give him direct access to the outside of the fuselage of the aircraft. From this position all he had to do was to fall out backwards from the turret when he was ready (and after we had been directed by Merv to jump).

Merv would remain in his seat flying the aircraft until he was receiving no indication via the intercom that any others of the crew remained in it, then leave the pilot's position and vacate the aircraft via the front escape hatch as quickly as possible.



NOTE: locations of Front Escape Hatch and Main Entrance Door

Leaving my Navigator's position

As I got up from my seat at the navigator's table, I picked up a couple of small things and put them in my jacket pocket – my dividers (couldn't lose them) and a good pencil eraser that my English cousin, Maurice, had given me – (what was I thinking of – my next trip as a navigator?)

Then I reached over and took my parachute pack out of its stowage place, clipped it on to the front of my parachute harness and took off my helmet with oxygen mask attached after acknowledging to Merv via the intercom that I was leaving my position.

I then turned and took the few steps forward, which positioned me next to Merv.

My diary goes on to say "there was no panic- and we knew that it wouldn't be long before we each had to make our first parachute jump".

NOTE: The following description of what happened - from the time that the crew commenced to bale out up till the time that the aircraft crashed - actually took place over a shorter period than that needed to read it!

Bale out – Bale out

My diary then continues – "As Merv had made the deadline 3,500 feet, I was not surprised when, seeing the altimeter on the pilot's instrument panel drop to that reading, that Sam (when instructed to jump by Merv) jettisoned the escape hatch in the floor of the bomb-aimer's compartment by pulling it up out of its hatchway and tossing it on the floor in the nose of the aircraft near the bombsight – then he spoke to Merv, removed his flying helmet and "took a header" down through the escape hatchway.

He was almost immediately followed by Ernie, who had been standing, waiting, near to the rear side of the escape hatch in the bomb-aimer's compartment.

It was now 1155hrs.

Headfirst through the Escape Hatch

I gave Merv the "thumbs-up" sign, stepping down into the bomb-aimer's compartment as Ernie went through the hatchway. I then grasped my parachute's ripcord handle with my right hand – tucked both elbows into my sides so that they would not strike the sides of the hatchway as I passed through – thought briefly that the ground looked a long way down - felt a bit scared at that instant so made my mind a blank – pushed on the step behind me with the back of my heels – and took a clean header through the hatchway, not touching it with any part of my body as I went through.

As I fell, I straightened out to stop from tumbling "head over heels" in the air – counted to five, then pulled the ripcord.

I must have closed my eyes, because the next thing that I knew was feeling a jerk which knocked my head back, but did not hurt unduly anywhere else (ie my groin – which, if I had not tightened my parachute harness sufficiently when I put it on back at Waddington, would have taken the considerable shock of the weight of my body as the parachute canopy snapped open).

Floating Down – What to do with the Ripcord Handle?

I then found myself floating down, "as per book" – tightly grasping the ripcord handle which I had just pulled free of its mounting clips on the outside of the parachute pack.

This had immediately released the small pilot chute, which was forced out from the parachute pack by its spring loaded stiff wire ribs and "snapped out" to its full extent in the air – thus rapidly dragging the main parachute canopy out of the pack after it as I fell.

At that moment the thought came into my mind – why not keep the ripcord handle as a souvenir?

Now my navigator mate from our training days, Johnny East, had kept his when he was forced to parachute from a "Wimpy" (Wellington) two engine bomber training aircraft, back at our Bomber Command OTU (Operational Training Unit) at Lichfield, in England – after one of the aircraft's engines had fallen out while on a training flight.

So I tried to find a place to put the handle, as I thought I may need both hands to grasp the shroud lines of the parachute in order to manoeuvre it a little if I saw when I was nearer to the ground that I seemed to be heading for some obstruction which may cause me injury.

Then I found that it would not go into either of my jacket pockets because the parachute harness covered them, nor could I place it inside my jacket because it was held tightly against my body by the parachute harness.

Finally, I pushed it down into the leg section of one of my flying boots.

Merv and Jim get out and PO-H "ploughs-in"

Then I looked around me – and saw the plane describing a slow arc to port, then rolling to port and going into a dive. It was getting very low and I was afraid that Merv would never get out – when at about 1,000 feet I saw his chute open and thought "we are all safe".

I had presumed that the others had got out as, due to the way which I was then facing I was looking in the direction in which the aircraft had flown away from me – and those who had jumped before me were all behind me. Les was close to me but I did not notice him – and I did not see Jim for some reason, though he had jumped just before Merv.

I watched PO-H roll over while it went into a steeper dive, then hit the ground on the other side of a wood with what sounded like a soft "Woomph".

Immediately a pillar of flame and brown smoke shot upwards about 500 feet into the air, curling around and around.

Where will I land?

The ground was now getting closer and I saw that I would be landing in an open field, which seemed to be drifting ever so slowly up towards me.

It was now perfectly quiet and still. Then I noticed that I was drifting sideways with the wind, so tried to turn to place the wind direction at my back by twisting the straps which attached my parachute harness to the shroud lines of the main canopy but found that it only made me swing, so I gave it up even though it appeared that it had helped a little.

I looked down again and it seemed that I was heading for a ruined farmhouse. Then it looked as though I may land in its bare rafters, which could cause me an injury – but I could not, at this late stage, do anything about it. So just hoped that I would miss it.

Hitting the Ground – Hard!

The ground seemed to be getting rather close and I was finding it difficult to estimate my height so straightened my legs a little, then reached up and grasped the straps attached to the harness ready to take the shock that I knew was coming.

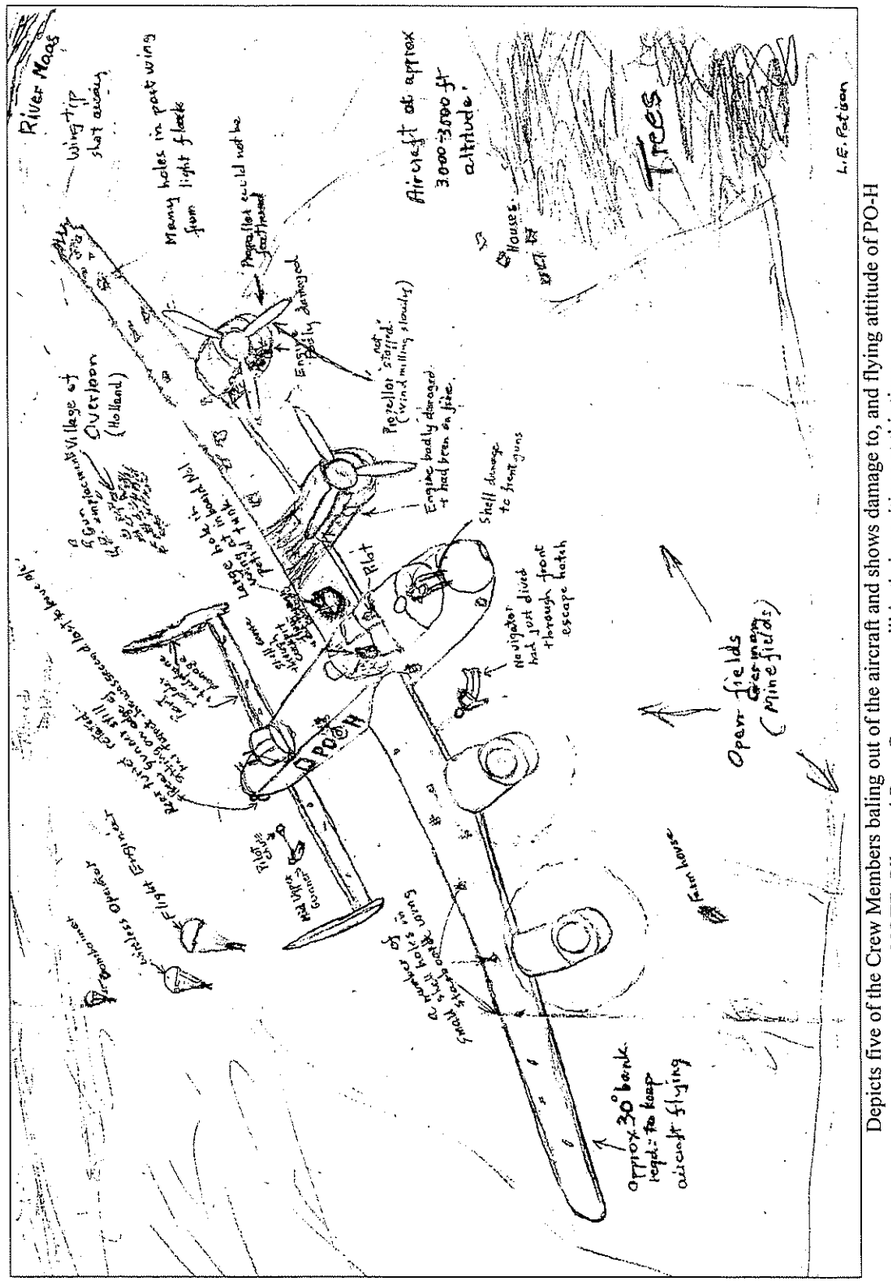
Suddenly I seemed to be falling at a terrific rate – and before I knew where I was I had hit the ground.

My feet hit first but before they could take any of the impact they slipped on the icy surface, causing me to crash down on one side of my bottom with a terrible wallop that hurt a lot, then I rolled over on to my side – and finally, face downward.

Didn't know whether I had broken anything and thought "when I try to move I will find out" – lay there, breathing heavily from shock for a minute or so, then slowly got to my feet and was very relieved to find that I could do so. Nothing seemed broken, but my back hurt.

Caterpillar Club Certificate

Caterpillar Club membership - awarded to all who save their lives by Irvin type parachute.



Depicts five of the Crew Members baling out of the aircraft and shows damage to, and flying attitude of PO-H
NOTE: Pilot and Rear Gunner are still in their positions at this time

L.E. Petrie

Crew Baling Out of PO-H near Overloon 1st January 1945

On the Ground and back to England

What was around me?

Now that I was standing, I looked towards where I thought PO-H had crashed but, being on ground level and some little distance away, could not see any signs of smoke or anything which would indicate where it had struck the ground

Then I started to look around to see if any other of the crew were within sight but instead, there nearby, was the ruined farmhouse which I had missed by about 30 feet.

I could see that although its four stone walls were still standing it seemed to have been burned out, its sturdy wooden rafters all blackened.

In a German Minefield!

The field was bare and the ground was hard and very cold – and I could see no one in my immediate vicinity – but there, about 20 feet away in the ground was a short post supporting a small notice board, which had a single word "MINEN" painted on it in letters about 3 inches high.

I had landed in a German minefield!!

Well – regardless of that, here I was and the first thing that I could think of was to get moving – but which way was safe?

The first Dutchman

I was starting to gather up my chute, which was spread around more or less in a heap on the ground when a civilian ran up to me, seemingly from nowhere! He started shouting excitedly in what I took to be Dutch, which of course, I could not understand – so we more or less grinned and made signs at each other.

He counted to six on his fingers, from which I gathered that he must have seen six chutes opening.

I was then a bit concerned as to what had happened to the seventh, but thought that perhaps he would not have seen Merv anyway as he had jumped out of our aircraft at quite a low height or - perhaps Sam, who had jumped first.

Amongst Friends

Soon a crowd of about 20 men, women and children materialised and were all around me – talking together and pointing at the word "Australia" on my shoulder patches. One boy could speak English, so I pointed to the MINEN notice and asked him if this was a minefield. He smiled and said that, although there were unexploded German mines all around that area – not to worry too much because the ground was frozen! (Cold comfort?)

I then asked him where the others of the crew had landed – but he couldn't tell me exactly.

I found out later that the MINEN notices had been planted by Allied troops in many places in this area of extensive German minefields, a big portion of which were still uncleared – in what had been the scene of heavy fighting a couple of months or so earlier.

Apparently they were intended to warn those of the Dutch populace in the area who had refused to leave for their own safety when they had been instructed to do so, of the danger ever present until the cleanup could be completed ("MINEN" being "MINES" in Dutch?)

Of course the Dutch people knew how hard the ground became during much of winter (and the cows left wandering around hereabouts were no longer going up with a bang and a puff of smoke) – so here they were – back on their farms for the time being at least!

The women admired the silk of my parachute and insisted on folding it neatly for me. I could see how much they liked the look of the silk – but they did not ask me to give it to them.

Les Appears

Then I saw Les coming towards us. When he met up with me he said that he was OK and went back to where he had landed to collect his chute – near the other side of the field – (about 100 yards away according to later information. Apparently he had jumped via the rear door of the aircraft at about the same time as I went through the front escape hatch).

Shortly afterwards he returned, carrying his chute – and we noticed that there was what looked like a main road a few hundred yards away, along which a number of military trucks were passing.

Merv and Jim join us – their stories

We had just started to move off towards the road, the women carrying my parachute and harness for me, when we saw another group of people coming towards us from the direction in which PO-H had crashed. The group was surrounding Merv and Jim as they walked.

When they joined us they told us that neither had been injured when they reached the ground.

They had both landed quite a few hundred yards beyond where Les and I had each come down – and not very far from each other, Merv in the wood which covered the area on this side of the spot where PO-H had crashed and Jim on open ground near to the edge of this wooded area.

Jim was not wearing either of his flying boots. He said that they both must have come off when he pulled his ripcord and his parachute opened. His rate of decent decreased immediately but, apparently, both boots kept going earthwards in free fall – so he was wearing only the inner (normally electrically heated) slippers on his feet – with each slipper attached by its heating wires to the bottom cuff of its leg of his "inner" flying suit.

Merv said later that when he had received no replies to his queries via the intercom as to the presence of other of the crew in the aircraft he had pulled himself out of his pilot's seat, holding the control column in position with his left hand until the last moment, then he dropped down on to the floor of the cockpit. He then dragged himself as quickly as he could but with quite some difficulty forward along the floor of the cockpit – then down into the bomb-aimer's

Merv looking through front escape hatchway

"I pushed myself through here"

compartment. As he was forcing himself out through the escape hatchway the slipstream jammed him against the side of the opening but another hard push sent him right through it.

He said that he saw the aircraft's tail wheel go past, pulled his ripcord, felt the sudden jerk of his parachute opening, then struck the tops of trees – and said that it was very lucky for him that he had landed in them. Had they not been there to break his fall he may have been killed or seriously injured himself when he hit the ground.

He had then undone his harness and dropped to the ground not far below – wasn't sure if he was in Allied territory or just behind the German lines – so crept along in the undergrowth until he heard a lot of voices ahead – peeped out from the bushes and saw Jim, revolver in hand, standing in front of a group of Dutch kids – who seemed quite unperturbed by the situation.

Jim and the Dutch Kids – and the Significance of Parachute silk

Jim said later that when he had jumped from the aircraft he thought that we may have still been over enemy territory.

He had read, back in England, that numbers of "Hitler Youth" members had, at this late stage of the war, when they realised that Germany was losing – formed themselves into roving groups calling themselves "Werewolves" – and that woe betide any downed Allied airman who happened to meet up with them in some lonely spot in the countryside!

So when he saw this group of boys coming across the field towards him he drew his revolver as a precaution, while in the process of getting things sorted out.

I have since come to the conclusion that it was not him that they were really interested in – it was his parachute – which still lay on the ground when he left the spot, together with the parachute harness and bulky "outer" flying suit which he had removed before moving off.

Merv's chute and parachute harness were still up in the tree in the woods.

It makes sense that when people living in Europe during the war saw an Allied airman descending by parachute from a crippled aircraft – what this meant to the ladies was the possibility of new silk underwear – and a source of some ready income for others!

Walk to the MP's Jeep

The group of the four of us – surrounded by our Dutch friends, then started walking again toward the main road – making sure that we steered well clear of the MINEN notices that we passed on the way.

After we had covered part of the distance we could see an MP's (military policeman's) jeep apparently waiting for us so we headed for it – and after covering what seemed to me to be about two hundred yards we reached the vehicle in which was a military policeman sitting, waiting for us – and I wondered if he was aware that we were in an uncleared minefield and was not risking his neck by coming in to see how we were!!

Goodbye to our Dutch friends

I thanked the Dutch woman who had folded and carried my parachute and took it from her – but removed the little kangaroo badge from my battledress jacket and gave it to her – probably a very poor substitute for the parachute, in her eyes – and I sometimes wonder what eventually happened to that chute after I had "officially passed it over" to the officer who had taken charge of us at the military hospital where we stayed that night – looking back I would be most surprised if it ever reached RAF hands!

PO-H Crash Site & Parachute Landing Locations

Location near Overloon where PO-H crashed and also where the last four of our crew landed by parachute. This information was supplied by Mr H Willemsen of Venray, Holland, after he had visited these locations with three of our ex-crew members at different times in the late 1970's and 1980's. He later sent a photocopy of the marked up map to Mr Pieter Driesen, author "Air Battles over De Peel", who passed it on to me.

Into Overloon

We were taken in the vehicle about a mile into the village of Overloon – now just a collection of ruined and battered houses as the result of being in the centre of the prolonged and ferocious tank battle which had raged in the area during the previous October.

As a result of this battle the front line had been pushed east by a distance of some 5 miles past Overloon to the River Maas and had remained stationary in that position since then.

This situation changed dramatically in February – March 1945, as the result of General Montgomery's "Operation Veritable"- part of the Allied push to and across the Rhine.

We had Made It – Just!!

So we had achieved our objective of reaching Allied territory before we were down to the minimum height of 3,500 feet, at which we must commence to bale out – following which, our Lancaster, PO-H, had crashed at a point a bare 5 miles on the Allied side of the front line!

As we found out later, PO-H was flying in a nearly southerly direction and almost parallel to the River Maas as we were in the process of bailing out- a few miles further on and it would have started to head back into Germany again! (and Merv would not have been able to stop it from doing so without causing it to lose so much height that it would have quickly dropped down to below 3500 feet).

Waiting in Overloon

The MP took us to a patched up house (school building?) in the village, where he asked us to wait while he went in search of Cec and Ernie – who, we were told later, had landed fairly near to each other, not far from a road.

Sam, who landed a little further ahead of them, had as we found out that evening – been picked up by other army personnel.

Apparently all seven of the crew had landed within the space of about a mile – well under a minute's flying time – which indicates the speed at which we had abandoned our aircraft once Merv had given us the word to jump – and that PO-H had crashed less than half a mile further on.

