HIGH PEAK DAMBUSTER

JACK MARRIOTT

The Dambuster that didn't come home

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DEDICATION

As always to my wife Alison,
but especially to the members and employees, past and present,
of Townscliffe, Mellor, and Mellor & Townscliffe Golf Clubs
as without them I wouldn't have been able to write this little piece
of history.

IMAGE CREDITS

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Marple and Townscliffe Golf Club
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I would like to thank:

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FOREWORD

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PREFACE

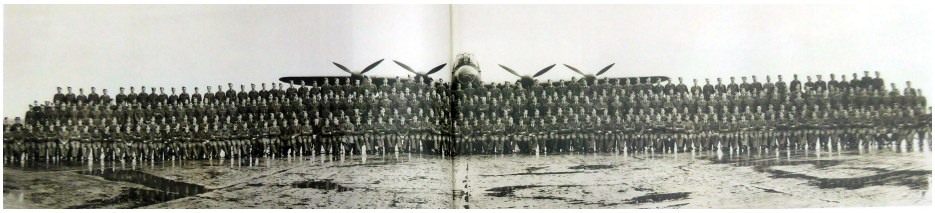
The ‘Dambusters’ or more correctly Operation Chastise is arguably the most famous historic military operation of the 20th century. Most people have heard of it and know of the famous ‘Bouncing Bomb’. Most will know the name of the commander of the attack - Guy Gibson, and many the name of the ‘Bouncing Bomb’ inventor - Barnes Wallis. The raid took place during the night of 16-17 May 1943 and was immediately headline news around the world. Interest and intrigue has not diminished with the passing of time. The myth was enhanced with the release of Guy Gibson’s book ‘Enemy Coast Ahead’ in 1946 and further still when Paul Brickhill published his book, still considered by many to be a classic, ‘The Dam Busters’ in 1951.

Not surprisingly soon after it became a film of the same name. Released in 1955, it is quite possibly the best loved if not most watched war film of all time and it further immortalised the legend of many of those that had taken part. At the time of the making of the film much of Operation Chastise was still covered by the Official Secrets Act and the film not only used ‘artistic license’ but also perpetuated some popular but untrue myths in many of the scenes. However, it does form the basis for most people’s knowledge of the event, and it clearly demonstrates accurately the skill, dedication, ability, and absolute heroism of those young men that took part.

No military operation is the result of just one or two high profile names. And whilst Gibson and Wallis undeniably deserve the adulation and praise they have had and continue to receive, the success of The Dambusters was the result of a multitude of people with different roles and from varying backgrounds. Typically, each Lancaster would require around 50 personnel to keep it flying. These would include the seven air crew members, flying control officers, parachute packers, meteorological officers, the flight maintenance crew (fitters, maintenance and electrical mechanics, instrument and radio specialists), the bombing up team, drivers, ground servicing engineers, armourers, gun belt fitters, petrol and oil tender crews, and mobile workshop teams.

Flying and support team for a single Avro Lancaster

In addition to these there were the squadron, base support, ancillary personnel, and RAF management. To support Operation Chastise there would have been over 1,000 individuals involved in its planning, execution, and analysis.



Some of 617 Squadron personnel in July 1943

The success of The Dambusters could not have been achieved without all their input and for many their hard work and long hours was just as intense as those that flew on the raid. In literature few of these are mentioned let alone identified by name and whilst all but a few of the Dambusters pilots get a cursory mention, most of the names of the other aircrew members usually only ever appear in lists of crews.

For Operation Chastise there were, including Gibson, 21 crews that trained for the raid. Two of the crews didn't take part on the night. Each of the 19 Lancasters that departed for the raid had a crew of seven, so there were 133 young men, most of them not much more than boys. The average age was just 22, Gibson himself only 24. Three of the Lancasters turned back without using their 'Bouncing Bomb'. Eight

crashed or were shot down and only three of the aircrew survived to be taken prisoner of war. 53 young men lost their lives during the night of 16 and 17 May.

Three of those that took part that night came from the High Peak region of Derbyshire. Sgt Jack Marriott came from Chinley, Flt Lt Bill Astell a mile away at Combs near Chapel-en-le-Frith and Sgt John Nugent from nearby Stoney Middleton.

The aim of this book is to tell, in words and pictures, the sad and mysterious story of just one member of an aircrew that were all killed after having reached both the Möhne and Eder Dams. He was Sergeant Jack Marriott Flight Engineer on Lancaster Z-Zulu (AJ-Z).

Jack Marriott

I'm not going to go into the incredible science, engineering, planning or politics that went in to making the raid, nor a post raid analysis of the success or benefits of Operation Chastise. But it is important to describe the events that took place leading up to and on the night of the raid itself together with a little post raid history of 617 Sqn. In order to do this I have drawn extensively on the excellent works of many others to pull together a picture of what was happened leading up to the operation, what happened as the night progressed, and also the fate of all the aircrew and aircraft that were involved. Some of the events are still speculation as in some cases the details are vague and even those air crew members that participated on the night and were subsequently interviewed have different recollections of what happened.

I have necessarily concentrated on the activities and actions of the Lancaster AJ-Z and looked at possibilities to try and explain what might have occurred even though we will never know the actual reasons. The story continued for Jack and 617 Sqn. after The Dambusters. For Jack, his memory has been kept alive for more than 80 years by his niece Norma Bagshaw.

I have outlined the story as a series of relevant facts in a chronological order. I refer to most people mentioned by their surnames and give their full names, and where appropriate their military rank, in appendices. I have outlined the story as a series of relevant facts in a chronological order. I refer to most people mentioned by their surnames and give their full names, and where appropriate their military rank, in appendices. I have also capitalised crew positions where it refers to a specific role. Where I include images of handwritten letters or type written documents, I include a transcription complete with any errors for authenticity.

INTRODUCTION

Even before the start of the Second World War the British Air Staff had identified strategic air targets should there be another conflict in Europe. German industrial areas were considered to be a primary target, and in particular the Ruhr Valley which was critical for production arms and munitions.

As early as 1938 the possibility of attacking the large dams that controlled water for the Ruhr was being discussed. If these could be breached it would cause untold damage, disrupt vital production and require a re-distribution of workers from other work to help in any rebuild effort. By the time of WW2, the dams were impossible to attack. Multiple layers of floats stretched across the front of the dams which prevented the use of any surface weapons and suspended below steel nets prohibited the use of torpedoes or submarine devices. From the air there was no suitable aircraft or bombsight capable of delivering the pin-point attack that would be needed.

The Assistant Chief Designer at Vickers Armstrong Aviation was Barnes Wallis who began to look at the issues and possible solutions for an air born attack. His initial idea was for a 22,000 lb 'Earthquake' bomb that when dropped would accelerate so fast it would embed itself deep into the base of the dam and when it exploded shake the dam to bits. The idea was rejected as there was no was means to guarantee accuracy and more importantly no aircraft was capable of carrying such a heavy payload.

Disappointed but undeterred Wallis set about not only looking at other solutions to destroy the dams but designing an aircraft capable of carrying what was essentially a 10 ton bomb. During 1940 and 1941 he began tests on model dams and determined that if the explosion was up against the wall of the dam below the water surface pressure was not dissipated but assisted the explosion in breaching the dam wall. It also meant that a much smaller weapon would be required to cause the breach.

Once he had discovered where the placement of a bomb needed to be, Wallis looked at how it could be delivered accurately. He famously took inspiration from his daughter's game of marbles to design his famous 'Bouncing Bomb'. Despite many failures and setbacks, he came up with the of the Upkeep weighing just over 4 tons designed to rotate backwards, skip across the surface of the water, over the torpedo nets hit the dam wall, roll down the inner face of the dam wall and the using a pressure activated hydrostatic trigger explode at the optimum depth. Although, his design for an aircraft (Vickers Windsor) was completed and eventually flew in 1943, by 1942 the Avro Aircraft Manufacturing company had revised their disastrous twin engine bomber the Avro Manchester. They had replaced the two powerful but unreliable Rolls-Royce Vulture engines with four lower power Merlin engines. With very little re-design they had created the performant, fast and reliable Avro Lancaster with a huge carrying capacity.

Vickers Windsor prototype

Avro Manchester prototype

Having committed to the weapon the RAF were reluctant to withdraw and use a frontline squadron for its delivery. A new squadron was formed, resourced from existing No.5 Group Bomber Command aircrews and to be based at RAF Scampton in Lincolnshire which was waiting to have a concrete runway installed and so only had a single squadron based there. The premise for the creation of the squadron was that it would use aircrews that had completed at last one tour of operations with some key personnel being specially selected for their aptitude.

Initially referred to as 'Squadron X' the new 617 Sqn. came into existence on 21 March 1943. The commander was 24-year-old Wg Cdr Guy Gibson. Highly decorated, he had transformed 106 Sqn. into the most successfully bomber squadron in No.5 Group. Having just completed his third tour with 106 Sqn. on Lancasters he had been posted to No.5 Group headquarters ostensibly for a rest and to write book about war time bomber pilots. Eventually he was asked if he would consider forming and leading a new special squadron for one more low-level mission.

The top-secret operation would require incredible skills from all the aircrew members. Most No.5 Group squadrons were asked to contribute complete Lancaster crews and contrary to popular belief Gibson neither knew nor selected all the pilots personally. Although he brought pilots Shannon, Hopgood, and Burpee with him from 106 Sqn. and he had briefly met Martin previously, all the other pilots were new to him. Some clearly did not match the criteria required of the new squadron. However, most of the pilots were highly skilled, some highly decorated. Flt Lt Henry Maudslay, an ex-Etonian athlete from Leamington Spa was one of these, transferred from 50 Sqn. he was soon confirmed as a Sqn Ldr and 617 Sqn. B-Flight Commander.

Again, a popular misconception is that Gibson brought with him his entire aircrew from 106 Sqn. He in fact had a completely new crew at 617 Sqn. and his Bomb Aimer, far from being experienced had not flown any operations let alone a whole tour.

Maudslay however, already had 42 operations behind him. He had been seconded from 44 Sqn. to do operational acceptance testing and service

trials of the Lancaster at A&AEE[1] Boscombe Down before it entered RAF service. He was then transferred to 1654 HCU[2] where he was a Lancaster instructor pilot as well as flying on operational missions. It was whilst there that he 'checked out' several of the eventual 617 Sqn. pilots on Lancasters. Bill Astell was one of these and became one of his closest friends.

After transferring back to operational duties at 50 Sqn. his crew was eventually finalised. They were all experienced and highly competent and all moved with him to 617 Sqn. Jack Marriott was the Sergeant Flight Engineer. The Navigator was Canadian Fg Off Robert Urquhart. With 28 Operations and cited for a DFC he was highly experienced and as such became 617 Sqn. B-Flight Flight Navigation Officer. Sgt Cottam, the Wireless Operator was another Canadian with several Ops[3] to his credit. Plt Off Michael Fuller from Surrey was the Bomb Aimer, also with several Ops with his previous squadron 106 Sqn. The Front Gunner was Fg Off William 'Johnny' Tytherleigh from Cambridge. He was highly experienced having completed a full tour before joining 50 Sqn. and completed a further eight Ops with Maudslay. After transferring to 617 Sqn. he was appointed B-Flight Gunnery Leader. The Rear Gunner was Sgt Norman 'Bunny' Burrows from Liverpool who had only one Op to his name before joining Maudslay's crew.

[1] A&AEE - Aeroplane and Armament Experimental Establishment
[2] HCU – Heavy Conversion Unit
[3] Op – Operational mission

JACK MARRIOTT

On Monday 19 January 1920 John Marriott was born at his family home of Middleton House in the tiny Derbyshire Peak District Hamlet of New Smithy near to the village of Chinley. He was the youngest of four boys and two girls.

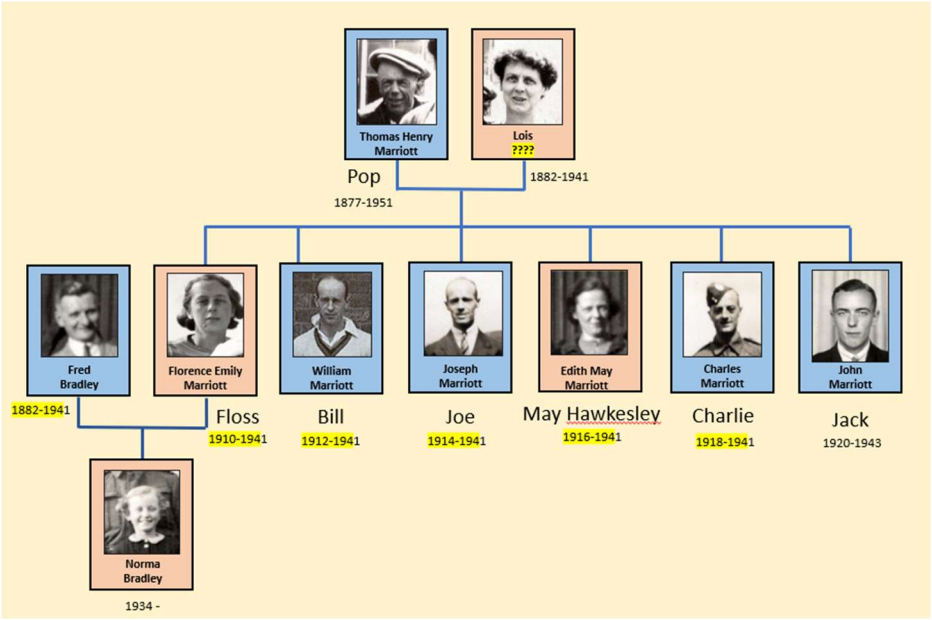
Map of Chinley

John's father Thomas Henry (affectionately known as Pop) and mother Lois (née xxxx) had moved to New Smithy (when xxx) from Ashover near Matlock for work and to start their family.

Florence Emily (Floss) was born in 19xx, William (Bill) in 1912, Joseph (Joe) in 1914, Edith May (May) in 19xx, Charles (Charlie) in 1918 and John in 1920. As with most of his relatives and siblings forenames were either abbreviated or converted into a pet-name. Thus, John became Jack to his family and close friends.

Jack's grandmother Emily Marriott, father Thomas Henry and grandfather Joseph Marriott at their home in Yew Tree Close, Ashover about 1900

Jack's father 'Pop' mother Lois, elder brothers Bill (left), and Joe (right)



Marriott family tree

Thomas Henry was a stern father, but full of character and bizarrely intriguing. A veteran of the Boer and Great Wars he worked as a labourer for the local council highways department where he, like his father before him, could indulge his passion for horses.

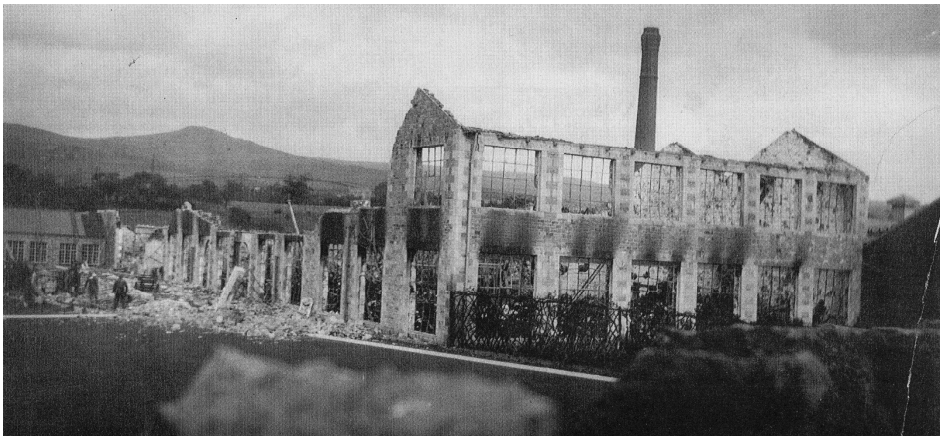
The family home of Middleton House proved ideal for their large family; a curiously long thin bedroom provided a dormitory-like accommodation for the boys whilst the girls shared a separate small bedroom. Access was by a separate staircase at the rear of the house.

Jack was a likeable child, and it was here that he developed a special and close relationship with brother Charlie. Only two years difference in age they played, fought, and grew together and together they developed their unique cheerful and happy-go-lucky characters. Full of fun and mischief they lived life to the full.

As with all his brothers and sisters Jack attended the nearby Chinley Primary school on Buxton Road before attending (which school) in Chinley.

Chinley Primary school (about 1928-1930)
Jack is on the second row from the front on the extreme right

Jack was a popular child, good natured full of fun and energy but despite being an excellent student he left school to work, like his brothers had before him, for the J J Hadfield Company Ltd. This local employer had been developing and growing their bleach works since the turn of the century at Forge Mill on the banks of Black Brook on the south side of Chinley. J J Hadfield were, by the time Jack started working for them, a large company employing a significant proportion of the locals.



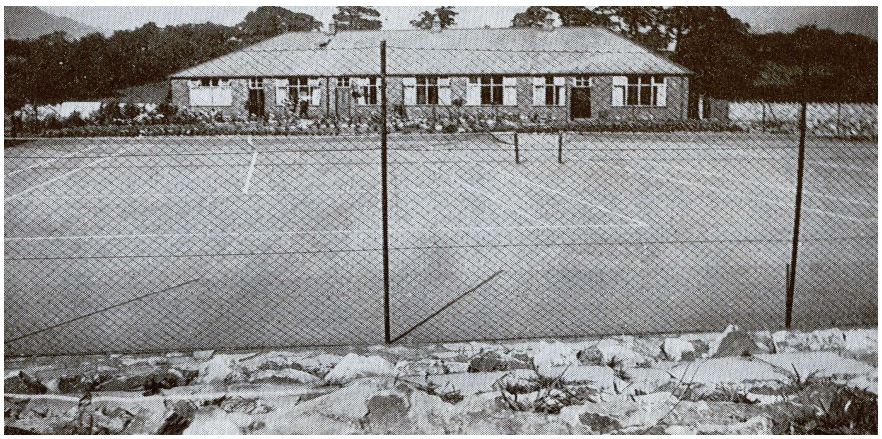
Fire damage at Forge Mill in 1934

In 1936 when Jack started his employment with them, they had only just fully recovered from a devastating fire that started on the Friday evening 17 August 1934.

So intense was the inferno that most of the factory was destroyed. Although Buxton and New Mills fire brigades were quickly on the scene it required additional support from Stockport and Manchester Fire services to control and manage the incident. The company was back operating in a reduced capacity after six months, but full production wasn't resumed for several more months.

Jack worked as a xxxx in the bleaching department. He enjoyed his work and his free time and as he got older so his and brother Charlie's sense of humour grew. Always happy and joking they seemed to have a perpetual smile or cheeky grin on their faces. They were a pair of practical jokers and on one occasion Charlie rang home and introduced himself as *'the cheerful chappy from Chinley'* only to discover that he had dialed the wrong number at which point the person on the other end swiftly hung up.

J J Hadfield's were regarded as an excellent employer. They had throughout their history shown a keen interest in the welfare and wellbeing of their workforce. As their Forge Mill works was in a remote location most of the workforce had to remain on the premises for their meals. In March 1925 a modern canteen was officially opened which provided very good meals at low prices.

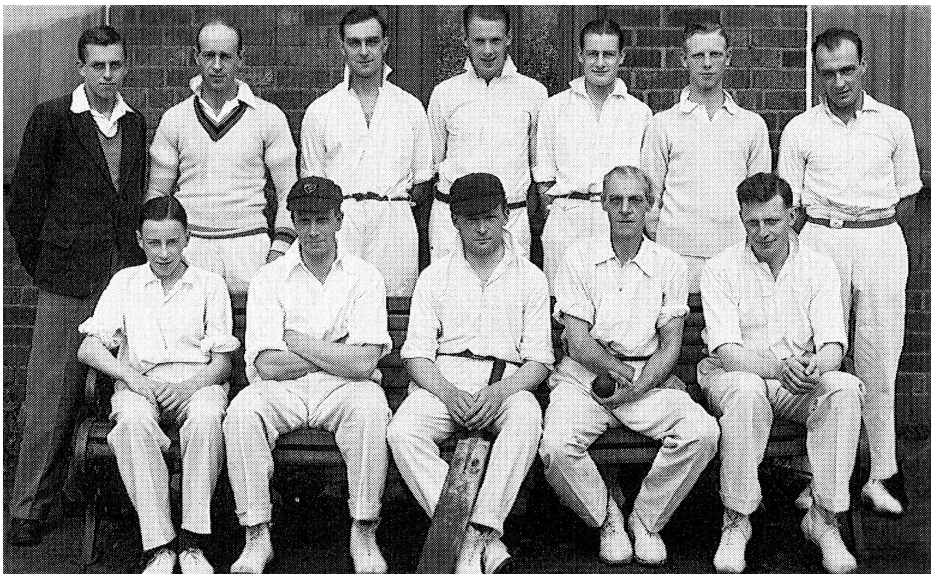


The "Forge" Social & Athletic Union club house and tennis courts

In the evenings and at weekends the canteen was used for social events such as dances, concerts, and entertainment. Adjoining the social club Hadfield's provided a very large sports field managed by the 'The "Forge" Social & Athletic Union' which provided, amongst others, football, cricket, bowls and tennis.

The "Forge" Social & Athletic Union's cricket and football teams were particularly successful, regularly topped their respective leagues and were feared and well respected in equal measures. Every Saturday throughout the year the whole area was busy with sporting activities which attracted teams and visitors from all over the area.

Jack was a keen (?) sportsman and a popular member of the sports club. Though a frequent participant at both football and cricket he never reached the same standard as his eldest brother Bill who was a regular choice for the Cricket Second Team squad.



The Forge Cricket Second Eleven 1929/30
(Bill Marriott back row, second from left)

J J Hadfield was a progressive employer and provided a range of other social benefits including arranging annual trips to the seaside for their employees. This was always a popular and eagerly awaited annual activity. Blackpool was a favourite destination. Jack of course relished

these trips and always made the most of them as can be seen in the following photographs.

Jack on Blackpool sands

Jack on Blackpool's central pier

Another fun day out

NORMA BAGSHAW

Jack was a family man, and apart from the special relationship with brother Charlie he also had a very close relationship with his eldest sister Floss.

Floss (Florence Emily) worked at Welch's Mill (also known as Whitehall Works) which was located on the west side of Chinley also on the banks of Black Brook and not too far from J J Hadfield's Forge Mill.

During the 1920s Welch's main production was cotton brocades which were manufactured in various designs with the majority dyed in a wide range of chrome colours for the lucrative Indian market. Other cotton products were also produced and by the 1930's a towelling and nappy range was introduced necessitating the introduction of a sewing machine department.

Floss worked as a ?????? and it was whilst working at Welch's Mill that she met Fred Bradley a ????? working on a machine that aged cotton products. Their relationship blossomed, in 1932 they were married at Chinley Church and before long had moved to their own home Moorfield on Lower Lane in Chinley.

Norma Bradley

On ????/1934 their first and only child was born: Norma Bradley. As with her mother Norma soon had a strong relationship with Jack, he was fun to be with. As Norma got older, Jack would regularly take her along when out walking with his girlfriend XXXXX. The Wash, a rural area to the east of Chinley in the beautiful Peak District was a favourite destination and still holds fond memories for Norma.

Norma with (from the left) her mother Floss Bradley, grandmother Lois Marriott, aunt May (Hawkesley) and father Fred Bradley

Norma with father Fred Bradley in their garden at Middleton House

JOINING THE ROYAL AIR FORCE

By 1940 Jack's career at the Forge was progressing but, ominously, so were developments in Europe. It wasn't long before it became obvious that further men would be required to leave their normal employment and enlist into the armed forces.

And so it was around mid April that Jack with trepidation but with a sense of duty and pride, found himself at the local combined forces recruiting centre. We have no record of Jack's experience at the recruiting centre but it was probably similar to that described by Montague in BBC's Peoples War…..

'At the recruiting centre I went to the Royal Air Force section, where I was seen by a rather old hand of a sergeant. He enquired "What do you want to do, laddie?", "I thought I may try for wireless operator", I replied. "Well, let's see how you did with your schooling", he re-joined. For the life of me I could not see how that came into the matter, but I gave him a run-down on my 'education of a sort', hoping that would clinch the case. At the end of all this he simply said in a tone which brooked no discussion, "The trade for you is as a radio/wireless mechanic". I was then immediately whisked away for a medical examination at which I suffered all the usual medical indignities. Finally, I was told to hold myself in readiness for a letter telling me when and where I was to report.'

Jack's chosen (or allocated) trade was ground engineer, possibly based on his experience at J J Hadfields. He will have received his letter from the Officer-in-Charge of the RAF Recruiting Centre in mid or late May of 1940. It will have been brief and to the point basically confirming that his application for enlistment into the Royal Air Force Volunteer Reserve had been approved, instructing him to report back at the Recruiting Centre at 9 am on 7 June, and a short list of the various items he should bring with him.

He no doubt made all his farewells, promises to write regularly, collected his final wages from work and reported back at the to the Recruiting Centre as instructed. He will have joined a crowd of other similar new recruits aged from 18 to early 30s. En masse they were led

through their oath of allegiance *"to our Sovereign King and his heirs and successors"* followed by a ritual form filling and signing exercise. Finally, he will have been allocated a railway warrant affording him travel to Padgate near Warrington.

RAF Padgate is well-remembered by thousands of young men who joined the RAF, it was their first experience of military life with their first taste of military discipline, ill-fitting uniforms and severe haircuts. After a short journey via Manchester Jack arrived at Padgate train station where he was met by RAF officials who will have collected all the new recruits and led them on their final short trip to RAF Padgate the home of RAF No.1 Reception Unit and RAF No 3 School of Recruit Training.

RAF Padgate

The new recruits would have been arranged in three ranks whilst a roll call was performed, during which Jack will have become Aircraftman Second Class (AC2) Jack Marriott 1003474 RAFVR[4], with a starting trade as Aircraft Hand General Duties (ACH GD). His name, number and his religion (Church of England) were stamped on two dog-tags

[4] RAFVR - Royal Air Force Volunteer Reserve

which he will have worn permanently around his neck and his RAF Service Record started.

The recruits would then have been crudely marched carrying their suitcases and allocated a bed in one of the many huts. The following day all the new recruits were marched from store to store and in a seemingly hap-hazard fashion allocated their RAF issue clothes, equipment including knife, fork, spoon, mug and a towel. All new recruits would then have had another cursory medical to ensure they were free from any contagious diseases (known as Free from Infection, or FFI) and then undertaken a brief trade test to determine their best suitability.

Having changed into uniform the new recruits were immediately transformed from a mis-match bunch of civvies into an even and pristine blue military group. No longer could the mill worker be distinguished from a bank clerk, farm worker or labourer; everybody was starting equal.

AC Jack Marriott RAFVR 1003474

Jack was assigned to 4 Wing t Padgate on 10 June and the following two weeks consisted of RAF basic training which have comprised mainly of drill practise. They were marched everywhere (as described by Montague in BBC People's War);

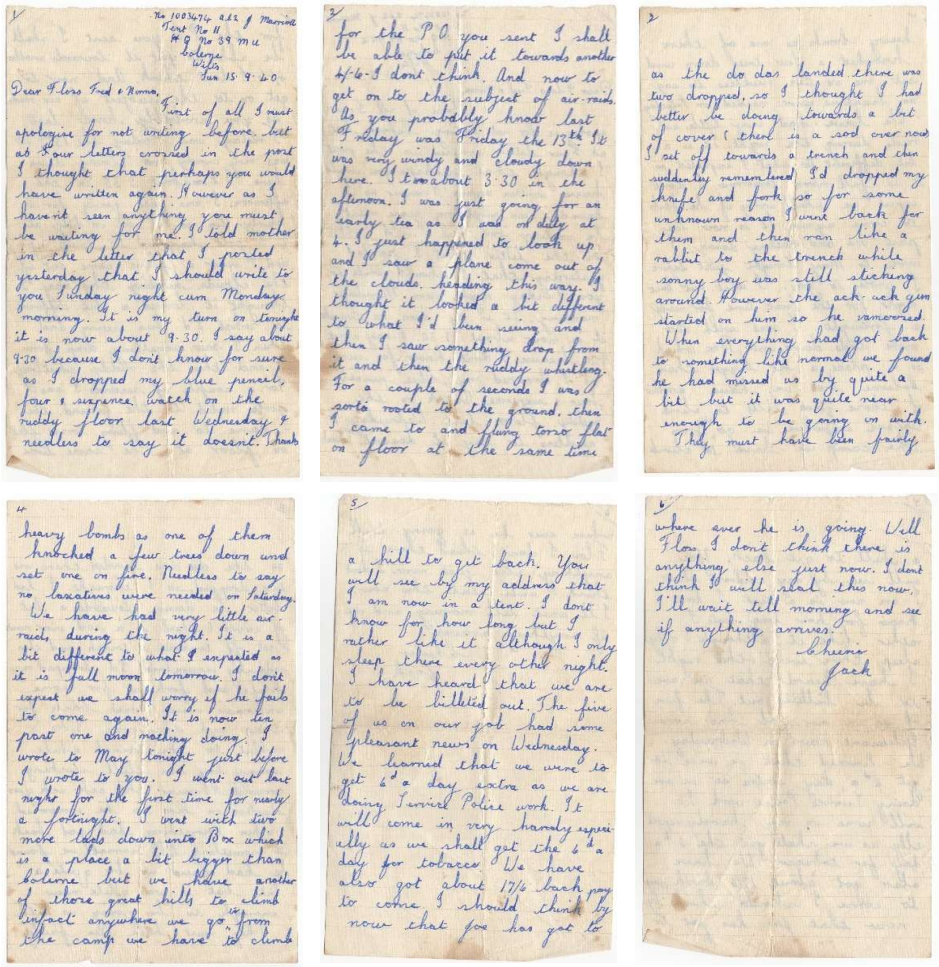
'to the mess-hall, to the sick quarters for various jabs, to church, to the rifle range, to the public baths once a week, to the local cinema for instructional films on gas warfare, security and the like. We never went anywhere except when marching as a squad, sometimes dressed in our best blues (uniform), sometimes in PT kit, sometimes in fatigue overalls. We were never alone, even the normally most private matters were managed as a squad; privacy was a thing unknown'.

In addition, there was lots of cleaning of huts and barracks, polishing floors and generally tidying up around the camp. There were injections and vaccinations, haircuts and of course lectures on topics such as the organization of the RAF, ranks in the RAF, discipline, diseases and lectures on not 'talking shop' outside of the camp. There were sports trials and bayonet practise, but after two weeks Jack was already rehearsing in full dress uniform for his passing out parade.

Basic training over, Jack's passing out parade was on Friday 21 June 1940. He then had a weekend at home and the following Tuesday, 25 June travelled by train and reported at his next posting to No.39 Maintenance Unit (MU) at RAF Colerne in Wiltshire. It was Jack's first experience of RAF aeroplanes and an operational Airfield.

At the time of Jack's arrival RAF Colerne had only recently been upgraded and occupied by No.39 MU. It was used for storage and maintenance of aircraft but was also home to some aircraft of Fighter Command. Since there had been a rapid increase in personnel at the site accommodation was at a premium. Initially Jack was billeted in a tent before being allocated to permanent accommodation. Though Jack had some exposure to aircraft much of his time was spent on guard and patrol duties whilst undertaking lessons and being assessed in a series of aptitude tests. He had plenty of time to write home in which his subtle sense of humour is clearly in evidence.

Letter 15/9/40 from RAF Colerne



No 1003474 AC2 J Marriott
Tent No 11
HQ No 39 MU
Sun 15.9.40 *Colerne, Wilts*

Dear Floss Fred & Norma,

First I must apologise for not writing before but as our letters crossed in the post I thought that perhaps you would have written again. However as I haven't seen anything you must be waiting for me. I told mother in the letter that I posted yesterday that I should write to

you Sunday night cum Monday morning. It is my turn on tonight it is now about 9.30. I say about 9.30 because I don't know for sure as I dropped my blue pencil four & sixpence watch on the ruddy floor last Wednesday & needless to say it doesn't. Thanks for the PO you sent I shall be able to put it towards another 4/6 – I don't think. And now to get on to the subject of air-raids.

As you probably know last Friday was Friday the 13th. It was very windy and cloudy down here. It was about 3.30 in the afternoon. I was just going for an early tea as I was on duty at 4. I just happened to look up and I saw a plane come out of the clouds heading this way. I thought it looked a bit different to what I'd been seeing and then I saw something drop from it and then the ruddy whistling. For a couple of seconds I was sorta rooted to the ground, then I came to and flung torso flat on floor at the same time as the do das landed. There was two dropped, so I thought I had better be going towards a bit of cover (there is a sod over now) I set off towards a trench and then suddenly remembered I'd dropped my knife and fork so for some unknown reason I went back for them and ran like a rabbit to the trench while sonny boy was still sticking around. However the ack ack[5] gun started on him so he vamoosed.

When everything had got back to something like normal we found he had missed us by quite a bit but it was quite near enough to be going on with. They must have been fairly heavy bombs as one of them knocked a few trees down and set one on fire. Needless to say no laxatives were needed on Saturday.