Had it taken any longer for us all to get out, would Merv (and maybe Jim) have made it successfully?

While we were waiting inside the house some Dutch ladies gave each of us a cup of tea and piece of pie – most welcome after our very early breakfast!

We certainly realised that we were in the front line area when, shortly afterwards, we were startled by the crashing roar of heavy guns in the immediate vicinity. This continued from time to time and the ladies told us that the village had been under enemy shellfire during the morning.

Fortunately the Germans were not replying while we happened to be there!

It was an almost perfect day with bright sunshine and now hardly any wind at ground level despite the high wind speed "upstairs" which we had experienced earlier and further east – so we went out into the sunshine and waited for the result of the MP's search.

A Narrow Escape for Me – or for Ernie – or for Merv (and therefore at that height – for all of us!)

Merv then told me of a narrow escape that I had in the aircraft just prior to us baling out.

He said that while I was moving up to stand next to him - just after Ernie had vacated that position to move down into the bomb-aimer's compartment - a shell had come through my side of the cockpit and gone out through the top of the canopy on his (the pilot's) side.

Lucky that neither Ernie or I happened to be standing there at that time. The shell can't have missed Merv by much either!

Looking back – it would have been rather ironic if, after all that we had come through since the time that we had bombed the target, for one of the last flak guns to fire at us as we were crossing into the safety of Allied territory, to be the one that fired the shell which hit Merv and caused the aircraft and all those in it to plunge into the ground!

That gunner must have been quite a good shot, because Les told us afterwards that when he and Cec were moving along inside the fuselage of the aircraft towards the rear door, a shell (probably in the same burst from that same gun) had come through the side of the fuselage near the floor and just behind Cec. It had hit the D.R. compass master unit and had blown it through the top of the aircraft!

Cec and Ernie arrive – What about Sam?

We waited at the house in Overloon for about an hour, then along came an ambulance with Cec and Ernie in it. Our "friendly MP" must have organised the ambulance for them?

Cec said that he had a very sore ankle and thought that it may have been broken when he landed. He could not stand on it, so Ernie was helping him to get around.

We found out later that Ernie had been picked up by a soldier from the British Middlesex Regiment – (as was Cec, I guess). Next day, Ernie was found to have damaged one of his ankles, but did not realise it at the time!

But what about Sam? We were to hear of his experiences from him on the following day.

More on Parachutes – and on Pilot Chutes

A young woman at the house in Overloon in which we were waiting had been admiring my parachute and finally asked me for it, but I did not see why she should have it when it had not been given to the woman who had helped me earlier.

However the thought came to me that, in addition to my ripcord handle which I was now carrying in a pocket, it should be a simple matter to untie the knot on the braided silk cord which attached the small pilot chute to the centre of the main parachute canopy – and to keep

the pilot chute safely inside my battledress jacket if it was small enough to fit in there. Sure enough it was (its overall length when folded was 11 inches) – so it was quickly detached and stowed away (and I now keep it, together with my ripcord handle, here at home amongst my other war souvenirs). Les did the same with his pilot chute.

Shortly afterwards, we bundled up the two parachutes etc and piled them into the ambulance with us, then set off for the city of Eindhoven which was about 40 miles away by road and further to the west.

On our way to Eindhoven.

While we were stopped in one small town along the way for a short while, we got out of the ambulance and soon there was a crowd of people around us, including some children who offered us each an apple. We were very grateful for their gift as we felt that these may have been about all the spare food that they had – so we thanked them then quickly ate the apples, as we were still quite hungry.

In all we travelled for about 2 hours and, though our route took us quickly away from the front line area, we passed through quite a few burned out villages and along tree lined roads – just as wartime Holland was pictured in the newspapers and magazines back in England.

In the early part of our journey we saw burned out tanks, both Allied and German, at intervals alongside or not far from the road.

Wrecked trucks and guns also adorned the scenery in this area – all evidence of war not long past

St Joseph's Hospital – Eindhoven

We had baled out at 1155hrs – ie at 12.55pm local time - and arrived at about 4.30pm in Eindhoven, where the ambulance took us to a modern hospital, "St Josephs", which was in the suburbs – and which housed a British army mobile field hospital at the time.

We were all examined and my sore back was passed off as being the result of my hard parachute landing. Ernie's ankle problem (two broken bones) was soon discovered as he was in quite bad pain by then.

After we had been fed we were cautioned against venturing outside because Germans, dressed as Tommies or Yanks, were very active as snipers in various parts of the city after dark. So we decided that as we were all tired after our day's experiences we would prepare for bed – and while doing this were told that news had been received that Sam – the first to jump from the aircraft – had been immediately picked up when he landed and had been taken to an army unit near to Overloon.

He was quite OK and had been brought to Eindhoven and was currently staying for the night at the British Service Headquarters in the city.

Noises in the Night!

Unfortunately none of us slept much that night – me sleeping for about six of the twelve hours that I spent in bed. My back still ached and I couldn't get comfortable no matter which way I lay. The Doc said next morning that he should have given us something to make us sleep – but after having a hot bath I felt much better, though rather stiff and sore.

From time to time during the night I had heard loud rumbling noises from somewhere above and had wondered if they may be the sound of German flying bombs passing low overhead on their way to London. However I was informed in the morning that the noise that had been keeping me awake was the sound of beds being wheeled around on the wooden floor of the room immediately above us!

Cec and Ernie – a broken ankle each

Cec and Ernie were in beds in one of the wards and were to have plaster put on their ankles that day.

We went up to see them – and while we were there Sam arrived and told us of what had happened to him after he dived out of the front escape hatch of the aircraft.

Sam's Experiences after Baling out

Sam has since said that he had pulled his parachute ripcord – prayed that the chute would open safely – then, when it did, tried to find a suitable place to stow the ripcord handle so as not to lose it. He finally pushed it up the arm of one of his sleeves so that he would have both hands free – but apparently the shock of him landing must have dislodged it and he didn't think to look for it on the ground. He said that as he was descending by chute he saw a truck with a white star on its roof, so knew then that he was in Allied territory.

He said that he was found almost immediately after he landed by a sergeant of the Middlesex Regiment of the British Army – and, after he had recovered from his parachute descent was told that, although it was not far to walk to the battalion headquarters, they had to take care to remain between the tapes which indicated safe passage across a German minefield – and that it was one of the many still uncleared in the Overloon area.

After a short walk they came to a group of tents which were near to a heavy gun battery – and that while he was there the guns kept firing spasmodically over the front line. He was given a brief examination on the spot by an army Doctor who gave him about three quarters of a bottle of "Dutch Grog" – and was told that this was to help to calm him down.

From where he had landed – and later at the battalion headquarters, he could not see Overloon and did not know in what direction it lay – and did not know while at the battalion headquarters how far he was from the River Maas.

A little while later he left in an army vehicle for Eindhoven. When asked, he said that they had not passed through Overloon , nor had he sighted it on their way.

Would that mean the army battalion headquarters was to the north and slightly to the west of Overloon?

On arrival in the Eindhoven area, the vehicle took him to the RAF Base Headquarters, adjacent to an Allied airfield on which he noticed a number of still smoldering and burned out aircraft and also recently bomb-damaged buildings and facilities.

He was dropped off at a building of substantial size which was part of the RAF Station, then escorted to a room in which there was a line of German flyers standing – and where he was told to wait.

A German Bastard! – No, I'm Australian!

After the flyers had filed, one by one, into an adjacent room he was told to enter – to be greeted with "not another one of those German bastards" – from one of the two RAF officers seated at the table!

Sam, who was still wearing his heavy flying suit, immediately pulled one of its sleeves partly down – to expose the "AUSTRALIA" patch on the shoulder of his battledress. The officer's attitude immediately changed and he apologised to him – saying that the German flyers "were a lot of arrogant bastards".

It turned out that they were some of those who had been shot down by Allied ground defences or fighter aircraft during that morning's "Operation Bodenplatte" attacks on the Allied airfields in the Eindhoven area – and that they were being given a preliminary interrogation prior to being sent on their way to prisoner of war facilities.

Sam, whose flying suit was almost the same colour as those of the German flyers, had been taken to be just one more of them.

I'm not riding in the back with Bloody Germans!

After he had provided the debriefing officers with brief details of the day's happenings to our crew, he was taken outside to a truck, in the back of which were two German flyers and one "Tommy" soldier with gun.

Sam was told to get in with them – but replied that he "was not going to ride in the back with bloody Germans!" When the driver insisted that he do so, Sam showed him his Flight Sergeant's brevet and said "you are a Corporal and I am a Flight Sergeant – I will sit in the front with you"!

Sam's comment was that the driver was not very happy but had to agree!

A bed for the night

When the truck arrived in the city area of Eindhoven, it dropped him off at the place where he was to be accommodated for the night. Later on a RAF Warrant Officer gave him his own bed to sleep in – and in the evening, left him a note to let him know that he would be taken next morning to the hospital where the rest of the crew were located – then on to Brussels in Belgium.

We leave Cec and Ernie – and head for Brussels

Merv, Sam, Les, Jim and I then had to leave Cec and Ernie in the hospital. We five departed shortly afterwards by road for Brussels (the capital city of Belgium) in the vehicle which had brought Sam to the hospital – while Cec and Ernie were to be flown back to England from Eindhoven when their plaster casts had set and they could get around on crutches.

Ernie said later that he had spent a total of two weeks in hospital in England before being discharged – and after a short period of convalescence, was sent back to our squadron.

Cec spent a longer period in hospital in England – and, according to Jim's records – was seen in a hospital by Merv on 22nd February, so must have been discharged some time later?

We obtained a few Dutch coins and notes as souvenirs, then left Eindhoven at about 10.30am and arrived at Brussels at 3.30 in the afternoon after a very cold trip along icy roads. On one occasion the driver lost control in a bad skid and the truck nearly turned over.

(How ironic it would have been, after having survived relatively unscathed all that had happened to us on the day before – only to end up being flattened under an overturned truck in Belgium!)

The RAF Reception Centre and other places in Brussels

The driver eventually found his way to the RAF Reception Centre in Brussels where they looked after "distressed aircrew" – as we were called. The place was in the heart of the city, so very conveniently located for short-time visitors wanting to have a look around.

We exchanged about six pounds Sterling for 950 Belgian franks, then were given beds for the night.

Merv and I were placed in an aircrew officers leave hotel – very posh! It was about half a mile from the RAF Reception Centre – and as it was too late to go to a movie show by the time that we had gotten organised, we both covered up our badges of rank – then met up with our NCO crew members at their billets, after which we all went along to the NAAFI Sergeants Leave Centre where we had a wonderful meal, INCLUDING ICE CREAM – served up to us by French and Belgian waitresses in a sumptuous dining room. Really, was there a war on?

After wending our merry way back to our digs we were each forced to spend the night tucked up in what seemed like the softest of feather beds.

IT WAS A TOUGH LIFE IN BRUSSELS! (At this stage of the war anyway!)

Next morning after a slap-up breakfast, it was down to the RAF Reception Centre again.

The Escape Kit, Flying Boots and things

Both Merv and I were without our officer's caps as they had been lost in the aircraft – and we had both shaved with the razor in Merv's Escape Kit, which was better than nothing! We were also wearing flying boots, as were Sam, Les and Jim, so caused some comment as we moved around.

(I asked Jim recently what he had done with his "inner" flying suit and electrically heated slippers. After all this time he is not sure but thinks that he must have handed them in at the hospital at Eindhoven, as while we were there he was able to obtain a pair of flying boots to wear by using one loaned to him by Cec and one by Ernie, which they no longer needed once their broken ankles were encased in plaster.)

Although flying boots were reasonably comfortable for us to wear around Brussels – they really were not the ideal footwear for Les and Jim to use when attending a dance on the following night!

Life in Brussels

The people in Brussels – particularly the women – looked wonderfully dressed – "miles" of furs and silk stockings – shops being stocked with all sorts of luxuries – watches, silks, laces, furniture etc all being on display – but all very expensive.

Food was the big problem – being almost impossible to get so we were told. It was said that everyone had to buy on the black market in order to exist.

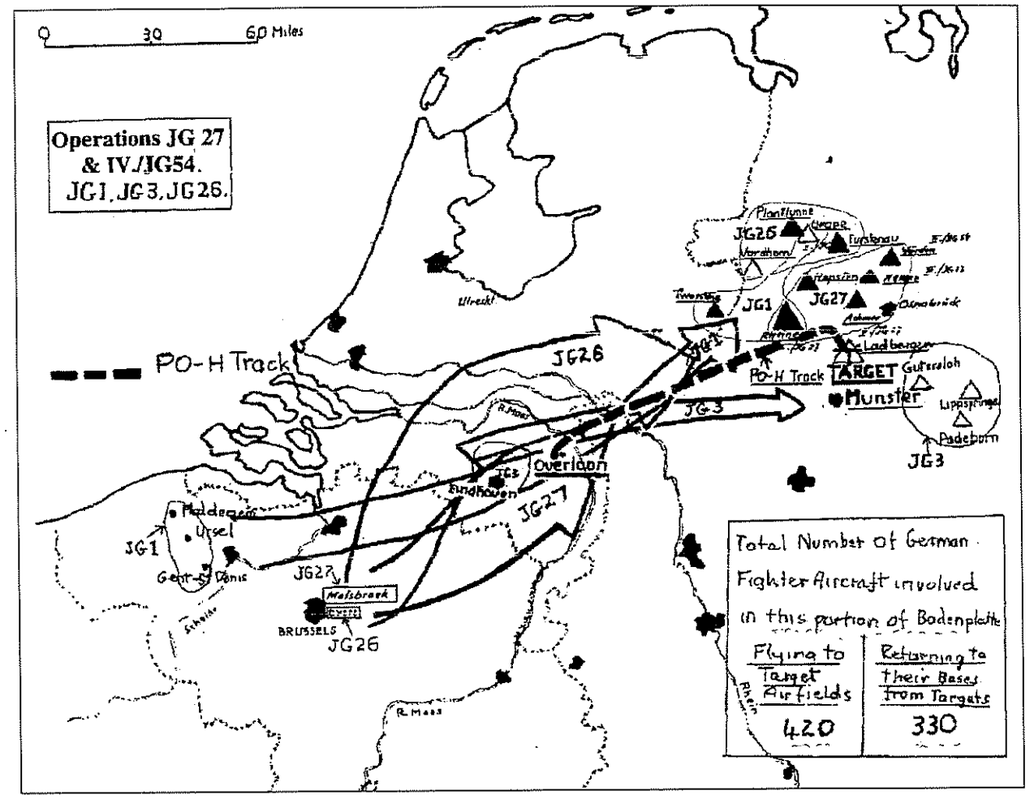
The Service Clubs were not short of a good variety of food, though.

More on Operation Bodenplatte

While at the RAF Reception Centre during the morning, we were told that the smoke which we had seen while over southern Belgium on our way to the target was caused by a very large strafing which Jerry had given the airfields around Brussels - and elsewhere in Belgium - as well as in Holland and caught a lot of our kites on the ground. Our boys caught them on their way home though and got about 150 of them".

So this is why we had not been molested by fighters on our way back from the target to Overloon and a sitting duck for any fighter that was around – another miracle – as usually there's no lack of fighters round that area, they just picked that particular morning to be busy elsewhere.

Route taken by PO-H through the Bodenplatte Area



Showing the return routes to their bases taken by the Fighters of JG1, JG3, JG26, JG27 and JG54 – also shows the route taken by PO-H back from the target on the Dortmund-Ems Canal to Overloon in Holland.

It shows the relationship between our track out of Germany and the routes followed by the German fighters on their return flights – and also the positions of their closest fighter bases – especially those at Rheine and Twenthe.

Back to England in a Dakota – with the troops

My diary goes on to say – "We were then taken out to an airfield about 12 miles from Brussels and from there flown back to Northolt, just out of London, by Dakota, with a lot of army bods going on leave – boy were they sick!"

Sojourn at Northolt

My Flying Log Book records that we took off from Brussels on 3rd January at 1350hrs and after a flight of 2hrs10mins arrived at Northolt – where we stayed for a day and a half (it was here that Les and Jim caused much comment and amusement when they turned up at a dance in town in the evening, wearing their flying boots).

Taken back to Waddo in a Lanc

My Flying Log Book then records that on 5th January we were picked up from Northolt at 1515hrs by No 467 Squadron Lancaster PO-O, piloted by F/L Livingstone from Waddington, who flew us back to our Station via a stop-off at RAF Manston – arriving at Waddington after a flying time of 3hrs 30mins.

A Belated Debriefing – then Survivors Leave

It then continues on – "After telling our story, officially and otherwise, we are now going on leave." This special leave was classed as "Survivor's Leave"

Following the Non Return of PO-H to Waddington after the Dortmund-Ems Op.

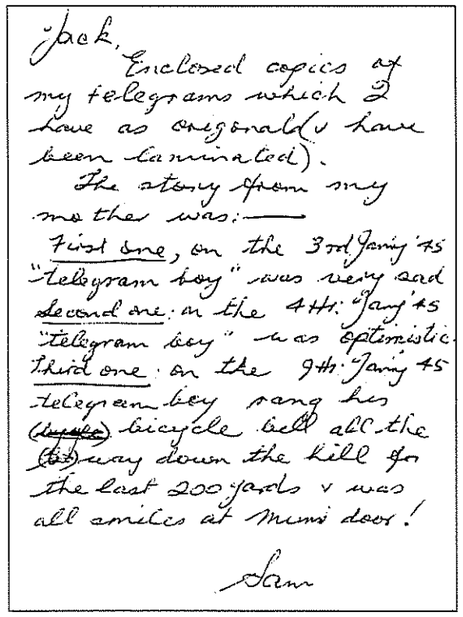
When PO-H did not return to Waddington with the remainder of the 463 and 467 Squadron aircraft after the Operation on 1st January – and was not reported as having landed elsewhere in England, it was assumed on the Squadron that we had "bought it" ("had the chop" ie been killed) – especially as others in aircraft from Waddington flying in the vicinity of PO-H just after we had dropped our bombs had seen us losing height with an engine on fire.

Classified as "Missing on Operations" – Personal Effects – The dreaded Telegrams.

So, because no evidence of our survival had been received from Allied sources in Europe after a reasonable period, in due course our crew was classified as "missing on operations" over enemy territory.

Shortly after our eventual return to Waddington, "minus one aircraft", I wrote a note telling of what happened on the squadron immediately after the Bache crew had been officially classified as "Missing on Operations." Some of this information found its way into my diary, as follows -"As an immediate consequence of this – and following normal procedure – our belongings were quickly collected from our quarters, our flying clothing and equipment lockers emptied, my navigator's flying logs and charts which covered most of our previous Operational Sorties were bundled up and marked "DESTROY 1-6-45" (*as at the year 2002, I still have them covered by this wrapping paper*!) - another crew was designated to take our place on the crew list etc – and our next-of-kin sent the dreaded "missing on air operations" telegrams.

Sam's Note with Telegrams


Jack,
Enclosed copies of my telegrams which I have as original(s have been laminated).
The story from my mother was:—
First one, on the 3rd Jany '45 "Telegram boy" was very sad
Second one: on the 4th Jany '45 "Telegram boy" was optimistic.
Third one: on the 9th Jany 45 Telegram boy rang his (bicycle) bicycle bell all the (the) way down the hill for the last 200 yards & was all smiles at Mum's door!
Sam

Recently when Sam sent me a copy of the three telegrams which each of our families received, to use in this Chronicle - he included a note "which says it all!"

The first Telegram

T.G. 42.

This Telegram has been received subject to the Post and Telegraph Act and Regulations. The time received at this office is shown at the end of the message.

COMMONWEALTH OF AUSTRALIA
POSTMASTER-GENERAL'S DEPARTMENT
TELEGRAM

The date stamp indicates the date of reception and lodgment also, unless an earlier date is shown after the time of lodgment.

Office Date Stamp: KATOOMBA N.S.W. 2 JAN 45

Sch. C.4163. 7/1943.

Office of Origin	No. of Words	Time of Lodgment	T. C. R. No.
1 MELBOURNE 110	5-15P	POSTAL ACKNOWLEDGEMENT DELIVERY PERSONAL	

MR B H NELSON
16 KUNDIBAR ST
KATOOMBA NSW

234

20254 FLIGHT SERGEANT S H NELSON MISSING STOP REGRET TO INFORM YOU THAT YOUR SON FLIGHT SERGEANT SAMUEL HARRISON NELSON IS MISSING AS RESULT AIR OPERATIONS ON 1ST JANUARY 1945 STOP KNOWN DETAILS ARE HE WAS MEMBER OF CREW LANCASTER AIRCRAFT DETAILED TO ATTACK ENEMY TARGET ON DORTMUND CANAL WHICH FAILED TO RETURN TO BASE PRESUMABLY DUE TO ENEMY ACTION STOP THE MINISTER FOR AIR JOINS WITH AIR BOARD IN EXPRESSING SINCERE SYMPATHY IN YOUR ANXIETY STOP WHEN ANY FURTHER INFORMATION IS RECEIVED IT WILL BE CONVEYED TO YOU IMMEDIATELY

AIR FORCE 391 LITTLE COLLINS ST MELBOURNE

6-10P CY

Fortunately it was not that long before word of our whereabouts and condition reached the authorities in the RAF and steps were immediately taken to put matters to rights.

Nevertheless it was a harrowing few days for our loved ones.

The second Telegram

T.G. 42.

This Telegram has been received subject to the Post and Telegraph Act and Regulations. The time received at this office is shown at the end of the message.

COMMONWEALTH OF AUSTRALIA
POSTMASTER-GENERAL'S DEPARTMENT
TELEGRAM

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Office Date Stamp: KATOOMBA N.S.W. 3 JAN 45

Sch. C.4163. 7/1943.

Office of Origin	No. of Words	Time of Lodgment	T. C. R. No.
3 MELBOURNE	83 956	4 20	

POSTAL ACKNOWLEDGMENT DELIVERY PERSONAL
MR B H NELSON 16 KINDIBAR ST
KATOOMBA NSW
WISH TO INFORM YOU THAT ADVICE HAS BEEN RECEIVED FROM AN UNCONFIRMED SOURCE THAT YOUR SON FLIGHT SERGEANT SAMUEL HARRISON NELSON IS SAFE STOP IT IS SUGGESTED THAT YOU TREAT THIS INFORMATION WITH THE UTMOST RESERVE PENDING CONFIRMATION STOP YOUR SON STILL REMAINS CLASSIFIED AS MISSING UNTIL CONFIRMATION OF HIS SAFETY IS RECEIVED STOP YOU WILL BE INFORMED IMMEDIATELY WHEN FURTHER NEWS IS RECEIVED

AIRFORCE 391 LITTLE COLLINS ST MELBOURNE

5 55pm o

The third Telegram

URGENT
T.G. 54

T.G. 42.

This Telegram has been received subject to the Post and Telegraph Act and Regulations. The time received at this office is shown at the end of the message.

COMMONWEALTH OF AUSTRALIA
POSTMASTER-GENERAL'S DEPARTMENT
TELEGRAM

The date stamp indicates the date of reception and lodgment also, unless an earlier date is shown after the time of lodgment.

Office Date Stamp: KATOOMBA N.S.W. 3 JAN 45

Sch. C.4163. 7/1943.

Office of Origin	No. of Words	Time of Lodgment	T. C. R. No.
2. MELBOURNE 60 1-30PM.			

109

TELEGRAPHIC ACKNOWLEDGMENT
DELIVERY PERSONAL
MR B H NELSON
16 KINDISBAR ST KATOOMBA NSW.

PLEASED TO INFORM YOU THAT YOUR SON FLIGHT SERGEANT SAMUEL HARRISON NELSON PREVIOUSLY REPORTED MISSING IS NOW SAFE AND UNINJURED STOP ALL OTHER AUSTRALIAN MEMBERS OF CREW ARE ALSO SAFE STOP ANY FURTHER INFORMATION RECEIVED WILL BE CONVEYED TO YOU IMMEDIATELY

AIRFORCE 391 LITTLE COLLINS STREET MELBOURNE.

2-46PM.S.

Events which followed our return to the Squadron

Now it was a tradition that each member of aircrew who had baled out of an aircraft in an emergency should seek out the Airwoman of the Station's Parachute Section who had packed his parachute in order to thank her for it working properly! (And also to give her a small monetary token of their gratitude). This we duly did shortly after arriving back on the Squadron and before going on Survivor's Leave.

A Decision on our Futures

My diary goes on to say – "After the episode on January 1st we were given the opportunity of continuing on with Ops or being screened".

It then continues on – "Being screened would have meant the breaking up of the crew and departure from Squadron life, which was most congenial and free from restrictions" – *(but perhaps a mite dangerous at times.)*

"So after some discussion we decided that if we seven could still remain as a complete crew then we would continue on Ops – and told this to the Station Commander, Group Captain DWF Bonham-Carter *("Tannoy" – as he was known to the crews because of his need to wear a hearing aid).*

He agreed to us waiting for Cec and Ernie as long as they were not in hospital or convalescing for more than three weeks.

Wing Commander Douglas (our Squadron Commander) was at his best, he called us up and had his little speech – "Good Show Bache, you upheld the traditions of the Squadron" were his words – which were, according to Merv "what a line!"

The Award of The Distinguished Service Order to Merv Bache

It was not long after this that the Squadron was informed that Merv had received "an immediate award" of the DSO (Distinguished Service Order) for the courage, flying skill and determination which he had displayed in flying PO-H and his crew as far as Allied territory in Holland on 1/1/1945, under most difficult and dangerous circumstances.

Having assessed the amount of damage which PO-H had suffered just after dropping our bombs on the target he might well have decided that the safest course of action would be to order all of us to immediately abandon the aircraft at what was then a safe height – and accept that we would, at best, spend the rest of the war in a prisoner of war camp.

It would have seemed at that time to be an almost impossible task to fly it in that condition and by ourselves without fighter escort as far as friendly territory – particularly in view of what we all thought at that moment would be almost certain enemy fighter attack at any minute.

As it was, he chose to give it a go – and we succeeded in making it!

Flight Lieutenant Maurice George (Merv) Bache – DSO Citation

ROYAL AUSTRALIAN AIR FORCE

HONOURS AND AWARDS

DISTINGUISHED SERVICE ORDER

FLIGHT LIEUTENANT MAURICE GEORGE BACHE (434095)

CITATION:

Flight Lieutenant Bache has completed many operational missions and has displayed high qualities of skill, courage and determination.

In January, 1945, he piloted an aircraft in an attack against the Dartmund-Ems Canal and when nearing the target the aircraft was hit in one of the wings and in the bomb bay by shrapnel. In spite of this Flight Lieutenant Bache went on to execute a good bombing run.

Shortly afterwards the aircraft was again hit, the port inner engine caught fire and the propeller had to be feathered. The port outer engine was also damaged and one of the petrol tanks was punctured and its contents drained away. Other damage which affected the control of the aircraft was also sustained.

Height was lost rapidly and Flight Lieutenant Bache experienced the greatest difficulty in retaining control but nevertheless he was determined, if possible, to reach allied lines. To ease the strain of flying with full rudder applied Flight Lieutenant Bache instructed another member of the crew to fasten a cable to the rudder pedal. The damaged port engine now failed completely but this resolute pilot still held on.

As he passed over the Rhine defences at low altitude his aircraft came under considerable light anti-aircraft fire and was hit in many places, but nevertheless he reached allied lines before ordering the crew to abandon the aircraft.

Not until they were clear did he himself jump and he was then so low that as he got clear of the crashing aircraft he struck the top of a tree almost as the parachute opened.

This officer displayed exemplary conduct in the face of great danger and the ultimate safety of the crew was undoubtedly due to his skill, bravery and resolution.

PRIVATE ADDRESS: 47 Young Street, PARKSIDE, S.A.

H.A. Wrigley

Group Captain,
DIRECTOR OF PERSONAL SERVICES

Citation which accompanied the award of the Distinguished Service Order to Merv – for his actions on 1st January 1945

My Flying Logbook open at January 1945 pages

					Time Carried Forward:—	179:50	195:55
Date	Hour	Aircraft Type and No.	Pilot	Duty	Remarks (Including results of bombing, gunnery, exercises, etc.)	Flying Times Day	Flying Times Night
1945 JAN 1	0734	LANCASTER H PA169	F/O BACHE	NAVIGATOR	OPS 15 DORTMUND EMMS CANAL (LADBERGEN) 11x1000lb SAP. Gaggle to A. Where we received 3 hits by H.E. Port wing root & bomb bay. After bombing hit in No 1 Port tank lost fuel. Hit Port Inner & Port outer. Port Inner on fire. Port Outer U/S. Rudders hit. lost ht. back to Front line [illegible] Repeatedly hit by AA crossing Rhine. Bailed out in front line at Venlo Holland All Crew OK. W/Op & F/E broke ankle	4:20	
JAN 3	1350	DAKOTA KG423	STAFF		BRUSSELS – NORTHOLT	2:10	
JAN 5	1515	LANCASTER O PA187	F/L LIVINGSTONE		NORTHOLT – MANSTON – BASE	3:30	
JAN 21	1441	A LM646	F/O BACHE	NAVIGATOR	Fighter Affil.	1:50	
JAN 22	1414	B PB76–	F/O BACHE	"	Air Sea Firing	3:15	
						15:05	
		SUMMARY FOR 1.1.45					
		UNIT	467 Sq				
		DATE	1.2.45				
		SIGNATURE	L.E. Paterson				
		[signature] S/Ldr O/C A Flight					
						94:55	195:55

THURSDAY, MARCH 22, 1945

Repeated Flak Hits Could Not Deter Him

BOMBER PILOT HELD ON IN CRIPPLED 'PLANE

In an airplane crippled by shrapnel Flight Lieutenant Maurice George Bache went on to make a good bombing run against the Dortmund-Ems Canal last January.

His airplane was hit in one of the wings and in the bomb bay. Shortly afterwards the airplane was again hit. The port inner engine caught fire and the propeller had to be feathered. The port outer engine also was damaged.

One of the petrol tanks was punctured and its contents drained away. Other damage which affected the control of the aircraft was also sustained.

Height was lost rapidly and Bache experienced the greatest difficulty in retaining control.

Nevertheless he was determined, if possible, to reach the Allied lines.

To ease the strain of flying with full rudder applied, Bache instructed another member of the crew to fasten a cable to the rudder pedal.

The damaged port engine next failed completely.

Still he held on.

As he passed over the Rhine defences at a low altitude his airplane came under considerable light anti-aircraft fire and was hit in many places.

Bache reached the Allied lines before ordering his crew to abandon airplane. Not until they were clear did he himself jump.

He was then so low that, as he got clear of the crashing airplane he struck the top of a tree almost as his parachute opened.

This officer displayed exemplary conduct in the face of great danger and the ultimate safety of his crew was undoubtedly due to his skill, bravery and resolution, says the citation to-day, awarding him the D.S.O.

Bache, an Australian, is in the R.A.A.F., 467 Squadron.

These pages cover the crew's Dortmund-Ems Canal Operation on 1st January 1945 and our subsequent flights back to Waddington. The attached newspaper clipping covers our experiences on 1st January and the award of Merv's DSO.

Clipping from Cec's local newspaper

The Bowen Independent

FRIDAY, FEBRUARY 16, 1945

LOCAL AND GENERAL

HOW FL./Sgt. DREGER WAS INJURED.

How the R.A.A.F. crew of a Lancaster, hit by flak in a recent raid on the Dortmund Elms canal, fought for 40 minutes to keep the crippled bomber in the air and then parachuted to safety in Holland was told in a message from London to R.A.A.F. headquarters on February 7.

While over target the Lancaster captained by Flying Officer M. G. Bache, of Parkside (S.A.), was hit by three heavy flak bursts in the bomb doors and the port wing root. These hits did not affect the handling of the aircraft and the crew went in and bombed, their bombs straddling the canal.

Then the bomber was hit again. A two feet hole was torn in the No. 1 port tank, the port outer engine was damaged and lost power, and the port inner nacelle was ripped away.

A portable extinguisher was used to put out the flames and with full power on the starboard engines and hard right rudder the pilot fought the aircraft out of the target area, flying with 40 degrees of bank.

The bomber was rapidly losing height and, 20 miles from the Rhine the port outer engine cut out. The two starboard engines had to be throttled back to prevent the machine swinging to port.

Then with two dead engines and still losing height the crippled Lancaster was hit by more flak, which came through the floor of the cockpit but none of the crew was hit.

As soon as he crossed the River Maas and knew he was over Holland, the pilot ordered the crew to abandon the aircraft after a dramatic struggle which had lasted 40 minutes from the target. Except for an English engineer and the wireless operator, Flight Sergeant C. J. Dreger, of Bowen (Q.), who were taken to a Dutch hospital with ankles fractured by heavy landings, the crew landed safely and returned to their English base.

Description of our crew's experience on 1st January 1945 in Cec's local newspaper

What If?

Had we not gone through the experience on 1st January 1945 which I have described – then, with a bit of luck – we would have finished our normal Tour of about 30 Operations before the war in Europe ended – probably at about the same time as the other crews at Waddington who had about the same number of Ops. up as us at the beginning of January – and maybe we would have been individually sent home to continue on as RAAF aircrew, operating somewhere in the Far East theatre of war, or posted elsewhere in the UK – to serve in one or another of the Operational Commands..

But that was not the way it happened.

NOTE: – Of those RAF Bomber Command crews who were posted "Missing on Air Operations" during World War II – we were in the 2.6% (ie 1 in 39) who evaded being either killed or captured by the enemy.

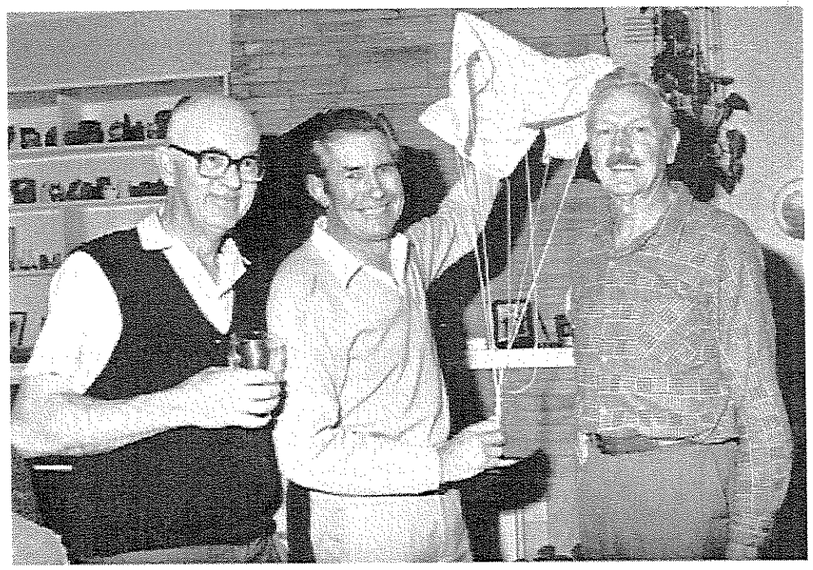
Summary

Sometime after the war, Sam was asked how it was that we had survived the events of January 1st 1945.

He certainly spoke on behalf of all of us when he replied – "God smiled on us that day!"

Post War Crew Reunions

Les shows us his pilot chute



Les and I both souvenired our pilot chutes – here Les shows his to Sam and me at a get-together attended by Les and Norma, and Dot and I, and held at Sam and Valda's home in Wagga.

50 Years After The Event – Get-together in Canberra 1st January 1995

Jack(me), Cec, Sam, Les and Jim cut the special cake made by Valda Nelson to mark the occasion.

To Bert Adams with very best wishes and appreciation for your willingness to provide me with valuable information used in writing this account.

Perhaps it will revive a few memories of our days on the Squadron.

Your fellow navigator "Jacki Patsier

Epilogue

Return to Overloon

In 1982 my wife, Dot, and I decided to do a holiday tour of Europe. Prior to leaving home I wrote to a Mr W. Willemsen of Venray – which is a city in Holland close to what is now the small town of Overloon – to seek his assistance in us visiting the area in which the Bache crew had baled out of our Lancaster aircraft, PO-H, on 1st January 1945.

Mr Willemsen was a gentleman who had a great interest in World War II historical events in that part of Holland, in particular anything to do with Allied aircrew who had baled out or crashed in the south east of the country. He had served in the Dutch Resistance Movement in the area during the war years and been associated with Dutch people who had assisted some of these airmen to escape capture by the Germans.

This had led him to institute a program of research into World War II aircraft crash sites in southern Holland.

The mid-upper gunner of our crew, Les Court, had contacted Mr Willemsen a few years previously to 1982 about our experiences on 1st January 1945 and, in particular the bale-out of the crew and crash of our aircraft near Overloon.