We have had very little air raids during the night. It is a bit different to what I expected as it is a full moon tomorrow. I don't expect we shall worry if he fails to come again. It is now ten past one and nothing doing. I wrote to May tonight just before I wrote to you. I went out last night for the first time for nearly a fortnight. I went with two more lads down into Box which is a place a bit bigger than Colerne but we have another of those great hills to climb in fact anywhere we go to from the camp we have to climb a hill to get back.

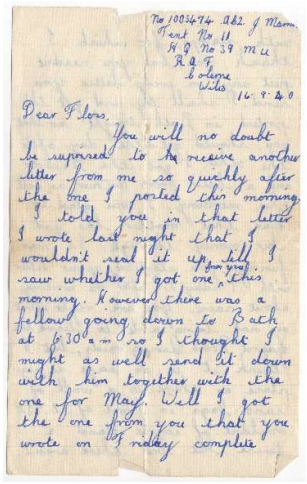
You will see by my address that I am now in a tent. I don't know for how long but I rather like it although I only sleep there every other night. I have heard that we are to be billeted out. The five of us on our job had some pleasant news on Wednesday. We learned that we were to get 6d. a day extra as we are doing Service Police work. It will come in

[5] Ack ack – Anti-aircraft

very handy especially as we shall get the 6d. a day for tobacco. We have also got about 17/6 back pay to come.

I should think by now that Joe has got to where ever he is going. Well Floss I don't think there is anything else just now. I don't think I will seal this now. I'll wait till Monday and see if anything arrives.
Cheerio
Jack

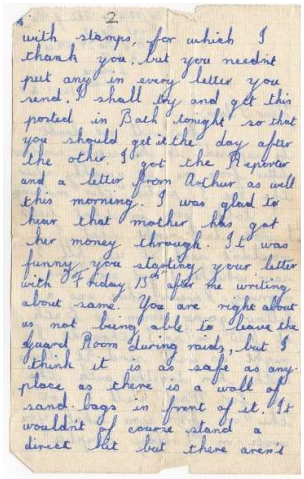
Letter 16/9/40 from RAF Colerne



No 1003474 AC2 J Marriott
Tent No 11
H.Q. No 39 M U
R.A.F.
Colerne
Wilts
16.9.40

Dear Floss,

You will no doubt be surprised to be receive another letter from me so quickly after the one I posted this morning. I told you in that letter I wrote last night that I wouldn't seal it up till I saw whether I got one from you this morning. However there was a fellow going down to Bath at 6.30 a.m. so I thought I might as well send it down with him together with the one for May. Well I got the one from you that you wrote on Friday complete



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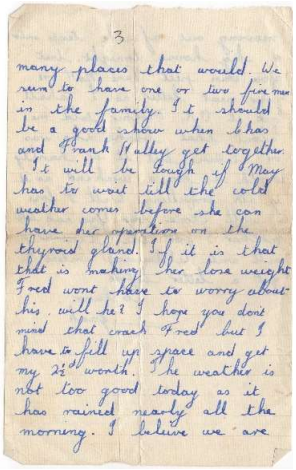

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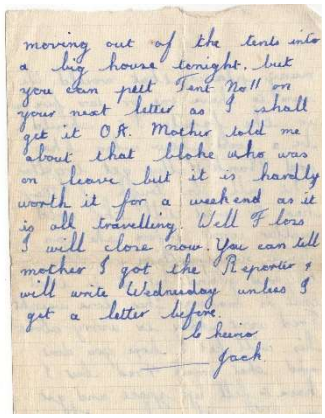

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Cheerio

Jack

No 1003474 AC2 J Marriott
Tent No 11
HQ No 39 MU
Colerne, Wilts

Sun 16.9.40

Dear Floss,

You will no doubt be surprised to receive another letter from me so quickly after the one I posted this morning.

I told you in that letter I wrote last night that I wouldn't seal it up till I saw whether I got one from you this morning. However there was a fellow going to Bath at 6.30am so I thought I might as well send it down with him together with the one for May. Well I got the one back from you that you wrote on Friday complete with stamps, for which I thank you, but you needn't put any in every letter you send. I shall try and get this posted in Bath tonight so that you should get it the day after the other.

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Cheerio

Jack

After 14 weeks at RAF Colerne Jacks initial training was over and his aptitude tests successful. On 1 October he was promoted to AC1 (Aircraftman First Class). After completing his roster on guard duties he

returned home for a short break before travelling to his new posting at No.5 School of Technical Training (5SofTT) RAF Locking just outside Weston-Super-Mare in Somerset on 19 October. Jack was by then confirmed in his trade (Mustering) as ACH u/t FM/FR. He was an Aircraft Hand (ACH), undertraining (u/t), in Fitter Mechanics (FM) and Fitter Radios (FR).

Jack in the garden at Middleton House

5SofTT at RAF Locking specialised in training in the areas of Flight Mechanics Airframe, Engines and Rigging, Parachute Packing and Fabric Working. Jacks initial courses and training was followed by further aptitude tests which honed Jacks abilities. From 25 October his

mustering became u/t FM, he was specialising as a Fitter Mechanics. His courses consisted of subjects on aircraft airframes, engines, carburettors and magnetos, electrics and instruments, aircraft engines (both radial and inline), hydraulics and propellers. After a week Jack had completed his general mechanical fitter training and progressed to u/t FM (E). He was then in training to be a Mechanical fitter specialising in engines.

The training was intense, on 1 December Jack's RAF Service Record was updated with a character of VG (Very Good, the highest character which was awarded in the Royal Air Force Volunteer Reserve) and in the Proficiency section that he was under training. He had little time for letters, but he did manage to buy an RAF Christmas card from the NAAFI shop and send it home. His training continued and towards the end of February 1941 had qualified as FM (E).

Engineering lesson on a Bristol Mercury radial piston engine

On 12 March after a short break at home he was posted to 18 Sqn. at RAF Massingham near Fakenham in Norfolk. Here he was working with the squadron's twin-engined Bristol Blenheim Mk.IVs light bombers. At the same time he was training for his grade II engine

qualification (u/t F II (E)). As the training intensified 18 Sqn. relocated to nearby RAF Oulton from 3 April. A week later Jack was posted to No.2 School of Technical Training (2SofTT) at RAF Cosford between Telford and Wolverhampton to continue towards his engine grade II qualifications.

Sadly, towards the end of April Jack's mother died. Following a short break at home Jack was back at RAF Cosford completing his training and preparing for his final assessments. By the beginning of June his training was over, and his final exams completed.

Jack with brothers Joe and Charlie at Middleton House

On 11 June he was a fully qualified Grade II Engine Fitter (F II (E)) having attained an 85% overall pass mark. Another short break at home and then Jack was back at RAF Oulton working on the engines of their Blenheims with their radial nine-cylinder Bristol Mercury engines. On 1 November Jack was promoted to Leading Aircraftman (LAC) and his end of year assessment as recorded in his Service Record once again showed a character of VG and for his Trade Proficiency he was awarded a 'Superior' (could only bettered by Exceptional).

Work on the Blenheims continued during the early months of 1942 and in March he undertook a Bristol company specialist training for their Mercury engines. This was completed successfully, and his Service Record Specialist Qualification section updated accordingly.

Ground crew working on a Bristol Blenheim Mk.IV

FLIGHT ENGINEER TRAINING

By the spring of 1942, the Blenheim light bomber was being superseded in the strategic bomber role by the huge four engined bombers. The Short Stirling had entered service in August 1940 and the Handley Page Halifax soon after in November. The Avro companies' medium bomber, the Avro Manchester, which was also introduced into squadron service in November 1940 had proved to be troublesome due to its unreliable Rolls-Royce Vulture engines. In a relatively minor re-design, the two Vulture engines were replaced by four less powerful but efficient and reliable Rolls-Royce Merlin engines.

The aircraft was re-named the Avro Lancaster, it was an instant success. Fast and manoeuvrable it had a huge bomb carrying capability and it went into massive production. The UK though had a paucity of pilots so like all British heavy bombers was only configured for single pilot operation. There was dual controls and no co-pilot unlike all the comparable American bombers. With the increased complexity of the modern heavy bomber and the necessary management of engines and flight systems the bomber crew became seven with the introduction in 1942 of the new role of Flight Engineer.

Initially Flight Engineer training was undertaken at Squadron level. In order to formalise training No.4 School of Technical Training (4SofTT) at RAF St Athan in the Vale of Glamorgan (South Wales) was established as a Flight Engineers School. The very first intake was on 30 May 1942. Typically for ab-initio (starting from the beginning) Flight Engineers the course took about six months to complete.

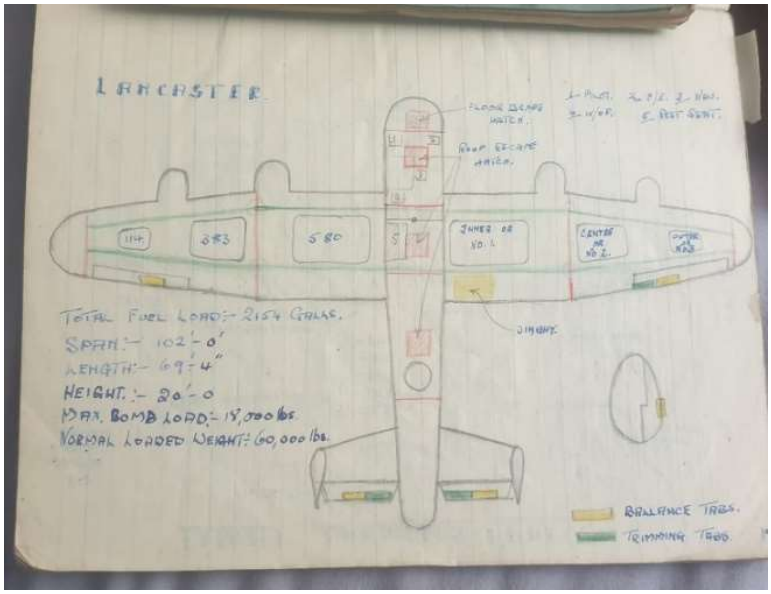
The first 17 weeks covered preliminary airframes and engines (radial and inline), carburettors and magnetos, electrics and instruments, hydraulics and propellers. Following a short home break, a further seven weeks covered Merlin engines, advanced airframes, hydraulics, propellers, instruments, electrics and aerodrome procedures. The final course provided specific training on the airframes and engines of the aircraft they were likely to get posted to.

Though very little, if any, actual flight training was undertaken, simulated flight environments were created using cockpit and fuselage sections and lessons would be conducted in full flying kit. Sometimes a tethered aircraft would be provided so students could run the engines at maximum throttle and observe the effects. Topics such as damage assessment, emergency procedures, crash-landings, and dinghy drills were also covered.

Flight Engineer lesson on a Lancaster B.III cockpit section

As well as direct entry students qualified ground engineers and fitters with a suitable aptitude were encouraged to apply. As soon as the opportunity arose Jack applied which was endorsed by his 18 Sqn. engineering lead. His Service record was stamped with 'Recommended for training as Flight Engineer'. Jack was an early entry arriving at 4SofTT on Tuesday 7 July.

For fully qualified fitters, like Jack, the course only encompassed the advanced topics and as such was condensed down to around six weeks. The training at RAF St Athan was intense. There were no course books or handouts all diagrams and notes had to be copied long-hand into his own notebooks.



Trainee Flight Engineer Eric Mortimer's hand drawn Lancaster diagram

In addition to the Flight Engineer training topics such as Morse Code, oxygen supply and the effects of hypoxia, physical fitness, navigation, and armaments were also undertaken. He did, however, have at least one weekend off, spending it at nearby Barry Island from where he sent a post card home.

The conclusion of the course was two exams, one written and the other oral. For those students who achieved a pass mark of 70% or more were recommended for a commission to officer rank. There were in actual fact few that achieved such a high score, it required excellent exam results together a demonstration of discipline, leadership skills and a determination that had been demonstrated throughout the entire course. Of the 19 Flight Engineers that took part on Operation Chastise (The Dambusters) 15 had passed through 4SofTT. Only two of them were Plt Off rank, but neither had gained it as a result of their 4SofTT course results.

Jack just missed the officer recommendation having achieved a very creditable 64%. The passing out parade was on Wednesday 19 August at which he was presented with his Flight Engineers winged Brevet. At the same time, he, together with all successful students who were now

qualified in a flying trade, were immediately promoted from LAC to Sergeant[6]. Despite his background and experience with radial engines and the introduction of the Lancaster Jack specialised in the Merlin V12 inline engine. Following his passing out parade it is no surprise that he was posted to a Lancaster squadron.

Jack with his winged Flight Engineers Brevet

[6] His RAF Service Record shows T/Sgt. All RAF VR were assigned Temporary sergeant status.

JOINING AN OPERATIONAL SQUADRON

On Friday 21 August Jack arrived at RAF Wigsley, a satellite station of RAF Swinderby in Lincolnshire to join 50 Sqn. Conversion Flight of 1654 HCU. With the introduction of the four-engined heavy bombers the Royal Air Force had created Heavy Conversion Units (HCU) to retrain crews experienced on medium bombers and Flight Engineers recently graduated to operate the heavy bombers before final posting to an operational squadron.

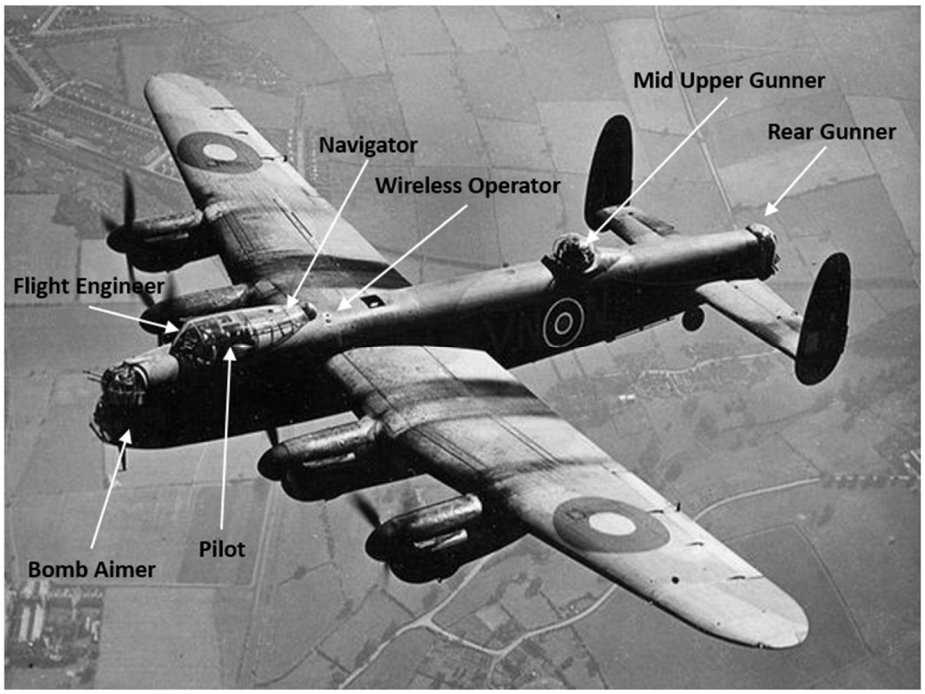
During the initial days after arriving at RAF Wigsley Jack was engaged in more ground school activities. From his quarters and the Sergeants' Mess he would walk to the 'Flights', the offices and crew rooms of the HCU which contained the classrooms, parachute section and changing rooms. Typically, Jack would have been expected to get some flight time whilst HCU training. Some HCU crews even took part in actual bombing raids but it seems that Jack did neither. His posting to 1654 HCU was summarily brief. It is not recorded whether he volunteered or was allocated, but less than a week later he was posted to an operational Lancaster crew of 50 Sqn. based at RAF Swinderby.

50 Squadron Lancasters at RAF Swinderby 1942
(Lancaster R5689 (VN-N) in the foreground is possibly the most photographed Lancaster of WW2)

AVRO LANCASTER CREW

It seems that Plt Off Drew Wyness who came from Sale near Manchester was in need of a new Flight engineer. Whether his regular Flight Engineer was ill or had completed his operational tour isn't known but on 25 August, just four days after arriving at Swinderby Jack joined Wyness's crew of Plt Off Kauffling, Sgt Oldridge, Plt Off Spedding, Sgt Newman, and Sgt Gurden at 50 Sqn. Jack's involvement in the war had just become much closer.

The Avro Lancaster consisted of seven crew members. Once a crew had come together, they were a tight knit team wholly dependent and reliant on each other. Typically, their strong comradeship existed from the moment they formed until they were either shot down or disbanded and existed both in the air and on the ground.



Aircrew positions in standard Avro Lancaster B.III

The Pilot, regardless of rank was the captain of the crew. His seat was in the cockpit on a raised seat on the left-hand side, it was the only position in the aircraft with armoured protection. He was responsible for controlling the aircraft both on the ground and in the air. The rest of the crew were totally dependent on him, his skills, and on his decision making. He was the leader and had to know the duties of all the crew members and what they were doing at all times. Gibson in his book 'Enemy Coast Ahead' describes his duty as a Lancaster Pilot*: 'The pilot of a bomber must know everything. He must know the duties of the rest of the crew inside out, and should be able to take on any one of them should the occasion arise.'*

At the right-hand side of the Pilot the Flight Engineer had a simple pull-down collapsible canvas seat, known as a 'Second Dickey'. There were no dual controls, though some Flight Engineers were trained to take over from the Pilot and fly a Lancaster straight and level if needed. The Flight Engineer was responsible for the management (and running repairs) of the engines, propellers, fuel, flight, and oxygen systems. His instruments were on the main control panel directly in front and also behind on the right-hand fuselage bulkhead.

Lancaster Flight Engineer checks the instruments on his console
The Second Dickey seat can be seen folded in its stowed position

Flight Engineers tended to very much overlooked as an aircrew category. They were usually non-commissioned and regarded by some quite erroneously, as being lesser educated 'blue collar' to pilots and navigators who were in effect seen as 'white collar'. Gibson often regarded as aloof and dictatorial however had high praise for them: *'The Flight Engineer is the pilot's mate and sits beside him watching the engine instruments. Most flight engineers were ground mechanics of Bomber Command who have volunteered to fly on operations, and a grand job of work they do too.'* Yet few received the acknowledgement richly deserved, they were the interface between the aircrew and ground crew, and many had some of the best technical training the RAF could provide. They also, along with the gunners had probably the most uncomfortable position in the aircraft with only a collapsible canvas 'perch', which many chose not to bother with for most of the time, but their view out of the cockpit was excellent.

At the front of the Lancaster the Bomb Aimers had two duties. His main duty was to release the bomb load accurately. His location was lying prone (or kneeling) in the Perspex nose blister, with bombsight and bomb release controls. He also acted as Front Gunner climbing into the nose turret and sitting on a simple canvas seat.

Directly behind the Pilot the Navigator sat facing the port side of the fuselage. He was equipped with a blackout curtain, his navigational instruments, and a desk for his charts. His primary duty was to ensure the aircraft was accurately directed to and from the target destination.

The Wireless Operator is often considered to have had the cosiest seat on a Lancaster. He sat behind the Navigator just in front of the wing spar facing forward and next to the heated cabin air intake. His desk contained all the necessary radio equipment and Morse key.

The Mid Upper Gunner was located in the turret and was on constant alert scanning a and protecting from enemy fighters from all sides.

The Rear Gunner also sat for the duration of a mission protecting the Lancaster's vulnerable rear. Often (as with Front Gunners) when on low flying missions they would (after seeking the pilot's permission) shoot at opportunistic targets as they flew over.

FIRST TOUR OF DUTY

Jack didn't get much time to adjust to being in an operational squadron. It is not known if was able to participate in any training flights, but it is assumed he did. Only four days after joining 50 Sqn. his Lancaster and crew was allocated to his first operational mission: his first 'Op'. I don't intend to describe what Jack would have done prior to and during the mission in this section as I will elaborate on his duties and activities in later chapters.

50 Sqn. Commemorative Bomber Card for Kassel 25-26/8/1942

During the night of 25 - 26 August Jack's Lancaster with 11 others from 50 Sqn. were detailed for a bombing mission to Kassel. They departed

RAF Swinderby starting at around 20:30 and were part of a total of 306 assembled for the attack. The weather conditions were good and there was only a light wind. The attacking force was split into three sections. The first section contained the Pathfinders[7], who used their flares to illuminate the most important targets in the city centre – the Henschel armaments works (codenamed Bream), the marshalling yard (codenamed Smolt) and the surrounding city block. Following these the bombers released their bombs, and finally four selected crews surveyed the damage and results of the attack.

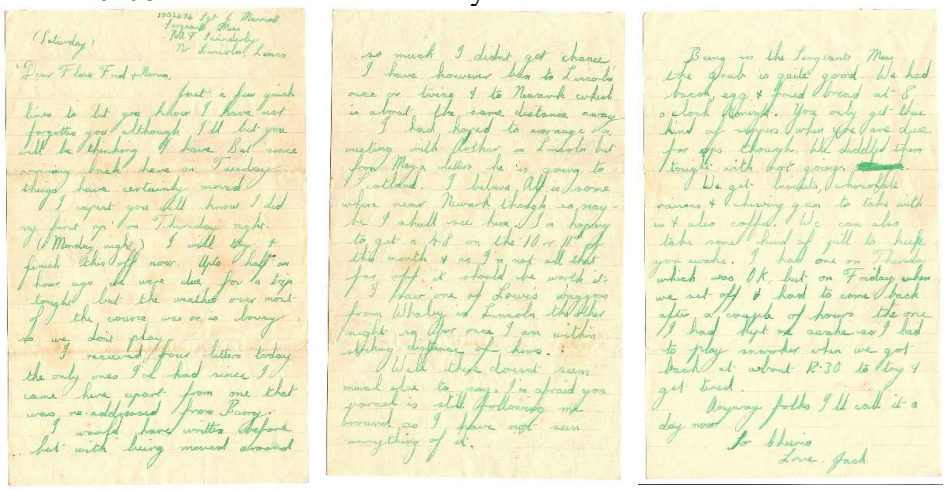
It was quite a costly mission, a total of 31 aircraft failed to return. However, all the 12 50 Sqn. Lancasters returned safely despite one of the Lancasters being fired upon (without damage) by a Wellington rear gunner when the aircraft passed under the Wellington. Jack had completed his first Op successfully and received a 50 Sqn. 'Op Bomber Card' to commemorate the event.

There was no time to reflect, the very next night Friday 27 August Jack's crew were detailed for another attack on Germany. This time it was Nuremburg. However, after crossing over the English Channel Jack's Lancaster developed an (unspecified) technical fault and had to abort the mission and returned without reaching their target, they landed back at RAF Swinderby at around 00:30.

He had no Ops over the following weekend and found time to start to a write letter home. The letter interestingly describes that his crew were given 'Wakey Wakey' pills to keep them awake whilst on a mission. These were more than likely Caffeine tablets but may have been the amphetamine-based Benzedrine. Whatever they were, they had worked effectively on his first Op the previous Thursday night, but because he had returned early on the Friday, he couldn't get to sleep and spent hours playing snooker to try and tire himself out. He finished his letter on the Monday evening of 30 August after an Op planned for that night was cancelled due to bad weather and he gloats that he was able to get a full flying supper despite the fact his mission that night had been cancelled.

[7] Pathfinder – target marking aircraft

Letter 29/08/42 from RAF Swinderby



1003474 Sgt J Marriott
Sergeants Mess
RAF Swinderby
Nr Lincoln

(Saturday)
Dear Floss Fred & Norma,

Just a few quick lines to let you know I have not forgotten you although I'll bet you will be thinking I have. But since arriving back here on Tuesday things have certainly moved.

I expect you will know I did my first op on Thursday night. (Monday night) I will try and finish this off now. Up to half an hour ago we were due for a trip tonight but the weather over most of the course was or is lousy so we don't play.

I received four letters today the only ones I've had since I came here apart from one that was re-addressed from Barry [RAF St Athan].

I would have written before but with being moved around so much I didn't get a chance. I have however been to Lincoln once or twice and to Newark which is about the same distance away.

I had hoped to arrange a meeting with Arthur in Lincoln but from May's letters he is going to Scotland. I believe Alf is somewhere near Newark though, so maybe I shall see him. I'm hoping to get a 48 on the 10th or 11th of the month and as I'm not all that far off it should

be worth it.

I saw one of Lowes' waggons from Whaley [Bridge] in Lincoln the other night so for once I am within striking distance of home.

Well there doesn't seem much else to say. I'm afraid your parcel is still following me around as I have not seen anything of it.

Being in the Sergeants Mess the grub is quite good. We had bacon, egg and fried bread at 8 o'clock tonight. You only get that these kind of suppers when you are due for ops though. We diddled them tonight with not going.

We get biscuits, chocolate, raisins and chewing gum to take with us and also coffee. We can also take some kind of pill to keep you awake. I had one on Thursday which was OK, but on Friday when we set off and had to come back after a couple of hours the one I had kept me awake so I had to play snooker when we got back at about 12:30 to try and get tired.

Anyway folks I'll call it a day now.

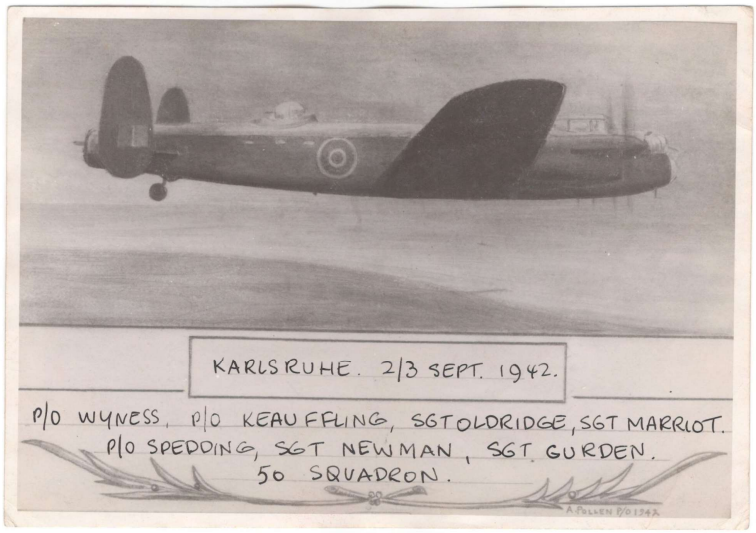
So cheerio

Love Jack

The following night, Tuesday 1 September Jack was back on Ops detailed for a night bombing mission to Saarbrücken. Jack's crew were once again one of 12 50 Sqn. Lancasters that were included in the 205 aircraft on the mission. The 50 Sqn. Operational Record Book (ORB) states that visibility was excellent, the raid was virtually un-opposed by Flak[8], fighters or searchlights, and all 12 Lancasters returned successfully. However, this was possibly due to the fact that the Pathfinders had and marked a town which they believed to be Saarbrücken which the main force bombed vigorously. But the town bombed was in reality Saarlouis, 13 miles to the north-west and situated in a similar bend of the River Saar. The small, non-industrial town and its surrounding villages were heavily damaged whilst no bombs fell on Saarbrücken. One of the pilots from 106 Sqn. was Guy Gibson who sustained Flak damage to his starboard wing.

[8] Flak - an abbreviation of the German **Fl**uga**a**bwehr**k**anone (also referred to as **Fl**iegera**a**bwehr**k**anone) meaning aircraft-defence cannon

Ops were coming thick and fast. The very next night Wednesday 2 September Jack's crew was one of nine Lancasters provided by 50 Sqn. to a force of 200 bombers that attacked Karlsruhe. This time the Pathfinders were spot on and the attack successful. Defences were reported as being very quiet and all nine 50 Sqn. Lancasters returned safely to Base.



50 Sqn. Commemorative Bomber Card for Karlsruhe 2-3/9/1942

Two days later on Friday 4 September 50 Sqn. provided 16 Lancasters for a concerted attack of 251 bombers on Bremen. Despite heavy defences only one of the 50 Sqn. Lancasters sustained minor Flak damage but all 16 returned safely.

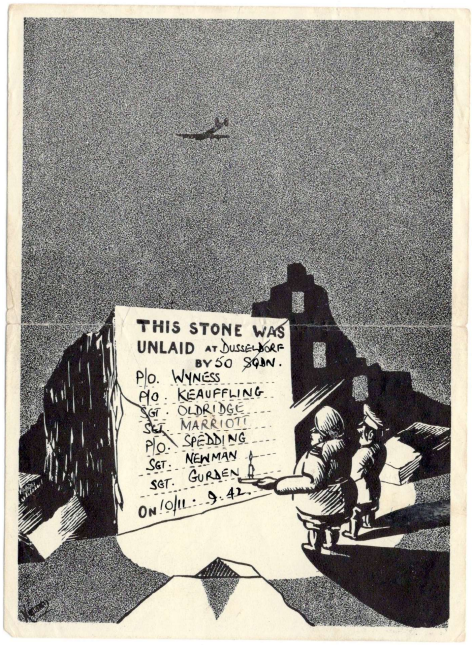
During this time the squadron continued to re-organise. 50 Sqn. Conversion Flight was being absorbed into 1654 HCU and as it expanded more and more Lancasters were being delivered straight from the Avro production lines.

Saturday 5 September was a rest day, but the following day Jack was again on Ops, part of ten 50 Sqn. Lancasters allocated to a bomber force of 207 aircraft for a night bombing mission to Duisburg. One of the Lancasters was turned inverted after Flak exploded beneath it, fortunately it was recovered by the pilot by performing a diving roll. Another suffered Flak damage to the port inner engine which was

feathered causing hydraulic failure, and two holes were also made in the tail and rudder. All ten Lancasters returned to base but for Jack the realities of war were coming ever nearer.

Tuesday 8 September was only two weeks after Jack had joined 50 Sqn., but it was already his seventh Op. 11 Lancasters from 50 Sqn. formed part of 249 aircraft that took part in a raid on Frankfurt. Gibson with 106 Sqn. also took part on the raid. Although the Pathfinder force had dropped their flares scattered ground haze and a very dark night made bombing accuracy very poor. Fg Off Calvert in one of the other 50 Sqn. Lancasters commented in his Logbook 'Too many searchlights-Shaky Do'.

A day of rest was following by another Op on 10 September. 11 Lancasters from 50 Sqn. were part of 479 aircraft that took part that night on a raid to Düsseldorf. The Pathfinders successfully marked the target using 'Pink Pansies' flares which were converted from 4,000 lb bomb casings. The conditions were good and visibility excellent. Over 100,000 bombs were dropped in less than an hour. All 11 Lancasters returned safely though one had turned back before releasing its bombs due to faulty guns.



50 Sqn. Commemorative Bomber Card for Düsseldorf 10-11/9/1942

A very short break followed during which the whole of 50 Sqn. posed for a team photograph in front of one of their Lancasters and framed by RAF Swinderby's distinctive twin water towers. Several members of the squadron in the photograph were also later to be transferred to 617 Sqn.

50 Squadron RAF Swinderby – August 1942
1-Jack Marriott 2-Drew Wyness 3-Mick Martin 4-Jack Leggo 5-Bob Hay
6-Frank Martin 7-Tammy Simpson 8-Henry Smith 9-James O'Neill

Ops resumed on Friday 18 September when another 11 Lancasters from 50 Sqn. undertook 'Gardening' (mine laying) operations. A total of 115 bombers participated, 50 Sqn. provided two at 'Nasturtium' (Copenhagen, Denmark, Sound North), two at 'Elderberry' (Bayonne, France), two at 'Pollock' (Bornholm, Denmark), three at 'Willow' (Sassnitz, Germany), one at 'Daffodil' (Copenhagen, Denmark, Sound South), and one at 'Quinces' (Kiel Bay, Germany).

It's not recorded which location Jack was at but one of the Lancasters at Nasturtium had mechanical problems and was unable to open its bomb doors, and another R5689 (VN-N) crashed on final approach when it returned to RAF Swinderby. Its port inner engine had failed and the crew mistakenly feathered (shut-down) the port outer causing the Lancaster to crash and burst into flames killing four members of the crew. It must have been a sobering realisation to Jack of how delicate and important his role was within the crew and how maximum concentration must be maintained at all times from start-up up to final shut-down.

Lancaster R5689 (VN-N) after crash landing on return to RAF Swinderby 18 September 1942

Jack didn't have time to dwell on it. The very next night 89 bombers attacked Munich. Jack was one of five aircraft provided by 50 Sqn. Lancaster W4117 (VN-R) returned after only 15 minutes but the other four completed their mission successfully.

Jack's next Op was on 23 September. The target for a total 83 bombers with 11 Lancasters from 50 Sqn. was the Baltic city of Wismar and the nearby aircraft factory of Norddeutsche Dornier-Werke. There was low cloud, no moon and poor visibility. Several aircraft were hit by Flak and only five aircraft managed to bomb the target with any degree of accuracy and one of the Lancasters failed to return.