I understand that when Les subsequently visited Holland in April 1979, he had been taken by Mr Willemsen to the site where PO-H had crashed and then been taken to near where he had landed by parachute – after which they inspected the National War and Resistance Museum of the Netherlands (Het Nederlands Nationaal Oorlogs- en Verzetsmuseum te Overloon), which is located quite near Overloon.

In late August 1979, our bomb-aimer, Sam Nelson, also visited Overloon with Mr Willemsen to look at the crash site of PO-H etc, while he was on a European holiday. (Our rear gunner, Jim Jay, did the same thing in the late 1980's).

When Mr Willemsen replied to my enquiry in 1982 he indicated that he would be pleased to assist us and would meet us at the railway station at Venray, from where he would take us to wherever we may wish to go in the Overloon area.

On 28th May 1982 we duly arrived at Venray, to find him waiting for us. First of all we were taken by him in his car to the National War and Resistance Museum near Overloon, where we picked up Mr H van Daal, who was the Museum Secretary and who had offered to accompany us for an hour or so to help with any information which he could provide.

Firstly we went to the spot where our Lancaster, PO-H, had crashed on 1st January 1945. It was on the edge of an open field next to a wooded area about 2 kilometres to the south west of Overloon, with a dirt lane running along the southern edge of the wood and an earthen bank approx 1.5 metres high running parallel to the road, between it and the adjacent field.

At the exact spot where PO-H had crashed the earthen bank had a large section gouged out of it where, we were told, a portion of the aircraft had been projected forward by the force of the impact.

Parts of this aircraft material had ploughed into the wooded area on the opposite side of the lane, while the remainder had been scattered over that part of the field, or forced into the

ground in the impact area.

We were told that as the earthen bank formed part of the east-west boundary between two adjacent Dutch Provinces, the local farmers in that part of each of the Provinces could not agree for some time who "owned" what was left of the wreckage that remained after the Army had taken those items of interest to them! Unfortunately for us, there was nothing to be found by the time that we arrived, some 37 years later – though Dot and Mr van Daal did spend a little while scratching around with sticks "just in case" while I took their photo doing so. Mr Willemsen then said that the last remaining pieces of metal had been found not long beforehand by a searcher who was using a mine detector.

In 1982 at the Crash Site of PO-H

Dot and Mr Van Daal scratching around on the surface of the ground at the crash site of PO-H, near Overloon, looking for any remnants of our aircraft which may have still been there after 35 years. They were unsuccessful in their search.

While we were there a local farmer arrived to tell us that as a boy, he had been in the area on 1st January 1945, so had seen the wreckage before the Army had arrived.

Apparently poor old PO-H was quite a mess!

I was able to describe to them my vivid recollections of hanging from my parachute, watching PO-H perform its "death dive" and also of seeing the column of smoke which resulted from the impact.

That picture is still as clear in my mind as when it happened!

Saying goodbye to the farmer we then left for the short drive to the area where Mr Willemsen said he understood that I may have landed by parachute. On arrival at the edge of another field he asked if I recognised anything.

It took only a moment for me to ask if the small stone farmhouse which I could see about 300 metres across the field, had been there during the war – and, if so, had its roof been destroyed and subsequently replaced?

Mr van Daal, who had been a noted Resistance leader in this area during the war and who knew it intimately at that time, replied that indeed this was so – we had found the place where I had come down by parachute!

We then went around the field by car to the front of the farmhouse where I pointed out, as closely as I could, the nearby spot in the field where I had struck the ground – but in May 1982 not nearly so cold and hard as is it had been at the time of me baling out! The area which had been quite bare back in January 1945, was now a ploughed field containing a large crop of vegetables in neat rows.

Of course I had to give my companions a detailed description of what had taken place in this area so long ago and of my feelings of that time – while Mr Willemsen busily took notes for his records – and finally placed another cross (my landing spot) on his large scale map of the area which indicated places where wartime aircraft, both Allied and German, had crashed or where airmen had come down by parachute.

He then told us of the fierce tank and infantry battles (known as The Battle of Overloon), which had been fought in this area from late September to mid October 1944. It had taken a week for the British forces to take Venray after taking Overloon. He said that the German defenders were elements of the elite SS Divisions, who flooded the more low-lying fields to impede the British tanks, then took to the trees in the woods in a desperate attempt to stem the British advance.

Both sides had suffered a large number of casualties as a result of the action in this area, just a few miles from the German border.

At least there were no MINEN notices around and about us in this field in May 1982!

After taking a few photos, we returned to the War Museum for Mr van Daal to get back to his work, though he joined us while we wandered around the Museum whenever he had a few moments free. He had spent the entire period since the end of the war directing efforts to form –and then to run -what is now a very important museum, paid for by various Foundations, for educating and reminding people of all nationalities of the dreadful carnage and effects of World War II.

He told us that some 250,000 visitors had gone through the Museum during the previous year, including many tourist groups and groups of school children from Holland and the surrounding countries.

Every attempt was made by the Museum Guides to point out the futility of war – but unfortunately not everyone seemed to respond as was hoped – a few elderly German people (and not so elderly?) in some German tourist groups even praising Hitler and giving the Nazi

salute in front of certain exhibits – though fortunately of late, these actions were much in the minority!

The work of the Dutch Resistance was deservedly highlighted – these brave people had paid a high price indeed for their efforts to help free the country from Nazi oppression, especially in the latter stages of the war. Certainly many downed Allied fliers had been sheltered by ordinary Dutch citizens at great risk to themselves, then where possible, spirited out of the country under the very noses of the Germans, on their way back to England!

The Museum is located in the middle of quite a large forest in which at various places are small clearings, each with a tank, a gun, a fighter plane or some other piece of interesting wartime equipment on show together with a notice with details of the item explained in various languages.

We could have spent many more hours wandering around examining the exhibits, both inside and outside the Museum building, but had to eventually take our leave after first thanking Mr van Daal for his kind assistance.

After a short look around the centre of Overloon – none of which we could recognise when thinking back to the small group of battered houses which we remembered from our last short visit to the village in January 1945, Mr Willemsen took us to the British War Cemetery just outside Overloon.

It was a beautiful, quiet place containing hundreds of graves of mainly British soldiers who had been killed during the fighting in the area in September, October and November 1944, but there were also quite a few RAF, RAAF, RNZAF and RCAF aircrew buried there. There were some groups of seven graves in a row, each surmounted by a cross bearing the RAF, RAAF etc crest to denote that there lay a whole bomber crew who had died while over, or on the soil of that part of Holland during the course of their last Operational flight over Europe.

By that time it was mid afternoon so we had to finally thank and bid farewell to our guide for the day – Mr Willemsen who, though he would have gained some useful information for his war records – had provided both Dot and I with a memorable experience which had made our long journey to Holland something to treasure.

Unfortunately I did not copy down the exact locations of the PO-H crash site and place where I landed by parachute in January 1945 while we were with Mr Willemsen, but, by good luck, have found that Pieter Driessen, who wrote the book "Air Battles over De Peel" in 1990, knew of Mr Willemsen's researches into military aircraft crashes in that part of Holland during World War II.

He had contacted Mr Willemsen for details of some of the incidents for his book and, amongst the information sent was a copy of the very map (shown on page 62) which Mr Willemsen had made during his post-war visits to the area with Les, Sam, Jim and I, showing PO-H's crash site and the spots where Merv, Jim, Les and I had each landed by parachute on 1-1-45.

Appendix

(1) Information Sources and the way in which the story of events from 1st January 1945 onwards was written

The first part of my chronicle of events, starting from when I got out of bed on the morning of 1st January 1945 up until our aircraft, PO-H, took off for the Operation, is based on various notes made while I was on Operations on No.467 Squadron, plus information in my Flying Log Book, my navigator's Operational logs and charts - other than those for this Operation - (most of which I still have) - and from the diaries of others of our crew members and that of fellow 467 Squadron navigator, Ernie Biddescombe.

The copies of the flying logsheets and plotting charts received from No.467 Squadron navigator, Bert Adam. s, for the Dortmund-Ems Canal Operation on 1st January 1945 also provided additional details. (Both Ernie and Bert are mentioned again below).

The remainder of the story - from time of take-off for the Operation up until our eventual return to Waddington, is based partly on the 17 page entry in my diary which was made on 7th January to cover our experiences over the period 1st January to 5th January 1945 and partly on other notes, made either shortly after we returned to the squadron, or later.

Further details have since been provided by other members of our crew - and as a result of my subsequent visit to Holland in 1982, including the items by Pieter Driessen which he had received from Mr Willemsen of Venray in Holland.

Other information was gleaned from the various sources mentioned later, including that covering Operation Bodenplatte

All of the above has been supplemented by information in the form of text, maps, diagrams, photos etc, which was obtained during World War II and over the years since the war. Books researched over the past 12 months were useful, as has been discussion of specific aspects with other members of our crew, members of the War and Resistance Museum of Holland's Research Group World War 1939-1945 and others.

The navigator in Frank Lillicrapp's crew, Ernie Biddescombe, transferred some of his flight log entries for the Operation to the Dortmund-Ems Canal on 1-1-1945 into his diary shortly afterwards – and, as he has since lost this flight log and plotting chart, has been kind enough to recently forward extracts from the diary to me. The Flight Plan details would have been similar to those entered in my navigator's flying logsheets for that Operation – which were, of course, lost with our aircraft, PO-H.

I have selected some of his entries, with his permission, for insertion at the appropriate points in my story of our experiences on the day in order to add to the completeness of my account – as, by great coincidence, their aircraft (PO-U) happened to be positioned in the "gaggle" formation directly ahead of PO-H for much of the route to the target – and then for a minute or two after we bombed.

Ernie Biddescombe's entries, where used, have been placed in brackets and prefaced by his initials, "E B".

However by far the most useful sources of information with regard to the period of No.5 Group's flight and its route to the target for the Dortmund-Ems Operation of 1st January 1945 were the copies of his navigator's flying logsheets and plotting chart which arrived in the mail from Bert Adams just after I had completed what was intended to be the final draft of the story.

This information resulted in me having to considerably modify the text in order to replace my "best estimates" with factual details concerning the Group's flight and route to the target and of certain navigational data applicable to this part of our flight.

Bert, who was the navigator of the Grey-Buchanan crew, was in the No.467 Squadron Lancaster PO-B, which flew quite close to our Lancaster, PO-H, from the assembly point for the Operation near Reading in southern England - all the way to the target and for the couple of minutes after we had released our bombs – ie, up to the time that PO-H dropped away from the gaggle after being badly damaged

NOTE - See Bert's log entry at 1122hrs concerning them seeing an aircraft "going down on their starboard quarter – on fire"! That was us!

These logsheets and plotting chart contained accurate records of both the Flight Plan track, and also the actual track which No.5 Group followed, the wind directions and wind speeds etc which were encountered, use of various Gee Chains, Gee availability in the target area, No.467 Squadron's actual times at the various turning points and much more in the way of relevant data.

Having access to these records has allowed me to considerably improve the accuracy of certain information which had a very important bearing on the relationship between the German "Operation Bodenplatte" and the presence of the No.5 Group formation of aircraft in the "Bodenplatte" area while on our way to our target on the Dortmund-Ems Canal. It also provided me with data very pertinent to my use of our damaged Gee navigational equipment on our way from the target area to Overloon, in Holland.

The "downside" of all this was that it meant me having to spend many hours rewriting a great deal of that part of the story and of the sections of the *Appendix* associated with it!

However I am very grateful to Bert for supplying these items from his treasured war records at very short notice and agreeing readily to my use of them as needed.

The short concluding section of the main story, from our return to Waddington up until the crew's interview with our Squadron Commander, W/C Douglas and the notification of the award of the DSO to Merv Bache is based on a later entry in my diary and information from Sam Nelson and the Bache family. Dawn Dreger sent me the copy of the clipping from their local newspaper with regard to Cec and the events involving the Bache crew on 1-1-45.

NOTE: – Where information which was made available to me from more than one source was found to vary between the two sources to any great degree, I tried to find another confirmatory source (a written source where possible). I then used that information source which had been confirmed.

(2) Navigator's in-flight responsibilities

While we were airborne, part of my normal procedure was, at either 6 or 10 minute intervals if possible, to read off the aircraft's present "ground position" using information derived from the trace on the Gee equipment screen and from the Gee chart – or to use a "pin-point" on the ground given to me by the bomb-aimer (ie a feature such as a town, lake, river etc shown on the map), if needed and available – and then to plot this position on my navigational Plotting Chart.

Then I would use the Air Position Indicator instrument (API), which was located on the navigator's instrument panel, to obtain the aircraft's "air position" (ie the position of the aircraft in relation to the mass of air through which it was moving – this being the same as its "ground position" only if there was no wind blowing).

I would plot the aircraft's air position and time at which it was read on my Plotting Chart – known as keeping an Air Plot – and, using the air position and the associated ground position, would then determine the latest "wind" (ie wind speed and direction), which was affecting the aircraft's flight path and ground speed.

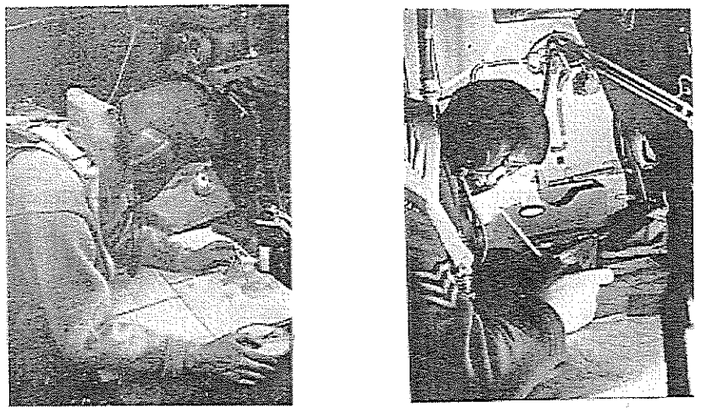
If a Gee position or suitable pin-point on the ground was not available to me at the time, then I had to use "dead reckoning" (short for "deduced reckoning") procedure – which meant using calculated air position, to which I applied what I considered to be the appropriate wind – either the forecast wind for that area and height from my Flight Plan, or a wind which had been obtained by me previously by use of a Gee fix or a pinpoint – to allow me to estimate the aircraft's latest ground position.

Next, from the latest ground position, (actual from a pinpoint or fix, or estimated), I calculated the required course and airspeed necessary to get us to the next Turning Point (or the Target) at the time shown on my flight plan where possible, or if not, then at the time which was within the aircraft's speed capability (as discussed with the pilot). I then passed this new course and required airspeed to him

Merv would act immediately on this information, unless he considered he had a sufficiently good reason not to – in which case he would discuss the situation with me – so that I could alter my navigational planning accordingly.

When the Operation took place during the hours of darkness or during a daylight Operation, when we were not, at that time, part of a "gaggle formation", the navigator had a "never-ending" job which required his continuous concentration for the duration of the flight – often having to be performed under much less than ideal conditions – and sometimes, even, with the odd distraction – as happened on the Operation described in this chronicle.

The Navigator at Work



The photo on the left shows a navigator using a pair of dividers to measure distance on his map or plotting chart. The navigator on the right is using his Dalton Course and Wind speed computer, while holding his pencil in his teeth to prevent it becoming misplaced – or rolling off the navigator's table should the aircraft's flying attitude change suddenly.

Now this particular Operation on 1st January 1945 was being carried out in daylight on a "precision target", so it had been planned on the basis of all the 102 Lancasters from the No 5 Group Squadrons involved, flying to the target as a gaggle - each Squadron behind its own leading aircraft and each of these leading aircraft "slotting into" its position in the Group formation.

Under these circumstances I would only need to use my flying calculations on the way to the target as a check on our Group's changing ground position and on the winds to which we were being subjected.

If for some reason we should become separated from the remainder of the aircraft due to circumstances such as flying in continuous thick cloud, enemy fighter attack etc – then my up-to-date Logsheet and Plotting Chart records would form the basis for me personally navigating our aircraft until either we could rejoin the main bomber stream, or for the remainder of our individual journey to the target.

As the "gaggle" formation would not usually be closely adhered to on the return journey from the target in daylight, especially after leaving enemy territory, the navigator of each aircraft would then become responsible for keeping his aircraft to track and time for the whole of the return journey, as mentioned earlier – (as was also the case throughout both the outward and return portions of all night time operations).

(3) Gee Aircraft Navigation Equipment

One of the prime navigation aids installed in our Lancasters was the Gee navigation equipment, the indicator unit of which was located just to the left hand side and above the navigator's table at about his head height when he was seated. (See photo on page 43)

Its viewing screen and operating knobs and switches were thus most accessible to him for use in maintaining his normal routine of taking ten, or six, minute air and ground position fixes and making course\airspeed adjustments (if necessary) whilst in Gee range - (as mentioned elsewhere).

Gee was very high frequency radio navigation receiving equipment, which, as it did not transmit any radio signals, could not be homed upon by enemy fighters as could some other types of Bomber Command aircraft navigation equipment. It was equally effective during daytime or night-time Operations and in conditions of thick cloud cover.

As pairs of Gee co-ordinates were read off the Gee monitor screen simultaneously, an experienced navigator was able to determine his aircraft's ground position accurately in less than a minute, within an area which, by the second half of 1944, encompassed all of the UK, Denmark, Holland, Belgium and western France. This area also extended for about 50 to 100 miles into western Germany, until a point was reached where the received signals either faded out or started to suffer severe interference from special German ground radio jamming stations.

The Gee coverage area was later extended as the Allied armies advanced into Europe, by installation of groups of portable Gee transmitting stations in north-western France etc.

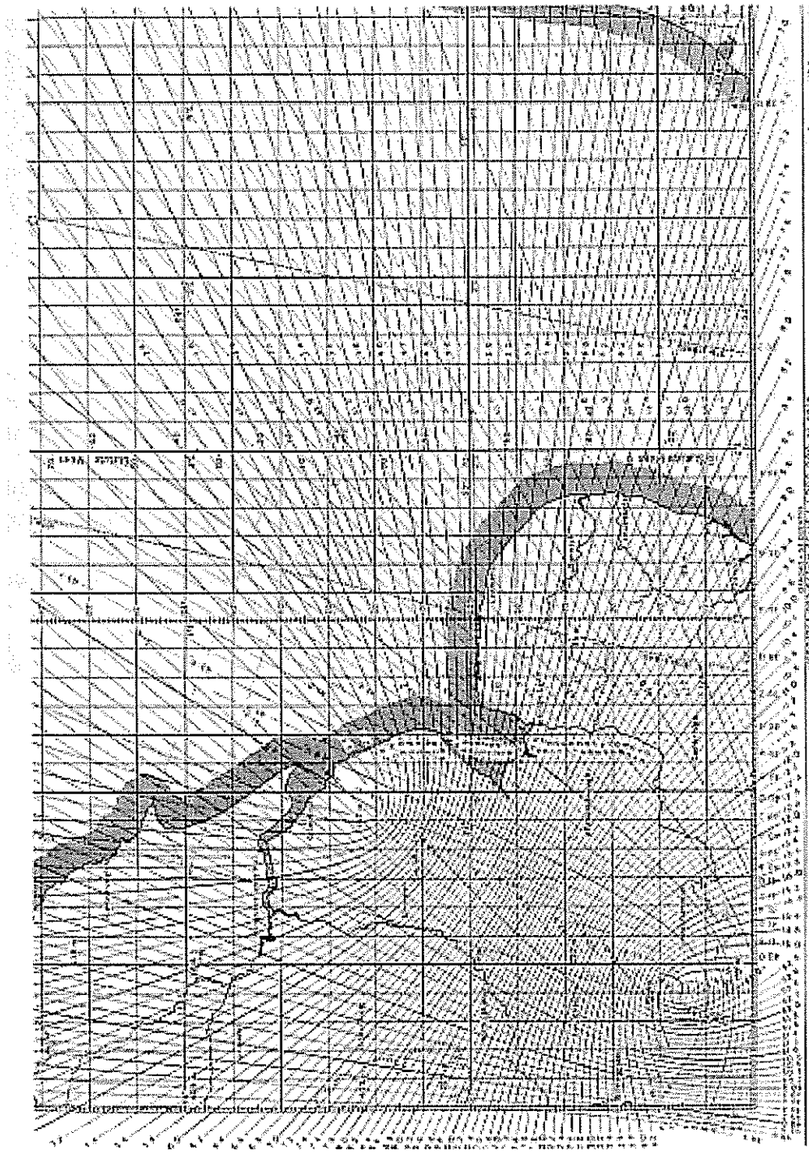
Satisfactory operation of the Gee equipment for some distance beyond this range could depend on the aircraft's operating height, radio propagation conditions etc. Also, as will be noted on the next page, at extreme range the accuracy of the fixes deteriorated due to the lessening angle at which the two position lines intersected one another on the Gee chart. Even so, the availability of this equipment meant that aircraft navigation methods were much in advance of what they were during the earlier years of World War II.

The Gee coordinates obtained by the navigator were converted by him to a ground position by the use of a series of special maps, each drawn to 1:1,000,000 scale and overprinted with a grid ("Gee"="Grid") or lattice, of coloured lines in a special geometric pattern, "centred upon" the groups of three transmitting stations in the UK, or elsewhere, involved for that particular "Gee Chain". Each line represented a given co-ordinate and the large knobs on the navigator's Gee indicator unit were equipped with scales which allowed these coordinates to be determined quickly once the appropriate parts of the "signal blips" were matched with calibration blips on the horizontal traces on the screen.

The ease of operation of the Gee equipment and accuracy of the Gee fixes meant that the navigator was always sorry when his aircraft went beyond Gee range and equally pleased when he returned to within its range – sometimes after having to use other methods of navigation for several hours if on a night-time sortie which penetrated deep into Germany or beyond.

Although other forms of radio and radar navigation aids became available on various Bomber Command squadrons operating in the European theatre of war from about 1943 onwards, Gee still played an important role right up to VE Day.

Gee Chart



Section of one of the Gee Charts as used by me on 1st January 1945 to provide ground positions for our aircraft – up to the limit of range of the Eastern Gee Chain.
To Obtain a Gee Fix, the knobs on the Gee Indicator Unit were adjusted to provide two co-ordinates – each of which was represented by a line on the grid of the Gee Chart, or interpolated between the lines shown. Where the two lines crossed became the Gee Fix for that instant in time. The latitude and longitude of the Fix was then transferred by the navigator to his plotting chart to indicate the aircraft's Ground Position at that time.

(4) Flying Clothing

The pilot, flight engineer, navigator and wireless operator were located in the section of the fuselage over and just forward of the wing in a Lancaster bomber where they received the benefit, when required, of warm air from a heater installed inside the wing next to the port inner engine.

This warm air entered the fuselage via a duct, the outlet of which was positioned next to the wireless operator, who controlled the amount of air being discharged. The temperature in this part of the fuselage could therefore be kept warm enough for each of these four members of the crew not to need the extra warmth provided by additional flying clothing over our battledress, which consisted of medium weight (dark blue for RAAF personnel and grey blue for RAF) wool/cotton jacket and trousers – as was worn around the station. However we wore a heavy white long-sleeved jumper over the battledress jacket when needed. We also wore warm socks and knee length flying boots in place of our normal shoes and our hands were kept warm by light leather gloves in the winter.

Our flight engineer may have also worn a heavier, Irvin-type jacket in winter.

However the bomb-aimer, in common with the two air gunners, wore the full flying suit over his battledress on Ops. because of the cold air which entered the bomb-aimer's compartment in the nose of the aircraft via the openings around the twin guns in the front turret.

The mid-upper gunner and the rear gunner in particular, were always warmly dressed while on Operations – both wearing a thick, multi-layered "top-to-toe" electrically heated "inner" flying suit over their battledress jacket and trousers (and, in winter, maybe an extra jumper or two over the jacket!) – all of which was covered by a full length heavy duty cotton "outer" flying suit. They also wore extra socks under their knee length flying boots – their hands being protected against the cold by electrically heated cotton "inner" gloves which were covered by thick, woollen lined, leather gloves – and their feet by a pair of electrically heated slippers inside the flying boots.

(5) Escape Pack, Escape Photos and Escape Compasses

The escape pack contained such items as a map (one of which I still possess) of the area in Europe over which we would be flying on that Operation. It was printed in colour on a fine piece of silk and was 720mm x 680mm in size, folding down to 165mm x 138mm in order to fit in its waterproof oiled silk envelope, which just fitted in the flat escape pack.

This pack also contained some currency of the area of enemy occupied territory in which we may come down, a small "escape compass", a small amount of concentrated food, chemicals for purifying a small amount of drinking water, a small piece of soap, a small razor with which we might keep our appearance reasonably presentable and a few other small items which I cannot bring to mind. This pack was "individual aircrew issue" to each of us when we flew on Operations over enemy territory – and had to be returned immediately after the Operation.

Other items of an escape nature included two of the metal buttons - if used instead of plastic buttons to button up the fly of our battledress trousers (no zips in those days!). These were made such that one button was magnetised and once removed, could be pivoted on top of the second one, which was made of non-magnetic material, to form a tiny magnetic compass.

In addition to these, the slightly larger button used to hold in place one of the two shoulder lapels of the jacket of our battledress, was hollow. The top part of this hollow button, on which the Air Force Eagle emblem was embossed, could be unscrewed – using a left hand screw thread (which fooled the Germans throughout the War!). Inside was a very small but reasonably accurate compass.

Another item, which was provided for every member of all Bomber Command aircrews who carried out Operations over enemy occupied countries, was a small packet which each of us carried in a pocket of our battledress jacket when going on an Op. It contained several "passport sized" photos, which had been taken on the Squadron. They each showed a head and shoulders view of the crew member dressed in a civilian type coat or jacket – front or side face view and no smile on the face. These were for affixing to false identification papers, should we meet up on the ground with one of the escape organisations found in "friendly" countries still under German domination - and be passed by them along an escape route.

(6) The Bubble Sextant

A hand held instrument used by the aircrew navigator to measure the altitude (angle above the horizontal) of celestial bodies such as the moon and stars, in order to obtain a "celestial fix" of the aircraft's ground position (or of the sun for a single position line during the day) when cloud conditions above us allowed.

The sextant was used while standing with one's head in, or directly below the astrodome which was located in the top of the fuselage of the aircraft, just behind the cockpit canopy.

Because the natural horizon was often not visible from this position in the aircraft, the sextant was fitted with an artificial horizon. This consisted of a clear plastic chamber, which was filled with a clear liquid in which a small air bubble was visible as a substitute for the natural horizon, normally not visible during the night - whereas the bubble could be dimly backlighted for use in the dark.

If the celestial body whose elevation being measured was placed and could be held at the centre of the small bubble while sightings were being carried out, then reading error was minimised (each sighting taking from one to three minutes).

It was not an easy instrument to use in flight under conditions of rapid changes of aircraft attitude in all three planes – and required close cooperation between pilot and navigator over quite a long period of time if a useful result was to be obtained. A "fix" requiring separate sightings being taken, over as short a period as possible, of three celestial bodies (eg stars, planets, moon) which were spaced fairly widely apart in the sky in an east-west direction.

In addition to taking the three sightings and recording their sextant readings, the navigator then had use his "Nautical Almanac" (a book of relevant tables) in order to convert the readings obtained to position lines on the earth's surface - and then to apply the necessary corrections to their positions to bring them to the same "effective time". This, then, finally produced what we navigators referred to as a "cocked hat" (because of its shape when drawn on the navigator's plotting chart) – with the aircraft's position (hopefully) at a point somewhere in the middle of where the lines intersected. (If this sounds all very complicated, then it really was – compared with the effort and time needed to obtain a Gee fix or pinpoint on the ground!)

As such, it was usually regarded by most Bomber Command navigators as an "instrument of last resort" and would only be used when Gee fixes, pinpoints or any other means of obtaining an accurate ground position could not be employed – and "dead reckoning" navigation was not adequate to meet the situation.

Still, it was comforting to have a sextant available on a long night-time Operation – just in case "all else failed".

(7) Operational Details of Lancaster PA169, PO-H

The Operational Service life of Lancaster PA169 commenced when it arrived, "brand new", on No.467 Squadron on 16th September 1944. It was allocated to "A" Flight where it received the aircraft identification letter "H". As the Squadron identification code letters were "PO", it thus became fully identified as "PO-H", which was painted in large letters on each side of its fuselage about two thirds way along from the nose towards the tail.

To those of the aircrew on the squadron, when referring to it in discussion, it was generally said to be "H-How" – "How" being the standard word used to identify the single letter "H" when using radio voice communications. (For example the aircraft "PO-E" was generally referred to in aircrew discussion on the squadron as "E-Easy", or just "Easy")

In order to cover the Service Life of PO-H, I compiled the following list of Operations in which PO-H participated – from the date of its first Operational sortie on 19th September 1944 to that of its last, on which it was lost, while being flown by the Bache crew on 1st January 1945.

This list sets out some details of each of the 28 Operations carried out by PO-H

Op. No.	Date	Pilot	Target
1	19/20–9-1944	D. Hughes	Rheydt
2	23/24-9-1944	E. Broad	Dortmund-Ems Canal
3	26/27–9-1944	H. Purser	Karlsruhe
4	27/28–9–1944	P. Gray – Buchanan	Kaiserlautern
5	5–10–1944	A. Bullock	Wilhelmshaven
6	6–10–1944	E. Broad	Bremen
7	11–10–1944	E. Broad	Flushing
8	14/15–10–1944	J. Sheridan	Brunswick
9	23–10–1944	J. Sheridan	Flushing
10	28/29-10-1944	E. Broad	Bergen
11	30-10-1944	M. Bache	Flushing
12	1-11-1944	M. Bache	Homberg
13	2-11-1944	M. Bache	Dusseldorf
14	6/7-11-1944	E. Broad	Ems-Weser Canal
15	11/12-11-1944	E. Broad	Harburg
16	16-11-1944	R. Mayes	Duren
17	21/22-11-1944	N. Colley	Dortmund-Ems Canal
18	22/23-11-1944	T. Smith	Trondheim
19	4/5-12-1944	G. Stewart	Heilbronn
20	6/7-12-1944	A. Robinson	Giessen

21	8-12-1944	A. Robinson	Urft Dam
22	9/10-12-1944	N. Colley	Urft Dam
23	11-12-1944	E. Broad	Urft Dam
24	18/19-12-1944	E. Broad	Gdynia
25	21/22-12-1944	J. Clark	Politz
26	27-12-1944	E. Broad	Rheydt
27	30/31-12-1944	W. Kynock	Houfalize
28	1-1-1945	M. Bache	Dortmund-Ems Canal (Aircraft lost)

NOTE: – Where a date is shown in the form "19/20-9-1944" in the above table, it indicates that the aircraft took off on the 19th September and landed on 20th September 1944 – ie it was a night-time Operation.

The above record of Operational Sorties flown by PO-H was compiled by me by checking through the entire list of aircrews who flew on No.467 Squadron over the complete period of its existence in order to find those who had been on Ops during the period 16th September 1944 to 1st January 1945 - then checking through the list of Operations on which each of these crews was involved to find out which, if any, of their Operational sorties they had flown in Lancaster PA169, PO-H.

In the process, an apparent error was discovered in the Squadron's records which had been used by Nobby Blundell for his book – in that, for the Operation on 11/12-11-1944, two different crews are each shown as flying in PO-H to the target at Harburg.. As it was being flown on Ops more often by the Broad crew than by any other crew during the period under my investigation, I assumed that they flew it on this Op. – and that the Colley crew actually flew in another aircraft.

My research into Operational Service statistics for Lancaster bombers in World War II revealed that –

(i) Number of Lancasters built=7377 and of these at least 6500 went to Operational squadrons.

(ii) The total number of Operational Sorties carried out by Lancaster bombers = 156,308

(iii) Number of Lancasters lost on Operations = 3,349 (ie between 48-52% of the number of Operational Lancs.)

Thus, from the above, the average number of Sorties carried out by an Operational Lancaster was 153,308/(6500 or more) – which gives a figure of 24 or less.

So Lancaster PA169, PO-H, having been lost on its 28th Operation, could be said to have "reached its quota" – but not, perhaps, for a Lancaster at that stage of the war.

(8) The "Corkscrew Manoeuvre"

The "Corkscrew manoeuvre", as it was known in Bomber Command, was a specific type of manoeuvre carried out by a bomber aircraft when it was attacked from the rear by an enemy fighter.

The bomber pilot, immediately he received the urgent message **"dive port – GO"** or **"dive starboard – GO"** over the intercom from one of the air gunners – pushed the control column forward to put the aircraft into a dive and at the same time used the rudders and ailerons to make it turn in the required direction, either port or starboard, depending from which rear quarter the enemy fighter was attacking. Then he quickly pulled the control column back hard, to make the aircraft climb sharply – and at the same time used the opposite rudder and aileron movement to make it "twist" in the reverse direction – back (theoretically, at least!) to about its initial height and direction of flight.

The rapid "dive/turn twist climb/turn-twist" procedure was kept up until, hopefully, the enemy fighter was shaken off and went to look for an easier prey.

This series of changes in direction was known as a "corkscrew", which was found to be, generally, the most effective evasive manoeuvre for combating an attack from the rear. It also gave the bomber's air gunners a series of short opportunities to fire at the attacker in a predetermined manner during the brief periods between changes of their aircraft's direction of flight.

Appropriate manoeuvres were used to combat attack from other directions.

The "corkscrew', if properly carried out - as was the case when Merv did it on Ops, using his considerable arm and body strength with great determination! - usually resulted in me – (because navigators in Lancs were not strapped in position on their seat) - and any of my portable equipment which was not "bolted down" being tossed about repeatedly "from floor to roof and back again" inside the aircraft's fuselage.

This was just one of those "slight inconveniences" which I mentioned earlier in the narrative – and which, though I may have cursed it as I was being thrown around, or immediately afterwards as I was searching for lost items of my essential equipment, such as pencils, dividers, protractor, ruler etc – I really did not mind, because I realised that it was definitely for the benefit of all of us – and, although perhaps a little bruised and temporarily disorganised, I was still alive, wasn't I?

(9) The Target Markers–No.5 Group.

No.5 Group was unique in Bomber Command, in that during the latter part of World War II it contained five squadrons of a mixture of Lancaster and Mosquito aircraft which provided a target marking force which employed marking methods which were developed by the Commander of No.617 Squadron, Wing Commander (later group Captain) G L Cheshire.

The method which he employed provided a marking accuracy "three times better" than that achieved by that employed by the No.8 Group Pathfinders and was thus most suitable for attaining the bombing accuracy demanded for the many "pinpoint" targets being assigned to No. 5 Group. It involved the Master Bomber who dropped the initial target indicators, flying low over the target, then having visually identified the aiming point, performing a shallow dive from about 1000 feet to approximately 500 feet – and releasing the target indicator visually (ie without using a bombsight) when nearing the bottom of the dive.

It was found, that with sufficient practice, great accuracy could thus be achieved – however this required the use of an aircraft which was even more manoeuvrable than the Lancaster and the smaller, two engine, Mosquito bomber proved ideal for the task – thus becoming the standard aircraft used by the No.5 Group Target Markers for this purpose.

With the actual marking being done by Mosquitos, the Target Marker squadron's Lancasters provided the flare illuminating role for night-time targets – locating the general target area from a height of several thousand feet or more, then dropping illuminating flares over that area for a period sufficiently long enough for the low flying Master Bomber to visually identify the aiming point and drop his target indicator(s).

The Master Bomber then took on the duties of Target Controller – directing the other Target Markers in their Mosquitos to drop further target indicators as needed to either keep the aiming point clearly marked for the Lancasters in the main force and/or make changes (if he did not do these himself) as the bombing proceeded to ensure that the target was most effectively destroyed. He also either gave instructions to his Deputy to pass on to the main force to marshal their efforts as needed or, on occasions did this himself, depending on the situation's urgency.

By this means, No.5 Group produced some of the most outstanding bombing results of the war in Europe, particularly on very small, but most important targets, or targets where it was essential that the non German population in the immediate vicinity be least affected.

Postscript - In order to achieve the required results from the No5 Group main force, it was standard practice for the Master Bomber/Target Controller (usually Cheshire himself) to continue to either fly across the aiming point at very low level for the duration of the attack, or to closely circle it if the smoke from the exploding bombs or burning installations on the ground became too dense, so that he could give immediate directions for any changes needed in the attack procedure. During this period he was not only subjected to intense fire from German light and medium anti aircraft guns (from which his aircraft was repeatedly damaged), but also risked being hit by bombs being dropped in the concentrated area by up to 200 or more of his No5 Group compatriots far above. Is it any wonder that Wing Commander Leonard Cheshire, (already DSO and two bars) was subsequently awarded the Victoria Cross for the sustained period of outstanding bravery which he exhibited in the performance of these duties. A job which he, as Squadron Commander, could well have delegated on many occasions.