Following the attack on Wismar Jack had a break from Ops. 50 Sqn. and 1654 HCU continued to develop and grow. On 3 October Fg Off Henry Maudslay arrived as an instructor to 1654 HCU. He had completed a tour with 44 Sqn., had helped test the Lancaster's suitability during pre-service introduction trials at A&AEE Boscombe Down, and though officially posted to 1654 HCU in June he had been

seconded back to 44 Sqn. A serious motorbike accident on 9 August kept him away from flying but having recovered from his accident he began conversion training for Lancaster pilots. He checked-out several pilots (Astell, Barlow, Brown, and Munro) who were later to join him at 617 Sqn. He struck up a particularly strong friendship with Bill Astell, whose home was in the Derbyshire village of Combs near Chapel-en-le-Frith. It was just about a mile from Jack's home in New Smithy.

Painting of 50 Squadron over the target

On Monday 5 October Jack was again on Ops. He was one of ten 50 Sqn. Lancasters from a force of 257 bombers detailed for an attack on Aachen. Despite flares dropped by the Pathfinder force there was poor visibility over the target area and very heavy Flak caused considerable difficulties. Fortunately, all aircraft returned though Lancaster R5733 piloted by S/L G.H. 'Hughie' Everitt was hit by Flak and lost both starboard engines. He nursed his Lancaster homeward but made a 'Belly landing' at RAF West Malling in Kent.

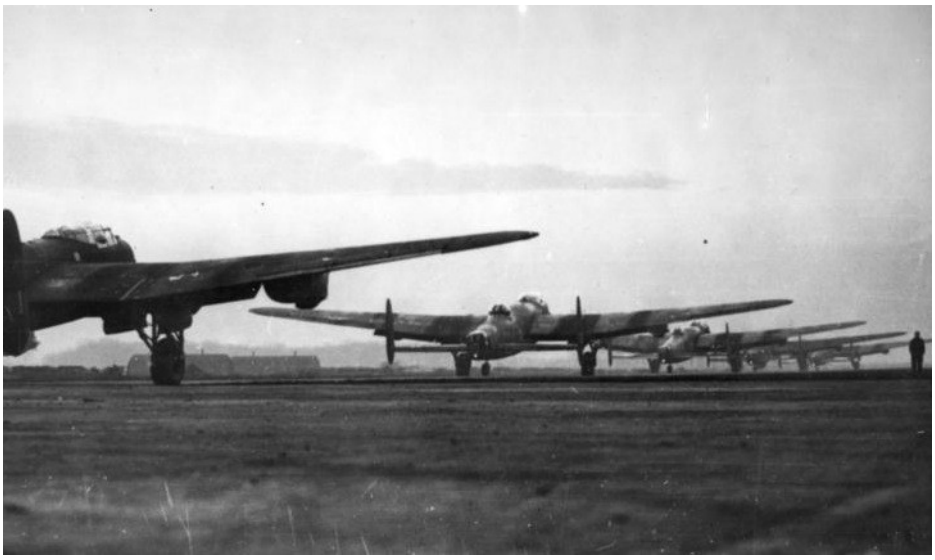
Osnabrück was the next target on 6 October for 237 bombers of which nine were provided by 50 Sqn. Jack took off just after 19:30. Visibility over Osnabrück was poor with lots of ground haze. There was little Flak activity, all nine Lancasters released their load and arrived safely back at RAF Swinderby around midnight.

On 11 October Flt Lt Harold Brownlow (Mick) Martin, one of the senior 50 Sqn. pilots with a reputation for his low flying skills and his meticulous pre-flight preparation left the squadron. He had completed his tour of operations and posted to 1654 HCU to undertake pilot training. After being awarded a DFC he happened to meet Guy Gibson who was receiving a DSO during their investiture at Buckingham Palace in February 1943. Gibson was impressed with Martin's knowledge of low-level flying so it is not surprising that Martin was one of the few pilots that Gibson actually personally invited to join 617 Sqn.

On 12 October Wismar was once again the target for 59 bombers of No.5 Group. 50 Sqn. provided 11 aircraft which departed RAF Swinderby around 18:00. Seven were detailed to bomb the town of Wismar and the other four the Norddeutsche Dornier-Werke factory. Lancaster W5154 returned early at around 20:00 with problems with one of its turrets. The targets were obscured by cloud, but the Norddeutsche Dornier-Werke factory was believed to have been heavily damaged whilst some of the crews reported bombing the nearby city of Lübeck. Unfortunately, R5902 (VN-T) piloted by Sgt Howard Rawlins was either hit by Flak or a night fighter. The aircraft entered a tight spin and exploded. All but one of the crew were killed immediately.

The following night 288 bombers attacked Kiel. 50 Sqn. provided nine Lancasters, it was the final operation flown by 50 Sqn. from R.A.F. Swinderby. The aircraft departed at 18.50, the weather and visibility was good en route and over the target. Opposition at Kiel was light, and all aircraft returned without damage or casualties. Jack by this time had flown 16 Ops since arriving with 50 Sqn. less than two months previously.

50 Sqn. returned to their formed base at RAF Skellingthorpe which had been upgraded to Class 'A' standard airfield. It had had a 350-yard extension to the main runway and the addition of further accommodation sites. 50 Sqn. returned from 15 and 16 October during which time no active Ops were undertaken. However, the squadron, including Jack's crew, had for some time been in special training for a secret mission. Along with other No.5 Group aircraft they had practised low level daytime formation flying.



On Saturday 17 October, the day following the completion of the move back to RAF Skellingthorpe 50 Sqn. Lancasters took part in Operation Robinson. A total of 94 aircraft took part in an attack on the Schneider heavy industry and armaments factory at Le Creusot in the Burgundy region of eastern France. Previous RAF experience of daylight bombing at Augsburg and Dantzig had been unsuccessful but with specialist training it was believed such a large force could be successful.

88 of the bombers attacked the Schneider factory whilst six attacked a power station at nearby Montchanin. All nine of No.5 Group squadrons supplied Lancasters. The operation was led by Wg Cdr L.C. Slee, the CO[9] of 49 Sqn. Following his squadron out over the Atlantic was 9 Sqn., 44 Sqn., Jack's crew in one of 12 Lancasters provided by 50 Sqn., 57 Sqn., 61 Sqn., 97 Sqn., 106 Sqn. and 207 Sqn. Guy Gibson led 12 Lancasters from 106 Sqn., which included pilots John Hopgood and Dave Shannon, all three of whom were later to join 617 Sqn. with Jack. Gibson and Hopgood piloted two of the Lancasters that attacked the power station.

The mission was top secret. The aircraft started taking off around 12:00. Coastal Command Whitley bombers flew 15 minutes ahead of the Lancasters to attack any German submarines to force them into staying submerged so they would not see the Lancasters and signal warnings. Fighter Command and aircraft from No.2 Group also attacked targets along the French coast in order to distract attention.

No.5 Group Lancasters flying at low level over Montrichard on the River Cher in France towards Le Creusot

[9] CO – Commanding Officer

The nine Squadrons joined up in a loose formation as they flew south from Land's End down passed Britany and over the Bay of Biscay before turning inland south of Saint Nazaire. The formation was un-escorted but met no opposition whatsoever. They flew at heights of between 50 and 500 ft before most climbed to their bombing height of 4,000 ft as they approached the town of Nevers about 50 miles to the west of Le Creusot. Those detailed for the attack on power station bombed from about 500 ft. Gibson received superficial Flak damage, Hopgood flew so low that the blast from his own bombs damaged his aircraft, and the only aircraft lost on the whole mission W5774 of 61 Sqn. flown by Sqn Ldr William Corr which crashed into the power station.

As the sun was setting over Le Creusot more than 200 tons of bombs were dropped in less than ten minutes. One of the 50 Sqn. Lancasters was unable to open its bomb doors so had to return complete with its bomb load, whilst all others returned individually by the fastest route. By the time the aircraft arrived back to Britain the weather had deteriorated and many Lancasters had to divert to airfields in the south of England. All 50 Sqn. aircraft returned safely to RAF Skellingthorpe by 23:00 after flying for about ten hours except W4161 which had to divert to RAF Hinton-in-the Hedges in Northamptonshire.

Though the mission was regarded as a great success, post raid photographs revealed that destruction was not as complete as had been hoped and many bombs had over-shot the target and destroyed many houses in a civilian workers housing estate. Despite this, the attack was prominently reported in the daily newspapers.

On Monday 19 October the leader column in The Daily Dispatch featured a detailed description of the raid complete with a photo of Jack's pilot Fg Off Drew Wyness and a group photo of *'Navigators, Machine-gunners, Wireless Operators, and Flight Engineers who took part in the Creusot raid'*. Jack may well be one of them, but it is not possible to identify him.


The Daily Dispatch

No. 13,288 — MONDAY, OCTOBER 19, 1942 — ONE PENNY — 4 A.M. EDITION

94 LANCASTERS HIT CREUZOT IN 7 MINUTES

THE great Schneider arms works at Le Creuzot in Occupied France was saturated by bombs in a seven-minute attack by 94 giant Lancaster bombers at dusk on Saturday—one bomber about every four seconds.

It was the war's greatest and shortest daylight raid — and its most daring, for the Lancasters were unescorted in their 600-mile round trip to Le Creuzot, which is 170 miles south-east of Paris and under 60 miles from Vichy. The defences were taken completely by surprise.

All but one bomber returned—and that one was probably hit by flying debris in the devastation it wrought when attacking a power station supplying current to the great arms works at Le Creuzot.

The raid was a miracle of timing and organisation. The planes, after a hedge-hopping flight over France, roared towards their target on time to the minute. Then for the next seven minutes it was hell let loose.

An aerial view of Le Creuzot, taken by a German reconnaissance aircraft and received from a neutral source.

Arrived on Time

Like Grand National

Big Loss to Nazis

Text for the Day

STALINGRAD: LAST FORTS HOLD OUT

Volga Bank Now Under Fire

FROM OUR SPECIAL CORRESPONDENT

Stockholm, Sunday Night.

RUSSIAN resistance is stiffening in the Red Barricade factory settlement, where the main weight of the German offensive against Stalingrad is now concentrated.

This massed blow, it is estimated, is being sustained with no fewer than 20 divisions—many German troops are being thrown into the battle "straight from the march"—and from 1,200 to 1,300 tanks.

THE Soviet High Command announces to-night, for the second time in 24 hours, that the Red Army garrison—after giving ground four times in four days—is holding the Germans at bay.

Staggering Losses

Non-stop Battering

To the Last Man

STRIKERS IN ATHENS GUNNED

Istanbul, Sunday.

ITALIAN carabinieri called out to disperse transport strikers in the main streets of Athens, machine-gunned them, killing and wounding a large number.

Defenders' Pledge

From ALEXANDER WERTH, The Daily Dispatch Special Correspondent

U.S. Petrol Fire Menaces City

MILLS BOMBS FOUND IN BELFAST

LATE NEWS

WEATHER IN RUSSIA GETTING WORSE

JAPS MASS IN GUADALCANAL

Big Battle Imminent

THE imminence of a great battle for the possession of the Solomons was revealed in the following communiqué issued by the U.S. Navy Department last night:—

"The Japanese are continuing to bomb our airfield and shore positions on Guadalcanal Island ..."

Some of the officers who took part in the Creuzot raid:— Back row (left to right): Flt.-Lt. Abercromby, Sqdn.-Ldr. Moore, D.F.C., and Sqdn.-Ldr. Everitt, D.F.C. and bar. Front row: Flying-Officer Wynes... and Flying-Officer Calvert, D.F.C.

ATTACKS ON MALTA EASE OFF

PILOTS' STORIES

"A Wizard Trip"

By LAWRENCE FAIRHALL, Our Air Correspondent

R.A.F. Plane Crash Killed 14

2-Mile Push in New Guinea

Rommel's Rear Lines Raided

Fair and Square

Spitfires Attack Railways

Allied Raids

Norway Swoop on Americans

2 Jap Destroyers Hit Off Kiska

ONE U.S. DIVISION IN LIBERIA Says Axis

"A BOUT one division" of American troops have landed in the negro Republic of Liberia, on the West African "bulge," according to an estimate from Axis sources last night.

This would imply a "task force" of anything between 10,000 and 18,000 troops, as American division varies between these limits.

Clash Near Ambositra

R.A.F. PLANE SHOT DOWN, SAYS OSLO

The War: 1,143rd Day

A group of navigators, machine-gunners, wireless operators and flight engineers who took part in the Creuzot raid.

The Daily Dispatch 19/10/1942

Following the Le Creusot raid Jack was given a few days off. There were no 50 Sqn. operations until 21 October, but Jack's next sortie was a week later on Saturday 24 October with another daylight mission, this time to Milan. 50 Sqn. provided nine aircraft to a No.5 Group formation of 71 Lancasters. The aircraft took off just after 12:00 and despite good visibility they encountered little defensive activity. All aircraft successfully dropped their bombs and successfully returned to base by 22:00.

It was then nearly two weeks until Jack's next sortie. Italy was again the target on Friday 6 November and a night bombing mission to bomb the city of Genoa. 50 Sqn. provided five aircraft which departed RAF Skellingthorpe from around 21.30 to complete a total of 72 Lancasters. The heating in a Lancaster was basic. The Wireless Operator was usually ok as the heater vent was by his position, but for the rest of the crew it was woefully inadequate. Jack, as with most Flight Engineers, was more often than not stood in the exposed cockpit during the high-altitude night operations and he was often cold. Over 115 tons of bombs were dropped on Genoa and although two aircraft were shot down all five 50 Sqn. Lancasters returned safely.

There was no rest for Jack. After a few hours sleep it was time for briefing and then he was preparing for another night sortie back to Genoa. It was the fourth and heaviest bombing raid of the war so far on the Italian city.

In total 175 Lancasters had taken off with 12 provided by 50 Sqn. The weather was good and in total 237 tons of bombs were dropped on the city and the Ansaldo shipyard. Six Lancasters were lost but all 12 of the 50 Sqn. aircraft returned by 02:00, though three had been damaged by Flak. Sqn Ldr Moore in R5687 was hit in the port wing damaging both engines. The port inner had to be shut-down and with reduced power on the port outer. His Flight Engineer suffered oxygen starvation due to the damage and was near to collapse but still managed to help the Lancaster limp back to base. It must have been a stark reminder to Jack of the dangers he was facing. Lancaster W4267 was hit by Flak which caused the aircraft to go out of control for a period, and another W4135 received Flak damage to the rear turret and Starboard tail.

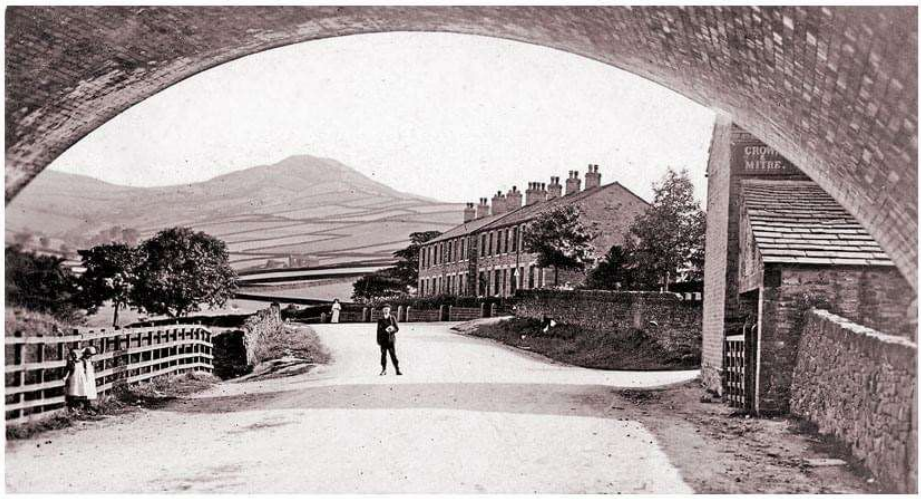
Two days later Jack was back on a night bombing sortie of Germany. The target was Hamburg, and the weather conditions were reported to be bad with heavy cloud and limited visibility.

Nine 50 Sqn. Lancasters were part of a total force of 213 aircraft. One returned early because of engine problems and four of the Lancasters had to use 'Dead Reckoning' to determine the drop zone and it is believed they may have bombed Hanover rather than Hamburg. Flak defences over the target were very aggressive, and 15 aircraft were lost including oneLancaster from 50 Sqn.

In addition, Lancaster R5702 (VN-S) named 'Taipo' was hit by Flak. Shrapnel and shattered Perspex peppered the aircraft and crew cutting off the Intercom between crew members. The Pilot Plt Off Roy Calvert was hit in the face and arm and the aircraft started flying left wing low due to loss of aileron trim and rudder bias systems. The Navigator Flt Sgt Medani, RNZAF was very badly wounded, and the Wireless Operator Sgt Lewis Herbert Austin RAAF was killed outright, with the wireless and numerous other navigation aids put out of action while over the target. The crew managed to nurse the Lancaster back to Britain where it crash-landed at RAF Bradwell Bay with no further casualties.

Jack then had a break and managed to get a weekend pass. On Saturday 14 November he decided to have a weekend at home in New Smithy. He managed to get to from 'Skelly' to nearby Lincoln and buy a train ticket to Sheffield. But without enough money for a ticket from Sheffield to Chinley he sneaked onto the Sheffield to Manchester train. Avoiding the guard wasn't difficult in the train packed with rowdy serviceman. As the train passed slowly over the Hayfield Road bridge on the approach to Chinley station Jack climbed out of the train and scrambled down the embankment. He was less than 100 yds from home.

Floss was horrified that he had risked the journey without a ticket and wasn't going to let him go back by the same method, so she bought him his return ticket to Lincoln. Floss was also concerned that he had been cold on his missions, so she borrowed him one of her husband Fred's thick knitted pullovers. It wasn't quite the right size but fortunately it was blue, so suitable for RAF aircrew. Floss said she would knit Jack his own and swap it back for Fred's.



New Smithy from Hayfield Road bridge. Middleton House is behind the low wall on the right just after the Crown and Mitre

Following his break Jack was again detailed for a night attack a German target. On Sunday 22 November a mixed formation of 222 aircraft including 97 Lancasters, 59 Wellingtons, 39 Halifaxes, and 27 Stirlings attacked Stuttgart. 50 Sqn. supplied nine Lancasters but two had to return home with technical issues. The remaining seven released their bombs and most dropped leaflets (‘Nickels’) before returning safely to base with no reported casualties. Jack though was a little more comfortable with his new none-standard item of flying clothing.

There was another break of a week for Jack then on 28 November was detailed for a night raid on Turin. It completed his raids on Italy’s so-called 'industrial triangle' of Milan, Genoa, and Turin. It was the Third ‘area bombing’ raid on the Italian city and from a total of 228 bombers Jack was one of the six from 50 Sqn. In total 371 tons of bombs were dropped on the Fiat Plants and on the city including the 8,000 lb blockbuster bombs used for the first time in Italy. Visibility was good and Flak was intense. Three aircraft were shot down but all six 50 Sqn. Lancasters landed safely though one was hit by Flak and returned on three engines.

Jack’s next Op was just over a week later on 6 December with a night raid on Manheim. Ten Lancasters of 50 Sqn. departed RAF Skellingthorpe but four were detailed for Gardening and to drop sea-

mines in the ‘Nectarine’ area. The other six including Jack joined a force 272 aircraft in the strategic bombing of Manheim. Jack’s usual Navigator Plt Off Spedding was ill and replaced by a Sgt Gurney. One of the Lancasters failed to reach the target because a crew member became ill due to lack of Oxygen and the Lancaster returned early. All ten aircraft returned to base though one had diverted to RAF Wyton.

Two days later Jack took part in the fifth area bombing raid on Turin. Plt Off Spedding had recovered and returned. Ten Lanacsters of 50 Sqn. departed to join a force of 133 bombers. One returned early with technical issues and the other nine dropped their bombs damaging the city centre, University, and the Fiat factory. One Lancaster was shot down over Turin but the nine 50 Sqn. Lancasters all successfully returned to base.

Jack was one of ten 50 Sqn. Lancasters the following night that returned to Turin. Again, one Lancaster returned early with technical issues but the other nine joined another 123 aircraft. Though visibility was good, and Flak was light smoke from the previous night’s bombing restricted accurate bombing. A total of 393 tons of bombs was dropped and three aircraft lost but all 50 Sqn. Lancasters returned to base successfully.

It was Jack’s last Op with Drew Wyness and the crew he had formed a strong bond both professionally and socially over the previous 15 weeks since he had joined 50 Sqn. Most of the crew had finished their 30-Op tour of duty. Jack had almost completed a tour having taken part in 26 operations. On 11 December his Service Record was updated. Once again, his character assessment was VG, his Proficiency column A (trade ability) was sat (satisfactory), and as it was his first review since becoming a Sergeant Proficiency column B (supervisory ability) was also sat.

Confusingly, even at the end of 1942 the length of an operational bomber tour was not formalised. A tour was usually regarded as being 30 Ops however it could sometimes be granted for fewer Ops. Similarly, the length of time on non-operational duties between active Ops was of an undefined period of time though it was usually considered to be up to nine months for flying crew members. After his last Op on 9 December Jack had a short leave break. To ensure he travelled home legally Floss had sent him the cost of a return train

ticket. He returned Fred's blue pullover proudly announcing in his jovial cocky manner that it had been touring over Turin.

On his return to RAF Skelligthorpe Jack waited to be allocated to a new crew. 50 Sqn. continued on Ops though weather restricted the number of flights through December and into January. Crew re-organisations continued. On 1 January 1943 Henry Maudslay who had been promoted to Flt Lt joined the squadron from his pilot training duties at 1654 HCU. Two days later Wyness, who Jack confided to his family that he held in high respect, was posted the opposite way, joining 1654 HCU as an instructor.

It's not recorded what Jack's activities were through the January and February of 1943. Maudslay though undertook nine missions including Ops over Germany, Italy and France during which time he was finalising his operational crew. Jack joined the Maudslay crew towards the end of February with his first flight with Maudslay, perhaps a check out, on Sunday 21 February when they flew in Lancaster W4823 on a short flight to RAF Waddington.

There was no immediate return to Ops for Jack as the following Wednesday his new pilot left for a weeks leave. Maudslay returned on 2 March and the following night with his finalised crew was included on the nights Battle Order. The target was once again Hamburg. Maudslay, presumably accompanied by Jack, undertook a short air test of about 30 minutes during the afternoon and following their briefing took off in Lancaster W4823 (VN-F) with seven other 50 Sqn. Lancasters at 19:00.

They were part of a force of 417 aircraft. One of the 50 Sqn. Lancasters (ED483) had a technical problem and had to return early. The 50 Sqn. Lancasters avoided a mass of search lights to the north of Hamburg and though they had departed RAF Skellingthorpe into a cloudless night by the time they reached their target there was poor visibility and significant ground haze.

Their Pathfinders had marked the wrong target, mistaking a mud bank for the docks with their recently introduced H2S[10] radar. Maudslay had been briefed to bomb the large Altona railway station but as with many

[10] H2S – early airborne ground mapping radar system

of the bombers that night they released their load downstream from the centre of Hamburg, around the small town of Wedel causing considerable damage. A total of ten aircraft were lost but all 50 Sqn. Lancasters returned safely.

As Jack's flying Logbook doesn't exist there is no record of his non-operational flying activities. However, as he was confirmed as Maudslay's permanent Flight Engineer we can assume he accompanied Maudslay during all his flying activities. So, on Friday 5 March he and Maudslay were driven the short distance to RAF Waddington to collect a new Lancaster ED693.

The next day they were flying in Lancaster ED478 (VN-G) on fighter affiliation, air firing, and 'Tinsel Tests'[11]. This was followed on 7 March flying again in ED478 (VN-G) performing air tests and muli-engined shutdown.

They were flying again during the day of 9 March putting Lancaster W4161 (VN-J) through an air test. No sooner had they landed when they were briefed for a mission that night. Their target was deep into Germany to attack the southern city of Munich.

In Lancaster ED415 (VN-C) Jack joined another nine 50 Sqn. Lancasters that comprised 142 Lancasters, 81 Halifaxes, and 41 Stirlings. Two of the 50 Sqn. Lancasters returned early, the others pressed on against strong headwinds and suffered intense Flak. Bombing from 12,500 ft was only partially successful as the area was obscured by smoke. One of the 61 Sqn. Lancasters was shot down over Munich and seven others failed to return but once again all 50 Sqn. Lancasters returned to base.

Jack's crew had a day off flying, then on 11 March the whole crew undertook an air-firing exercise which gave the crew, and particularly the gunners, practise at shooting target drones towed by single engine Miles Martinets target tugs.

[11] Tinsel tests were an early form of electronic counter measures

Miles Martinet target tug

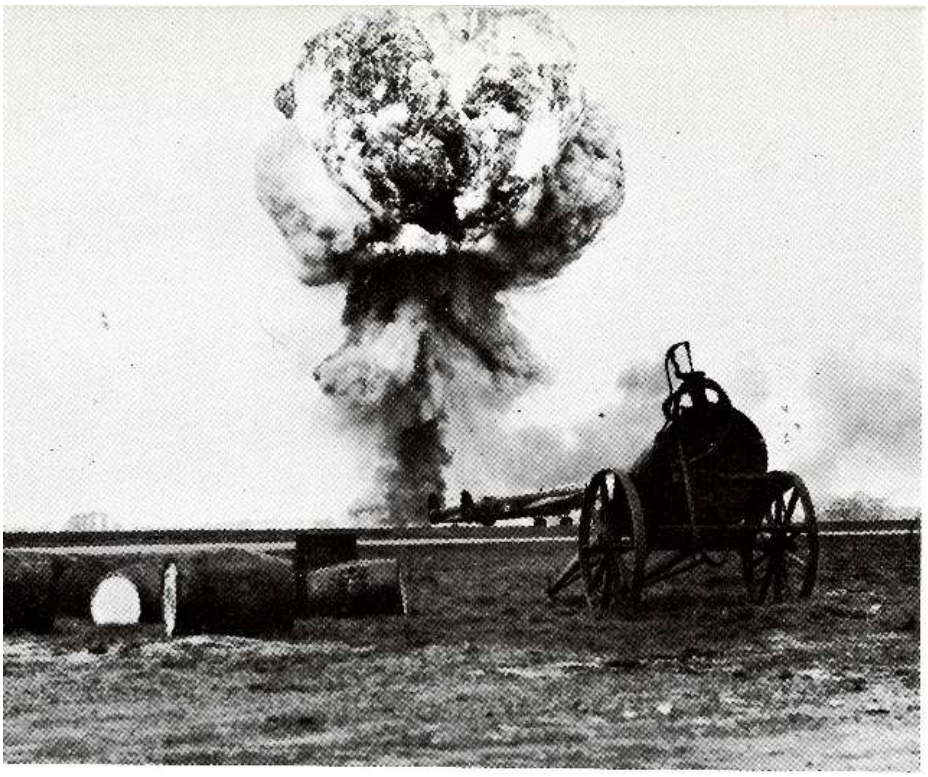
It seems that following the exercise Maudslay vacated his pilot's seat and gave members of the crew the opportunity to take control of the Lancaster. No doubt Jack would have relished the opportunity, but it in Jack's case it would have served to ensure that in the event of Maudslay getting injured enough not to be able to fly whilst on a mission Jack would have at least had the feel and some experience of handling the heavy aeroplane.

That night the Commanding Officer of 106 Sqn. Wg Cdr Guy Gibson completed his final Op of his third tour from RAF Syerston in Nottinghamshire. It was an eventful trip to Stuttgart as he had to shut-down one of his engines and rather than return to base he continued his mission on three engines flying low throughout the raid. He had expected to go on leave to Cornwall and was surprised to be summoned to HQ No.5 Group where he was told he was being posted ostensibly to write a book, (as he describes in *'Enemy Coast Ahead'*) *'for the benefit of the would-be bomber pilot'*.

Jack was back on the Battle Order the following night. 50 Sqn. provided ten Lancasters in a raid of 457 aircraft on a night bombing raid to Essen. Jack's crew were in their familiar Lancaster ED415 (VN-C) and with the rest of No.5 Group bombers attacked the huge Krupps Heavy armaments factory. Maudslay attacked towards the end of the raid at around 21:40. 23 aircraft failed to return from the raid including 50 Sqn.'s Lancaster B. Mk. III ED449 (VN-T).

From 15 to 21 March 1943 crews were briefed on six consecutive days but operations were cancelled at the last minute due to fog and early morning mists. Jack's crew though were able to undertake further air tests and training exercises in Maudslay's previous Lancaster ED475 (VN-D).

Three 'old' 50 Sqn. Lancasters which hadn't been used on Ops since February had been flown over to nearby RAF Scampton, home of 57 Sqn. At 09:15 on 15 March they were destroyed by fire on the ground in the morning fog. They had been stored near to where several 57 Sqn. Lancasters that had landed and been parked the previous evening, nose to tail, around the airfield perimeter track after fog had come down which made taxiing the aircraft back to their dispersals too hazardous. 57 Sqn. Lancaster W4834 had returned with its bomb load and as it was being removed it seems its 4,000 lb 'Cookie' exploded.



The devastation from an exploding 4,000 lb bomb explodes after a Lancaster crashed on take-off from RAF Croft

It was completely destroyed as were the three 50 Sqn. Lancasters W4112 (VN-L), W4196 and W4823 (VN-F) along with two further 57 Sqn. machines (ED306 and ED594). A further five more 57 Sqn. Lancasters (R5751, W4376, W4797, W4822, and ED706) were also damged. It was the worst incident of its type in 1943 and illustrates one of the benefits of having distribute aircraft dispersals. The three 50 Sqn. aircraft had possibly been flown to RAF Scampton in preparation for the creation of the, at that time secret 617 Sqn.

On Monday 22 March Jack's crew were flying and practising 'Beam Approaches'. This was an early form of ILS[12] and required close cooperation between Jack and Maudslay during their airfield approaches. This was followed by a practise bombing exercise at the Wainfleet Bombing Range just off the Lincolnshire coast, but when they got back to RAF Scampton, they learned that they were detailed for Ops again that night.

It was another night bombing raid and the target was the Kriegsmarine U-boat pens St. Nazaire on the French coast of Brittany. Ten of the 50 Sqn. Lancasters formed part of a large force of 357 aircraft from No.3, 4, 5, and 6 Groups. Most of the Stirlings provided by No.3 Group were recalled early and one of the ten 50 Sqn. Lancasters returned with technical problems. All the others reached the target but two found their bombs had 'hung-up' (failed to release). The remaining seven attacked their designated targets but with unclear results.

On their return they found that the poor weather that had restricted Ops during the previous days had returned and most of the Lancasters had to land at airfields in the south of England. Maudslay landed at RAF Abingdon in Oxfordshire where the crew spent the night returning to RAF Skellingthorpe during the morning of 23 March.

The weather once again restricted Ops from 23 to 25 March but the lack of flying presented the opportunity for a new squadron photo which was duly completed complete with a backdrop of the impressive Avro Lancaster.

[12] ILS – Instrument Landing System

50 Sqn (when) Christna Spencer

By this time Gibson had spent some days at No.5 Group HQ at Grantham. He'd struggled to get started on his book and was called in to see the recently appointed CO of No.5 Group AVM Ralf Cochrane who wasted no words and asked, *'How would you like the idea of doing one more trip ... a pretty important one''*. Gibson's character is well documented, so it's no surprise that he accepted the offer.

Gibson writes in his book that he heard nothing more for a few days then he was called in to see Cochrane again. This time he was given a little more detail but not the actual target, though he suspected it was the Battleship Tirpitz. Cochrane went on to say that special low-level training over water would be required, and a dedicated squadron with the best possible crews would be set up. RAF Scampton only had a single squadron (57 Sqn.) so was selected as the base, all No.5 Group squadrons would provide crews and donate Lancasters.