(10) Operation Bodenplatte – No.5 Group bombers' track to our target at the Dortmund-Ems Canal – and the route followed by PO-H back to Overloon – both in relation to the routes taken by the Luftwaffe fighters to and from their targets.

(i) <u>No.5 Group's flight to our Target on the Dortmund-Ems Canal near Ladbergen</u>

From my reading of the book "Six Months to Oblivion" written by Werner Girbig, which was mentioned in the story's narrative, I found that the routes followed by the German fighters taking part in Operation Bodenplatte to their target airfields in Holland and Belgium did not cross our track into Belgium on our way to Germany. Also they had all reached their target airfields near Brussels and others in that part of the country and had attacked them, except for the fighters of JG4 which could not find the Allied airfields which were the object of their attacks.

However the paths taken by a proportion of the fighters during the first part of their return flights to their bases in Germany either intersected our actual track to the target or ran parallel and very close to it. .

Because of this I have drawn on a map of the area the actual track for our flight to the target across Belgium and into Germany via the southern tip of Holland – making use of details shown in Bert Adams' flying logsheets and plotting chart. Then I have superimposed information (similar to that presented by Girbig) showing the flight paths followed by German fighters of JG26, JG27, JG77 and some of JG4 on their way back to their bases – these being the Gruppen which my sources indicate, were flying in the same areas on the same morning as our formation of Lancasters, but at times which were a little earlier than when we passed through.

Although many of the German pilots would have expended much of their ammunition by the time that they left their target airfields and headed for home, there were others who would have not, notably some of those from JG4 and JG77, because many of their 160 fighter aircraft which took off on Operation Bodenplatte were not able to locate their assigned targets of Le Culot and Deurne. These aircraft then went looking for "targets of opportunity" in some of the areas through which our route took us.

NOTE - As a matter of interest, I have set out the following tabular presentation covering the movements of the fighters of JG26, JG27, JG77 and JG4 during their involvement in Operation Bodenplatte on 1st January 1945, which is relevant to my investigation

This table of data is as complete and accurate only as are my information sources. Where there is no relevant data, I have inserted the term "N/k" (to denote "Not known")

References have been made to sources of information, where available, as shown in the following examples –ie if from "Girbig – Six Months to Oblivion, Page 153" – it is shown as "(G p153)"; or – if from "Franks – The Battle of the Airfields, Page 108" – it is shown as "(F p108)"; if from Caldwell – "Decision at Dawn" page 48 – it is shown as (C p48); and if from Parker – "To Win the Winter Sky page 420 - it is shown as (P p420)

NOTE - The times given in the table of data are all shown as "hrs.mins" – (eg 9.20am). This is "Continental Time", which is 1 hour ahead of GMT (Greenwich Mean Time).

Jagdgeschwader (JG-) and its Gruppen involved (I,II,III,IV etc)	JG26-I and JG54–III (G p.147)	JG26–II, III (G p.150)	JG27–I,.II,.III..and..IV (G..p.153, .154) and..JG54-IV (G p.155)	JG77-I,.II.and..III (Aircraft..of..I..and..II Gruppen..did..not..find target..airfield (G p162, 163)	JG4-IV…(Aircraft..of..I,.II.and..III Gruppen..eventually..attacked.. minor.targets) (G p132,133.and.134)
Target Airfields, where attacked, or alternative targets which were attacked	Grimbergen (G p.147)	Evere (G p.151)	Melsbroek (G p.154)	Deurne..for..III..Gruppe only….(Nearby..airfields for..I.and.II..Gruppen) (G p.162)	Melsbroek.for..some.of..IV.. Gruppe.only..(Le.Culot..not.. found.by.any.aircraft.of..JG4) (G..p.132,.133.and.134)
Time of take-off from base	8.14am (P..p.420)	8.15am (G ..p.150)	8.30am (G ..p.153)	N/k	8.10am.for..II.Gruppe.–.time.not known..for..I,.III,.IV.Gruppen (G p132)
No. of aircraft which took off	67 (G..p.148)	100 – 110 (G..p.150)	110 (G..p.221)	105 total,.incl..35.for III Gruppe (G p.163, 221)	Approx.20.for.IV.Gruppe (G..p.132)
Attack started at	9.22am (C..p.46)	9.20am (G..p.151)	Aprox..9.20am (G..p.149)	9.25am (F..141.and..142)	N/k
Attack lasted –minutes	15.mins (C..p.48)	45 mins (G..p.151)	Almost..40.mins (G..p.155)	Sporadic,.over.35.mins (F..p.142)	N/k
Time that the last fighters completed their attacks	9.37am (C p48)	10.05am	Approx 10.00am	Approx 10.00am	Approx 10.00am? for Melsbroek
No of fighters lost on way to target and by the end of the attack on target– or aborted their flight on way to target	25 (C p46, p48)	Approx 15 (G p153)	Approx 12 (G p.157, 221)	10.total,..incl..6..for..III Gruppe…(G..p.162,163 .and.221).….(F p142)	25..total..for..JG4,..incl.approx.6. of.JG4-IV (G..p.136.and.220)
No of fighters remaining, to make the return flight	41	Approx 90	Approx 95	95	Approx 14 for JG4-IV
Time that the last of the German a/c left the target to return to their bases	9.37am (C.p.48)	From Evere at 10.05am	From..Melsbroek..at approx 10.00am	From..Deurne..at approx 10.00am	From..Melsbroek, at approx 10.00am?

If Operation Bodenplatte had not taken place on that morning, then there were plenty of fighter bases in this part of Germany from which enemy attacks could have been launched against us. In that case the No.5 Group bombers and their fighter escort could well have been subjected to continuous harassment by many German fighters – both on the way to the Dortmund-Ems Canal., and on the return flight out of Germany.

(ii) The route followed by PO-H from the target to Overloon in Holland.

As our crew's main concern during the flight by PO-H from the target at the Dortmund-Ems Canal to our eventual destination near Ovcrloon in Holland was the seemingly inevitable attack by German fighters from one of their bases in enemy territory in that area, we could just not believe our luck when none appeared.

Now, it took us approx. 35 minutes to cover the distance between the target and Overloon in Holland– but the Luftwaffe's base at Twenthe (also in Holland, near to the German border and north of our track), was less than 10 minutes flying time from our crossing point over the River Rhine. Therefore, aircraft of JG1 at that base would have had plenty of time to prepare to take off, then to fly to intercept us at a point on our route westwards on the German side of their front line defences.

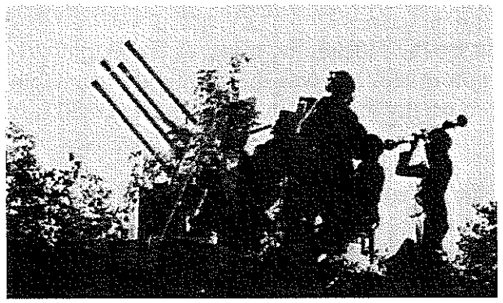
In addition to this, less than 5 minutes flying time northwards from a point on our track which was about 5 miles to the west of the Dortmund-Ems Canal, was a German fighter base at Rheine. Aircraft of JG1 and JG27 from this base could easily have caught up with us before we reached the Rhine.

Surely there must have been a number of German ground aircraft-observer sites along our route westwards that would have alerted the Luftwaffe as to our presence – as well as providing them with details as to the height, direction and speed at which we were flying?

Supplementary Notes

(1) German Anti-aircraft Flak

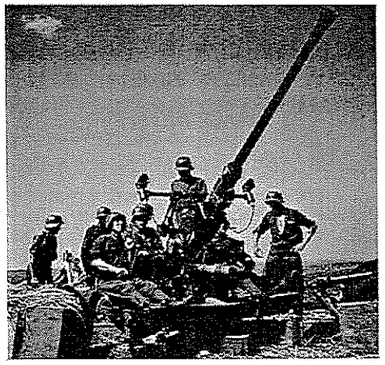
The Germans produced an incredible number of Fliegerabwehrkanone or "Flak" guns to protect their troops in the field and eventually to provide a moderately effective system of radar directed Flak and searchlight systems to protect their major industrial cities, in particular those of the Ruhr valley.



Stats for FLAK 2 cm FLAK 30 (0.79 in):
calibre: 20mm (0.79 in)
Swivelling range: 360 degrees
Maximum rate of fire: 280 shells a minute
Practical rate of fire: 120 shells a minute
Muzzle velocity HE shell: (2,950 ft/sec.)
Muzzle velocity AP shell: (2,720 ft/sec.)
Maximum firing range: 4,800m (15,750 ft)
Maximum firing height: 3,700m (12,140 ft)

Light Flak

Light Flak typically consisted of heavy 12.7 mm machine guns and 20 mm towed cannons that could be set up quickly around troop and armoured groups for anti-aricraft protection. These guns were light, fast firing and quite effective against aircraft at low altitudes. They eventually were found all throughout the German held countries to provide protection for railroads, bridges, towns, important cross-roads and anywhere the Germans felt they needed protection. They made it quite dangerous to fly low over certain areas, such as coast lines in a slow bomber, as they would fire at almost anything flying in their area.



Medium Flak

Medium Flak guns were typically 37 mm towed guns operated by a large crew. They were slower firing than the 20 mm guns, but had a longer range and were more deadly. They were used in conjunction with the smaller guns or at more important military installations. Their longer range allowed them to be used in the defence of German cities. Their streams of shells could be seen rising into the bomber stream as globes of yellow or red. They were contact bursting shells only.

Heavy Flak

Heavy Flak typically consisted of the highly effective and ubiquitous 88 mm cannon set up in anti-aircraft mode. By 1942 over 15,000 88 mm cannons formed the bulwark of Flak defenses for Germany arrayed in Flak belts stretching across Holland and Germany, in places 20 km thick. Many batteries were radar directed and worked cooperatively with searchlight batteries. The image above is of a radar directed battery of 88's night firing.

Heavier guns of 130 mm and 150 mm were also used. The heavy Flak shells exploded at pre-set heights.

German Anti-Aircraft Artillery

Name	Date	Calibre mm	Length calibres	Elevation degrees	Weight kg	Shell Weight kg	Muzzle Velocity meters/sec	Rate of Fire	Max Horiz. Range	Ceiling meters
2-cm Flak 30	1937?	20	85	90	483	0.120	899	280	2697	2134
2-cm Flak 38	1939?	20	85	90	406	0.120	899	450	2697	2134
2-cm Flakvierling	1940	20	85	100	1520	0.120	899	1800	2697	2134
3-cm Flak 103/38	1944	30	85	80	618	0.150	899	400	5715	4694
3.7 Flak 18	1935	37	85	85	1757	0.556	820	160	6492	4785
3.7 Flak 36/37	1937?	37	85	85	1544	0.556	820	160	6492	4785
3.7 Flak 43	1937?	37	85	90	1247	0.566	820	250	6584	4785
3.7 Flakzwilling	1937?	37	85	90	2781	0.566	820	500	6584	4785
5-cm Flak 41	1941	50	68	90	3100	2.2	840	130	-	9000
5.5-cm Gerät 58	1941	55	68	90	3500	2.03	840	140	N/A	N/A
8.8-cm Flak 18,36 or 37	1934	88	53	85	4986	9.4	820	15	-	9900
8.8-cm Flak 41	1942	88	72	90	7800	9.4	1000	20	-	15000
10.5-cm Flak 38/39	1939	105	53	85	10224	14.8	881	15	-	9450
12.8-cm Flak 40	1942	128	58	88	10675	26.02	880	12	-	10675

The German Flak arm was also being strengthened by increasing the size of the 88 mm light batteries from 4 guns to 8. To guard the more important targets ***Grossbatterien*** comprising 2 or 3 of the enlarged single batteries were created (up to 40 heavy flak guns) firing rectangular patterns of shells known as box barrages that proved deadly. Each battery, large or small, was controlled by a single predictor which meant that up to 18 guns might engage one bomber at a time. The firepower also increased as larger calibre guns were introduced including a 105mm weapon and the largest of all a massive 125mm gun.

A true proximity fuse or variable time fuse was never developed by Germany despite extensive efforts to do so. **Allied planners estimated that German FLAK would be about three times more deadly if they had proximity fused shells.**

HOSTESS to "CATERPILLARS"

Scattered throughout the world are 22,000 Caterpillar officers who have saved their lives by emergency parachute jumps. Headquarters of their exclusive Club, is a girl's office desk in a quiet English village.

By a London Staff Correspondent

(2) Hostess to "Caterpillars" - The Sydney Morning Herald, 30 July 1946

(3) Publications in which there is specific mention of Merv Bache and/or the Bache crew

Publication	Author	Date
VICTORY ROLL – The RAAF at War.	RAAF Public Relations	1952
HOW FLT./SGT DREGER WAS INJURED	The Bowen Independent – (Newspaper)	1945, Feb 16
AIR POWER OVER EUROPE 1944-1945	John Herrington	1962
REPEATED FLAK HITS COULD NOT DETER HIM – Bomber Pilot Held On In Crippled Plane	London Morning Standard – (Newspaper)	1945, Mar 22
467 – 463 SQUADRONS RAAF	H. (Nobby) Blundell	1985
AIR BATTLES OVER DE PEEL	Pieter Driesen	1990
467 SQUADRON RAAF	H. (Nobby) Blundel	1991
SIX MONTHS TO OBLIVION	Werner Girbig	1991
FLYING SQUADRONS OF THE AUSTRALIAN DEFENCE FORCE	Steve Eather	1995
DIARY OF A BOMBAIMER	F/O Stephen Collier	1996
FOR FAITH AND FREEDOM – ROYAL AIR FORCE – WADDINGTON- The Last 50 Years	John F Hamlin	1996
ROYAL AIR FORCE BOMBER COMMAND LOSSES OF WWII – 1945	W. R. Chorley	1998
NEW YEAR RESOLVE – Lyle Patison recalls a daylight raid over the Dortmund-Ems Canal to Ray Leach	FlyPast – (English Aviation Magazine)	2002, March Issue

(4) The Article by Ray Leach in FlyPast magazine.

My writing of the chronicle of events on 1st January 1945 was given added impetus when its subject matter was covered, in a much abbreviated form, by an English friend, ex Squadron Leader Ray Leach, who had been located for a period of his wholly post-war RAF service at Waddington – the Station on which our crew carried out our World War II Bomber Command Operations.

I first came into contact with Ray in the mid 1980's when he made a request while stationed at RAF Waddington, for photographs which had been made by anyone serving at that Station during the many years since it was first formed, in order for him to make up albums containing a "Photo History of RAF Waddington" for display at the Station.

I was able to send him some of the photos (and their negatives) taken by me over my period there during 1944/45 – and subsequently, when he indicated that he was hoping eventually to produce a written history of the Station, also sent him material from my "war diary". I also sent him some other items concerning my experiences while at Waddington and events that were associated with this station, which I had come across later. We have subsequently kept in touch by letters written from time to time over the years.

Last year Ray advised me that he had been approached to write a short story for publication in a magazine and that he wished to use my diary entries covering our crew's experience on 1st January 1945 as the basis for this. His transcript of these diary entries, together with other information which he added – and comments etc which I had supplied to him, including excerpts from my partly completed story – eventually became the article, which is a much abbreviated version of part of the chronicle of events which I have now produced.

The Publisher of Ray's article apparently commissioned a well-known English aviation artist to make a painting depicting the badly damaged PO-H as he visualised it flying close to Overloon a few moments before we commenced to bale out. A full-colour reproduction of this painting was included in with the article.

The painting was produced after the artist had seen a copy of a sketch which I had made of us actually baling out of the aircraft. I had sent a copy of this sketch to Ray previously for his information.

However after I informed Ray that I wished to retain copyright on my sketch, the artist did not attempt to reproduce it exactly, but instead produced his impression of how he imagined the aircraft would have appeared just prior to it being as shown in my sketch.

His impression of PO-H looks quite close to how it was when the crew were abandoning it shortly afterwards, except that its actual angle of bank (which had been maintained for the whole of the flight from the point near the target at which it first received severe damage) –was about 15 to20 degrees greater than that which he has depicted.

Ray's article was published under the title of "New Year Resolve" in the March 2002 issue of the English monthly aviation magazine "FlyPast".

Glossary

Glossary of Technical Terms and RAF Slang Terms used in the Narrative.

A and B Flights	The (normally) two Flights on a Bomber Command Squadron between which, the Squadron's Operational aircraft - and aircrews - were allocated. Each Flight had its own Flight Commander "A" Flight usually contained those aircraft having an aircraft designation letter of "A" to approx "N", while those in "B" flight were designated by the letters from approx "M" to "Z". Each aircraft, apart from its manufacturer's aircraft identification number, was identified by its Squadron letters - eg for No.467 Squadron, the letters "PO" – followed by the aircraft identification letter, eg "E", painted about mid way along each side of its fuselage – to give its RAF identification - eg in this case, "PO-E"
Ailerons	Movable section of the wings, located part way along the trailing (rear) edge of each wing. When operated by the hand wheel mounted at the top of the pilot's control column, the ailerons on each wing moved in the opposite direction (one up, one down) to assist in setting the banked attitude of the aircraft during a turn
Aiming point	The exact position on the ground in the target area where it was intended that the bombs should strike
Air Plot	Part of the information plotted on the navigator's Plotting Chart during flight. It involved the plotting of lines on the chart to represent the course followed for given distances, based on True Airspeed and time between points where course alterations took place. The Air Plot was used in conjunction with Wind vectors to determine Ground Speed and Ground Position when following Dead Reckoning navigation procedure. Note - the navigator had to ensure that all speeds and distances used were expressed in the same units - eg nautical miles and knots, or statute miles and miles per hour etc - by carrying out conversions where necessary – and also had to ensure that he was always using true airspeeds not "indicated airspeeds" for his plots. The navigator had, for most of a flight, to follow a 6 or a 10 minute cycle for determination of current Ground Positions, often by means of Dead Reckoning navigation ("Dead" derived from the word "Deduced"). He also had to initiate course and airspeed changes for the pilot to carry out, as required, etc - under Bomber Command Operational conditions (ie being subjected to a variety of external events caused by the enemy) for hours on end – knowing that a mistake could end in disaster for the aircraft and crew. This posed quite an arduous task for navigators – no wonder that I was "dog tired" at the end of a long night time Operation, of up to 10 hours in duration.
Air Position Indicator (API)	An instrument installed at the navigator's position to provide readout of the aircraft's air position, referenced to a previous known position of the aircraft - such as point of take-off, a Gee fix, a pinpoint, the target etc. The instrument utilised inputs from the Direct Reading Compass and the Airspeed Indicator, which had been corrected by the navigator to provide true airspeed. Its availability saved him from having to maintain an Air Plot on the navigator's Plotting Chart -or it was used by him as an accessory to an Air Plot. However the instrument was subject to certain limitations.

Airspeed	The speed of the aircraft through the air mass surrounding it. Airspeed equalled groundspeed only when there was no movement of the air mass over the surface of the earth – ie no wind. Indicated airspeed was measured by means of a pitot head, which was connected to airspeed indicators installed in front of both the pilot and the navigator. Indicated airspeed had to be converted by the navigator to true airspeed, by the application of a correction based on the aircraft's height and air temperature at that height, if it was to be used by him, together with wind speed, to determine the aircraft's groundspeed etc.
Altimeter	Instruments placed in front of both pilot and navigator, which indicated height above some datum point (usually sea level – or, in the case of the pilot's altimeter, the height above sea level of an airfield at which the aircraft was about to land)
Anglepoise lamp	Small lamp which was mounted on a movable bracket, pivoted at the rear of the navigator's table to allow it to be positioned to give a small area of light on the surface of a map or chart pinned on the table. Its brightness could be varied to suit operational requirements
Astern	Behind the aircraft
Baling out	(i)Leaving an aircraft in flight by parachute, in an emergency (ii) RAF slang for getting out of some undesirable situation quickly Also see Glossary Parachute pack (chest type) and Parachute pack (seat type)
Bang-on	RAF slang for accurately positioned-on; (or very accurate; very good, just the way I want it, just right!)
Banked	An aircraft's attitude where it was flying with one wing higher than the other, such as when it was in a turn
Beam (port or starboard)	Being at right angles to the aircraft (in the horizontal plane) in its direction of flight. Port beam being to the left and starboard beam being to the right of the aircraft when looking towards its nose from inside the fuselage.
Bod	RAF slang for a person
Bomb bay	Compartment located in the under side of the aircraft (at about its centre of gravity) into which the bombs were loaded just prior to an Operation. The two bomb bay doors opened downwards to allow the bombs, when released by the bomb-aimer, to fall clear of the aircraft.
Bombing panel	Panel mounted next to bomb-aimer's position in the nose of the aircraft. It had a series of switches and indicating lights mounted on it – one for each bomb position, to allow the order of release to be selected, and also indication that each bomb had been released etc
Bombsight	Aiming device mounted in nose compartment of a bomber aircraft. Used by the bomb-aimer to accurately position the aircraft such that if he released the bombs when the aiming point on the ground was seen to be at the junction point of its "sighting cross", then they should strike the ground at the designated target point
Boost	The pressure of the air forced into the engine air intake
Caterpillar Club	Club initiated and run by the Irvin Parachute Company, which provides automatic Life Membership to any person who can prove that they have saved their life by the use of an Irvin type parachute. A membership pin – in the form of a small gold caterpillar pin "dress ornament"- which has the recipient's name - and Service Rank if any, engraved on the back. It is provided to each new member, free of charge – together with a Membership Certificate in the form of a small plastic card Also see *Notes* – Item (2) – Hostess to "Caterpillars"
Chute	Parachute

Control column	Vertical column located directly in front of the pilot's seat, movable by the pilot in a fore and aft direction about a pivot at its base, to control elevator movement. Rotation in a vertical plane of the hand wheel which was mounted near the top rear side of the control column in a vertical plane moved the ailerons
Course	Direction of movement of the aircraft, in the horizontal plane, through the air mass surrounding the aircraft. Magnetic Course, as shown on the aircraft's magnetic compasses, had to be converted by the navigator to True Course for his Air Plot. NOTE - The course and track of the aircraft were only the same in conditions of zero wind velocity
Crash landing	A partially controlled landing of a damaged aircraft – usually with the undercarriage retracted
D/R position	Position of aircraft (usually ground position) - determined by "dead reckoning" procedure - rather than by use of an aid such as a visual pin point, or by Gee or other navigational equipment (such as H_2S or Loran etc where installed), which indicated true ground position
Dakota	American manufactured two engine transport aircraft
Dalton navigation Computer	A handheld navigational instrument having a small rotatable circular transparent screen, which was calibrated in degrees around its edge to allow it to be set to represent the aircraft's True Course. A movable chart roll with cross lines representing values of airspeed or groundspeed could be viewed though the circular plastic screen, or "window". The aircraft's groundspeed and direction of flight in relation to the ground (ie the track) could be quickly determined if one vector line to represent wind speed and direction was drawn in pencil on the plastic transparent rotatable screen from a point at the centre of the screen, once the screen and chart roll had been suitably positioned It was one of the navigator's basic "tools of trade"
Dead reckoning	Method of navigation in which determination of the aircraft's present ground position relied on the use of calculations rather than aids such as pin points, Gee, visual or radio bearings, sextant derived position lines etc (although a single or poor quality position line may be incorporated as part of the Dead Reckoning calculations). In the absence of more up-to-date information, the wind speed and direction data for various areas along the Flight Plan track as supplied at the Operational Briefing, or perhaps from some much earlier reliable ground position - may have to be used to determine the aircraft's present "D/R ground position"
Defended areas map	Map in main briefing room, on which was shown those areas in enemy held territory which were surrounded by a heavy concentration of anti-aircraft guns. This information was updated regularly
Digs	Service slang for "accommodation", or place where one lived
Dispersal bay	An area in the vicinity of the perimeter of an airfield allocated to each of the aircraft based at that airfield. It was where that aircraft was placed when not flying and where routine service work and flight preparation, other than major maintenance, was carried out on it – in the case of a Bomber Command squadron, by its own small group of ground crew – assisted by specialist personnel when required.

DR compass	Distant Reading gyro-stabilised magnetic compass – which consisted of a "master unit" located inside the fuselage of the bomber aircraft about 2/3 way to the tail end where it was relatively clear of magnetic effects from the engines etc. The magnetic compass bearing which it produced was transmitted to "slave units" for display to pilot and navigator (and also as an input to the bomb-aimer's bombsight if required). These readings could be converted from "magnetic " to "true" by the navigator at the turn of a knob - to apply the correct value for local "magnetic variation" – a most useful feature Being gyro-stabilised, it did not suffer from acceleration and deceleration effects in conditions of varying course, airspeed, aircraft attitude etc, as did the simple magnetic compass. However in the case of a violent manoeuvre it could "topple" and be rendered useless until reset by the pilot or navigator.
DSO –(Distinguished Service Order)	An Award made to Commissioned Officers in the British and Commonwealth Armed Forces. In the Air Force, if for Gallantry in Action, it was ranked next to the VC
Duty Officer	One of the, usually more junior, Commissioned Officers – selected on a weekly or similar basis (if an aircrew officer, one who was not at that time on flying duties) to carry out certain routine duties on the Squadron or other Air Force Establishment. These duties were such as performing routine inspections, roll call checks and other checks etc and instituting appropriate corrective action – filling in certain routine reports and carrying out similar duties as directed by a more senior Officer – or accompanying a more senior Officer in order to render assistance such as obtaining information, as required.
Elevator trim tab	Small, separately operated section of each elevator. The position of the elevator trim tabs was set by the pilot to assist in trimming the fore and aft attitude of the aircraft.
Elevators	Installed at the rear edge of each half of the horizontal section of the tailplane. Operated by the pilot to cause aircraft to climb or dive.
Engine nacelle	Sheet-metal cover installed to "wrap around" each engine
Escape Manoeuvre	Recognised method adopted by a bomber when attempting to escape being shot down by an approaching enemy fighter. Usually the escape procedure adopted by the pilot of the bomber being attacked was to initiate a "corkscrew manoeuvre" when instructed to do so by another member of the crew – usually one of the air gunners. For more details *see Appendix Item (8) –" Corkscrew Manoeuvre"*
Escape pack and escape photos	See *Appendix* Item (5) "Escape Pack etc".
ETA	Navigational term for Estimated Time of Arrival (at some point). The ETA is calculated by dividing the distance to the point concerned by the (estimated) ground speed of the aircraft.
Feather propeller	An operation carried out by the pilot or by flight engineer under the pilot's directions immediately after an engine had been shut down in flight. Feathering caused the pitch of the blades of that engine's propeller to be changed to a position which reduces the tendency for rotation of the propeller due to air flowing over its blades at the speed at which the aircraft is flying. It was done to minimise the quite significant drag on that side of the aircraft which would be caused by the propeller (hence the engine crankshaft etc) continuing to be rotated slowly under the influence of the airstream – and thus for the aircraft to veer in that direction as well as slowing down.
Flak	German anti-aircraft guns (Fliegerabwehrkanone) from 20mm calibre upwards. The same term was used to describe the shells fired from German anti-aircraft guns and also shrapnel from bursting shells from these guns. For more details see *Notes* - Item (1) - German Anti-aircraft Flak

Flaps	Movable aerofoil sections attached to the trailing edge of each wing – pivoted such that they could be rotated in the downward direction by the pilot, by means of push button controls in the cockpit. The flaps were normally used by the pilot during aircraft take-off and landing to optimise the lift characteristics of the wings during these manoeuvres, but during normal flight their position could be adjusted slightly in order to vary the aircraft's "trim" in the fore and aft flight attitude.
Flight Plan	The information about the route to and from the target and means by which timing, flying height and bombing requirements etc were to be achieved (also see "Flying Log sheets")
Flying bomb	Small German pilotless aircraft in which was installed an explosive charge, set to detonate on impact. Many of these devices were launched from enemy held territory near to the North Sea coast during the later part of World War II - aimed at the London area in England. Otherwise called a "V1", "buzz-bomb" or "doodle-bug".
Fore and aft	Front to rear, as related to the aircraft's longitudinal axis.
Fuselage	The main body of the aircraft, to which the wings and tail plane assembly were attached.
Gaggle	Loose formation of bombers flying on a daylight Operation behind a leading aircraft. The gaggle formation was usually maintained from the point where it formed up until at least the target – and sometimes then part way over the return journey back to base.
Gee	A radio receiving device provided in Allied bomber aircraft during the second half of World War II. It was used by the navigator to quickly obtain the ground position of the aircraft with an accuracy of a mile or so - except at the extremities of its operational range, which was somewhat limited outside the UK because of its operating characteristics, jamming by the enemy etc. As it did not transmit, it could not be homed-upon by enemy fighters, as could some other aircraft navigation devices. Also see Appendix Item (3) - Gee Aircraft Navigation Equipment
Gee fix	The ground position obtained at the time that the navigator operated the Gee equipment to take a "fix" of the aircraft's position. This position was then entered into his navigator's flying logsheets and plotted as a point of latitude and longitude (obtained by use of the appropriate Gee chart) on to his navigator's plotting chart. The Gee fix position was shown by a small "x" symbol on the plotting chart, with the corresponding time that it was taken shown next to it. The Gee fix ground position on the plotting chart was usually joined to its corresponding "air position" by an arrow, whose direction represented the current wind direction and whose length was used to calculate the current wind speed (to give the current "wind"). This "wind" was then usually indicated by an entry, which was identified by the time that it was taken, and encased in a small rectangle, on a line in the navigator's logsheet. Also see – *Appendix* Item (2) – Navigator's in-flight responsibilities. – and also Appendix Item (3) – Gee Aircraft Navigation Equipment
Grass	Term denoting the visual appearance of the "radio noise floor" on the screen of the Gee receiving equipment - and also from some types of German jamming signals. "Grass" was a horizontal band of closely spaced vertical green lines of irregular height along the lower edge of the display – giving the general appearance of a mass of shorter or longer green grass! The higher the background noise or jamming signal level, the longer the "grass". The desired Gee signals, if discernable, appeared as "blips" through and above the level of the "grass"
Graviner fire extinguisher	A fire extinguisher which was fitted to each of the aircraft's four engines. The individual extinguishers were operated remotely by means of push-buttons on the instrument panel in the pilot's cockpit when required to extinguish a fire in an engine.
Great rate of knots	Very quickly – or with surprisingly fast speed

Ground crew	In the context of this story – a group of four ground staff tradesmen from the fitter and armourer groups who were allocated to each Lancaster aircraft on the squadron. They carried out the routine maintenance and minor repairs required to keep it in a serviceable condition - and often to make minor (and sometimes a bit more than minor) repairs needed to return it to serviceable condition after being "shot up" - and they also helped prepare it for Operations when needed. One of the group was of higher rank, maybe a sergeant or flight sergeant – who was the "crew chief". This group was assisted by specialist ground staff where necessary. As they were allocated to only one aircraft, they soon came to regard this Lancaster as "their" aircraft, which, it has been said – they "loaned" to an aircrew (or to various aircrews) from time to time for them to fly it on Operations, training flights etc! These ground crews often worked very hard for long hours under all types of weather conditions out in the open in a dispersal area to ensure that "their aircraft" would be ready for an Operation . No wonder it came as a blow to them when "their aircraft" did not return.
Gun turret (front, mid-upper or rear)	Rotatable, or partially rotatable housing, installed at one of these points on the Lancaster bomber aircraft, in which machine guns were housed. The mid-upper and rear turrets also housed a gunner at all times when on Operations and the bomb-aimer operated the guns in the front turret when required
Hampden	Two engine bomber aircraft employed for Bomber Command Operations during the early part of World War II
Heavily Defended Area	For the purposes of this story - an area which surrounded an important industrial area, city, town, military installation, front line troop concentration, or other military target – which was defended against air attack by a heavy concentration of searchlights and heavy, medium, (and possibly light) anti-aircraft guns. The heavily defended areas may have, in some cases, extended for a distance of some miles beyond the boundary of the area being defended.
Intercom	Aircraft voice intercommunication system between the different crew members who used a microphone mounted in the person's oxygen mask and earphones mounted in his flying helmet. A switch was fitted to the rear of the microphone so that it could be switched off to reduce background noise when not in actual use There were a number of intercom positions, mainly at the normal crew stations in the aircraft – and at a few other appropriate points
Irvin type parachute	A parachute of the type designed by the Irvin Parachute Company
Jamming	Transmission by radio of interference type signals on frequencies in use by the enemy
Jerry	Term used by the Allies for German soldiers – or for German fighting forces generally
Kite	RAF slang for aircraft
Lanc.	Lancaster bomber aircraft
Landmark	A visually discernable feature on the ground, which was identifiable on a map.

Lead aircraft	In this case, the aircraft (and its crew) designated as the leading aircraft in No.467 Squadron's gaggle, behind which the remainder of the squadron's aircraft maintained their flying positions (as best they could) during Daylight Operations – at least as far as the target. Note – If both No.463 and 467 Squadrons were involved in the same Operation then each squadron appointed their own lead aircraft – both of which formed up behind a lead aircraft for Waddington, which may have been from either of the two squadrons. The crew of this aircraft then effectively navigated for all aircraft in the Waddington gaggle until it and our Waddington group of aircraft took up position in the main bomber stream. However, every aircraft's navigator was expected to continue with his own navigation procedure, finding winds, ground positions etc – so that should his aircraft become separated from the gaggle due to such as flying in continuous thick cloud, enemy fighter attack or a malfunction of an engine due to flak damage etc – then he and his aircraft could immediately continue on independently until, hopefully, they could rejoin the main stream of Lancasters.
Line; Line-shoot; Shoot-a-line	A "tall story" or piece of bragging, boasting or exaggerating - sometimes in all seriousness, sometimes in jest - about an achievement, alleged capability or situation in which the person found himself – like – "The flak was so thick over the target that if you put the wheels down, you could land on it"!
Logsheets (navigator's) – or Flying Log Sheets	Prepared sheets provided to each navigator at the Operational briefing, on which he entered all the navigational and "general" information given at the briefing, which was required to cover that Operation. Each Logsheet contained, at the top of its first page, a Preflight Route Planning section in which he entered the exact details of the route to and from the target, turning points, flying height and timing requirements and other details concerning the way in which the Operation was to be carried out – mainly, but not only, from a navigational point of view. Once airborne on the Operation the navigator used the Log sheets to record all of his work activities, (in conjunction with his Plotting chart), plus anything else which he or the pilot wished to be placed "On-the-Record" for later use - or for information – eg another aircraft in the bomber stream seen "going down" (Also see Glossary "Flight Plan" and "Plotting Chart")
Luftwaffe	German Air Force - (Luftwaffe = Flying Army?)
Mae West flotation jacket	Inflatable yellow jacket worn over their flying clothing by all Bomber Command aircrew when on an Operation, in case of descent into the sea. Known as a "Mae West' because, after inflation, it gave one a "Mae West" look about the chest!
Main bomber stream, or - bomber stream	Main concentration of bomber aircraft when flying as a group taking part in an Operation
Mainplane	Main section of the aircraft's wing – at the outer extremities of which, the two wing tip assemblies were attached. In a Lancaster the mainplane of the wing housed the six fuel tanks and supported the aircraft's four engines. Total capacity of the fuel tanks was 2,154 gallons. The centre section of the mainplane of a Lancaster bomber was integral with the aircraft's fuselage. The two major spars which supported this section (the forward or "main spar" and the rear spar) passed completely through the fuselage just above floor level. These two spars had to be negotiated by crew members passing between the front and rear section of the fuselage. Getting over the main spar in particular, was not an easy task when dressed in a bulky flying suit. It also made it very difficult to get a badly injured crew member from the front section of the fuselage on to the "rest bed" which was located between the two spars. See photo "The Infamous Main Spar" – on page 26 in the main text

Merlin engines	Rolls Royce Merlin engines – four of which were installed in the Lancaster bomber.
Mess	Basically, in the RAF, a building located on the RAF Station where meals and recreation facilities were provided for a group of serving personnel viz, Officer's Mess, Sergeant's Mess, Airman's Mess . The Mess building may have also contained kitchens for the preparation of food and some sleeping quarters etc
Met.	Meteorological - ie to do with the weather and its effects
MINEN	German for "MINES" - ie land mines – buried just under surface of the ground and set to explode if trodden on
NAAFI	British organisation which operated mobile canteens for some Service personnel on duty and also larger canteens and recreational facilities for Service personnel off duty or on leave
Op. (Operation) For Operational Sortie – also see "Sortie"	Offensive Operation against the enemy For Bomber Command – a planned and coordinated penetration of enemy territory, either to attack a designated target, or to achieve a specific objective.
Operation Bodenplatte	"All-out" low level attack carried out by approx 900 German fighters on 16 Allied airfields in Holland and Belgium – and one in northern France on the morning of 1st January 1945 Also see – *Appendix Item* (10) – "*Operaton Bodenplatte* etc"
Operational Command	One of the RAF Commands – Bomber, Fighter, Coastal, etc
Operational Training Unit (OTU)	RAF Bomber Command training unit at which those aircrew personnel who had completed their specialist training in Training Command were brought together to form the group required to learn to fly as a crew in a two engine Operational type bomber aircraft and to further prepare themselves as a crew to go on to Operations on a Squadron in multi engine bomber aircraft. All of the RAF Bomber Command OTU's were located in the United Kingdom For further information - see page 98 of "Bomber Offensive" – by Marshall of the RAF Sir Arthur Harris – and also see Glossary – "Screened"
Parachute pack (chest type)	Type of parachute pack worn by aircrew in Bomber Command Lancasters, other than pilots (and by 1944, rear gunners in some */most?* squadrons). This pack was designed so that when it was clipped on to the wearer's parachute harness it rested on his chest. The chest type pack was normally not worn in the aircraft until an emergency situation arose – but was stowed on a special bracket in the vicinity of the crew member's flying position. Also see Glossary – Parachute Pack (seat type) and Glossary – Baling out
Parachute pack (seat type)	Type of parachute pack, complete with harness, worn by pilots (and by 1944, rear gunners in No. 467 and various */many*? other squadron's Lancasters. These crew members sat on the pack while on their seat, which were recessed to accommodate it. The pilot wore this type of pack because he was normally the last to leave the aircraft in an emergency, by which time it could be in a flying attitude which may make it impossible for him to find and put on a chest type chute which was stored near him in the aircraft, before he could leave. Where the rear gunner wore one, it was because, on some */most*? squadrons, including No. 467, it was considered that he needed to have his parachute with him in his very confined rear turret if he was to bale out quickly. By wearing a seat pack he could rotate the turret by 90 degrees, open the turret doors behind him and slide out of the aircraft backwards, directly from the turret. Also see Glossary – Parachute Pack (chest type) and Glossary – Baling out.