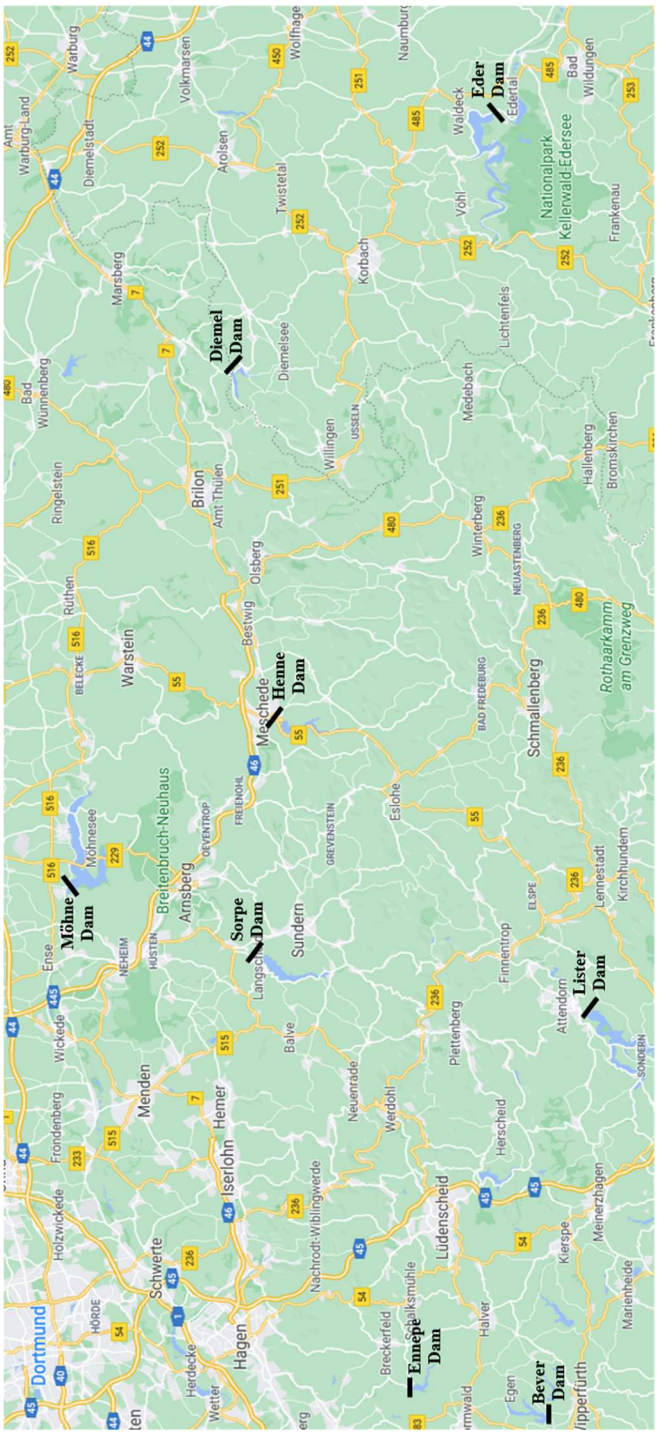
SQUADRON X

Gibson arrived at RAF Scampton during the afternoon of Sunday 21 March. The airfield was waiting to have its grass runway extended and converted to concrete. He was allocated Hangar No.2 with the squadron offices in a two story, long flat roofed annex attached to the north side facing the runway. Gibson's office was at the far west end of the corridor on the first floor. He immediately set about the process of creating a new squadron. Whilst a number was being formalised the new squadron was temporarily, as with all new squadrons without a confirmed number, known simply as Squadron X.

One of his first tasks was to arrange for the crews. For a squadron, comprising two Flights of ten aircraft he needed 20 additional crews. Contrary to popular myth and despite Gibson writing *'It took me an hour to pick my pilots. I wrote all the names down on a piece of paper … I had picked them all myself because from my own personal knowledge I believed them to be the best bomber pilots available. I knew that each one of them had already done his full tour of duty and should really now be having a well-earned rest; and I knew also that there was nothing any of them would want less than this rest when they heard that there was an exciting operation on hand'* he neither knew all the pilots or selected them all himself.

It's true that he knew Hopgood and Burpee from 106 Sqn. Shannon had also been with him at 106 Sqn. and on completion of his tour had been transferred to 83 Sqn. Gibson had also met Martin and discussed low flying at their medal investiture, but the rest were either recommended by their squadron CO or had responded to a request posted to all No.5 Group squadrons for volunteer crews for a special mission.

The preparation for this special mission had been going on for some time. Seven reservoir dams had been identified, five in the industrial Ruhr Valley (Möhne, Sorpe, Lister, Ennepe, and Henne) and two further to the east in the Weser Valley (Eder and Diemel). The Möhne, Eder and Sorpe Dams were the primary targets and all the others were secondary.



Location of the seven initial target dams (and the Bever Dam)

It was believed that if these could be destroyed it would significantly disrupt German industrial war production and electricity supply, cause significant and untold disruption below the dams, reduce morale, and then during their repair divert German resources away from other military construction programmes.

Though the idea of attacking German and Italian dams had been considered as early as 1937 there were several issues preventing a realistic attack plan. Firstly, any bomb would have to be considerably heavier than any of the RAF aircraft were capable of carrying. Conventional bombing would have required an accuracy impossible to achieve. Torpedo nets in the water prevented any type of torpedo attack.

By 1942 the aircraft engineer Barnes Wallis, the Assistant Chief Designer at Vickers Armstrong Aviation section at Weybridge, had been investigating how the water energy sources of the axis powers could be attacked. He had come up with a unique design for skipping a bomb across the water of the dam, over the torpedo nets to hit the dam wall and then sink in contact with the dam wall to a depth where the water pressure would assist the explosion in breaching the dam. His testing, famously started with his marble experiments, had progressed through experiments in water tanks at the National Physics Laboratory, scale model dams at the Building Research Establishment and the Transport Research Laboratory, to a successful test explosion on an unused dam at Nant-y-Gro Reservoir in Wales. Two types of bomb were being developed, the Highball for use against ships and the larger version that was given the codename Upkeep for use against dams. Test releases from a specially converted Vickers Wellington started badly but were eventually successful.

The ‘Bouncing Bomb’ thus came into being. However, though it is always known as this, it is in reality a convenient but misleading term! In the first instance, technically the Upkeep wasn’t a ‘bomb’ as these are explosive stores that detonate on impact or following impact with a delayed fuse. It is usually described as a ‘mine’ but again this is a misleading term as a mine is an explosive device that is placed in a location and detonates on contact or in proximity with its target. The Upkeep was more correctly a ‘depth charge’ which is a weapon that explodes at a predetermined depth using a hydrostatic trigger. For the Upkeep Wallis determined that this was 30 ft below the reservoir water

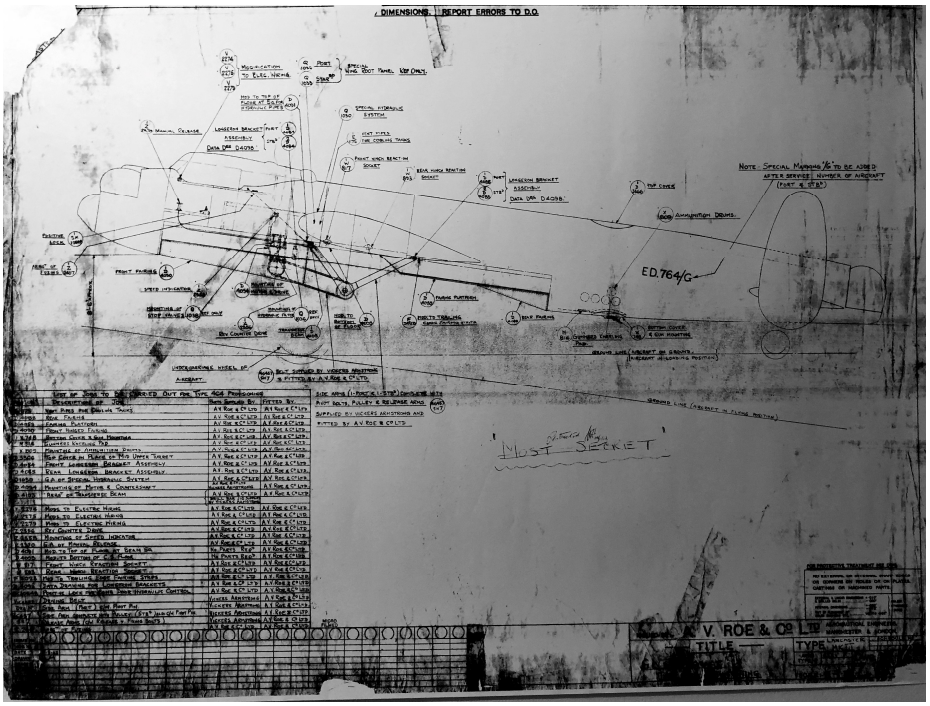
level for maximum destructive power. Nor did the Upkeep 'bounce' which is a physical property whereby there is a change in direction after hitting an obstacle, so as the Upkeep didn't change direction it skipped or skimmed across the water following its release. By adding backspin, it aided the skipping process but more importantly it ensured that the Upkeep stayed in contact with the inner face of the dam wall as it sank to its predetermined depth before exploding.

The Upkeep was developed and produced by the Vickers Company as the Vickers Type 464. Initially, it had been designed with a wooden spherical casing which surrounded a cylindrical metal core containing 6600 lb of Torpex high explosive. But in trials the outer casing shattered on impact with the water leaving the central cylinder to continue. Its overall weight was over 4 tons and it had three hydrostatic pistols. There was also a 'self-destruct' detonation by a fuse, which could be armed automatically as the bomb was dropped from the aircraft or manually if it had to be jettisoned.

The final operational version of the Upkeep was a cylinder 60 inches long with a diameter of 57 inches. Fortunately, by May 1943 the Lancaster heavy bomber had been in service for over a year. It was reliable, fast and capable of carrying a massive load. It required though, extensive and elaborate modifications in order to deliver the Upkeep. The Lancaster's manufacturer Avro worked in close collaboration with Vickers to produce 23 modified Lancasters. These were taken straight from the production line at Avro's Woodford facility and converted in a secret hangar. Though their designation was the Avro Lancaster B.IIIs (Special) they are more commonly referred to as the Lancaster Type 464 Provisioning to denote that they had been provisioned for the specific task of carrying the Vickers Type 464 Upkeep.

The modifications were extensive. The huge bomb bay doors were removed, and a pair of aluminium and steel V-shaped callipers were installed to carry Upkeep. These were swung apart to release the Upkeep. Backspin was provided by a Vickers Variable Speed Gear unit forward of the callipers operated from the Wireless Operators position. The ventral turret was removed to save weight and reduce drag and fared over as were the parts of the bomb bay forward and to the rear of the callipers. The dorsal mid upper turret was also removed to save weight with the gunner which was normally a permanent position

moving to the front turret. Because of the very specific nature of the operation the role of the crew differed slightly to that of a standard Lancaster with additional roles undertaken when attacking the target.



Avro original drawing of some of the Lancaster Type 464 modifications

The crew positions of the Lancaster Type 464 also changed in order to accommodate the changed and additional roles required in the delivery of the Upkeep.

Standard Lancaster	Lancaster Type 464
Pilot	Pilot
Flight Engineer / co-Pilot	Flight Engineer / co-Pilot
Navigator	Navigator / height monitor
Wireless Operator	Wireless Operator / controlling Upkeep
Bomb Aimer / Front Gunner	Bomb Aimer / co-Navigator
Mid Upper Gunner	Front Gunner
Rear Gunner	Rear Gunner

Internally few of the converted Lancaster Type 464s were identical as additional equipment and minor modifications were undertaken up until the night of the raid. All had though, the manual Upkeep release which was a T-shaped handle just in front of the pilots trim controls, and an additional super-sensitive altimeter at the pilot's eye level on the dashboard so he didn't need to look down when flying at low level. Most were eventually fitted with 'fighter-type' VHF radio sets to enable communication between aircraft during the mission.

By the time Gibson arrived at RAF Scampton the development of the Upkeep, its method of delivery, and the modified Lancaster to carry it was well under way but none of it was complete and it was all still top secret. In order that Squadron X could start their low flying practise Ten standard Lancasters were 'borrowed' from other No.5 Group bomber squadrons as below.

Reg.	617 Sqn. code	617 Sqn. flight	Providing squadron	Lancaster version	Manufacturer
W4921	AJ-C	A-Flight	106 Sqn.	B.I	Metro-Vicks
W4926	AJ-Z	B-Flight	97 Sqn.	BI	Metro-Vicks
W4929	AJ-J	A-Flight	61 Sqn.	B.I	Metro-Vicks
W4940	AJ-B	A-Flight	57 Sqn.	B.I	Metro-Vicks
ED329	EM-T	B-Flight	207 Sqn.	B.I	Avro Woodford
ED437	AJ-N	B-Flight	50 Sqn.	B.III	Avro Woodford
ED735	AJ-R	B-Flight	44 Sqn.	B.I	Avro Woodford
ED756	AJ-H	A-Flight	49 Sqn.	B.III	Avro Woodford
ED763	AJ-D	A-Flight	467 Sqn.	B.III	Avro Woodford
LM309	WS-X	B-Flight	9 Sqn.	B.I	Avro Yeadon

On Wednesday 24 March Gibson was taken to meet Barnes Wallis in secret at Burhill near Weybridge. Though Wallace was frustrated that he could not reveal the actual targets he nevertheless outlined the requirements and showed Gibson films of the Upkeep trials.

The same day over at RAF Skellingthorpe Maudslay, much to his surprise was notified that he was being promoted to Sqn Ldr and posted to a new squadron at RAF Scampton with his complete crew where he would be a Flight Commander. It seems that he hadn't responded to the request for volunteers, and neither Jack nor any of the other crew members realised it at the time but they were about to join the RAF's

most elite squadron. They travelled the short distance from RAF Skellingthorpe to RAF Scampton by road the following day.

Several crews were already there, the rest arrived over the following week or so. Maudslay was particularly pleased to be sharing his mess with his good friend Bill Astell who was already at RAF Scampton having transferred over from 57 Sqn. Again, contrary to popular belief not all crews (including some of the pilots) were either experienced or tour expired. It is true that some were, and many were highly decorated, but some had only completed a few Ops and some for some of the crew the Operation Chastise would be their first mission. It appears that Gibson was even concerned that some of the crews may have been recommended just in order to get them off their previous squadron and probably were not up to the task in hand.

Most of the remaining crews arrived by the end of March, though it wasn't until the beginning of April that 617 Sqn. was complete with Gibson, two flights of ten crews and a spare crew.

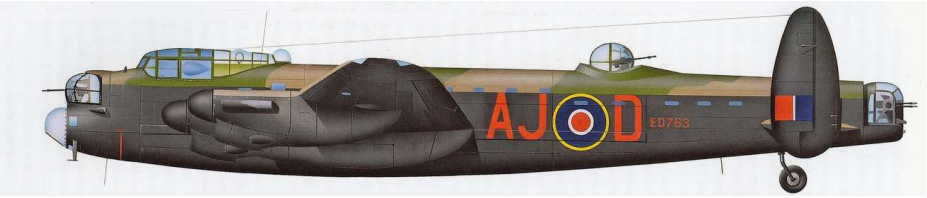
	Pilot	**Previous Squadron**	**Date joined 617 Sqn.**
1	Gibson	106 Sqn.	21 March 1943
2	Byers	467 Sqn.	24 March 1943
3	Anderson	49 Sqn.	25 March 1943
4	Barlow	61 Sqn.	25 March 1943
5	Hopgood	106 Sqn.	25 March 1943
6	Knight	50 Sqn.	25 March 1943
7	Maltby	97 Sqn.	25 March 1943
8	Maudslay	50 Sqn.	25 March 1943
9	McCarthy	97 Sqn.	25 March 1943
10	Munro	97 Sqn.	25 March 1943
11	Wilson	44 Sqn.	25 March 1943
12	Astell	57 Sqn.	26 March 1943
13	Lancaster	57 Sqn.	26 March 1943
14	Lovell	57 Sqn.	26 March 1943
15	Shannon	83 Sqn.	26 March 1943
16	Townsend	49 Sqn.	26 March 1943
17	Young	57 Sqn.	26 March 1943

18	Burpee	106 Sqn.	29 March 1943
19	Brown	44 Sqn.	30 March 1943
20	Martin	1654 HCU	31 March 1943
21	Rice	57 Sqn.	01 April 1943
22	Otley	207 Sqn.	04 April 1943

Within days the squadron was allocated 617 Sqn. number with codes AJ. It is arguably the most famous RAF squadron number. Training started immediately. Astell was sent on the first sorties in one of the temporary Lancasters on Saturday 27 March and the following day to fly over and take photographs of all the lakes and reservoirs in England. The reason given was that it was to assist in the development of cross-country exercises. Young previously with 57 Sqn. was A-Flight Commander and Maudslay B-Flight Commander and between them they organised the crews, the structure of the squadron and prepared training schedules.

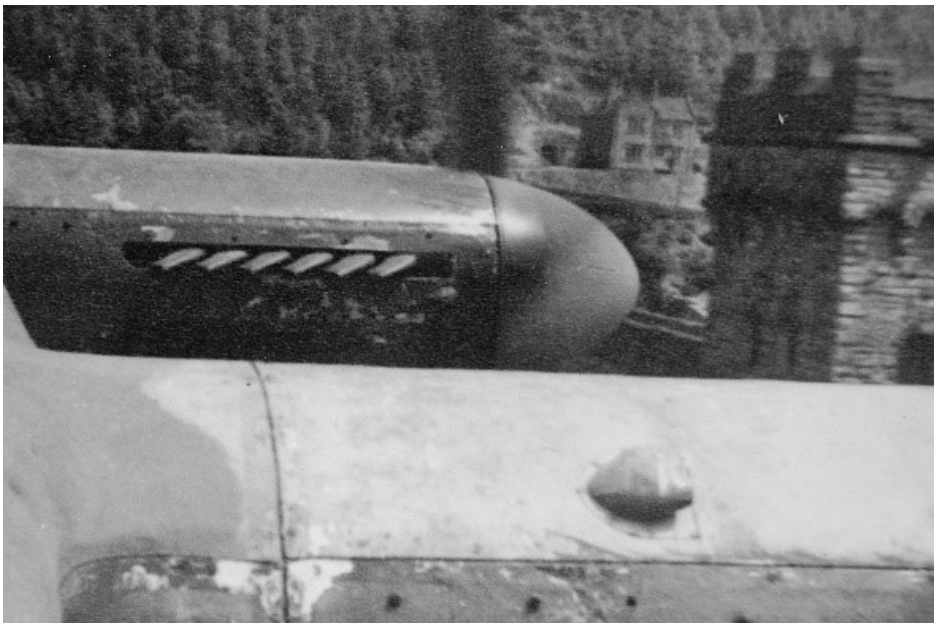
Gibson was away much of the time in secret discussion with his superiors during which time Maudslay and Young managed the squadron between them. He did though assemble the whole of 617 Sqn. for a meeting to outline briefly their mission which ended with him saying *"You're here to do a special job"*. Maybe, Jack just realised he was now part of an elite squadron

To simulate night flying during the day Lancaster ED763 on loan from 467 Sqn. was installed with 'Two Stage Blue'. This was a navigational training aid in which the front section of the cockpit and the Bomb Aimers blister were covered with blue Perspex which would simulate night flying during the day when used in conjunction with orange coloured flying goggles. All crews had the opportunity to familiarise themselves with this technique, though some found it difficult to adjust to.



Lancaster ED763 fitted with 'Two Stage Blue'

Gibson outlines some of the logistic and organisational problems and how they overcame them in his book, but he did manage to get some flying in. On 28 March he took Hopgood as a co-Pilot and Young as a passenger to assess the practicalities of low-level flying at 150 ft over water before he asked all the pilots to do it. They flew to a series of reservoirs in the Peak District to the East of Sheffield. The three reservoirs were (from upstream) the Howden Reservoir and Dam completed between 1901 and 1912, Derwent Reservoir and Dam completed between 1902 and 1916 and, the at that time incomplete, Ladybower Reservoir and Dam.



Pilot's view low over the Derwent Dam

The Derwent offered the best practice and Gibson hurtled down the Derwent valley at 240 mph dropped down to as near to 150 ft as the three pilots could collectively guess over the Derwent Reservoir and dam banked round over what would eventually be the Ladybower Reservoir and made several more approaches of which he noted *'in the end found it more or less fairly easy'*. As the daylight faded into dusk they made another approach. The visibility had drastically reduced, mist was forming in the valley, the waters of the reservoirs that had appeared blue during the day had by then turned an unforgiving black. The limited visibility was disorientating, and judging the height was

impossible, so much so that they nearly hit the water of Derwent Reservoir before pulling up sharply. It could have been disastrous, Gibson writes *'Even Spam* [Spafford - Gibson's Bomb Aimer*] said, "Christ! This is bloody dangerous," which meant it was. Not only that. I said to Dinghy* [Young] *there and then, that unless we could find some way of judging our height above water, this type of attack would be completely impossible. "But why must we fly at this dead height? Asked Hoppy* [Hopgood*]. "I'm afraid that's the snag. The scientist I met told me that in order to make his weapon work we would have to fly within a few miles an hour at the right airspeed and within a very few feet of the right height. That's our problem"'.*

On 29 March Gibson was at No.5 Group HQ where he was told the actual targets and shown scale models of the Möhne and Sorpe Dams, though significantly not for the Eder Dam. At least he then knew it wasn't going to be the Tirpitz. Afterwards he flew down for another meeting with Wallis at Weybridge. At the meeting Wallis gave details on the targets, elaborated on the plans and described the tests and developments of the Upkeep. He confirmed that the dams must be attacked when the reservoirs were full of water which meant there was only a small window of opportunity between 13 to 19 May. It was only six weeks in which to finalise the testing of the Upkeep, building of the Lancaster Type 464s, developing a mechanism for accurately releasing the Upkeep, working out how to maintain a constant low altitude at night, and most importantly training of the 21 crews. Although Gibson had nearly killed himself and two of his senior pilots the night before he rejected any suggestion of a daylight raid.

In the absence of Gibson much of the planning and development of the training was undertaken by the two Flight Commanders Young and Maudslay. This unfortunately meant that they flew less than the other pilots. However, on 31 March many of the crews including Jack's undertook cross-country navigation exercises flying at about 500 ft. Since Jack's flying Logbook doesn't exist, I have assumed that he accompanied Maudslay on all his flights. Their mission, in Lancaster LM309 (WS-X), was almost three hours which included low level bombing practise from 100 ft just off the Lincolnshire coast south of Skegness at the Wainfleet Bombing Range where wooden panels had

been erected unbeknown to the crews but to simulate the towers on the Möhne and Eder Dams.

The method of determining the correct distance from the dams was developed by Wg Cmdr Dann from A&AEE Boscombe Down, using a simple triangular shaped sight to line up with the towers on the dams. This appears to have been used by some crews although others found with the vibration of the Lancaster it was too difficult and preferred to use their own methods including string and marks on the Bomb Aimers window.

Whilst most of the crews were by then undertaking longer and lower training flights, Maudslay's time with preparation and planning restricted his flying time. His next flight was 2 April in W4926 (AJ-Z) with a short session of circuits possibly as an air test. The following day he participated in another two-hour daylight navigational exercise at 500 ft in Lancaster LM309, culminating in further bombing practice from 100 ft.

By early April Gibson had learned that their targets would be dams around the Ruhr valley and the height for the attack would be at a mere 150 ft. With the unreliability of conventional altimeters at such a low level he had continued to ponder the difficulties in maintaining a height of 150 ft at night over water. A bizarre option considered was trailing a defined weight to touch the water at the correct height and airspeed, a jerk on the wire would indicate the correct height. It was quickly discounted as being impractical. Unlike as suggested in popular myth, it wasn't Gibson's idea after watching stage lights on dancing girls that provided the answer. Benjamin Lockspeiser, the Deputy Director of Scientific Research at the Ministry of Aircraft Production proposed the 'Spotlight Altimeter', an idea that had first used during WW1 and used earlier in WW2 which used two spotlights. These would be positioned to shine down and when the two beams of light came together the aircraft would be at the correct height.

Maudslay flew Lancaster W4926 (AJ-Z) to RAE[13] Farnborough to have test spotlights fitted on 4 April. One Aldis light was attached in the Bomb Aimers camera mount on the port side of the nose. Another was

[13] RAE – Royal Aircraft Establishment

fitted into an aperture to the rear of the bomb bay which had been provisioned for a ventral machine gun. Both had shrouds to prevent light shining other than in the direction of the light beam. They were positioned to shine down and to starboard so they could be seen by the Navigator from the starboard cockpit blister. The installation took three days to complete and Maudslay returned to RAF Scampton on 8 April. Before they departed RAE Farnborough, the crew may have noticed the arrival of odd-looking Lancaster. The first modified prototype of the Lancaster Type 464 ED765 without bomb bay doors but complete with a dangling calliper mechanism for holding the Upkeep had arrived for flight trials. That evening with a team from the Royal Aircraft Establishment Maudslay tested the spotlights flying over The Wash. The lights worked perfectly, they returned to base after about an hour and then completed several runs over the airfield where the height was accurately assessed by ground teams with theodolites.

Two days later the second prototype Lancaster Type 464 ED817 (AJ-C) was flown from Avro at Woodford to RAF Manston in Kent to be prepared for Upkeep trials. Maudslay's crew though finally got a long low-level exercise in Lancaster W4926 (AJ-Z) on 11 April with four-and half-hour cross country which ended with another low-level bombing exercise.

Avro Lancaster B.III (S) Type 464 - ED817
showing V-Shaped Callipers for holding the Upkeep

The following day Jack accompanied Maudslay on a short air test of Lancaster ED329 (EM-T) whilst Gibson travelled south by car to RAF Manston with the Squadron bombing lead Bob Hay.

On 13 April the Maudslay crew undertook a short daylight cross country but Gibson and Hay had arrived at Reculver on the north Kent coast to witness testing of the Upkeep. Already there were Wallis and Lockspeiser amongst others. High speed cameras had been setup to record the events whilst policemen patrolled the barbed-wire perimeter of the test site. Before their arrival testing of the smaller High Ball had failed.

At 09:20 a converted twin engined Wellington (BJ895) flown by Vickers test Pilot, Bob Handasyde flew parallel to the beach from east to west. As it approached two white aiming marker buoys it dived to gain speed and levelled off at about 80 ft, with a half scale test Upkeep spinning at 520 rpm. The Upkeep was released, hit the water, the wooden outer casing shattered but the cylindrical metal core that would hold the explosive on the live versions continued to spin and skip. It was a positive result for Wallis who exclaimed *'Excellent'* as he set off to collect fragments for analysis.

At 11:08, Lancaster Type 464 ED817 (AJ-C) approached flown by Sqn Ldr Maurice 'Shorty' Longbottom, an RAF Officer seconded to Vickers for test flying. The Lancaster levelled out, at around 250 ft and 210 mph. The Upkeep painted black and white was released, created a huge spray of water as it struck the flat calm sea whereupon it shattered and disappeared. Wallis adjourned the trials whilst an Upkeep was strengthened for another trial later that evening.

Whilst the modifications were being carried out Gibson and Hay managed to borrow a Miles Magister (T9908), an open cockpit two-seat trainer from 137 Sqn. Gibson writes that it was to fly back to RAF Scampton though other reports suggest it was so he could fly over and have a look at the test area.

Lancaster ED817 dropping a wooden cased Upkeep at Reculver

Whatever the reason, they had climbed to about 300 ft near Margate when the engine cut out as Gibson describes: *'When an engine stops in a four engine aircraft you do not have to worry much about it – you have always got three others, but when it happens in a single-engine aircraft, then the long finger of gravity points to mother earth; and so we began coming down. In ordinary parts of the world this is quite easy, but at Hell's Corner they make quite certain that aircraft do not land safely in fields. There were abundant wires and other devices because German glider-borne troops were not very welcome. So we fell into the trap. . . . After the aircraft had rolled itself into a ball and we had stepped out of the dust a man came running over to see if we were hurt. His words were memorable. "I think they teach you young fellows to fly too early", he said. Then a policeman arrived and took a statement. "I'm glad to see our anti-aircraft landing devices work," he said without sympathy.'*

Gibson and Hay made their way back to RAF Manston but returned to RAF Scampton without waiting for the next Upkeep test. Just after 19:00 Lancaster ED817 (AJ-C) approached the white marker buoys at Reculver but this time instructed to release the Upkeep at just 50 ft. Again, the outer wooden casing shattered on impact with the sea but the cylindrical metal core again continued skimming across the sea.

Around about the same time ED817 (AJ-C) was making its final flight over Reculver Maudslay and crew were getting airborne in Lancaster LM309. It was their first long night exercise and lasted almost five hours, but training wasn't going well for all the crews.

Whilst Gibson was at Reculver the Squadron Adjutant Harry Humphries had written that Flt Sgt Lovell from 57 Sqn. had *not 'come up to the required standard necessary for this squadron'*. He was immediately posted back across the airfieldto 57 Sqn. and replaced by Sgt Pilot Divall.

Maudslay was flying again on 15 April. During the morning a short air test in Lancaster LM309 was followed that evening by a night cross country exercise in ED437 (AJ-N). The flight took four and half hours flight which incorporated a route to the north of Scotland and was undertaken at 50 ft.

Unsuccessful tests with the revised Upkeep without the wooden outer casing continued at Reculver. But at RAF Scampton Gibson had removed another crew from the squadron. George Lancaster's crew were also sent back to 57 Sqn. It wasn't Lancaster himself that had been the concern but his Navigator. Lancaster objected to the sacking, and Gibson not known for his tolerance sent the whole crew back.

Training flights continued at the same intensity. Maudslay may have flown more, but his next recorded flight was on 22 April which was a 20-minute air test in ED437 (AJ-N). However, the same day the third Lancaster Type 464 ED825 (AJ-T) was delivered to A&AEE Boscombe Down but significantly the first three of the 20 converted Lancaster Type 464s ED864 (AJ-B), ED865 (AJ-S), and ED887 (AJ-A) arrived at RAF Scampton. Their unusual looks were no doubt much to the bemusement and curiosity of the crews that were going to use them. A further five ED886 (AJ-O), ED906 (AJ-J), ED909 (AJ-P), ED915 (AJ-Q), and ED921 (AJ-W) arrived the following day. The crews must have realised that the date for the operation must be getting nearer. They were not immediately able to replace the loaned Lancasters as various further modifications were undertaken in the RAF Scampton hangar.

Night flying and map reading at 150 ft was generally considered fairly easy even though pilot McCarthy was furious on one exercise flying at 100 ft when another Lancaster, piloted by Munro flew beneath him. The original 10 standard Lancasters were getting so much use shared between the crews they were frequently received minor damage and were rapidly approaching their maximum hours when they required major inspections and maintenance. Maudslay was back in the air on 24

April in standard Lancaster W4926 (AJ-Z) in which he completed two bombing exercises. As he returned following the second exercise the Lancaster's tail wheel was damaged on RAF Scampton's grass runway and took several days to repair.

Gibson's flight that day was not as the pilot of a Lancaster but as a passenger in a Mosquito when he was transported down to the Vickers site at Weybridge for a meeting with Wallis. After further Upkeep tests, evaluations and calculations Wallis had determined that the release needed to be not at the 150 ft but at a mere 60 ft and asked Gibson if it could be achieved. It was a huge ask. A 30 ton Lancaster, flying at 230 mph, at night, over water in the face of an aggressive enemy at just 60 ft – less than the length of the Lancaster itself.

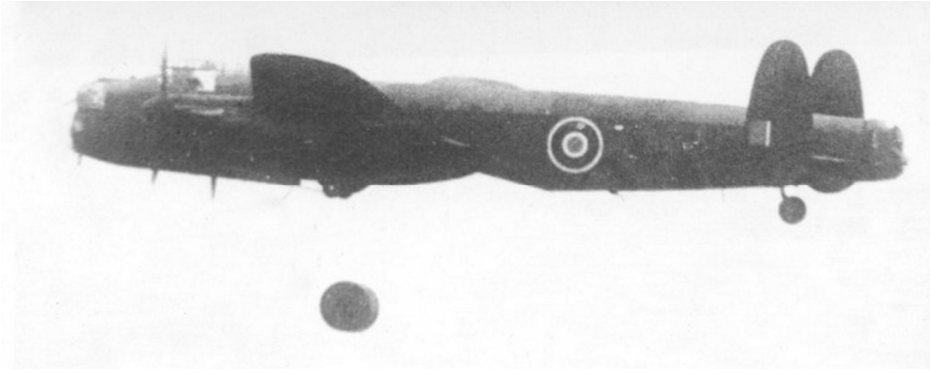
Much has been written about the character of Gibson, but what he definitely was was positive, brave, and determined. He would never ask of others actions that he couldn't, or wasn't prepared to, do himself. He was just 24 years old at the time, maybe his youth made him fearless, but undeniably he had all the attributes of great leader. He returned to RAF Scampton to ensure that 617 Sqn. were in a position to fulfil the requirements. If he had had any doubts then it is likely that Operation Chastise, The Dambusters, would never have taken place.

On 25 April Maudslay's crew completed another daylight low altitude bombing detail in Lancaster LM309. Accompanying them was the Squadron's Medical Officer Fg Off Malcolm Arthurton. The weather was gusty and the Lancaster experienced severe buffeting throughout the flight, so much so that Arthurton documented that he was airsick after just 90 minutes.

The weather prevented any flying until 27 April when Maudslay completed a night tactical training detail in Lancaster ED437 (AJ-N), no doubt at the new height of 60 ft. It seems that Gibson was satisfied with the conversion to the lower level as he communicated his confirmation of 60 ft to Wallis. There was no flying logged for Maudslay on 28 April but a further Lancaster Type 464 ED910 (AJ-C) arrived at RAF Scampton as Wallis began more Highball and Upkeep trials at Reculver.

On 29 April Gibson again departed RAF Scampton for Reculver to observe the trials as Maudslay once again took Lancaster ED437 (AJ-N) on a daylight bombing exercise at Wainfleet. Because of his organisational tasks as B-Flight Commander both his daytime and night-time flying was only about half that of the other crews most of whom had done around 40 hours daylight and 15 hours night flying. Only Young had done as little flying and Gibson considerably less.

Wallis had completed some more tests with the Highball the previous day but at 09:15 watched by Gibson as Longbottom flying parallel to the shore dropped a full-size cylindrical Upkeep from 50 ft spinning at 500 rpm. It skipped six times over a distance of 670 yds and veered slightly to the left. Wallis and Gibson then travelled for meetings in London, but Wallis returned to Reculver to conduct further tests. These together with experimental work at Vickers and A&AEE Boscombe Down satisfied Wallis that the Upkeep was ready for the operation as planned.



Lancaster dropping a cylindrical Upkeep at Reculver

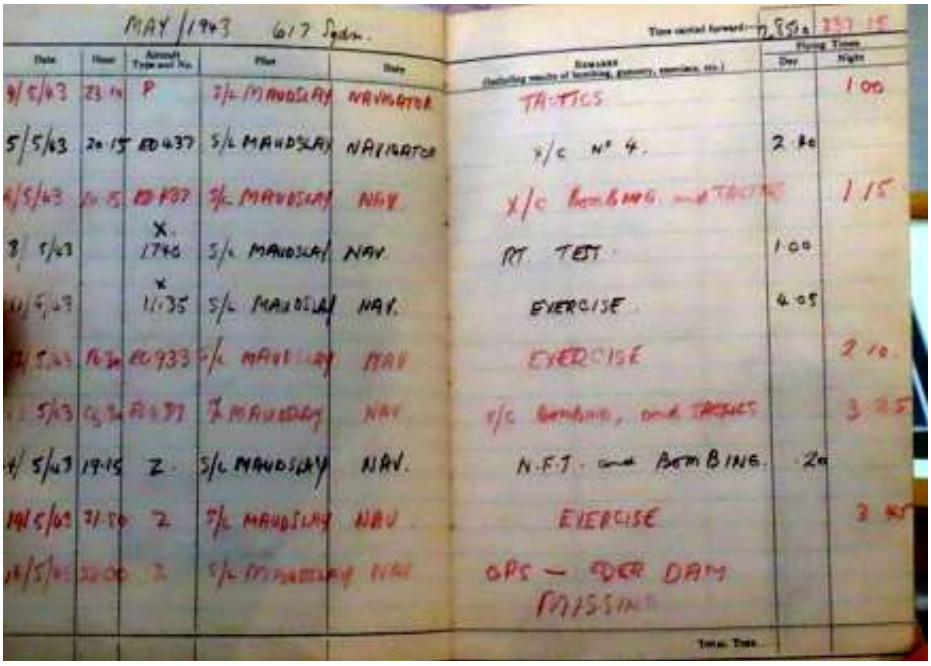
Maudslay ferried ED909 (AJ-P), one of the new Lancaster Type 464s, down to RAE Farnborough on 30 April for further modifications. It seems that Jack didn't accompany him as by the beginning of May most of the crews were given a few days leave. Maudslay took the train back and stopped off at his home. Jack most probably spent the time relaxing and/or studying around RAF Scampton and Lincoln. The same day another five Lancaster Type 464s arrived at the airfield these being ED918 (AJ-F), ED924 (AJ-Y), ED925 (AJ-M), ED929 (AJ-L), and possibly the most famous Lancaster ED932 (AJ-G) which was Gibson's

aircraft. It's believed it was chosen for him as it was the initials of Gibson's father Alexander James Gibson.

There was little flying at the beginning of May as the crews took some well-earned rest. But Gibson was sufficiently happy with the progress that on 1 May he telephoned Wallis to confirm he had confidence that the operation would succeed.

The Maudslay crew reconvened on Monday 3 May just as another batch of four Lancaster Type 464s were delivered to RAF Scampton by Avro ferry pilots. The four were ED912 (AJ-N), ED927 (AJ-E), ED934 (AJ-K), and the aircraft that was allocated to the Maudslay crew ED933 (AJ-X). All were whisked away into the hangar for further modifications. The same day Gibson reported to his superiors that the Squadron was 'ready to operate'.

Jack was flying again on 4 May. As can be seen in his Navigator Urquhart's logbook it was in Lancaster Type 464 ED909 (AJ-P). They took off in the dark at 11:10 for an hour's night tactics mission.


MAY 1943 617 Sqdn.

Date	Hour	Aircraft Type and No.	Pilot	Duty	Remarks (including results of bombing, gunnery, exercises, etc.)	Flying Time Day	Flying Time Night
3/5/43	23.10	P	S/L MAUDSLAY	NAVIGATOR	TACTICS		1.00
5/5/43	20.15	ED437	S/L MAUDSLAY	NAVIGATOR	X/C No 4.	2.10	
4/5/43	20.15	ED437	S/L MAUDSLAY	NAV.	X/C BOMBING and TACTICS		1.15
3/5/43		X. 1740	S/L MAUDSLAY	NAV.	RT TEST	1.00	
4/5/43		X 11.35	S/L MAUDSLAY	NAV.	EXERCISE	4.05	
5/5/43		ED933	S/L MAUDSLAY	NAV.	EXERCISE		2.10
5/5/43			S/L MAUDSLAY	NAV.	X/C BOMBING and TACTICS		3.25
5/5/43	19.15	Z	S/L MAUDSLAY	NAV.	N.F.T. and BOMBING	2.0	
5/5/43	21.50	Z	S/L MAUDSLAY	NAV.	EXERCISE		3.40
16/5/43	22.00	Z	S/L MAUDSLAY	NAV.	OPS — DER DAM MISSING		

Robert Urquhart's flying logbook

They also flew on the following day in the standard Lancaster ED437 (AJ-N) during which daylight long cross country of two hours and 40 minutes was completed. Away in the secrecy of HQ No.5 Group a meeting had convened and decided that the operation would go ahead and must take place as close to the night of 14 May as possible. It was just over a week away!

Final Upkeep trials were also undertaken at Reculver. On 6 May during testing only one release was considered to have been satisfactory. However, adjustments to the callipers and spin mechanism were undertaken overnight and the following day some of the Upkeeps were released perpendicular to the shore so that as they skipped along they climbed the inclined beach and crashed into the pasture beyond. The tests confirmed the release requirements for the Upkeep and showed that the main issues associated with it had all be resolved.

That evening Gibson had a discussion with all the pilots and explained all the tactical and technical aspects of the mission. Without identifying the actual targets, he told them, stressing the need for secrecy, that the operation would take place within the following two weeks. He confirmed, his satisfaction with low level navigation, how to maintain a final bombing run at 60 ft, how to determine the release distance, and also that the Upkeep was available.

He went on to describe that they would be using VHF (Very High Frequency) radio sets as fitted in fighter aircraft for communication between the Lancasters whilst over the target so that the attacks could be controlled and co-ordinated efficiently.

Finally, he notified the pilots that they would start dress rehearsals that evening. Nine aircraft flying in groups of three they would make mock attacks at the Eyebrook Reservoir (sometimes quoted as Uppingham Lake) between Leicester and Peterborough. Although its dam was more similar to that at the Sorpe Dam, scaffolding towers were erected to give it the appearance of the Möhne Dam. It proved excellent for honing their difficult bomb aiming skills. The aircraft were then to fly on to Abberton Reservoir just south of Colchester which was supposed to look like the Eder Reservoir from the air. Six of the crews were selected to conduct parallel approaches at the Derwent Dam (which was more like the Möhne Dam) to simulate the Sorpe Dam. The remainder

intended to form a mobile reserve would practice bombing runs over the wash. Maudslay took off at 20:15 with the group of nine Lancasters. It was logged in Navigator Urquhart's flying Logbook as one hour 15 minutes night cross country, bombing and tactics.

The following day, 7 May, Maudslay's and Young's allocated Lancaster Type 464s were installed with the latest VHF Type TR 1143 radio equipment. Classrooms were also setup in the crew room complete with TR1143 radio equipment so that the pilots and wireless operators could practise and familiarise themselves with the procedures and operation of the new radio kit.

By late the following afternoon the two Lancaster Type 464s were ready for use complete with TR1143 radios. Maudslay took off in ED933 (AJ-X) at 17:40 alongside Young in ED887 (AJ-A) they tested the equipment at varying heights and distances apart and found that though some minor adjustments were necessary the equipment worked well even at larger distances than they would be expecting to use them at. By 9 May all 18 Lancaster Type 464s delivered to RAF Scampton had been successfully installed including two sets in Gibson's ED932 (AJ-G) just in case one failed.

There is no record of Jack's crew flying on either 9 or 10 May but elsewhere at No.5 Group HQ senior staff members had drawn the draft operation and dispatched it to the RAF Scampton base commander Gp Capt Charles Whitworth for review and revision, to be returned by 16:00 on 12 May. It included a priority list of targets, how the 20 aircraft of the squadron would be split into waves to attack the targets, reserves, likely defences, and exit routes. Gibson provided detailed comments removing the proposal that the Lancasters should climb to 3,000 ft to cross the coast, recommending they remained low level all the way. He also removed a suggestion that Mosquitos make diversionary raid as he considered it would alert the defences and make their task harder.

It seems strange now that the Eder Dam was a primary target given that it was strategically less important than those dams that supplied water to the Ruhr Valley. In hindsight it seems that it was probably chosen as it was considered easier to breach than the other dams and as such would

have a considerable effect on morale, for the allies but also negatively for the German population.

On 11 May live Upkeeps began arriving at RAF Scampton. It must have been another reminder to those that saw them that their mission was nearing. Despite most crews having had a short break they must have been exhausted both physically and mentally. The training had been tough and intense but few of the crews had taken ill, and fortuitously there had been no serious accidents. There was no let up, crews started positioning to RAF Manston in groups using the aircraft they were going to use on the operation. They took turns dropping inert Upkeeps (filled with concrete) towards the shore at Reculver. Gibson flew ED932 (AJ-G) and noted in his logbook *'Low level. Upkeep. Dropped at 60 ft. Good run of 60 yds'*.

Gibson in ED932 flying low over Reculver after releasing a test Upkeep

After his test release he landed at RAF Manston and made his way to the beach at Reculver where he joined Wallis in observing the spectacle of the Upkeeps crashing up the foreshore.

Maudslay though took off for the crew's first proper flight in ED933 (AJ-X). He departed at 11:35 on a daylight cross country exercise that lasted four hours and five minutes. They no doubt used the time as an extended air test, and it gave the crew chance to familiarise themselves with the aircraft thy were going to use on the operation and ensure that it was running as expected. The same day Jack's Service Record was

updated. Once again, his character assessment was VG, his Proficiency column A (trade ability) was sup (superior), and column B (supervisory ability) was sat (satisfactory).

Successful Upkeep release rolling up the beach at Reculver
Wallis is second from the left (waving his arms in front of an observer in uniform), Gibson is second from the right

12 MAY 1943 – RECULVER: TRIALS AND TRIBULATIONS

On 12 May the 19th and penultimate Lancaster Type 464 ED936 (AJ-H) was delivered to RAF Scampton. That evening Maudslay, Shannon, Knight, Barlow and Munro took off at 18:30 for an exercise which incorporated their opportunity to release an Upkeep at Reculver. The five aircraft maintained a loose formation, flying low and eventually made their way down the Thames Estuary and out towards Reculver.

At around 19:30 Shannon in ED929 (AJ-L) made his approach. His height and speed seemed about right to observers on the shore but Sumpter his Bomb Aimer, released their Upkeep about 40 yds too early. It skipped a few times and then sank into the sea. Had it been on the actual operation it would not have reached the dam. Gibson observing was not impressed, the following day he called Shannon and Sumpter into his office for a reprimand.

Munro flying ED915 (AJ-W) was next. His speed looked about right but the Upkeep was released too low.

Damage to Munro's ED915 (AJ-W) at Reculver

As it hit the water a spume of water crashed into the underside of his Lancaster damaging the underside and knocking off a fairing that covered the bomb bay. It was a stark warning of the importance of getting the correct height. The damage though was minor and soon repaired back at base.

It was then Maudslay's turn. This gave them, the opportunity to really get used to their aircraft, but it mainly gave them experience of releasing an Upkeep and the effect it would have on the flying controls and engines, so Jack and his pilot would have been especially watchful on the handling changes at the transition of height, speed, and releasing the 4 ton Upkeep.

Maudslay circled round waiting for his turn whilst keeping a watchful eye on those Lancasters who were ahead in their turn to release their Upkeep. Cottam the Wireless Operator will have started spinning up the Upkeep and been crouched in the narrow Lancaster alleyway watching the dial as the rotation steadied at 500 rpm. Most of the crews reported a noticeable vibration through the airframe as the Upkeep gathered speed. It was then their turn, Maudslay banked round to port nosing down to get the Lancaster to 60 ft, he levelled off perpendicular to the shore aiming for two marker posts with Jack tweaking and caressing the throttles in an attempt to maintain the correct approach speed of 232 mph. Unfortunately, the Spotlight Altimeters, that worked so well at night were of no use at all during the day as Munro had previously experienced – the height had to be guessed – almost impossible at the height and speed they approached the shoreline. Fuller the Bomb Aimer oblivious to the height and speed peered intently through his personalised bombsight waiting for the two marker posts to sit exactly within his sight.

To observers on the shore it looked as though the Lancaster was too low and possibly too slow but at 450 yds with one marker post visible in each eyepiece of his sight Fuller pressed his release button. The two calliper arms swung open; the spinning Upkeep hurtled towards the sea. Maudslay, instinctively resisted the tendency of the Lancaster to pitch nose up and Jack similarly further tweaked the throttles as the four Merlin engines compensated for the reduced weight and drag.

A split second later the Upkeep hit the water almost directly under ED933. The initial plume of water lurched upwards and forwards smashing into and enveloping the rear of the fuselage and tailplane. The noise and impact must have been hugely disconcerting, probably like being hit by Flak. Maudslay clearly fought with his Lancaster as it then lurched nose down. As he pulled it through the water spray, several large sections were seen to break away from his Lancaster but he was able to gradually pull the nose up and gently climb away with water streaming from the rear of the aircraft.

Damage to Maudslay's ED933 (AJ-X) at Reculver

The Upkeep skipped towards the shore, fortunately the successive plumes of water were less intense and behind the struggling Lancaster. After several skips the Upkeep sank into the sea without reaching the shoreline.

Knight in ED912 (AJ-N) and Barlow in ED927 (AJ-E) then each made a satisfactory approach and release. Their Upkeeps skipped across the sea and ran up the shore.

Maudslay had maintained a heading straight ahead inland as the crew assessed the damage. Burrows in the rear turret, shaken and thoroughly drenched was fortunately uninjured and confirmed that both fins, rudders, tailplanes, and elevators were still attached but severely bent. The engines were undamaged so Maudslay nursed the struggling Lancaster back to RAF Scampton rather than landing at nearby RAF Manston.

Successful Upkeep release at Reculver

Throughout training many of the Lancasters had incurred damage. Most had suffered stress damage, and some had even returned to base with twigs attached to their tailwheels or embedded in the engine cowlings. Martin had suffered a little damage during his trials at Reculver and even Munro's damage there was minor, but to ED933 was the damage to the rear fuselage section was serious and there was probably large sections of the wings, central section of the fuselage, and the Upkeep release mechanism that were also damaged.

Following inspection, the damage was officially categorised as Cat.Ac – 'Repair is beyond the unit capacity but can be repaired on site by another unit or a contractor'. The best estimates were that the work would take a minimum of five days. Despite the best efforts and round the clock work of the groundcrews it was five days they didn't have.

Gibson officially recorded that the *'pilot misjudged his height'* and later wrote in his book *'Everything ran smoothly and there was no hitch; that is, no hitch except that six out of the twelve aircraft were very seriously damaged by the great columns of water sent up when their mines splashed in. They had been flying slightly too low. Most of the damage was around the tails of the aircraft; elevators were smashed like plywood, turrets were knocked in, fins were bent. It was a miracle some of them got home'.* The station commander and an internal Court of

Inquiry, taking into consideration the special training and circumstances, concluded that the cause was due to low level bombing and no further action was taken. However, it is significant and noteworthy that Gibson was privately unhappy with the accident and it was probably a factor in him choosing Hopgood rather than Maudslay as deputy in command for the attacks on the Möhne and Eder Dams should Gibson get shot down. It must have been demoralising and a blow to the ego and confidence of Maudslay who had worked hard as B-Flight Commander.

On 13 May Vickers test Pilot Longbottom flew one of the Lancaster Type 464s used for trials with a live Upkeep five miles out to sea from Broadstairs in Kent. In another Lancaster the other Vickers test Pilot Handasyde flew a safe distance away with a film crew and Gibson as an observer. Longbottom released the Upkeep at 75 ft spinning backwards at 500 rpm. It skipped seven times covered about 800 yds maintained a straight course, sank and a moment later exploded with a huge plume of water that rose to over 1,000 ft. It was the only test of a live Upkeep that was ever undertaken.

Live Upkeep trial 13 May

There was no time for Maudslay to dwell on the incident at Reculver. That night Jack with his crew were flying again. Taking off at 22:30 they were back to using the standard Lancaster ED437 (AJ-N). A three

and half hour night cross country, tactics exercise culminated in another bombing detail.

The last Lancaster Type 464 ED937 (AJ-Z) was delivered to RAF Scampton on 14 May. It had been delivered from Avro to 39 Maintenance Unit at RAF Colerne on 6 May and had all the necessary modifications added before being ferried to RAF Scampton. Without Lancaster ED933 (AJ-X) Maudslay was allocated the newly arrived Lancaster which was ready for testing by the early evening. Taking off at 19:15 the crew probably performed a 20-minute air test, though Urquhart records at as being a night flying test and bombing exercise in his logbook.

Later that night, in what was to be Jack's final training exercise, a full-dress rehearsal was undertaken. It was planned to simulate the operation as much as possible and used simulated routes to Eyebrook for the Möhne Reservoir, Abberton for the Eder Reservoir and Derwent Reservoir for the Sorpe. Unfortunately, not all crews could participate for various reasons, but Maudslay in AJ-Z took off for the exercise which lasted almost four hours. Gibson recorded in his logbook 'Full dress rehearsal on Uppingham Lake [Eyebrook Reservoir] and Colchester Res. [Abberton Reservoir]. Completely successful'.

Painting by Gary Eason of the full-dress rehearsal at Abberton Reservoir

15 MAY– ONE DAY TO GO

There was little flying on Saturday May 15. A few crews performed air tests on their Lancasters and a few others conducted a bombing practice at Wainfleet. Maudslay was still B-Flight commander and had plenty of final planning to complete so he and his crew did not fly at all.

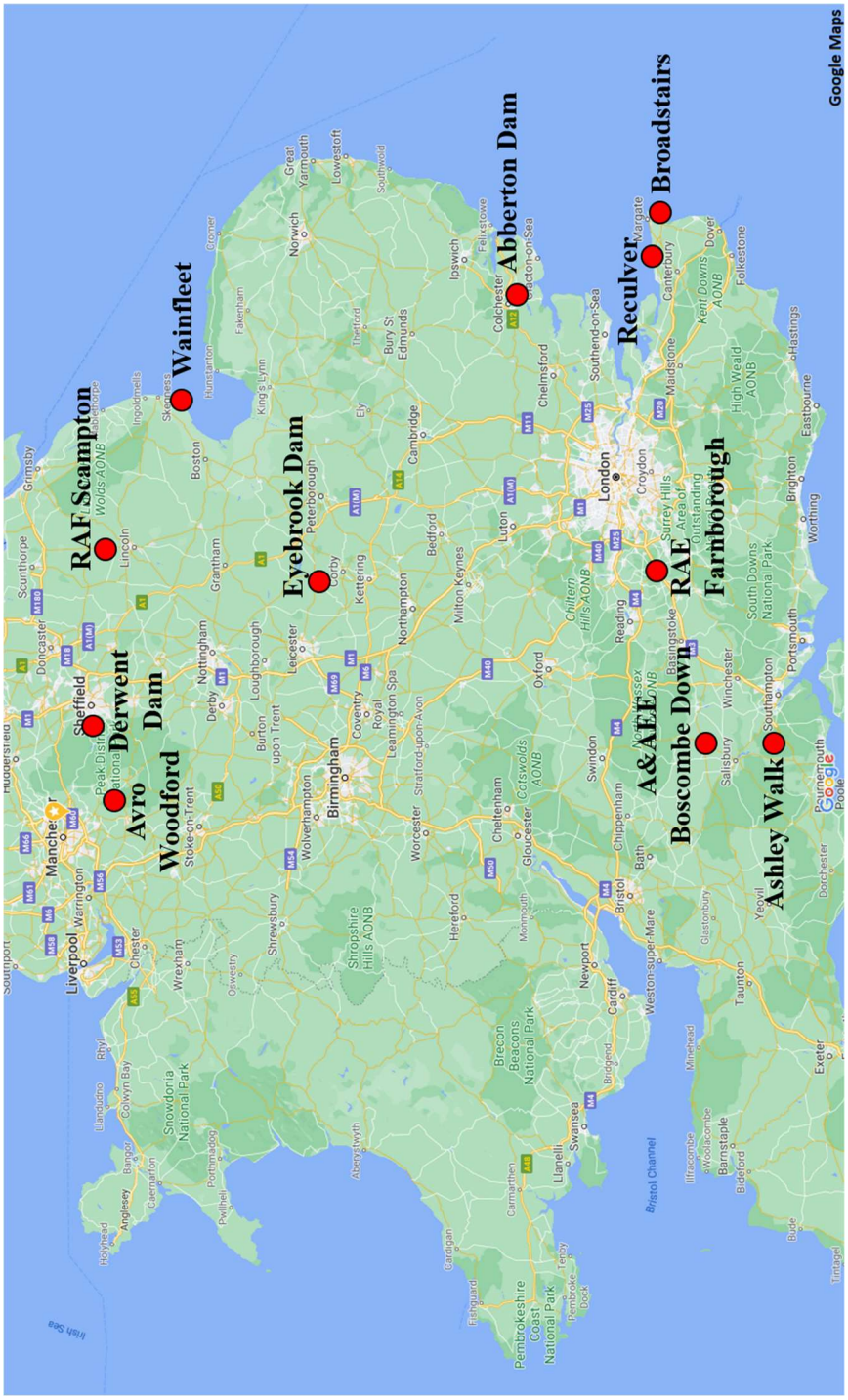
There was still a live Upkeep at Reculver, and Handasyde flew with it direct to the same location as the previous live drop off Broadstairs to dispose of the device. It had no hydrostatic or self-destruct mechanism and was to test whether an Upkeep would explode just with a violent impact of contact with the surface of water. For safety reasons it was dropped from over 500 ft and it did not explode when it hit the sea.

During the morning AVM Ralf Cochrane No.5 Group AOC[14] travelled from HQ No.5 Group Grantham to RAF Scampton to inform Gp Capt Whitworth and Gibson that the operation would take place the following night 16 May. Wallis also arrived from Weybridge in a white Coastal Command Wellington.

At about 16:00, Gibson travelled with Cochrane on his return to Grantham. Here he discussed the draft operation order with Gp Capt Satterly SASO[15] and Wg Cdr Dunn, No.5 Group's chief signals officer. It was also decided that Munro and McCarthy be moved from Wave 1 to Wave 2.

Gibson returned to RAF Scampton and at 18:00 where he held a meeting in Whitworth's house and together with Wallis, briefed Young and Maudslay, his two Flight commanders, Hopgood the deputy leader, and Hay, the squadron's bombing leader.

[14] AOC - Air Officer Commanding
[15] SASO - Senior Air Staff Officer



Key Locations

SUNDAY 16 MAY: UP TO BOARDING

Sunday 16 May 1943 was bright and sunny. The forecast was ideal for the raid. Jack and most of the crew members were in the RAF Scampton messes around 08:00 and had a proper breakfast of porridge or cereal followed by sausages, potatoes and toast and marmalade. They were still oblivious that their day had finally arrived.

Gibson had been up since 05:30 having had no more than about five hours sleep. He had much on his mind. The raid was looming, there was still lots to do and on top of that he had lost his best friend, his black Labrador Nigger, killed in a road accident the previous night. Above all he was mentally, physically and emotionally drained. He was a sick man. At 09:00 he was with the squadron doctor; his gout was causing him extreme pain and discomfort in his foot. The remedy, medication, which would have prevented him flying that day, was rejected. He would just have to live through the pain.

The final Operation Order arrived, delivered by hand, at around 11:00. The plan had been finalised. The number of Lancasters was reduced from 20 to 19 and would be used in three waves of attack. The plan indicated outbound and inbound routes, timings and areas with known anti-aircraft batteries to avoid. Wave 2 had been adjusted to include more experienced crews to specifically attack the Sorpe Dam which required a different bombing approach. Take off was scheduled to begin at 21:00.

No. 617 SQUADRON. NIGHT FLYING PROGRAMME 16.5.43.

No.	A/C.	Captain.	F/Engr.	Navigator.	W/Optr.	A/Bomber.	Front Gunner.	Rear Gunner.
1.	G.	W/CDR. GIBSON.	SGT. PULFORD.	F/O. [illegible]	F/LT. HUTCHINSON.	P/O. SPAFFORD.	F/SGT. DEERING.	F/LT. TREVOR-ROPER.
2.	[illegible]	F/LT. HOPGOOD.	SGT. BRENNAN.	F/O. EARNSHAW.	SGT. MINCHIN.	F/SGT. FRASER.	P/O. GREGORY.	P/O. BURCHER.
3.	[illegible]	F/LT. MARTIN.	P/O. WHITTAKER.	F/LT. LEGGO.	F/O. CHAMBERS.	F/LT. HAY.	P/O. FOXLEE.	F/SGT. SIMPSON.
4.	A.	S/LDR. YOUNG.	SGT. HORSFALL.	SGT. ROBERTS.	SGT. NICHOLS.	F/O. MacCAUSLAND.	SGT. YEO.	SGT. IBBOTSON.
5.	J.	F/LT. MALTBY.	SGT. HATTON.	SGT. NICHOLSON.	SGT. STONE.	P/O. FORT.	SGT. HILL.	SGT. SIMMONDS.
6.	L.	F/LT. SHANNON.	SGT. HENDERSON.	F/O. WALKER.	F/O. GOODALE.	F/SGT. SUMPTER.	SGT. JAGGER.	P/O. BUCKLEY
7.	Z.	S/LDR. MAUDSLAY.	SGT. MARRIOTT.	F/O. URQUHART.	SGT. COTTAM.	P/O. FULLER.	F/O. TYTHERLEIGH	SGT. BURROWS.
8.	B.	F/LT. ASTELL.	SGT. KINNEAR.	P/O. WILE.	SGT. GARSHOWITZ.	F/O. HOPKINSON.	SGT. GARBAS.	SGT. BOLITHO.
9.	N.	P/O. KNIGHT.	SGT. GRAYSTON.	F/O. HOBDAY.	F/SGT. KELLOW.	F/O. JOHNSON.	SGT. SUTHERLAND.	SGT. O'BRIEN.
10.	W.	F/LT. MUNRO.	SGT. APPLEBY.	F/O. RUMBLES.	SGT. PIGEON.	SGT. CLAY.	SGT. HOWARTH.	F/SGT. WEEKS.
11.	T.	F/LT. McCARTHY.	SGT. RATCLIFFE.	F/SGT. MacLEAN.	SGT. EATON.	SGT. JOHNSON.	SGT. BATSON.	F/O. RODGER.
12.	H.	P/O. RICE.	SGT. SMITH.	F/O. MacFARLANE.	SGT. GOWRIE.	F/SGT. THRASHER	SGT. MAYNARD.	SGT. BURNS.
13.	K.	SGT. BYERS.	SGT. TAYLOR.	P/O. WARNER.	SGT. WILKINSON.	SGT. WHITAKER.	SGT. JARVIE.	SGT. McDOWELL.
14.	E.	F/LT. BARLOW.	SGT. WHILLIS.	F/O. BURGESS.	F/O. WILLIAMS.	SGT. GILLESPIE.	P/O. GLINZ.	SGT. LIDDELL.
15.	C.	P/O. OTTLEY.	SGT. MARSDEN.	F/O. BARRETT.	SGT. GUTERMAN.	F/SGT. JOHNSON.	SGT. TEES.	SGT. STRANGE.
16.	S.	P/O. BURPEE.	SGT. PEGLER.	SGT. JAYE.	P/O. WELLER.	SGT. ARTHUR.	SGT. LONG.	F/SGT. BRADY.
17.	O.	F/SGT. TOWNSEND.	SGT. POWELL.	P/O. HOWARD.	F/SGT. CHALMERS.	SGT. FRANKLIN.	SGT. WEBB.	SGT. WILKINSON.
18.	F.	F/SGT. BROWN.	SGT. FEENERON.	SGT. HEAL.	SGT. HEWSTONE.	SGT. OANCIA.	SGT. ALLATSON.	F/SGT. McDONALD.
19.	Y.	F/SGT. ANDERSON.	SGT. PATERSON.	SGT. NUGENT.	SGT. BICKLE.	SGT. GREEN.	SGT. EWAN.	SGT. BUCK.

Pilot list for Operation Chastise

At 12:00 all the Pilots and Navigators were called into a briefing with Gibson and Wallis whilst the Wireless Operators had a separate briefing. All were surprised to finally learn their targets: three primary targets, Möhne, Eder and Sorpe Dams and three secondary targets Lister, Ennepe and Diemel Dams. The Henne Dam had been removed from the list of targets.

As they looked at models of the Möhne and Sorpe Dams. Gibson outlined the battle order, stressed the importance of getting the job done to avoid having to go back and try again, and confirmed the crews that would be involved. Of the 20 crews, Divall and Wilson who had joined the squadron later than most of the other crews would not fly in Wave 3. Officially they, or members of the crew were ill or injured, but it's widely believed that Gibson did not consider them having sufficient experience and capable of performing the job in hand.

Brown's crew had not been due to fly on the mission but were included and added to Wave 3, though his Front Gunner Sgt Buntaine was ill and replaced for the operation by Divall's Front Gunner Sgt Allatson.

Initially, McCarthy and Munro and their crews were a little disconsolate as it seemed they had been demoted from Wave 1. Although there are suggestions it may have been the result of poor results in bombing practise, it wasn't the case, their low flying expertise and bombing prowess were considered more suited for the different bombing approach required at the Sorpe Dam, even though they had not actually practised for it.

Wave 1 9 aircraft in 3 groups
Gibson, Hopgood, Martin
Young, Maltby, Shannon
Maudslay, Astell, Knight.
Task 1 - attack Möhne Dam until destroyed then
Task 2 - those aircraft with unused Upkeeps to attack Eder Dam then
Task 3 - any aircraft with unused Upkeeps to attack Sorpe Dam.

Wave 2 5 aircraft
McCarthy, Barlow, Munro, Byers, Rice
Task 1 - attack Sorpe Dam.

Wave 3 5 aircraft

Ottley, Burpee, Brown, Townsend, Anderson

Task 1 - act as an airborne reserve to attack targets as instructed.

Around the airfield a small army of engine and airframe fitters exhaustively checked and re-checked every part of the aircraft, armourers examined and tested turrets and guns. At the bomb dump the Upkeeps were made ready and loaded onto the trolleys for delivery to each aircraft at their remote dispersal bays. At the various sections of the base specialist officers finalised the signalling procedures, examined weather forecasts and target information.

By 13:00 RAF Scampton which had increased in activity the previous day was bustling. The perimeter track, so often quiet and deserted had turned into a busy motorway with trucks, trailers, tractors, buses, bicycles and a variety of personnel bustling about their business to the aircraft scattered around dispersal. The special Lancasters around dispersal were frantically being worked on. Fuel and oil were being topped up.

Fuel and oil bowsers

The loading of live Upkeeps from the bomb dumps had started the previous day, it was a time-consuming job, they were delivered on a specially converted bomb trailers pulled by a tractor. The front fairing of the bomb bay was swung open to enable the trailer to be positioned beneath the V-shaped calliper carrying arms and then the Upkeep was winched up into position. The callipers were then closed, rotation tests

performed and compass deviation[16] calculated. 18,000 rounds of ammunition, all with 100% daylight tracer (to give the impression of a heavier weight of fire than there was in reality), was also being installed into the two gun positions, 3000 for each of the machine-guns.

Though most of the 617 Sqn. crews still didn't know their targets, or even that they would be flying on their mission that night, it must have been obvious to them all that tonight was the night.

Inside No.2 Hangar there was feverish activity. Squadron Adjutant Harry Humphries was frantic with the amount of work he still had to work out and arrange: logistics – transport of all the crews to their aircraft and transport of the crews once they returned from their mission, pre- flight checks and any last minute maintenance for the operational aircraft, meal times for the crews before take-off and on return, rations for the crews to take, safe keeping of cash and precious items, help with wills and letters to next of kin, making sure aircrew dogs were looked after – the list must have seemed endless.