Pilot chute	Very small parachute, less than two feet in diameter, which was fitted with four spring-loaded ribs to cause it to be ejected from the parachute pack as soon as the split covers of the pack were released by the ripcord being pulled by the wearer. Its spring loaded ribs then rapidly opened the pilot chute to its full extent As the wearer was normally falling through the air when the pilot chute was ejected from the pack, the rapid flow of air past the now-open pilot chute quickly pulled it above his head. The more slowly descending pilot chute then pulled the main parachute out of its pack by means of a thick woven silk cord connecting the junction of the pilot chute's four short shroud lines to a point at the apex of the canopy of the main chute. The main parachute canopy caught the air rushing past it and was rapidly opened to its full 24 feet diameter – the whole sequence of events taking approx 1½ seconds
Pinpoint	An exact location of some object or feature at ground level which was used in flight as a means of visually identifying on a map, the ground position of the aircraft
Pitot head	Short horizontal section of tubing mounted on the outside of the fuselage just under and to one side of the pilot's cockpit. It had its open end facing towards the nose of the aircraft and therefore into the airstream as the aircraft moved through it. The pitot head tube was the intake for the measurement of the frontal pressure of the air in the tube caused by the speed of the aircraft - and was connected to the pilot's and navigator's airspeed indicators. These, though pressure measuring instruments, had their dials calibrated to read in units of speed (ie miles per hour or knots). When the aircraft was stationary on the ground for any period the pitot head was protected from accidental ingress of foreign matter by a small canvas cover. It was an essential part of the pilot's pre take-off aircraft inspection procedure to ensure that the pitot head cover had been removed
Plotting Chart	A scale map of an area showing meridians of latitude and longitude (normally to scale 1:1,000,000 if used for Operational purposes by the navigator). It showed only the basic features on the earth's surface, such as coastlines, lakes, rivers, outlines of cities and large towns, as well as borderlines of countries, together with some spot heights and areas of high ground . The navigator drew the position of the target together with planned turning points and tracks between them on this chart at the Operation Briefing. At each of these points he showed the aircraft's planned time of arrival, required height, etc. He also drew in the heavily defended areas and also any other information required by him during the Operation to allow the aircraft to follow the route as set down in the Flight Plan. The plotting chart was then used by him during the flight to set down the courses flown, winds found, the resultant tracks followed and actual times at the various points along the air position plot and ground position plot (sometimes from the use of pinpoints, Gee fixes, visual bearings on ground objects or radio bearings etc) which he used for his navigational calculations. Information was transferred to and from this chart and his navigator's logsheets as required. On No.467 Squadron each navigator's plotting charts and logsheets were closely scrutinised in the Squadron Navigation Section after every Operation in which he took part - and comments made as to ways in which he may improve his procedures. Timekeeping and track keeping were of special concern. His training never ceased!
Port	Left hand side, looking in the direction of flight – "To Port" was to the left
Position line	Line drawn on a map or chart between the observer's position and that of the object being observed. In practice, it was a short line drawn on a plotting chart in the direction as read on the device being used to make the observation. This may have been by means of a visual bearing, radio bearing or as determined from use of a sextant, or it may have been a Gee coordinate line etc
Press on regardless	RAF slang for – Continue on line of action regardless of the consequences

Pressing on	RAF slang for continuing on with a line of action under difficulties
Ranks of P/O, F/O, F/L, S/L, W/C.	Ranks of Commissioned Officers. Starting from the lowest and progressing in ascending order these were – Pilot Officer (P/O), Flying Officer (F/O), Flight Lieutenant (F/L), Squadron Leader (S/L), Wing Commander (W/C).
Reciprocal track	A track in the opposite direction to the reference track - or, in the case of it being the result of an error – in the opposite direction to the intended track
Ripcord Ripcord handle	Stranded wire "cord" to which the ripcord handle was attached. When the "ripcord was pulled", the wearer of the parachute pulled the "D" shaped ripcord handle across in front of his chest (for chest type parachute), which pulled the pin attached to the other end of the ripcord out of its retaining clips on the parachute pack, releasing the "pilot chute" from the pack.
Roll	Aircraft rotating about its fore and aft axis
Rudders	Two sections of the vertical surface, mounted on bearings near the rear edge of each of the tail fins of the aircraft. Operated by the pilot's feet via pedals, one at each extremity of the rudder bar which was installed crossways on the floor of the cockpit immediately in front of him
Screened	Type of duty performed by each member of a Bomber Command aircrew on completion of his first Tour of 30 Operations. Being "Screened" meant that the "Tour Expired" crew member was transferred from his Operational squadron to one of the Bomber Command Operational Training Units somewhere in the UK. Here he became one of the "Operationally experienced" course instructors for groups of aircrew members who had just been placed into Bomber Command as part of newly formed flying crews. This "screened" period was regarded by the authorities as a form of rest period from "Operational stress" (but not always regarded as an actual "rest period" by the aircrew members concerned!) – prior to them returning to an Operational Squadron for a second tour of 20 Operations. Also see Glossary – "O T U"
Scrubbed	RAF slang for "cancelled", where applied in particular to an Operation, but the term could also be applied to some other event which, having been arranged, was cancelled for any one of a number of reasons.
Sextant (bubble sextant)	A hand held instrument used by aircrew navigators to obtain fixes or position lines by use of celestial bodies - (in the case of the sun - for obtaining a position line only) – when in flight. For further details – see *Appendix Item (6) The Bubble Sextant*
Shoulder patches	Small cloth patches, sewn on to each of the sleeves near the shoulder – of the wearer's battledress or dress uniform to denote that he was a member of the Service of a particular country external to the UK – in our case, AUSTRALIA.
Shroud lines (of parachute)	Twenty four thick stranded silken (or nylon) cords, each 16ft long, which attached the main silken parachute canopy to the two main parachute straps, which were attached to the wearer's parachute harness
Sitting duck	Slang for "easy target" or "easy mark"
Slap-up	Slang term for an extremely good; or sumptuous, meal
Sortie	For Bomber Command – a flight into enemy territory, during which a hostile response by their fighters and/or anti-aircraft fire was anticipated.
Stalling speed	Minimum airspeed at which an aircraft was able to maintain stable flying characteristics. The stalling speed varied according to bombload, condition and flying attitude of the aircraft etc. If the airspeed was reduced below stalling speed, the aircraft could quickly fall into a spin and may become uncontrollable
Starboard	Right hand side, looking in the direction of flight; to the right
Strafe, strafing	"Shooting up" of objects on the ground – usually by fighter aircraft

Supernumerary crew	Additional crew member to that of the normal Lancaster bomber crew of seven –who was present in some special capacity for one flight only. (usually a pilot of a newly arrived crew - in order to introduce him to Operational conditions).
Survivor's leave	A short period of leave, usually about 7 days, granted to Bomber Command aircrew members who had just survived a traumatic Operational experience but were otherwise relatively unharmed. It was considered to be a form of rehabilitation leave given prior to the crewman being returned to some form of normal duty.
Swing to (eg port)	Uncontrolled and sudden change of aircraft's heading to (eg port)
Tail fins	Vertical surfaces containing the rudders, which were located at outer end of each of the two halves of the tail plane assembly of the aircraft (for the Lancaster).
Tallboy	12,000lb deep penetration bomb which had a streamlined casing made of hardened steel (only the Lancaster being capable of carrying these, or the later 22,000lb Grand Slam "earthquake" bomb, during World War II)
Target	Designated place on which the bombs were to be dropped
Target Markers-No5 Group	For information – see *Appendix Item* (9) – The Target Markers-No5 Group.
Target photo	A single photograph taken by the camera installed in the floor of the bomb-aimer's compartment of the aircraft. The camera was pointing vertically downwards so that if the aircraft continued on a "straight and level" track after the bombs were released, for a period of a number of seconds (ie for the period which was calculated to be equal to the time that it would take for the bombs to reach the ground), after which the camera shutter was automatically operated - then the resultant bomb bursts should have been shown at the centre of the photo. However, if the aircraft was either banked and/or otherwise not level – or had changed course by the time that the target photo was taken, then the bomb bursts would not be in the centre of the photo – and perhaps, not shown in the photo al all! Naturally this would be a cause of considerable "angst" for the crew concerned!! The target photo was used to show (i) that the crew had actually dropped their bombs in the correct target area and (ii) if so, then how close to the aiming point the bombs from that crew's aircraft had struck the ground.
Target wind	The wind found by the navigator just before reaching the target – or the special wind received from Base (or Group, or the Master Bomber) just before reaching the target, for use in setting the bombsight "wind adjustment"
Throw a prop	Cause propeller to fly off from its propeller shaft due to engine speed being much in excess of designed maximum speed – or because of severe damage to propeller
Tommies	British soldiers
Topographical map	Scale map of an area which showed many ground features, heights etc. Mainly used by the bomb-aimer for visual identification of the aircraft position and of possible collision hazard with nearby high ground. It also showed the location of all operational RAF aerodromes in the UK suitable for handling bomber aircraft and of the major enemy aerodromes on the Continent etc Topographical maps used by navigators and bomb-aimers on Operations were normally of a scale of 1: 500,000, but this may vary under special circumstances
Tour (of Operations)	Normally, for Bomber Command aircrew, of about 30 Operational flights for the first of the two obligatory tours – the second, of about 20 Operations, being deferred by an approx. 6 months "rest period", as an instructor at an OTU etc
Track	Direction of movement of the aircraft relative to the ground
True Airspeed	Was the Indicated Airspeed as read from the Airspeed Indicator instrument, corrected for instrument errors - as shown on the aircraft's airspeed indicator correction card, air pressure (as affected by the aircraft's altitude etc) and air temperature (as shown on the aircraft's outside air temperature gauge)
Turn	Controlled change in horizontal direction of flight (ie a change in course)

Turning point	Designated points along the bomber track to and from the target at which a change in direction of the "Flight Plan Track" took place. For each turning point there was a designated time set down at the Operational Briefing. at which the aircraft of each particular squadron involved in the Operation should pass that point..
V2	Large German high-trajectory rocket. V2's were launched from various points near the western coast of the Continent towards London during the latter part of WW II
VC	Victoria Cross – the highest award for bravery "in the face of the enemy" for members of the British and Commonwealth Armed Services during wartime
Veer	Uncontrolled tendency for the aircraft to turn by a small but constant amount
Verey pistol and cartridges (Verey flares)	The pistol was placed in a bracket in the roof of the fuselage near to the wireless operator. He operated it to fire various coloured flares into the air above the aircraft when instructed to do so by the pilot – in situations such as to draw attention to the need for assistance, to request immediate clearance for landing in an emergency, or to indicate that the aircraft was "friendly" by firing "the colours of the day" – which was a selected set of coloured flares, determined by Bomber Command and advised to British anti-aircraft gunners each day. They could be used by Allied aircraft who, for one reason or another, came to be flying by themselves, unannounced, over a British anti-aircraft gun position which, thinking that they may be an enemy aircraft, "took a shot at them".
WAAF	A member of the Women's Auxiliary Air Service (WAAF) was usually referred to as a "WAAF". The WAAF Service was formed in the UK during World War II as part of the Royal Air Force (RAF). They released many men from ground duties.
Waddo.	Abbreviation used sometimes by personnel stationed at RAF Station Waddington, (of No.5 Group, Bomber Command) which was located a few miles south of the city of Lincoln, in Lincolnshire and at which No.463 RAAF Squadron and No.467 RAAF Squadron (including our crew) were located for a period of about 19 months during World War II.
Wakey-Wakeys	Benzedrine tablets issued to each crew member prior to an Operation, which if taken at an appropriate time either immediately before take off, and/or during the flight, helped to dispel drowsiness. They were of special assistance on long night-time Operations such as those of up to 10 hours in duration to targets such as Gdynia and Stettin, in Poland, to which we went to during our Operational period. I never took any of those issued to me (still have a few at home!) because I was concerned at their side effects, but after some of the longer night-time Operational trips I was mighty tired by the time that I was able to write "Landed" on my navigator's Log sheet – especially if it had been an eventful trip.
War list	A list of crews put up on the Squadron Notice Board as soon as notification was received from Group Headquarters prior to an Operation in which they were scheduled to be involved. This list was usually displayed on the afternoon before, when take off was during the morning - and during the morning for one put on for that night. The notice gave only the names of the crews involved and time of the pre-Operation meal - and of the Briefing time. Those on the War list who did not immediately read it, soon found out, in one way or another, that they were down "to go to war"!
Willing horse	Slang for performance being better than normal
Wind	In this sense, a term used by RAF navigators to denote a specific wind speed and direction
Windmilling propeller	A propeller which continued to rotate slowly after its engine had been shut down in flight, because of the effect of air flow past the blades.
Wing root	The portion of each wing where it was joined to the fuselage of the aircraft
Yanks	American soldiers
Yaw	Uncontrolled "sliding sideways" motion of an aircraft – such as when in a banked attitude but being steered (and pointed) straight ahead.

Bibliography

In addition to sections of my War Diary, personal notes and records of that period and also those of some of the other members of our aircrew, I found the following books, publications and other sources useful in providing information on various matters –

(i) <u>Books</u>

Author	Title (and Publisher)	Year first Published
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Atkinson, Bryan	THE LANCASTER IN FOCUS - (Aerofiles)	1982
Blundell, Nobby	467 SQUADRON RAAF - (H. Blundell)	1985
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Bowyer, Chaz	BOMBER GROUP AT WAR - (Ian Allan)	1981
Driessen, Pieter	AIR BATTLES OVER de PEEL - (Pieter Driessen)	1990
Eather, Steve	FLYING SQUADRONS OF THE AUSTRALIAN DEFENCE FORCES – (Aerospace)	1995
Falconer, Jonathan	THE BOMBER COMMAND HANDBOOK 1939-1945 – (Sutton)	1998
Franks, Norman	THE BATTLE OF THE AIRFIELDS – (William Kimber)	1982
Franks, Norman	CLAIMS TO FAME - THE LANCASTER - (Arms & Armour)	1994
Garbett, Mike & Golding, Brian	(i) THE LANCASTER AT WAR – (Ian Allan)	1971
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Girbig, Werner	SIX MONTHS TO OBLIVION – (Schiffer Military History)	1989
Hamlin, John F.	"FOR FAITH AND FREEDOM" – RAF WADDINGTON – The first eighty years - (G.M.S. Enterprises)	1996
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Low, Prof. A M	PARACHUTES – IN PEACE AND WAR – (The Scientific Book Club)	1942
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Middlebrook, Martin and Everitt, Chris	THE BOMBER COMMAND WAR DIARIES – (Viking)	1985
Parker, Danny	TO WIN THE WINTER SKY – (Greenhill Books)	1994
Price, Alfred	THE BOMBER IN WORLD WAR II – (Macdonald and Jones)	1976
RAAF Directorate of Public Relations	VICTORY ROLL - THE RAAF AT WAR – (Australian War Memorial)	1952
Swift, Michael and Sharpe, Michael	HISTORICAL MAPS OF WORLD WAR II – EUROPE – (P R C - Public Records Office)	2000
Tanner, John	THE LANCASTER MANUAL – (Arms & Armour)	1977
Ward Jackson, C. H.	"IT'S A PIECE OF CAKE" – R.A.F Slang Made Easy – with drawings by David Langdon - (Sylvan Press)	

(ii) Other sources

Adams, Bert	His navigator's flying logsheets and plotting chart for the Dortmund-Ems Canal Operation	1st January 1945
Air Ministry	Operational Photographs – (Air Ministry)	1944-1945
Biddescombe, Ernie	Diary entries covering items related to some of his navigator's logsheet entries made during the Dortmund-Ems Canal Operation	1st January 1945
London Staff Correspondent	"HOSTESS TO CATERPILLARS" – (The Sydney Morning Herald)	July 30 1946
Stothard, Chris (artist)	Untitled painting of Lancaster PO-H in flight near Overloon, Holland on 1-1-1945 - (FlyPast Magazine) NOTE – This painting is based on a sketch made by me.	March 2002 issue

Detailed Contents

Photographs & Diagrams