The Lancaster Jack's crew normally flew ED933 (AJ-X) was still being worked on, the damage was substantial, and the repairs proved very difficult and time consuming. In fact, the aircraft would not be completed to be used that night. As Divall and Wilson had been stood down, and only replaced by Brown, there was one spare Lancaster ED937 (AJ-Z) that had the required Type 464 modifications, and as Maudslay's crew had been using it since their incident at Reculver it was allocated to them to use. It wasn't ideal, crews get used to a particular aircraft, it's foibles, peculiarities, they knew how to handle it, they had confidence in flying it regularly even though they had only used ED933 (AJ-X) for a few training exercises. At least they had some experience of AJ-Z. Hopefully, it wasn't going to be painful reminder of the incident at Reculver where the test dropping of an Upkeep went disastrously wrong. They will have taken the chance to clean and polish the Perspex of the canopies and gun turrets; they knew any smears or blotches could be deceptive especially when under attack.

[16] Compass swing: required to determine the effect on the compass before and after loading of the Upkeep so a compensation could be included after the Upkeep had been dropped.

By early afternoon Jack with the rest of 617 Sqn. aircrew would have been at their aircraft checking it and ensuring everything was ready for any flying or testing they would be doing that day. Jack as the Flight Engineer was responsible for fuel management so would have been very precise that the fuel, oil, and coolant tanks were filled. Massive AEC Matador fuel trucks carrying xxxx tons of fuel busied about delivering 2154 gallons to each Lancaster delivering to two of the six fuel tanks simultaneously. Similarly, the oil bowser would have been used by a separate set of Erks to ensure the xxx tons of oil were topped up.

AEC Matador XXXXX-More info lanc

A further Lancaster Type 464 ED825 (AJ-T) was still at A&AEE Boscombe Down where it had been used to complete loading trials. An order was sent for a ferry team to deliver it to RAF Scampton immediately.

Mick Martin's team were at their Lancaster ED909 (AJ-P), their live Upkeep had been loaded: somebody, inadvertently pulled the Upkeep manual release handle. This was quite a large T-shaped trigger which was basically a re-purposed glider release mechanism that could be used by the Pilot if the Bomb Aimers electrical release failed. It's not clear what happened, the manual release was just forward of the flap selection handle and a similar size. Perhaps the manual release was pulled by mistake when checking the flaps were working satisfactorily, maybe it was just snagged as Martin was getting in or out of the pilot's seat. There are some references to WAAF Fay Gillon being onboard at the time and accidentally pulling the release when climbing into the pilot's seat. Whatever happened, the V-shaped callipers swung open

and the 4½ ton Upkeep crashed down embedding itself into the tarmac hardstanding.

For the groundcrew, known perhaps disparagingly as Erks, and those onboard the aeroplane there was a momentary freeze before the aeroplane and the immediate vicinity was rapidly vacated. Martin jumped into a nearby car and sped over to the Armaments Officer Plt Off 'Doc' Watson who declared that 'if it was going to explode it would have already done so'. After inspecting the mine Watson declared it safe and had it winched back into position.

At 14:30 all Bomb Aimers and Navigators were summoned to a briefing where they were shown the models of the Möhne and Sorpe Dams, large scale maps and lots of aerial photographs. The main concern raised was the routes in and out of the targets and Flt Sgt Sumpter of ED929 (AJ-L) stressed the point that Dutch overhead power cables were very high, up to 100 ft, and would have to be carefully avoided by flying over or even under.

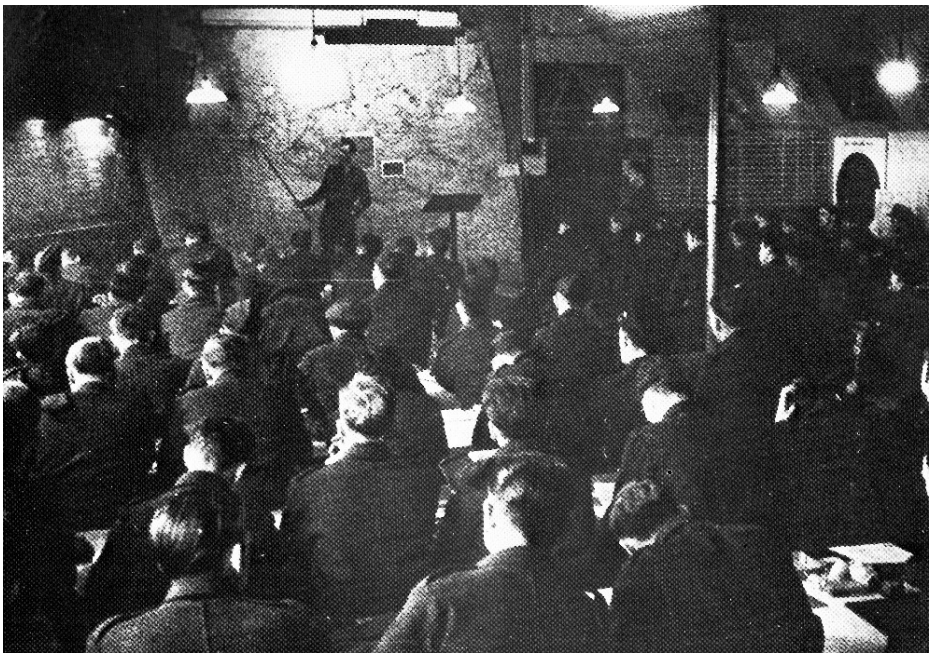
The Bomb Aimers were reminded of the approach needed for the dams whilst crews assigned to the Sorpe Dam were given details of the alternative technique needed as it was an earthen dam which required the Lancaster to fly parallel to the dam and drop the Upkeep vertically, without spinning, centrally on the water side of the dam so that it would roll down before exploding. But, for those that would attack the Eder Dam there was no models, just maps and aerial photographs, and even those made the task a daunting prospect.

The Lancaster Type 464 ED825 (AJ-T) arrived from A&AEE Boscombe Down at around 15:30. The ferry pilot had problems with No.3 engine, it would only run smoothly with the fuel booster turned off. As soon as it landed the Erks set to work to make it available as a spare, resolving the engine and other issues, but there wasn't time to have either the VHF radio or the Spotlight Altimeters fitted.

Activity around the airfield continued through the afternoon and into the early evening when at 18:00 the RAF Scampton public address system announced that all 617 Sqn. aircrew were to report to the briefing room on the upper floor of the sergeant's mess immediately. Amidst the tightest security Jack will have taken his seat on the wooden

benches with the rest of his team, and with trepidation, fear and undoubtedly and interest with an almost sense of relief waited for Gibson to begin. The temperature had only just begun to drop, the doors were shut tight and sentries stood on guard, windows were firmly closed, many were smoking, the tension must have been phenomenal. The whole room stood as Gibson arrived with AVM Cochrane, Barnes Wallis and several other senior squadron officers. Gibson, Wallis and the officers sat at the front on a raised platform. Behind them huge maps with routes marked in red tape, and reconnaissance photos adorned the wall.

Gibson began the briefing. He then introduced the targets and then handed over to Barnes Wallis who described the economic importance of dams and the development of the Upkeep before using the blackboard to explain the principles and operation of the Upkeep and stressing the importance of spinning it at 500 rpm, releasing from a height of 60 ft, speed of 220 mph, and at a 245 ft away from the dam. AVM Cochrane went on to describe that it would be an historic raid but stressed the importance of not talking about it after the raid in case the same technique was used again.



XXX Briefing – more info required

Gibson then continued for almost an hour, standing all the time despite the ongoing pain from his gout. He detailed the running order, R/T[17] procedures, details of enemy defences, known Flak hot spots, and night fighter units and airfields. He stressed the importance of accurate map reading and keeping to the designated routes and turning points. He was followed by the squadron Met[18] Officer who confirmed that the weather was forecast to be good, clear with a full moon, and light winds over the designated route. Everybody then synchronised their watches to the BBC clock.

In summary the route to the dams would be undertaken at minimum height all the way to and from the targets. Wave 1 and Wave 3 would take a south-easterly route over East Anglia to Southwold, crossing the North Sea to the Dutch Coast over the Sheldt Estuary and then taking an easterly direction, weaving around known Flak positions and air bases to the Ruhr Valley. Wave 2 would set off first and take a slightly longer northerly route, flying due east to Mablethorpe, crossing the Dutch coast about 100 miles north of Waves 1 and 3 over the small island of Vlieland before taking a south-easterly course over the Zuiderzee to cross the German border at roughly the same location as Waves 1 and 3. Wave 3 would take off after the success of Waves 1 and 2 were known so they could be directed to a target dam as appropriate. Homeward bound aircraft would use a predefined return route, almost the reverse of Wave 2's outward route, back through Holland and over the Zuiderzee before turning west towards their Lincolnshire base.

Gibson would attack the Möhne Dam first then control the attacks of the other aircraft. In case of issues with Gibson, Hopgood, No.2 of the first section would take over the leader's role, and then if necessary, No.3 of the First section (Martin) would become leader. For the attack on the Eder Dam, Gibson would control the attack, but Young, No.1 of the second section, would assume leader responsibilities and if required No.1 of the third section (Maudslay) would be stand in leader for the attack on the Eder Dam.

The briefing finished around 19:30. I can't imagine how Jack and all the crews were feeling, the stress and anxiety must have been intense, but

[17] R/T – Radio Telephone (or Radio Telephony)
[18] Met Officer = Meteorological Officer

there was only about one and a half hours before the first aircraft were due to take off. As they dispersed, there would have been a gaggle of discussions as they headed for their respective canteens and messes. Supper by all accounts was a quiet and subdued affair. Those flying were given their standard pre-flight meal of two eggs and bacon.

Many had a sense of impending doom and concerned that this could be their last flight and prepared instructions to have their affairs to be put in order. Many wrote letters, some tried to sleep, and others went to the hangar or crew room. Knowing there was going to be a long, hazardous flight ahead nerves were strained, and the tension must have been almost unbearable. Some crews played football others cricket with ground personnel, some chatted, some played cards, other just sat and smoked cigarettes. Some even tried to snatch a few moments' sleep. All tried to hide their fear, most were frightened, and many felt physically sick. Most bomber crews regarded the last hour before take-off as the worst moments of the whole trip. Worse than the take-off, the outward journey, the bombing run, the fighters or even the Flak. The intense training and secrecy of the previous few months only intensified the feeling and as the minutes ticked away the level of anxiety even for the most level-headed and seasoned bomber crews amongst them would have heightened to an almost unbearable level.

By 20:00 flying rations were ready, crews collected their flying clothes from the crew room. After collecting their flight bags and flying rations they were given their few items of escape equipment: miniature compass, silk maps, fishing line, and German and Dutch money. Some crews made their own way to their aircraft. Buses, trucks and other transport started to assemble ready to deliver the crews to their aircraft. Most were sat outside on the grass or in deck chairs, it was still a hot day, and many remained in shirt sleeves. Outwardly it might have looked calm, but tension was mounting, stomachs were churning.

Gibson arrived and hiding his fear and nerves casually announced *"Well, chaps, my watch says time to go"*. The crews from Waves 1 and 2 collected their flying kit, and carrying their flying clothes clambered abord their transport. Dave Shannon, reputedly a laid-back individual, had returned to his room for something and had to be called for which increased the tension on his already stressed crew. These young crews at the peak of their abilities honed by their extensive training would

have changed from their youthful exuberance of only a few hours previously. They were now highly focussed professionals with their thoughts firmly fixed on their task ahead.

Lancaster crew of No 57 Squadron at Scampton board a van to take them to dispersal and their waiting aircraft, February 1943

Around the peri-track[19] the 19 converted Lancasters sat at dispersal waiting. ED933 (AJ-X) was still being repaired and ED825 (AJ-T) the spare was available though without either VHF radio equipment or spotlight altimeters. The only other two Lancaster Type 464 conversions were at RAF Manston where they had been used for bombing trials but were not available even if they were needed.

Gibson arrived at his aircraft ED932 (AJ-G) before 20:30 in his own Humber car cramped together with his crew by which time the crew buses, vans and other transport had pulled up outside No.2 Hangar.

[19] Peri-track: perimeter track. Now more commonly referred to as the taxiway.

Having completed their external pre-flight checks, they gathered around the entrance hatch just about to climb abord when AVM Cochrane arrived with a photographer. Cochrane wished Gibson and his crew the best and the photographer took a picture of Gibson and his crew of AJ-G.

Gibson's crew climb abord. (from the left Trevor-Roper, Pulford, Deering, Spafford, Hutchison, Gibson and Taerum)

Astell's crew arrived at their Lancaster AJ-B and Abram Garshowitz the Wireless Operator chalked on the Upkeep 'Never has so much been expected of so few'. He was hoping it wasn't a bad omen. Many of the crews followed the time-honoured flying ritual of 'watering' the tailwheel.

JACK AND AJ-Z PREPARE FOR TAKE OFF

Jack, his skipper Henry Maudslay, and the rest of the crew arrived at their aircraft ED937 (AJ-Z) which they had used for the previous three days since their disastrous incident in ED933 (AJ-X) during bombing trials at Reculver. The Erks were still busily readying the aircraft. The crew chief would have been ready with Form 700 completed by the Erks ready for signing, but the team will have wanted to double check anyway. Apprehension, building since the end of the briefing was now really stretched.

Jack, undoubtedly, as the Flight Engineer will have gone round with the groundcrew fitters and riggers ensuring he was happy with his aircraft. He would have checked a 'trolley-acc'[20] was available and wheel chocks were in place, then checked that the wheel, engine, and pitot and static vent covers were removed, flying control were ok and locks removed. Then visually checked the engines and other systems for leaks of fuel, oil, or engine coolant, and ensured all the fuel and oil tanks were full. He would have also confirmed that all engine cowlings, inspection panels and the wing leading edge were secured. The whole team would have taken time with Fuller the Bomb Aimer to curiously (perhaps intriguingly) review and check the 4½ ton Upkeep hanging below the Lancaster.

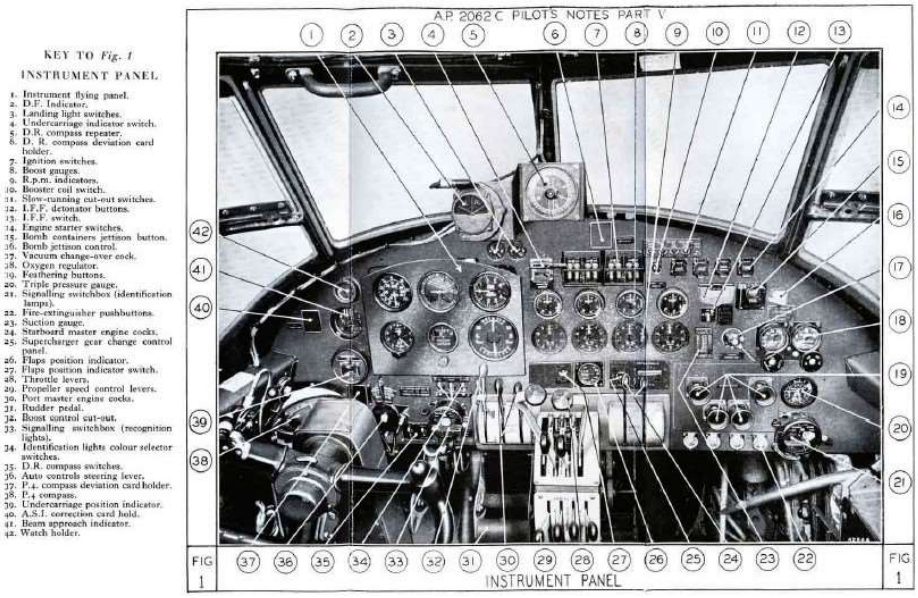
External checks complete Jack, as with all Lancaster Flight Engineers, did not have a proper seat in the Lancaster, so would have carried his parachute, a flight bag which probably contained engine and system performance information, notes made at the briefing, and leather flying helmet amongst other items. He would then have climbed up the primitive steel step ladder through the small square entrance hatch on the starboard side near the tail plane. Because of the cramped crew positions, he would probably have entered the aircraft after Pilot Maudslay, Bomb Aimer Fuller, and Front Gunner Tytherleigh. He would have turned right through the small entrance hatch then clambered forward through the thin cramped fuselage over the wing spars, stowed his parachute in the bulkhead receptacle and continued

[20] Trolley-acc. Trolley accumulator or Ground starter battery, external batteries on a wheeled trolley used for starting the aircraft so not to waste the aircraft batteries before take-off.

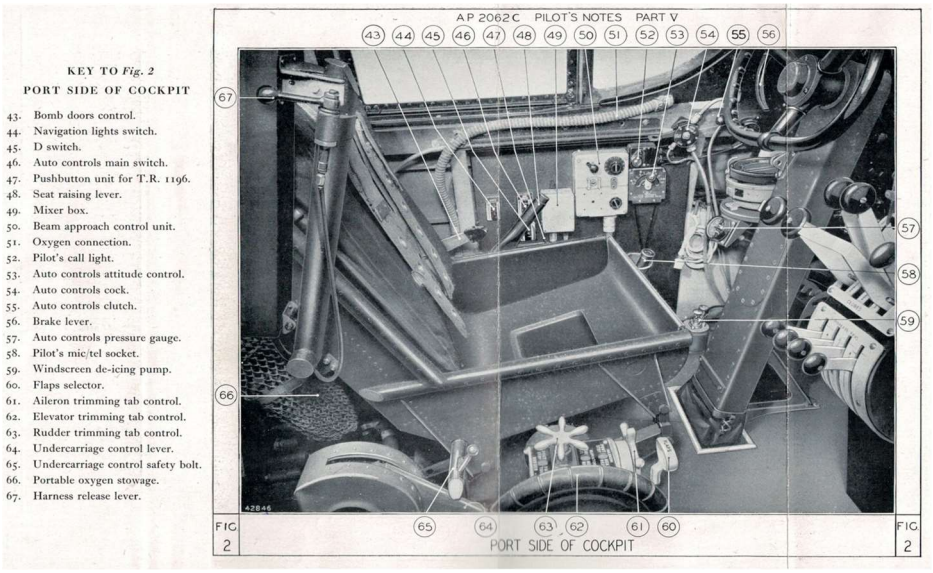
past the Wireless Operators and Navigator's positions. He would then have been followed by Navigator Urquhart, Wireless Operator Cottam, and lastly Rear Gunner Burrows who closed and checked the hatch was locked.

The distinctive smell of WW2 bomber, a peculiar melange of paint, dope, metal, oil, coolant, petrol, and leather was to be their home for the next five or six hours. It was enough to upset some of those even with the strongest disposition, but it had to be ignored. The moment of truth had finally arrived, these young men, 133 of them in 19 Lancasters now faced the stark reality that all the training was behind them and this was it. Fighting back feelings of fear, voices no doubt increased to a nervous pitch and with dry mouths they continued.

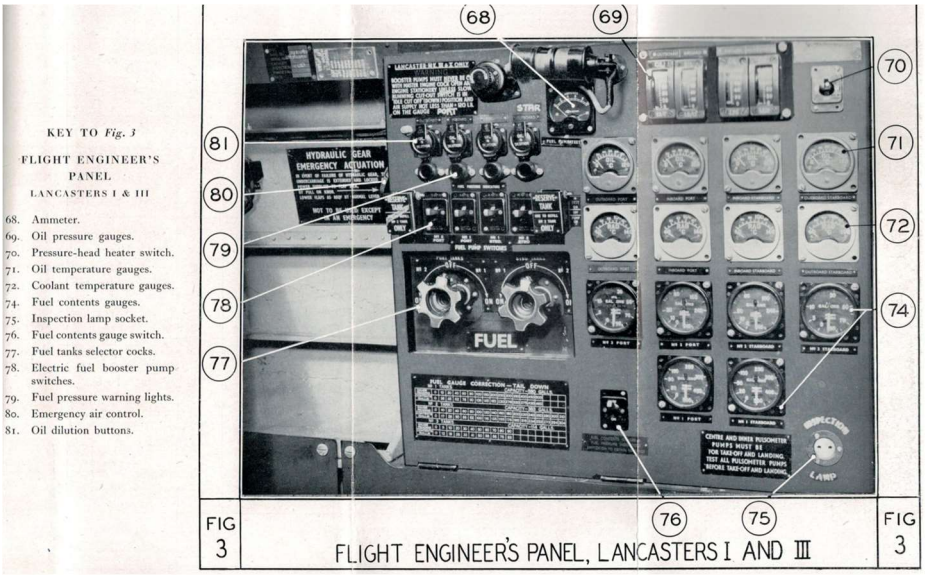
Once at his position next to the Pilot, Jack would have connected his intercom then began checking the onboard systems. It's unlikely that he will have pulled down his fold-away, the 'Second Dickey' as his instruments were both forward of him on the main control panel, and behind on the starboard side of the fuselage bulkhead. Jack standing would then have followed his Flight Engineer pre-flight checks.



Standard Lancaster Instrument panel
(from Lancaster Pilot's and Flight Engineer's Notes)



Standard Lancaster Pilot's position



Standard Lancaster Flight Engineer's panel
(from Lancaster Pilot's and Flight Engineer's Notes)

It was Jack's 30th Op, it would have completed his tour of duty. His procedure was one that he and the rest of the crew knew so well. This time was different, it was a special Op. Each task would have been

completed with special attention, switches that were normally just observed being in position would have been touched for added confirmation just to make sure, the checklist followed to the letter. I'd bet that not a single check was overlooked or not given the maximum attention however trivial:

Parachutes stowed and secured
Check security of emergency escape hatches
Fireman's axe fire extinguisher & first aid kits are in position
All hatches closed & secure
Flame floats and equipment properly stored
Oxygen main cock 'ON'
Check emergency air bottle, normal pressure 1200 psi
Check hydraulic accumulator, static pressure 220 psi
Turn Master switch to 'FLIGHT'
Check fuel cross feed cock "OFF"
All idle cut-off switches 'OFF'
Switch fuel contents gauge 'ON' & check fuel contents
Test fuel pumps by ammeter one at a time
Main fuel cocks to No.2 (centre) tanks 'ON'
Leave master cocks and No.1 (inner) & No.2 (centre) fuel pumps 'ON'
Switch on undercarriage & flap indicator switches & check indicators
Switch on fuel contents gauges switch & check fuel contents

Then together with Pilot Maudslay they would have started their onboard systems checks. Jack would have read from his checklist and Maudslay repeated each check as he carried it out:

Seat secure
Adjust rudder pedals to suit leg length & ensure pedals are adjusted evenly
Test that full rudder to port and starboard can be applied from normal sitting position without extending legs fully
Test all control for full movement & put automatic pilot 'IN'
Brakes 'ON' (Note pressure min. 120 psi)
Test elevator trimming tab control movement - full and free set to neutral
Test rudder trimming tab control movement - full and free set to neutral
Test aileron trimming tab control movement - full and free set to neutral
Cold air
Mixer box to I/C position
Flap gauge & indicator light switch 'ON'
Set altimeter to 'ZERO' - QFE
Propeller Pitch controls 'FULLY FINE'

Supercharger in M (Medium) ratio
Flap lever 'NEUTRAL'
Undercarriage lever locked 'DOWN'
Master switch to 'GROUND'

Gibson's crew completed their pre-flight checks then just after 21:00 observing radio silence, Robert Hutchison his Wireless Operator fired a red Very pistol. It was the signal for all Wave 1 and Wave 2 aircraft to start their engines. Around the dispersal Lancasters began spluttering into life.

Having completed the pre-start-up checks Pilot Maudslay together with Jack and the groundcrew designated as the starter (stood just ahead of the port wingtip clearly visible to the pilot), would then have initiated the engine start-up procedure, revisiting some of the previously completed checks:

Maudslay would have settled himself in his raised pilot's seat then through his open window would have shouted the order:
"Ready for starting".

The starting crew member would have responded with:
"Undercarriage locked down", "Brakes on", "Switch to ground".

Jack would then have double checked the undercarriage lever between him and the pilot was in the down position, the undercarriage switch at the top centre of the control panel was on and the control panel undercarriage lights directly ahead of the pilots control column showed green (locked down) for both left and right undercarriage, then replied *"Undercarriage locked down"*. Maudslay would then have double checked the brake lever on his control column yoke was on and locked and replied, *"Brakes on"*, before turning around and checking the Master switch on the bulkhead behind him was in the Ground position after which he would have replied *"Switch to ground"*.

One of the Erks would have climbed via the main wheel beneath No.3 engine nacelle to balance precariously on footrests on the undercarriage oleo leg to access the starboard priming station. The trolley-acc would have been connected with the Erk waiting for the engine to start turning.

No.3 engine, the starboard inner was always started first, when running it charged the pneumatics and hydraulics for the brakes and other essential services. The starting crew member would have raised his left arm pointing skyward, and with his right hand pointed at the starboard inner engine and then made revolving motion with his index finger and shouted to the Erks:

"All clear", "Contact starboard inner".

Maudslay, peering over Jack's shoulder at the groundcrew, would then have gone through the start sequence issue the following commands that Jack would have checked and/or set before repeating the command back to Maudslay to confirm it had been completed.

Master fuel cocks - OFF
Slow-running cut-out controls - ENGINE RUN
Throttles – SET ½ INCH OPEN
Propeller pitch – FULLY FINE
Supercharger control – M RATIO, warning lights out
Slow-running – IDLE CUT OFF
Air intake heat control - COLD
Radiator shutters[21] *- AUTOMATIC*
Fuel tank selector cocks (port & starboard) to No.2 (centre) tanks – ON
Fuel pump switches No.2 tanks (port and starboard) – ON
Master fuel cocks – ON
Ignition – ON
Booster Coil - ON

Jack will have leaned forward and flicked the two toggle magneto ignition switches for No.3 Engine into the ON (up) position and switched on the adjacent booster coil switch. the crew chief signalled ready to start with a thumbs up and pointing at No.3 engine. Jack would then have lifted the switch guard and pressed the start button for No.3 engine. The Erk standing on the undercarriage pumped the fuel through to the priming nozzles and repeatedly pressed the priming pump until the engine coughed and banged then burst into life as the carburettors picked up.

The beautiful, reliable and resilient Rolls-Royce Packard Merlin engines would have flashed a burst of fire (despite their flame

[21] Radiator shutters were often abbreviated to RAD shutters

suppressors covering the exhaust pipes), coughed thick bluey-black sooty smoke, and then burst into life with that deep guttural purring immediately recognisable as the Rolls-Royce Merlin.

The groundcrew would then have given a thumbs up with one hand whilst pointing at the engine with the other to confirm the engine was running ok. Onboard Jack would have been monitoring the process and as soon as the engine was firing regularly, he would have tweaked the throttles gently and reset the slow-running cut-out switch to the engine running (up) position.

The process would then have been repeated No.2 port inner engine then by No.4 starboard outer, and finally No.1 port outer. When all the four engines were running Jack would have leaned forward and switched off the booster-coil switch. Beneath the Lancaster the Erk would have locked the priming pumps. The crew chief would have issued the command *"Switch to flight"*. Maudslay would have turned round and flicked the main switch to the aircraft batteries and repeated *"Switch to flight"*, and the Erk disconnected and wheeled the trolley-acc to a safe distance. The wash from the propellers rushed over with the tail plane making the rear of the Lancaster bounce lightly on the tailwheel and the whole machine to throb rhythmically and noisily.

Jack would have gently eased the four throttles forward till the rev-counter on the front console was showing a steady 1200 rpm. He would have turned to his Flight Engineers console on the starboard fuselage side and carefully monitored the oil pressure, oil temperature, and coolant temperature gauges for the four engines whilst ensuring that the fuel pressure warning lights were not illuminated. He would then have switched the four electric fuel booster pump switches to the off position to ensure the engine driven pumps were operating normally.

As the engines were warming up Maudslay in the pilot's seat would have leaned forward and switched his DR Compass[22] on and adjusted it as required for the flight. He and Jack together would have checked that the hydraulically operated flaps lowered and raised satisfactorily.

[22] DR Compass or Distant Reading Compass was the aircraft master compass

Once the oil temperature had reached 15oc (yellow gauges on the Flight Engineers panel) and coolant temperature 40oc (blue gauges on the Flight Engineers panel) and Jack and Maudslay were happy the engines and systems were running satisfactorily, they would have then started the power checks, known to the crews as ‘giving the gun’. Jack would have flicked the RAD shutters switches to open and eased the four throttle levers forward to 1500 rpm. He would then have leaned forward and flicked the No.1 magneto switch for No.1 engine down to the off position checking that the revs did not drop more than 150 rpm, then back up to the on position the No.2 magneto switch for the same engine to the off position checking that the revs did not drop below 150 rpm or with a difference of 100 rpm between the two magnetos. This would have been repeated in sequence from left to right using the eight magneto switches for the four engines. If any engine failed this test the aircraft would have to be reported as unserviceable and would not be able fly. Fortunately, all engines behaved, the Op was on.

The throttles would have been moved even further forward till the red boost gauges in the central control panel showed +4 psi and then Jack would have leaned forward and tested the superchargers, even though they were unlikely to be used in this mission, by switching the two supercharger switches down to the S ratio and ensuring a fall in the engines rpm and the red warning light came on, before returning the switch to the M ratio.

The propeller speed control levers below the throttle controls would have been pushed fully forward to 3,000 rpm, the aircraft would have tensed and pressed itself into the wheel chocks desperate to move forward and then the levers would have been moved back to an engine boost of +9 psi and the magnetos tested for each engine again as a precaution.

On completion of the tests, with the engines sweetly ticking over at 800 rpm Jack will have reported *“All engines OK”*, which Maudslay will have repeated to acknowledge. By this time the airframe would have throbbed and rattled pushing against the wheel chocks like a thoroughbred racehorse braced, tense and fired up desperate for the off.

I love the sound of Merlin engines, it’s a beautiful noise. What a joy the cacophony of the 56 Merlins of the 14 Wave 1 and 2 Lancasters must

have made. But it was not something to be admired or enjoyed by those involved that night. I doubt if any of the aircrew or groundcrew even noticed. This was the serious business of making sure they were running properly and ready for the difficult night that they knew would be coming.

But for the seven crew onboard AJ-Z the checks continued. Maudslay as captain would have announced to the crew *"engines OK"* and then gone round the remaining five other crew members in turn.

To Michael Fuller the Bomb Aimer:
"Intercom OK when turret rotated".
To Johnny Tytherleigh the Front Gunner:
"Turret elevation & rotations OK, intercom OK when turret rotated, feed (bullets) clear".
To Robert Urquhart the Navigator:
"Instruments & lights OK, 'GEE'[23] set off & check Spotlight Altimeters (assumed check)".
To Alden Cottam the Wireless Operator:
"Wireless OK, spare batteries OK & Upkeep rotation locked (assumed check)".
To Norman Burrows the Rear Gunner:
"Turret elevation & rotations OK, intercom OK when turret rotated, feed (bullets) clear".

Each of the crew would have checked their equipment and repeated the command so Maudslay knew everything was OK to proceed. All the checks must have been satisfactory and the crew happy that AJ-Z was ready for the action ahead.

The Form 700, basically a logbook of airworthiness was signed by Maudslay indicating he was happy with the aircraft. It was then passed back to the crew chief. The ladders were pulled aboard and the entrance hatch closed and locked. AJ-Z and the Maudslay crew were ready to go.

Around them the 13 other Wave 1 and Wave 2 Lancaster crews had gone through the same process. Like Jack's aircraft all were similarly issue free – with the exception of one aircraft. AJ-Q. It was piloted by

[23] GEE = Early radio navigation equipment

the American Joe McCarthy, the checks had gone satisfactorily up until the power checks were started. No.4 engine, the starboard outer had developed an issue with the coolant temperature. It appears that a leak had developed in the coolant system and the engine had to be shut-down. This was a serious issue; the aircraft couldn't be risked as there was the possibility that the engine could seize or even catastrophically explode.

McCarthy was scheduled to be the first aircraft airborne; he was desperate not to miss the most significant mission of his life and having shut the engines down yelled to at his crew as he frantically clambered out of AJ-Q: *"For Christ's sake, get into that spare aircraft before some other bugger gets there and we don't get to go!"*. They disembarked and rushed over to the only serviceable spare aircraft ED825 (AJ-T) which had arrived that afternoon. Fortunately, AJ-T had been fixed and loaded with fuel and an Upkeep. But it hadn't had a flight test, nor did it have a VHF radio installed or the spotlight altimeters which ordinarily would have meant it couldn't be used on the mission, but this was no ordinary raid, McCarthy was in Wave 2, so no VHF or Spotlight Altimeters were required, and the ground power checks would have to suffice for a flight test. They intended to go on the mission whatever.

Rushing through the pre-flight for a second time that evening he discovered another issue. The compass deviation card an essential requirement for navigation was missing from its little cradle at the top of the dashboard. McCarthy already stressed cursing and no doubt swearing once again clambered out of his pilot's seat and jumped into the nearest van and sped off back to Hangar No.2. On arriving he leapt out of the van, threw his parachute to the ground and ran into the hangar where was met by the chief ground engineer, who listened to his abusive tirade then hurried off to try and find the missing compass card.

Around the airfield the 13 Lancasters hummed like a swarm of bees in the fading daylight. Observing strict radio silence, at about 21:20 Barlow's Lancaster AJ-E started to move around the peri-track towards the southerly threshold of RAF Scampton's grass runway. They were immediately followed by Munro in AJ-W, Byers in AJ-K, and Rice in AJ-H. McCarthy looked on disconsolate as the four Lancasters approached the take-off holding point.

At 21:28 the red and white squared airfield flight Control caravan parked just off the runway changed its Aldis Lamp from red to green. Barlow's engines roared, the Lancaster accelerated over the grass and was soon airborne. Munro followed at 21:29, Byers at 21:30, and Rice at 21:31. The four Lancasters of Wave 2 banked round to starboard onto an easterly setting for Mablethorpe on the Lincolnshire coast.

One of the few photos taken on the night of Operation Chastise by official Air Ministry photographer Fg Off W Bellamy. Believed to be Barlow in AJ-E

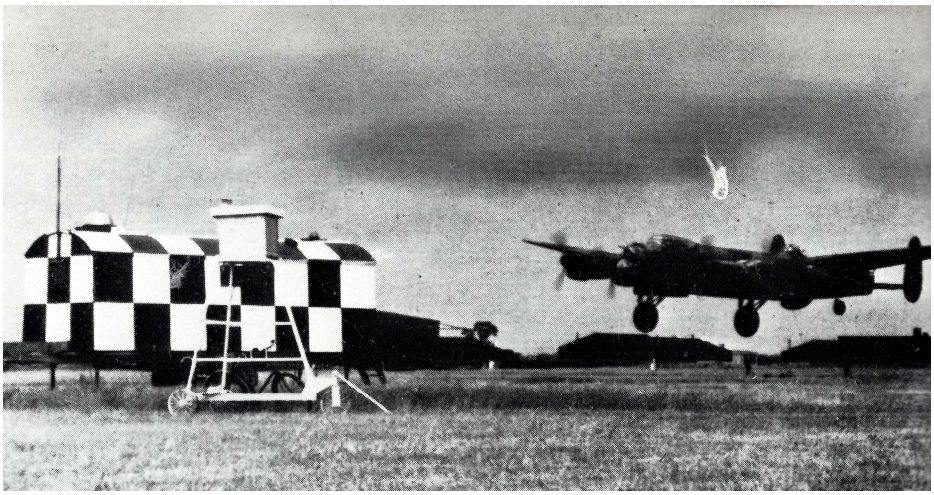
Except for McCarthy, Wave 2, who had a longer flight were airborne. Gibson leading the first flight of Wave 1 were already making their way to the runway. Jack back in AJ-Z at his position alongside Maudslay would have pulled up his dickey seat and connected the primitive back support and sat vibrating in symphony with his massive aircraft as throbbed rhythmically driven by the four massive Merlin engines. Whilst waiting for their turn to move he would be anxiously watching his engine gauges, ensuring there was no last-minute issues.

At 21:39 the flight controllers Aldis flashed green again. Gibson (AJ-G), with Hopgood (AJ-M) on his right, and Martin (AJ-P) on his left-hand side opened their throttles simultaneously and began their take-off.

Gibson slightly ahead in a loose three ship vic formation climbed slowly away.

Flight 2 of Wave 1 were taxiing, and McCarthy had finally been given his compass correction card. He raced back to the waiting van grabbing at his parachute on the way. But in his haste missed the canvas loop handle and snatched the D-ring of the ripcord which sent his parachute silk billowing across the airfield. In temper he threw the now useless parachute pack to the ground cursing *"Goddamit, I'll go without one"*. Fortunately, the crew chief quickly grabbed a spare and managed to push it through the window before McCarthy sped off to AJ-T to start his engine power checks.

At 21:47 a green Aldis was flashed from the Control caravan. Young (AJ-A) leading Shannon (AJ-L) on the right, and Maltby (AJ-J) on the left took off also in a loose vic formation.



Lancaster takes off past an airfield Control caravan

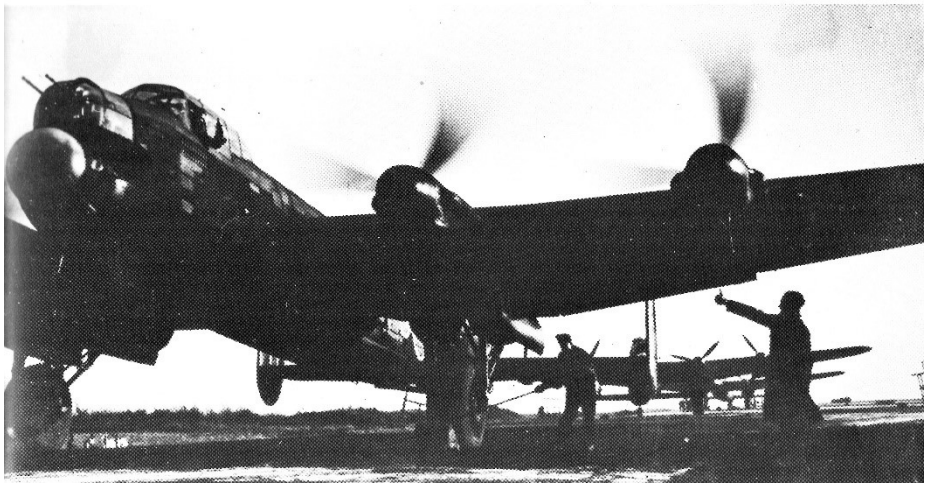
McCarthy had finally got his engines started and was going through his power checks.

Even before the second flight led by Young were airborne Maudslay had revisited some of checks.

Master switch - 'FLIGHT'
Nav lights - 'ON'
Altimeter - 'set to QFE' – airfield elevation
Radiator shutters – OPEN
Brake pressure – sufficient
Autopilot – checked
DR compass – set
Pitot head heater – on

He would then have waved his hands to and from to the groundcrew on the port side to signal the removal of the wheel chocks. Jack would have given the thumbs to those on the starboard side. Once the chocks had been removed to a safe distance the crew chief would have given a thumbs up with both hands indicating the aircraft was clear to taxi.

Flight Engineer gives thumbs up to the groundcrew



Chocs away

Maudslay released the brakes on his control column with a squeal and rush of air and opened the throttles to around 1,000 rpm until the huge heavy Lancaster started to move forward. He would have used careful pressure on the brakes and by using differential power on the outboard engines manoeuvred his way to the holding point at the southern end of the runway.

As they made their way the final take-off checks and take off configuration were carried out. It's probable that Maudslay would have shouted the instructions with Jack carrying out the check or making the setting before repeating the instruction to confirm.

Pilot Command – 'Response'	**Equipment Location**
Elevator trim tab – 'Two notches forward'	On a pedestal between Pilots and Flight Engineer's seats
Rudder trim tab – 'Neutral'	On a pedestal between Pilots and Flight Engineer's seats
Aileron trim tab – 'Neutral'	On a pedestal between Pilots and Flight Engineer's seats
Propeller pitch – 'Fully Forward and locked'	Central at the bottom of the control panel between Pilots and Flight Engineer

Fuel Contents – 'Checked'	On the Flight Engineers panel on the starboard side and just behind the Flight Engineers seat
Master engine fuel cocks – 'On'	Central at the bottom of the control panel between Pilots and Flight Engineer – port fuel cocks to the left and starboard fuel cocks to the right of the throttles
Fuel Tank Selector cocks – 'Checked – port and starboard on tank 2'	On the Flight Engineers panel on the starboard side and just behind the Flight Engineers seat
Cross Feed cock – 'Off'	Marked as 'Balance Cock', on the floor just forward of the main spar, visible through a hole in the spar cover
Booster pumps – 'No.1 and No.2 tanks On'	Switches on the Flight Engineers panel on the starboard side and just behind the Flight Engineers seat
Superchargers – 'M ratio'	Switch at bottom of the control panel above starboard fuel cocks
Air Intake – 'Cold'	Port side of Pilot's floor, so would have been done by Maudslay
Radiator shutters – 'Automatic'	Switches on small panel on the starboard fuselage side next to control panel
Flaps – '20° down'	Push/pull flap selector on a pedestal between Pilots and Flight Engineer's seats in front of trim tabs, indicator on central console above throttles

Behind Astell and Knight, the last two aircraft of Wave 1 followed closely. By this time Barlow, Munro, Byers, and Rice had already crossed the English coast around heading eastwards across the North Sea to Vlieland.

JACK TAKES OFF

Just before 21:55 Maudslay, Astell, and Knight moved onto the southern end of RAF Scampton's grass runway. They moved a few yards forward to straighten their tailwheels, throttled back to 2,000 rpm on all engines, tightened the throttle tension enough to hold its position and not slip when released, applied their brakes and anxiously watched the flight control caravan, staring intently at the red Aldis lamp.

McCarthy had completed his power checks and was also taxiing for take-off.

AJ-Z's checks were all in order, the crew were ready. Maudslay right hand cradled the four throttle levers, his little finger and thumb controlling the outboard engines and the palm of his hand the inners. Jack's left hand fitted around Maudslay's ready to take over once they were airborne.

Flight Engineer's right hand and Pilot's left hand on throttles during take-off (Clip from The Dambusters film)

The training was complete, these highly trained and skilful airmen were at the pinnacle of their readiness, their fear had transformed into intense concentration. Their palms were sweaty, their mouths dry. They had all flown around 30 missions before but that now didn't count. They were focussed on the job in hand and the first part was to get their Lancaster safely airborne. Taking off in a Lancaster was a two-man job, the Flight Engineer was equally as important as the Pilot.

At one minute to ten the runway controllers Aldis changed from red to green. Any normal person would have taken a dep breath and gulped, there might have been a murmur *"Here we go"*. Maudslay and Jack together eased the four throttles to zero boost with the brakes on to check the engines were responding evenly. The throttles were then eased back, the aircraft throbbing with power vibrating and straining against the brakes. Maudslay released the brake lever on his control column with his left hand. The Lancaster lunged forward and together with Jack he advanced the throttles forward.

The engines roared as the huge Lancaster moved forward, as the speed built up Maudslay instinctively tweaked the left throttle levers for the port engines slightly ahead of the starboard counteract the Lancaster's tendency to swing to port on take-off. Although Jack was a master of the engines and controls, it was the pilot who could feel the swing and make the necessary engine adjustments. Jack carefully watched the boost and rpm needles swing round.

Knight on Maudslay's port quarter and Astell on the starboard watched as Maudslay edged forward and then followed. The three Lancasters lumbered down the undulating grass runway. Slowly at first but as the speed built up the heavy controls became more responsive and Maudslay instinctively pushed the control column forward to bring the tail up. He could then use the rudders to keep straight so removed his right hand from the throttles and asked Jack for *"Full power"*. Jack moved the throttles fully forward through the gate and then tightened the throttle lock to keep them in place.

It was a heavy aeroplane, almost 30 tons. The noise of the engines was deafening even through the leather flying helmets. The Lancaster rattled and creaked and bumped and bounced. Urquhart the Navigator carefully

watching his ASI[24], possibly shouting the speed as it built up. As the airspeed increased and approached 90 mph Maudslay started heaving back on the control column, it was the point of no return. It took some effort, even with both hands, but the bounces got less and less, longer and longer until around 100 mph when finally, one last bounce and they were airborne. Jack carefully scanned his engine gauges on the front console ensuring each engine was developing +12 psi boost and 3,000 rpm. If there was going to be a problem, it would be the boost gauges that would give the first signs of engine troubles so these would have been watched like a hawk. Thankfully, all was well. About a minute after releasing the brakes AJ-Z was flying.

All Maudslay's strength, expertise and coordination were required in just holding the aircraft in a shallow climb. Jack still held the throttles fully open; AJ-Z used the maximum take-off run. It seemed that they only just cleared the hedges as they crossed the northern boundary of the airfield.

Take off scene from The Dambusters film

[24] Air Speed Indicator. The Lancaster Navigator position had a duplicate of the pilot's air speed indicator and altimeter

Even before the final three Lancasters of Wave 1 cleared the northern airfield boundary McCarthy was powering down the runway. He was half an hour behind the rest of Wave 2 desperate to make some of the lost time.

Safely airborne, Maudslay dabbed the brakes to stop the main wheels spinning and gave the instruction *"Undercarriage up"*. Jack turned to his left, released the undercarriage safety bolt and moved the large red undercarriage handle backwards to the up position. As the undercarriage folded away backwards into the inboard engine nacelles and the undercarriage doors closed Jack will have carefully watched the undercarriage position indicator as the green lights showed red as the undercarriage retracted and then finally no lights to show undercarriage successfully locked up. Although the indicator was immediately in front of Maudslay's control column and clearly visible to the pilot Jack will have confirmed *"Undercarriage up and locked"*.

With the reduction in drag the nose of the aircraft pitched slightly up but Maudslay knew the feel of a Lancaster so well and without even thinking about it eased the control column forward and retrimmed the elevators and called for *"Climbing power"*. Jack unscrewed the throttle lock eased the throttles back to 2850 rpm +9 psi boost and relocked. He probably had a quick look over his shoulder at the Flight Engineers instrument panel to check the oil pressure was around 70 psi, the oil temperature 90° and the coolant temperature 125° on all four engines and then confirmed *"Climbing power, temps and pressures OK"*.

Maudslay held the nose down letting the airspeed build up. As they were going to fly low level all the way when the airspeed passed 145 mph he called *"Flaps up"*. Jack pulled the flap selector lever and watched for the flap indicator on the main console to read 0° before confirming *"Flaps up"*. Maudslay automatically trimmed the elevators backwards to compensate the nose pitching down. AJ-Z was now *'clean'* and flew smoothly. Jack checked that with the increase in speed and power reductions the oil and coolant temperatures came down.

Maudslay, Astell and Knight in their loose vic formation levelled off at about 100 ft. Maudslay called for *"Cruise power"*. Jack set the throttles to 2650 rpm +7 psi boost, and even before he could confirm *"Cruise power"* Maudslay had instinctively retrimmed the Lancaster's nose level. The three Lancasters banked round to port and made a circuit of the RAF Scampton airfield. Navigator Urquhart set his instruments and gave Maudslay the heading of 125°, their track to their exit point at Southwold on the Suffolk coast.

Lancaster Flight Engineer flicking the fuel contents switch to check fuel levels

Once settled into a steady cruise at 180 mph Jack flicked off the electric fuel booster switches on his Flight Engineers panel and then checked the contents of the fuel tanks. He would have tweaked the engine revs, listening by ear making fine adjustments till all four Merlins were in phase and purring sweetly.

Though Maudslay would have contacted each member of the crew periodically for a cursory check-in the trip was probably generally quiet with little chatter. This was serious business each and every one of the crew needed to be highly alert. Jack will have settled in, without thinking, to his normal mission role of lookout, scanning all around the sky ensuring no other aircraft other than Astlell's and Knight's could be seen. Fuller the Bomb Aimer was key, assisting the Navigator with his own maps and shouting out landmarks and obstacles. At such a low altitude and fast speed, it was relentless pressure and an absolute necessity.

After ten minutes they were already above their training ground of the Wash and a few minutes later over the Norfolk countryside. By this time Gibson's trio were approaching the English coast, but further north over the North Sea McCarthy who was trying to make up some time was *'gunning'* his Lancaster and taking one of the return routes – a slightly more southern route to Holland. But it wasn't going smoothly, he was having more problems. His radio had stopped working and as he was to attack the Sorpe Dam without an airborne controller he wouldn't have the need for a radio, so he decided to press on.

At 22:48 Maudslay's three ship vic reached Southwold. Urquhart gave a new baring of 115°, Maudslay banked gently round to port and picked up the new heading. Still flying at 100 ft AJ-Z and passed over the North Sea.

The Lancaster had little sophistication, it was built for the purpose of delivery and dropping bombs. It needed continual flying. Maudslay was an experienced and top-class pilot but as he concentrated on keeping the aeroplane straight and level whilst scanning the horizon he may have been troubled by two incidents that undoubtedly played on his mind. The incident at Reculver together with the fact as B-Flight commander he was overlooked by Gibson in favour of Hopgood for the role of deputy commander in the event of a problem with Gibson at the Eder

Dam. Maybe he doubted his own abilities and considered his performance in training hadn't come up to scratch and perhaps thought that Gibson didn't consider him up to the job.

30 minutes ahead of them Gibson was approaching the Dutch coast. At one point over the English Channel he had selected the autopilot, but it didn't work correctly, it pitched the Lancaster violently nose down. Gibson quickly disengaged it and pulled the nose back up. He then it eased off the control column and tried to light a cigarette. Again, the nose pitched down much to the horror of Hopgood and Martin flying alongside. The Lancaster especially flying so low required continual concentration. At the same time Barlow, the first of the Wave 2 aircraft, was also approaching also approaching the Dutch coast, but 130 miles to the north.

The North Sea was calm and after a few minutes out over the sea Maudslay's trio descended to 60 ft. The crews kept their watchful sentry scanning the horizon and their relevant instruments. They were all busy. Maudslay with both hands on his control column keeping the aircraft straight and level as it buffeted gently in the airstream. Jack would have kept a look out whilst perpetually running his eyes over his engine instruments. Fuller the Bomb Aimer alert watching ahead for landmarks and obstacles, periodically reporting back to Urquhart. The gunners, Tytherleigh in the nose gun, and Burrows in the tail gun scanning from left to right and up and down, periodically checking the rotation of the turret and maximum elevation of their guns. Urquhart the Navigator will have switched off the IFF[25] sets as it was no longer of use outside of UK airspace and been monitoring his Gee and API[26] navigational equipment. He most likely periodically released some flame floats from which Burrows in the rear turret could determine the drift and advise so the course could be adjusted accordingly. Cottam the Wireless Operator alert for any radio or morse code messages probably stood with his head in the Perspex bubble-like astrodome at the back of the cockpit canopy helping with the lookout.

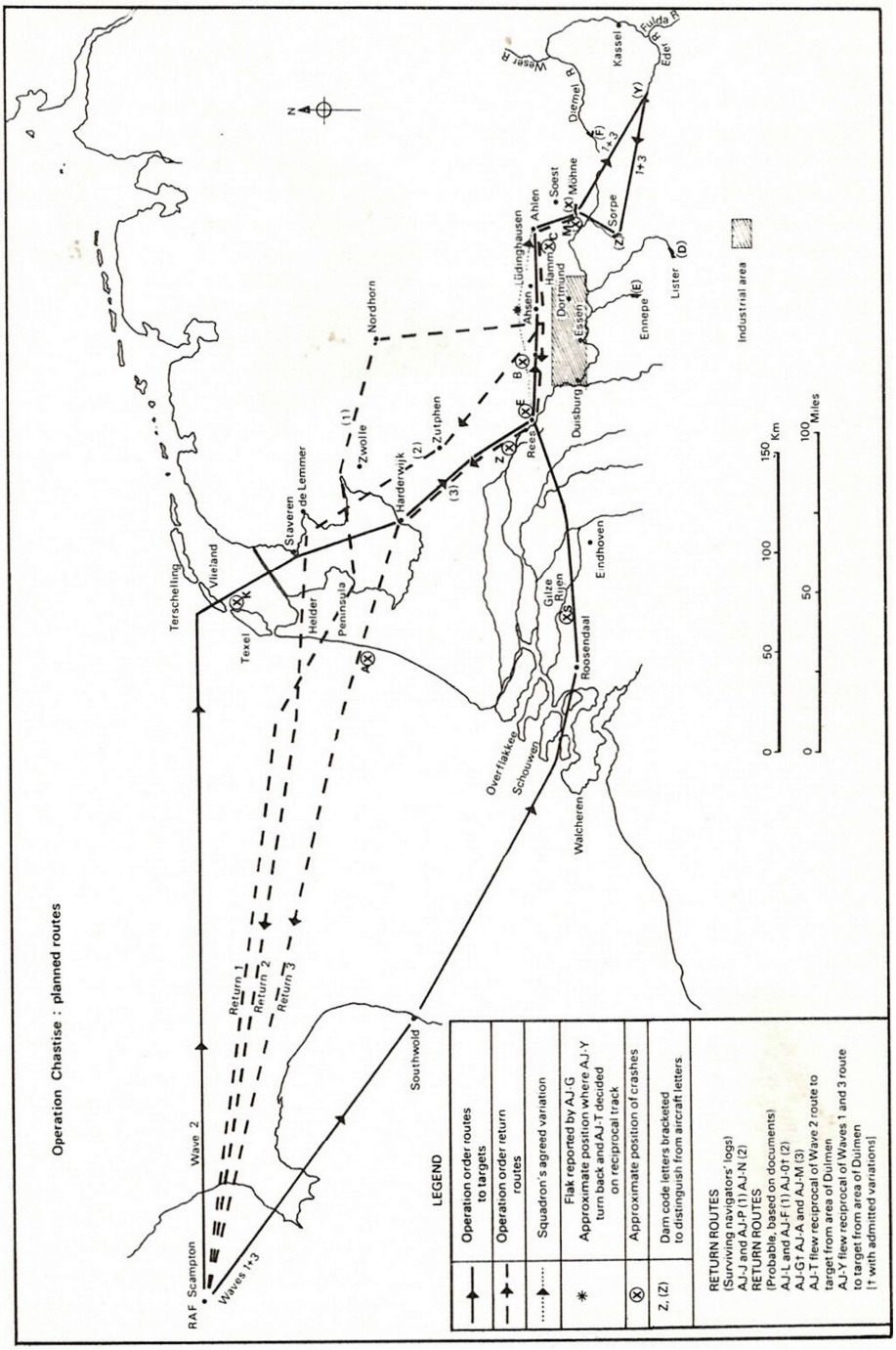
Urquhart the Navigator at some point would have switched on the spotlight altimeters, stood up from his seat behind Maudslay and looked

[25] IFF - Identification Friend of Foe – aircraft identification system
[26] API - Air Position Indicator

through the blister on the starboard side of the canopy and checked that the two lights were both working and the Lancaster was flying along at 60 ft so that Maudslay could ensure his altimeter was calibrated accurately. It's interesting to note that Rob Owen in his book 'Henry Maudslay – Dambuster' reports that Sutherland, the Front Gunner in Knight's Lancaster AJ-N, stated that his Flight Engineer Grayston (who would have had a clear view of Maudslay's AJ-Z just ahead and to the right of him) that one of the other two Lancasters, possibly AJ-Z, appeared to be about 20 ft below them when they had levelled off at 60 ft.

As Maudslay continued on, the Lancasters of Wave 2 flying closely but not together had arrived at the Dutch coast over the southern Wadden Islands but immediately encountered problems. At 22:57 the first of the Dambusters was lost. Barlow (AJ-E) had passed safely over Vlieland but a previously unidentified Flak unit was alerted and targeted Munro (AJ-W) who was hit by Flak. In order to determine the severity of the damage he circled over the Waddensee and with difficulty shouted with his Flight Engineer Appleby as the intercom and VHF radio had been damaged. The Wireless Operator Pigeon was sent to investigate. At the same time Byers flying AJ-K had been affected by the stronger than forecast northly wind and drifted from a track that would have taken him over the lightly defended island of Vlieland. He appeared to climb as he approached, perhaps to confirm his location. It seems that he had crossed the heavily defended island of Texel and was engaged by heavy anti-aircraft fire. The Lancaster burst into flames crashing into the Waddensee killing all seven crew members. He was the least experienced of all the pilots that night having only flown on only four previous operations.

Rice in AJ-H following just behind possibly saw the two aircraft ahead of him succumb to anti-aircraft fire so remained very low. So low that at 23:00 his aircraft hit the surface of the sea just south of Vlieland. The Upkeep was ripped free which smashed into the tailwheel pushing it up into the tail of the aircraft which flooded with water. Rice fought to maintain control of the Lancaster. Fortunately, the Upkeep wasn't fused and didn't explode. Nobody was injured and as water poured from the back of the Lancaster Rice had no other option and turned for home.



GET BETTER PIC XXXX

Just as Rice turned for home Gibson's trio crossed the Dutch coast. The northerly wind that had affected Wave 2 had also forced Gibson slightly south of track over the former island of Walcheren, just north of Middelburg.

At 23:05 in AJ-W the Wireless Operator Pigeon had returned to Munro with bad news. Although all crew members were uninjured there was a huge hole in the rear fuselage. The master compass had been destroyed which together with the loss of radio confirmed their worst fears that they would have to return to RAF Scampton without completing their mission.

Wave 2 were down to two aircraft. Though nobody was aware, it was already looking unlikely for success at the second most important target, the Sorpe Dam.

Just over five minutes later Young, Shannon and Maltby reached the Scheldt Estuary but unlike Gibson were greeted by searchlights and Flak who had been alerted when Gibso's trio had flown over . None of the three Lancasters were hit. About the same time McCarthy reached Vlieland to the north but avoided being hit by the same Flak team that had ended Munro's participation. McCarthy had made up almost ten minutes, ahead of him Barlow had tracked halfway down the Zuiderzee to his checkpoint of Stavoren.

By 23:15 Maudslay was approaching the Dutch coast. Remaining low, Knight and Astell eased from the tight vic formation to make themselves a more difficult target for the German defences. Urquhart the Navigator turned round and using the pull-handle on the starboard fuselage wall armed the self-destruct fuse on the Upkeep. It was a top-secret weapon, and should they get shot down it was imperative it didn't fall into enemy hands.

As they crossed the Dutch coast at 23:21 they were right on track over the Scheldt Estuary between Schouwen and Walcheren. Fuller confirmed the Dutch coast and Urquhart called a course correction. Maudslay brought the Lancaster round to the port and Jack tweaked the throttles. They were flying at just 100 ft. A minute later they were over mainland Europe. The whole crew maintained their look out which intensified with the prospect of enemy defences and the Dutch overhead

electrification system. To the north of them Barlow had crossed into mainland Europe making a slight course correction at Harderwijk for the next waypoint of Dieren.

Crossing the Dutch coast

In bright moon light visibility was excellent but flying so low and fast required maximum concentration by all. Flying so low and fast there would have been heavy buffeting and little room for error. Maudslay was a top-class pilot. He was skilled at flying Lancasters in all conditions, but this was a tough ask, as it was for all those flying on Operation Chastise that night.

No anti-aircraft fire appears to have opened as they made there was towards their next check point at the town of Roosendaal. But up ahead Gibson had reached the canal junction at Beek en Donk. Both his and Young's trio had both encountered Flak. To the north McCarthy was halfway down the Zuiderzee and Barlow was flying southeast near the waypoint of Dieren approaching the German border. Munro and Rice were flying west back over the North Sea on their way home

Maudslay reached the check point of the large railway junction at Roosendaal at 23:35 and a further course correction was made to bring them round to an almost due east direction taking them to the south of

the German night fighter airfields of Gilze-Rijn (between Breda and Tilburg) and north of the Eindhoven night fighter base. The whole crew would have been on maximum alert straining their eyes for any signs of night fighters and anti-aircraft activity. This was the area that Young's trio had been subject to flack ten minutes earlier. Maudslay's vic may have also been targeted but there is no mention in any subsequent documentation.

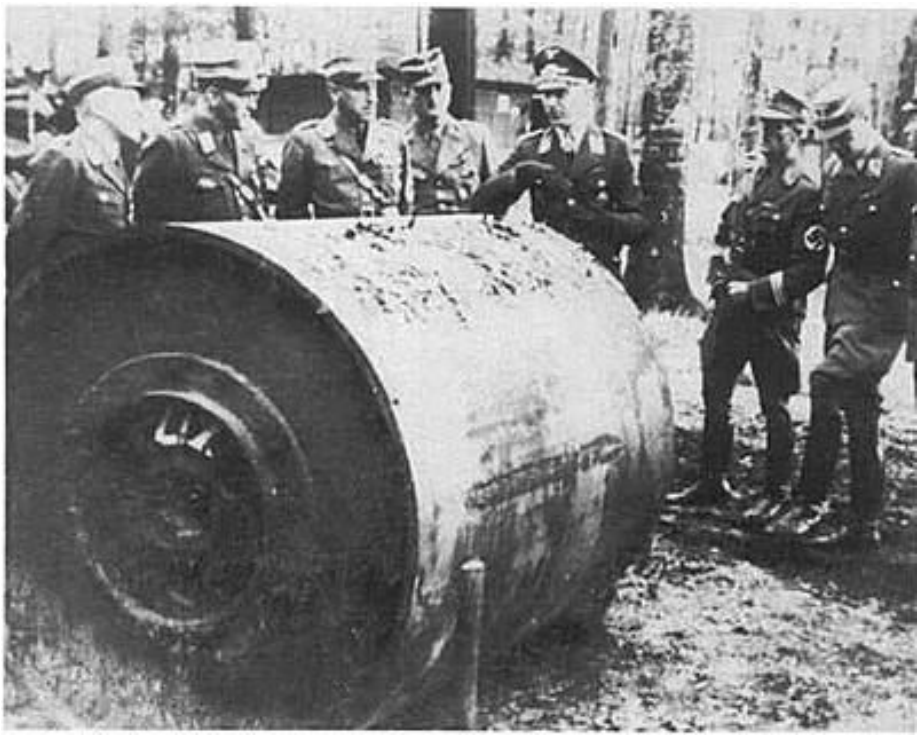
Working as team flew across the very flat countryside alert watching checking the power lines as much as a concern as enemy defences. Fuller with his detailed maps marked with known positions shouting out as they approached each one so Maudslay could haul the Lancaster up and over with the purr of the four Merlins changing into a growl as they lifted the nose up and over.

At about 23:45 Gibson entered German airspace slightly off track. He flew north up the River Rhine to Rees where he banked round to the right flying almost due east. Young was approaching Beek en Donk, and Barlow from Wave 2 having done the long route south through Holland was also approaching Rees where he made a sharp turn to port.

Maudslay had picked up the Wilhelmina Canal which came south east from Tilburg and then turned in an east-west direction at Haghorst. Maudslay like Gibson and Young ahead of him will have found it easy for navigation in the clear moonlight. Flying along it at about 100 ft Fuller watched intensely for those dreaded power lines. Maudslay would have periodically 'bunted' over, and possibly sometimes dived beneath, the deadly cables, each time Jack's four finely tuned Merlins complained noisily at the sudden change in the aircraft's attitude.

Five minutes later as Maudslay was passing north of Eindhoven still following the Wilhelmena Canal up ahead Barlow fell prey to the deadly 100,000-volt power lines. It's not known if he had been hit by Flak or whether his Lancaster AJ-E flew directly into them, but the Lancaster was horribly snared in the power cables and took a nosedive into a field north of Haldern exploding on impact with the ground killing all seven crew members. Unfortunately, the Upkeep had not been fused and rolled clear of the crash site coming to rest without exploding, it was soon disassembled and analysed by German scientists.

Wave 2 were now down to the single Lancaster of McCarthy and not one of the dams had yet been reached.



German officials inspect Barlow's unexploded Upkeep

Maudslay was soon at the canal junction south of Beek en Donk and the waypoint at the distinctive junction of the Wilhelmena and Willemsvaart canals. It's believed he climbed briefly to about 300 ft to get a positive identification followed by a slight course correction and he descended back down to 100 ft and tracking for the Dutch-German border near Boxmeer on the River Meuse.

As 16 May became 17 May Gibson's trio were at their final turning point at the small town of Ahlen, 20 miles north of the Möhne Reservoir. They had experienced searchlights and increased Flak activity since crossing over the Rhine. South-east of Dülmen Hopgood's Lancaster had been hit in the fuselage and quite badly in the port wing causing the port outer engine to burst into flames which some

reports state as being feathered[27]. Hopgood was wounded in the head, Burcher the Rear Gunner had slight injuries to his groin and stomach, Minchin the Wireless Operator was more seriously hurt and couldn't move his legs, and Front Gunner Gregory failed to respond to calls and was believed to have been killed.

Gibson instructed his Wireless Operator Hutchison to break radio silence and notify No.5 Group HQ of the Flak concentrations. Young's trio followed ten minutes behind and much to the consternation of Maltby and Shannon Young persisted in flying much higher than the other two at around 500 ft.

By 00:05 No.5 Group HQ had retransmitted the Flak warning by which time Young had passed Rees heading for Ahlen and Maudslay had passed Boxmeer and was approaching the Rhine. Back at RAF Scampton Wave 3 crews were ready for take-off.

At 00:09 Ottley became airborne in AJ-C, two minutes later Burpee followed in AJ-S, a minute later Brown in AJ-F, then two minutes later Townsend in AJ-O, and finally the last of the Dambusters to leave RAF Scampton Anderson in AJ-Y was on his way at 00:15. They followed the same route as Wave 1 on the southern route, but as they made their way, they still didn't know which their target dams was going to be.

As Anderson became airborne at RAF Scampton Gibson was approaching the Möhne Dam. The final route from Ahlen had been more over difficult terrain to traverse. Gone were the flat lands of Holland which had made navigation easier to be replaced by undulating hills, valleys, and forests. The tight three ship vic formation that Gibson's trio had maintained from the start became difficult to hold and Gibson seems to have lost his way for a short period enabling Martin in AJ-P to arrive at the Möhne Reservoir first at 00:15. Gibson arrived a minute or so later as he described in his book 'Enemy Coast Ahead':

'"We're there," said Spam.
"Thank God," said I, feelingly.

[27] Feathering an engine is to stop the engine and turn the propeller blades in line with airflow to create minimal resistance

As we came over the hill, we saw the Möhne Lake[28]. Then we saw the dam itself. In that light it looked squat and heavy and unconquerable; it looked grey and solid in the moonlight, as though it were part of the countryside itself and just as immovable. A structure like a battleship was showering out flak all along its length, but some came from the power-house below and nearby. There were no searchlights. It was light flak, mostly green, yellow and red, and the colours of the tracer reflected upon the face of the water in the lake. The reflections on the dead calm of the black water made it seem there was twice as much as there really was.'

Möhne Dam

Hopgood arrived as Young's group were at the waypoint of Ahlen, but Maudslay's trio had encountered problems. There are no accurate records, but there are suggestions that the formation which had reached Rees in a close formation had become separated and spread out. It seems that Knight had increased his speed slightly and was actually ahead of Maudslay.

[28] Möhnesee is a reservoir formed by the damming of the rivers Möhne and the more southerly Heve

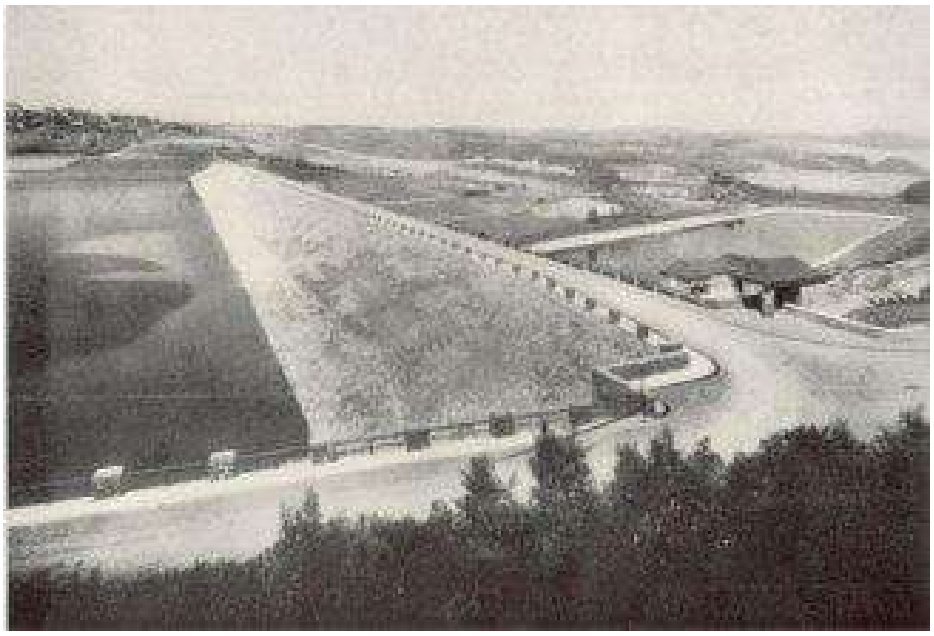
Astell's crew may not have been able to identify the turning point over the Rhine near Rees and carried on their original track for a while before making the course correction and getting back on track. It meant, however, that he had fallen behind slightly, so rather than a tight vic they were then flying individually one behind the other.

At the same time as Gibson arrived at the Möhne Reservoir Knight and Maudslay were making their way towards Ahlen. Thundering low over the rooftops of a farm just to the west of the village of Marbeck they heaved their Lancaster's up over powerlines.

A minute or two later Astell, by then back on track, for whatever reason failed to avoid the deadly obstacle. Whether he was pre-occupied with trying to catch up the other two, or whether it was a lack of concentration we'll never know. The Lancaster smashed into the top of a 90 ft electricity pylon causing the aircraft to erupt in flames. 30 tons of burning aircraft hurtled for 500 yds over a farmhouse before smashing into a field beyond. The Upkeep ripped free and rolled forward until the self-destruct fuse detonated the device 100 yds further on. Operation Chastise was now down to 14 aircraft.

The wreckage of Astell's AJ-B

Elsewhere McCarthy, despite no VHF radio and problems with his compass had arrived at the Sorpe Reservoir. Having made up considerable time he had been slightly ahead of Gibson which possibly alerted the Flak and searchlight defences between Rees and Ahlen that had cost Barlow's aircraft and made the rest of Wave 1s transition so uncomfortable.



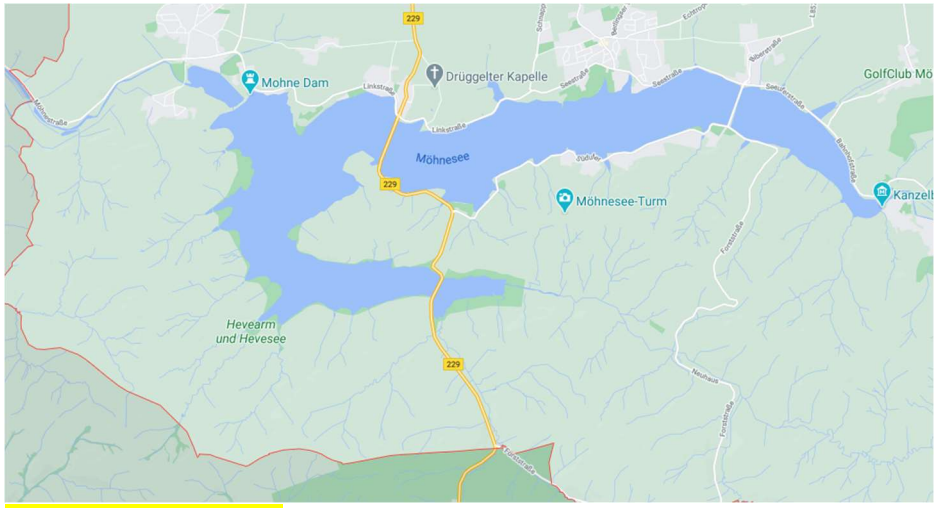
Sorpe Dam

Rice had arrived back over RAF Scampton and was circling whilst his crew sorted out hydraulic issues and made preparations for a difficult landing in the damaged Lancaster with no tailwheel. Munro was approaching the English coast on his final leg home.

ATTACKING THE MÖHNE DAM

At the Möhne Dam it was a bright moonlit night. It was still warm in the Lancaster cockpits, Gibson was still in his shirtsleeves, his concentration was intense despite the continual pain in his feet. The three Lancasters circled at about 600 ft over the hills and forests on the southern section of the Möhne Reservoir (known as the Hevesee) whilst the crews noted the landmarks and reviewed the plan of attack. As they did so the Flak emplacements on and around the dam started firing using various colours of tracers. Though they were out of range it enabled an estimate of the number of guns which Gibson concluded there were 12, though in reality there were only six. As expected, there were no barrage balloons or searchlights to contend with, but the Flak increased in intensity whenever the Lancasters got too near the dam.

Despite the intensity of Flak, it seems though it has never been confirmed, that it was decided that the best approach was from the southeast over the promontory of the north bank of the Hevesee over Heveberg spit with a direct run towards the dam.



UPFATE THIS XXX

About 00:20 Gibson announced over VHF radio the others to circle anti-clockwise whilst he made a trial approach. Flying low and fast over the calm reservoir with Flak coming almost horizontally towards his

Lancaster he made a successful pass over the dam and re-joined the circling Martin and Hopgood.

Just after 00:25 Young and Maltby arrived and joined the circuit of circling Lancasters. Shannon arrived a few moments later and approached the Möhne Dam over a ridge from the north almost directly above the dam. He was immediately targeted and hit by Flak from the right-hand tower causing a small hole in the fuselage.

Maudslay had turned south-easterly at the last waypoint of Ahlen, climbed to about 1,000 ft in compliance with Operation Orders which required the leader of each section and to listen on VHF 'channel A'. Although they were still over five minutes from the Möhne Reservoir they will have heard the radio chatter of the six Lancasters ahead of them.

At 00:28 Gibson announced those famous words. Words so familiar to me from being very young, indelibly etched into my subconscious from seeing the film and reading Paul Brickhill's book. I could probably type them even now without referring to the book. But to be accurate I won't because it's more appropriate to use Gibson's thoughts and impressions as he made his attack (extract from 'Enemy Coast Ahead' by Guy Gibson).

"Well, boys, I suppose we had better start the ball rolling".

"Hello all Cooler aircraft. I am going to attack. Stand by to come in to attack in your order when I tell you."

"Hello, M Mother. Stand by to take over if anything happens." Hoppy's clear and casual voice came back. "O.K., Leader. Good luck."

Then the boys dispersed to the pre-arranged hiding-spots in the hills, so that they should not be seen either from the ground or from the air, and we began to get into position for our approach. We circled wide and came down moon, over the high hills at the eastern end of the lake. On straightening up we began to dive towards the flat, ominous water two miles away. Over the front turret was the dam

silhouetted against the haze of the Ruhr Valley. We could see the towers. We could see the sluices. We could see everything.

Spam the bomb-aimer, said, "Good show. This is wizard." He had been a bit worried, as all bomb-aimers are, in case they cannot see their aiming points, but as we came in over the tall fir trees his voice came up again rather quickly. "You're going to hit them. You're going to hit those trees."

"That's all right, Spam. I'm just getting my height."

To Terry [Navigator]*: "Check height, Terry."*
To Pulford [Flight Engineer]*: "Speed control, Flight-Engineer."*
To Trevor [Rear Gunner]*: "All guns ready, gunners,"*
To Spam [Bomb Aimer]*: "Coming up, Spam."*

Terry turned on the spotlights and began giving directions – "Down – down - down. Steady – steady." We were then exactly sixty feet.

Pulford began working the speed; first he put a little flap to slow us down, then he opened the throttles to get the air speed indicator exactly against the red mark. Spam began lining up his sights against the towers. He had turned the fusing switch to the 'ON' position. I began flying.

The gunners had seen us coming. They could see us coming with our spotlights on for over two miles away. Now they opened up and their tracers began swirling towards us; some were even bouncing off the smooth surface of the lake. This was a horrible moment; we were being dragged along at four miles a minute, almost against are will, towards the things we were going to destroy. I think at that moment the boys did not want to go. I know I did not want to go. I thought to myself, "In another minute we shall all be dead – so what?" I thought again, "This is terrible – this feeling of fear – if it is fear." By now we were a few hundred yards away and I said quickly to Pulford, under my breath, "Better leave the throttles open now and stand by to pull me out of the seat if I get hit." As I glanced at him I thought he looked a little glum on hearing this.

The Lancaster was really moving and I began looking through the special sight in my windscreen. Spam had his eyes glued to the bomb sight in front, his hand on his button; a special mechanism on board had already begun to work so that the mine would drop (we hoped) in the right spot. Terry was still checking the height.

Joe and Trev. Began to raise their guns. The flak could see us quite clearly now. It was not exactly an inferno. I have been through far worse flak than that; but we were very low. There was something sinister and slightly unnerving about the whole operation. My aircraft was so small and the dam was so large; it was thick and solid, and now it was angry. My aircraft was very small. We skimmed along the surface of the lake, and as we went my gunner was firing into the defences, and the defences were firing back with vigour, their shells whistling past us. For some reason, we were not being hit.

Spam said, "Left – little more left – steady -steady -steady – coming up." Of the next few seconds I remember only a series of kaleidoscopic incidents.

The chatter from Joe's front guns pushing out tracers which bounced off the left had flak tower.
Pulford crouching beside me.
The smell of burnt cordite.
The cold sweat underneath my oxygen mask.

The tracers flashing past the windows – they all seemed the same colour now – and the inaccuracy of the gun positions near the power-station; they were all firing in the wrong direction.

The closeness of the dam wall.
Spam's exultant, "Mine gone".
Hutch's [Wireless Operator] *red Very lights to blind the flak-gunners.*
The speed of the whole thing.
Someone saying over the R.T., "Good show, Leader. Nice work."

Then it was all over, and at last we were out of range, and there came over us all, I think, an immense feeling of relief and confidence.

...

As we circled round we could see a great 1,000-feet column of whiteness still hanging in the air where our mine had exploded. We could see with satisfaction that Spam had been good, and it had gone off in the right position. Then, as we came closer, we could see the explosion of the mine had caused a great disturbance upon the surface of the lake and the water had become broken and furious, as though it were being lashed by a gale. At first we thought that the dam itself had broken, because great sheets of water were slopping over the top of the wall like a gigantic basin.

In reality the Upkeep had skipped three times and sank after travelling 50 yds, but short of the dam. Hutchison, the Wireless Operator, fired a red Very flare over the dam wall to indicate the Upkeep had been released and sent a message to No.5 Group HQ ***'GONER68A'*** indicating they had had released their Upkeep, it had exploded 5 yds from the Möhne Dam with no apparent damage. Despite the personal brilliance of Gibson, his heroism, and his extraordinary efforts whilst in discomfort and pain, his personal effort had failed.

Five minutes later at 00:33 the water had subsided, and Gibson called Hopgood into attack. *"Hello 'M-Mother'. You may attack now. Good luck."* Hopgood replied without any indication of his or his crew's injuries *"OK Leader. Attacking"*. He made his run towards the dam but the Flak teams were prepared and ready. The Lancaster already struggling with issues with the port outer engine was hit several times. The port inner engine was damaged, the large port inner fuel tank was also hit which burst into flames, and the watching aircraft also noted hits to his starboard wing.

Hopgood continued his approach regardless. It is not known how badly injured he and his crew were, or how difficult it was to co-ordinate their attack with the depleted crew, but the circling Lancasters watched in horror as the Upkeep was released late, flew over the dam wall, and smashed into a power station on the air side of the dam.

Hopgood's attack on the Möhne Dam

Hopgood fought desperately to gain height so his crew could bale out, Michin the Wireless Operator even managed to fire a red Very light in accordance with his instructions. Hopgood and Brennan the Flight Engineer desperately tried to sort the fires out. Hopgood fought hard with his dying Lancaster and managed to get to about 500 ft when the Lancaster exploded, at which point he ordered the crew to bale out.

Fraser the Bomb Aimer in the nose managed to get out through the forward escape hatch. Burcher fought with his rear turret which was powered from one of the by then useless engines, but eventually managed to manually turn it, whilst grabbing his parachute he noticed the badly injured Wireless Operator Minchin struggling back down towards the entrance hatch. Burcher pushed Minchin out of the door, pulling his D-Ring for him before being ejected through the door himself.

Sadly, Minchin didn't survive, but even though Burcher hit the tail fin and badly injured his back he and Fraser both survived. The rest of the crew sadly died with the aircraft. It was the fourth Lancaster lost and only one Upkeep had been used.

Luftwaffe officer inspects the remains of AJ-M

As the shock of Hopgood's demise was playing out Knight arrived at the Möhne Reservoir followed shortly afterwards by Jack's Lancaster. Though they may not have been able to see the horror of Hopgood's loss, they will certainly have heard the concerned chatter of the other crews over the R/T.

I can't imagine what their feelings and emotions would have been. Fear, horror, dread, trepidation? All no doubt, and many more besides, but sentiment and anger aside these were professional and experienced airmen and they had a job to do.

Maudslay joined the Lancasters in their left-hand orbit and he and his crew began familiarising themselves with the features from the model, maps, and photos they had studied so hard several hours before.

With the loss of Hopgood Gibson had lost his closest friend in the squadron and the operation wasn't going well at all. They were six aircraft down and only one Upkeep used albeit unsuccessfully. But Gibson, was a leader and incredibly brave so despite the losses the failures so far he put his own fears and pain in his legs to one side and prepared for the next aircraft.

At 00:36 as Martin was getting into position south-east of the Möhne Dam Munro in AJ-W had arrived back at RAF Scampton complete with his Upkeep. Without the use of radio, he wasn't able to contact the tower, so his approach took him straight in. What he didn't know was that Rice had also turned back and having completed his preparations for a difficult landing, was also on final approach. Munro flew directly beneath Rice without seeing him. Rice already fighting with his damaged Lancaster aborted his landing and talk a long careful orbit before finally landing at 00:47 coming to a halt on the Lancaster's two tailfins. An unfortunate accident was avoided by the smallest margins but two of the crews were back home safe even if they hadn't managed to complete their mission.

Gibson called Martin at 00:38. He was an outstanding and skilful pilot considered to be one of the best in the squadron. There are various accounts of Gibson's R/T instruction from *"Come in number three, you can go in now"* but more likely *"Hello P-Popsie. Are you ready?"* Martin replied *"O.K. Leader. Going in."*

Gibson as well as an incredible leader was exceptionally brave. Having already twice run the gauntlet of a low-level approach to the dam he flew starboard alongside and slightly ahead of Martin. Risking the lives of himself and his crew he attempted to draw some of the Flak away from Martin's Lancaster as the front gunners in both Lancasters fired a stream of tracers at the dam's defenders.

The two Lancasters were soon down at low level, Martin exactly at 60 ft, 217 mph, both font gunners firing furiously. Hay, Martin's Bomb Aimer and squadron bomb lead, watched intently as the two towers converged in his bombsight. Just as he was pressing the Upkeep release button Martin's Lancaster was hit in the starboard wing.

Either the Lancaster jolted slightly, maybe the Upkeep had sustained some damage when it fell from Lancaster several hours earlier and was out of balance, or maybe it was just the way it was spinning but instead of skipping towards the dam it veered off to the left exploding over 20 yds from the dam near the western shore of the reservoir. Another failure message was transmitted back to Grantham ***'GONER58A'*** (Upkeep released, exploded 50 yds from the Möhne Dam, with no

apparent breach). Three top class pilots and their elite crews had tried and not one had made a direct hit.

Gibson called in Young, the fourth attempt. This time Gibson flew around the northern (air) side of the dam with his gunners engaging the Flak defences and flashing his navigation lights as a further distraction. Martin flew alongside Young on his port side to draw some of the remaining Flak. At 00:43 Young's Upkeep skipped three times, hit the dam wall about centre and exploded at a depth of 30 ft as planned.

It seems that the Upkeep had caused the dam to crumble but it wasn't actually noticed by any of the aircrew and a ***'GONER78A'*** was sent to Grantham. Maltby was called in, and as he did so Gibson and Martin circled over the dam to draw fire from the Flak gunners. As he approached Maltby thought he could already see the dam crumbling but released his Upkeep at 00:49 which like the previous attempt bounced accurately, sank in contact with the dam and exploded.

Spray from the attacks was hanging in the air misting up the valley but more importantly restricting visibility but Gibson pressed on and called in Shannon. As Shannon ran from the southeast, Martin banking over the dam had seen the dam collapse sending a torrent of water down the valley excitedly shouted over R/T *"Hell, it's gone! It's gone! Look at it for Christ's sake!"*. The Möhne Dam had at last been breached but Maltby's Wireless Operator Stone transmitted the incorrect code of ***'GONER78A'***. Gibson, seconds after calling Shannon in hurriedly instructed him to *"Skip it"* whilst he flew closer to have a proper look.

Jack's Lancaster had been circling out of range of the German defences and he would probably have seen very little of the action of the other Lancasters but would have been listening intently on excited R/T interactions. With little risk of Flak all the Lancasters, amidst continued excited chatter which died away as they looked down in awe, circled around the dam to review the historic spectacle. Little did any of them realise how significant piece of British history they had just created. In Gibson's Lancaster Hutchison sat back his little desk tapped in Morse the codeword ***'NIGGER'*** confirming the Möhne Dam had been breached. Five Upkeeps had been used but in reality, had been breached by the first accurate attack. It was 00:49 though the message wasn't received in Grantham until 00:56. German sources later claimed that six

attempts had been made, but in realty the first attempt was Gibson's dummy run.

Gibson was concerned that time was running on, called for a halt to the excited R/T chatter and sent Martin and Maltby home. He instructed Young who had already released his Upkeep to accompany him to the Eder Dam to act as Controller in the event he had any issues. The remaining three Lancasters with Upkeeps were ordered to make their way to the Eder Dam.

Perhaps Henry Maudslay as B-Flight commander felt slightly irked about the use of Young as deputy controller for the attack at the Eder Dam and may have worried that it may have been a reflection on his performance in training and the incident at Reculver which maybe had given Gibson the impression that he wasn't up to the job. Max Hastings in his book 'Chastise' suggests taking Young as deputy controller at the Eder Dam *'was an odd decision by Gibson, which can only have reflected lack of confidence in Maudslay'*.

As the five Wave 1 Lancasters departed for the 15-minute flight further southeast to the Eder Reservoir Gibson had spent over 40 minutes in intense low level highly pressurized flying at the Möhne Reservoir.

Appendix 1: ABBREVIATIONS

RAF rank abbreviations listed in Appendix 2.

A&AEE	Aeroplane and Armament Experimental Establishment
AOC	Air Officer Commanding
ASI	Air Speed Indicator
CO	Commanding Officer
ft	Feet (12 inches)
Flak	Flugabwehrkanone (also referred to as Fliegerabwehrkanone) meaning aircraft-defence cannon
HCU	Heavy Conversion Unit
HQ	Head Quarters
ILS	Instrument Landing System
lb	Pounds (weight)
mm	Millimetre
MU	Maintenance Unit
mph	Miles per hour
Op	Operational mission
RAE	Royal Aircraft Establishment
RAF	Royal Air Force
RAFVR	Royal Air Force Volunteer Reserve
rpm	Revolutions per minute
R/T	Radio Telephone (or Radio Telephony)
SASO	Senior Air Staff Officer
Sqn.	Squadron
WAAF	Women's Auxiliary Air Force
yds	Yard (3 feet)

Appendix 2: RAF RANKS, WINGS AND BREVETS

RAF ranks including abbreviations (abbrv.) as used in the text.

Commissioned Officer ranks

Rank	Abbrv.	Lower arm insignia
Marshal of the RAF	MRAF	
Air Chief Marshal	ACM	
Air Marshal	AM	
Air Vice Marshal	AVM	
Air Commodore	ACom	
Group Captain	Gp Capt	
Wing Commander	Wg Cdr	
Squadron Leader	Sqn Ldr	
Flight Lieutenant	Flt Lt	
Flying Officer	Fg Off	
Pilot Officer	Plt Off	

Non-Commissioned Officer ranks

Rank	Abbrv.	Lower arm insignia
Flight Sergeant (aircrew)	Flt Sgt	
Sergeant (aircrew)	Sgt	
Corporal	Cpl	

Enlisted ranks

Senior Aircraftman	SAC	
Leading Aircraftman	LAC	
Aircraftman 1st Class	AC1	
Aircraftman 2nd Class	AC2	

RAF wings and aircrew brevets (flying badges).

Pilot 

Flight Engineer 

Navigator 

Bomb Aimer 

Wireless Operator 

Air Gunner 

Appendix 3: 617 SQUADRON AIRCREW NAMES

Aircrew with rank at the time of Operation Chastise of the 19 Lancasters used.

KIA = Killed In Action, KAS = Killed on Active Service
FE = Flight Engineer, Nav = Navigator, WO = Wireless Operator
BA = Bomb Aimer, FG = Front Gunner, RG = Rear Gunner

WAVE 1

Avro Lancaster B.III(S) Type 464 - ED932 (AJ-G)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Wg Cdr	Guy Gibson	106 Sqn.	KIA 19/09/1944	UK
FE	Sgt	John Pulford	97 Sqn.	KAS 13/02/1944	UK
Nav	Plt Off	Harlo 'Terry' Taerum	1654 HCU	KIA 16/09/1943	CAN
WO	Flt Lt	Robert 'Hutch' Hutchison	1654 HCU	KIA 16/09/1943	UK
BA	Plt Off	Frederick 'Spam' Spafford	50 Sqn.	KIA 16/09/1943	AUS
FG	Flt Sgt	George Deering	103 Sqn.	KIA 16/09/1943	UK
RG	Flt Lt	Richard Trevor-Roper	50 Sqn.	KIA 31/03/1944	UK
Take off: Landing:	21:39 04:15	Dropped Upkeep at Möhne Dam. Continued to Eder Dam. Returned safely.		Duration:	6:36

Avro Lancaster B.III(S) Type 464 - ED925 (AJ-M)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	John 'Hoppy' Hopgood	106 Sqn.	KIA 17/05/1943	UK
FE	Sgt	Charles Brennan	1660 HCU	KIA 17/05/1943	CAN
Nav	Fg Off	Kenneth Earnshaw	50 Sqn.	KIA 17/05/1943	UK
WO	Sgt	John Minchin	49 Sqn.	KIA 17/05/1943	UK
BA	Flt Sgt	John Fraser	50 Sqn.	Died 02/06/1962	CAN
FG	Plt Off	George Gregory	44 Sqn.	KIA 17/05/1943	UK
RG	Plt Off	Anthony Burcher	1654 HCU	Died 09/08/1995	AUS
Take off: Shotdown:	21:39 00:33	Shot down at Möhne Dam. All crew killed except Fraser and Burcher.		Duration:	2:54

Avro Lancaster B.III(S) Type 464 - ED909 (AJ-P)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	Harold 'Mick' Martin	1654 HCU	Died 03/11/1988	AUS
FE	Plt Off	Ivan Whittaker	50 Sqn.	Died 22/08/1979	UK
Nav	Flt Lt	Jack Leggo	50 Sqn.	Died 14/11/1983	AUS
WO	Fg Off	Len Chambers	50 Sqn.	Died 01/03/1985	NZ
BA	Flt Lt	Robert 'Bob' Hay	50 Sqn.	KIA 12/02/1944	AUS
FG	Plt Off	Bertie 'Toby' Foxlee	50 Sqn.	Died 06/03/1985	AUS
RG	Flt Sgt	Thomas Simpson	50 Sqn.	Died 02/04/1998	AUS
Take off: Landing:	21:39 03:19	Dropped Upkeep at Möhne Dam. Returned safely.		Duration:	5:40

Avro Lancaster B.III(S) Type 464 – ED887 (AJ-A)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Sqn Ldr	Henry 'Dinghy' Young	57 Sqn.	KIA 17/05/1943	UK
FE	Sgt	David Horsfall	57 Sqn.	KIA 17/05/1943	UK
Nav	Flt Sgt	Charles Roberts	57 Sqn.	KIA 17/05/1943	UK
WO	Sgt	Lawrence Nichols	57 Sqn.	KIA 17/05/1943	UK
BA	Fg Off	Vincent MacCausland	57 Sqn.	KIA 17/05/1943	CAN
FG	Sgt	Gordon Yeo	57 Sqn.	KIA 17/05/1943	UK
RG	Sgt	Wilfred Ibbotson	57 Sqn.	KIA 17/05/1943	UK
Take off: Shotdown:	21:47 02:58	Dropped Upkeep at Möhne. Continued to Eder Dam. Shot down inbound over Dutch coast.		Duration:	5:11

Avro Lancaster B.III(S) Type 464 - ED906 (AJ-J)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	David Maltby	97 Sqn.	KIA 15/09/1943	UK
FE	Sgt	William Hatton	97 Sqn.	KIA 15/09/1943	UK
Nav	Sgt	Vivian Nicholson	97 Sqn.	KIA 15/09/1943	UK
WO	Sgt	Anthony Stone	97 Sqn.	KIA 15/09/1943	UK
BA	Plt Off	John Fort	97 Sqn.	KIA 15/09/1943	UK
FG	Sgt	Victor Hill	97 Sqn.	KIA 15/09/1943	UK
RG	Sgt	Harold Simmons	97 Sqn.	KIA 15/09/1943	UK
Take off: Landing:	21:47 03:14	Dropped Upkeep at Möhne Dam. Returned safely.		Duration:	5:27

Avro Lancaster B.III(S) Type 464 - ED929 (AJ-L)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	David Shannon	83 Sqn.	Died 08/04/1993	AUS
FE	Sgt	Robert Henderson	57 Sqn.	Died 18/02/1961	UK
Nav	Fg Off	Daniel 'Danny' Walker	22 OUT	Died 17/11/2001	CAN
WO	Fg Off	Brian Goodale	51 Sqn.	Died 16/12/1977	UK
BA	Flt Sgt	Leonard Sumpter	57 Sqn.	Died 30/09/1993	UK
FG	Sgt	Brian Jagger	50 Sqn.	KAS 30/04/1944	UK
RG	Fg Off	Jack Buckley	75 Sqn.	Died 06/05/1990	UK
Take off: Landing:	21:47 04:06	Arrived at Möhne Dam. Dropped Upkeep at Eder Dam. Returned safely.		Duration:	6:19

Avro Lancaster B.III(S) Type 464 - ED937 (AJ-Z)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Sqn Ldr	Henry Maudslay	50 Sqn.	KIA 17/05/1943	UK
FE	Sgt	Jack Marriott	50 Sqn.	KIA 17/05/1943	UK
Nav	Fg Off	Robert Urquhart	50 Sqn.	KIA 17/05/1943	CAN
WO	Sgt	Alden Cottam	50 Sqn.	KIA 17/05/1943	CAN
BA	Plt Off	Michael Fuller	50 Sqn.	KIA 17/05/1943	UK
FG	Fg Off	William 'Johnny' Tytherleigh	50 Sqn.	KIA 17/05/1943	UK
RG	Sgt	Norman 'Bunny' Burrows	50 Sqn.	KIA 17/05/1943	UK
Take off: Shotdown:	21:59 02:36	Arrived at Möhne Dam. Dropped Upkeep at Eder Dam. Shot down on return.		Duration:	4:37

Avro Lancaster B.III(S) Type 464 – ED864 (AJ-B)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	William 'Bill' Astell	57 Sqn.	KIA 17/05/1943	UK
FE	Sgt	John Kinnear	57 Sqn.	KIA 17/05/1943	UK
Nav	Plt off	Floyd Wile	57 Sqn.	KIA 17/05/1943	CAN
WO	Sgt	Abram Garshowitz	57 Sqn.	KIA 17/05/1943	CAN
BA	Fg Off	Donald Hopkinson	57 Sqn.	KIA 17/05/1943	UK
FG	Flt Sgt	Francis 'Frank' Garbas	57 Sqn.	KIA 17/05/1943	UK
RG	Sgt	Richard Bolitho	57 Sqn.	KIA 17/05/1943	UK
Take off: Crashed:	21:59 00:15	Shot down outbound.		Duration:	2:16

Avro Lancaster B.III(S) Type 464 - ED912 (AJ-N)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Plt Off	Leslie Knight	50 Sqn.	KIA 16/09/1943	AUS
FE	Sgt	Raymond Grayston	50 Sqn.	Died 15/04/2010	UK
Nav	Fg Off	Harold 'Sydney' Hobday	50 Sqn.	Died 24/02/2000	UK
WO	Flt Sgt	Robert Kellow	50 Sqn.	Died 12/02/1988	AUS
BA	Fg Off	Edward Johnson	50 Sqn.	Died 01/10/2002	UK
FG	Sgt	Frederick Sutherland	50 Sqn.	Died 21/01/2019	CAN
RG	Sgt	Henry O'Brien	50 Sqn.	Died 12/09/1985	CAN
Take off: Landing:	21:59 04:20	Arrived at Möhne Dam. Dropped Upkeep at Eder Dam. Returned safely.		Duration:	6:21

WAVE 2

Avro Lancaster B.III(S) Type 464 – ED825 (AJ-T)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	Joseph McCarthy	97 Sqn.	Died 06/09/1998	US
FE	Sgt	William Radcliffe	97 Sqn.	Died 05/07/1952	CAN
Nav	Flt Sgt	Donald MacLean	97 Sqn.	Died 16/07/1992	CAN
WO	Flt Sgt	Leonard Eaton	97 Sqn.	Died 22/03/1974	UK
BA	Sgt	George 'Johnny' Johnson	97 Sqn.		UK
FG	Sgt	Ronald Batson	97 Sqn.	Died 06/09/1998	UK
RG	Fg Off	David Rodger	97 Sqn.	Died 06/09/1998	CAN
Take off: Landing:	22:01 03:25	Dropped Upkeep at Sorpe Dam. Returned safely.		Duration:	5:24

Avro Lancaster B.III(S) Type 464 – ED927 (AJ-E)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	Robert 'Norm' Barlow	61 Sqn.	KIA 16/05/1943	AUS
FE	Plt Off	Samuel 'Leslie' Whillis	61 Sqn.	KIA 16/05/1943	UK
Nav	Fg Off	Philip Burgess	61 Sqn.	KIA 16/05/1943	UK
WO	Fg Off	Charles Williams	61 Sqn.	KIA 16/05/1943	AUS
BA	Plt Off	Alan Gillespie	61 Sqn.	KIA 16/05/1943	UK
FG	Fg Off	Harvey Glinz	61 Sqn.	KIA 16/05/1943	CAN
RG	Sgt	Jack Liddell	61 Sqn.	KIA 16/05/1943	UK
Take off: Crashed:	21:28 23:50	Crashed outbound.		Duration:	2:23

Avro Lancaster B.III(S) Type 464 – ED921 (AJ-W)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Lt	John ‘Les’ Munro	97 Sqn.	Died 02/08/2015	NZ
FE	Sqt	Frank Appleby	97 Sqn.	Died 15/09/1996	UK
Nav	Fg Off	Francis ‘Jock’ Rumbles	97 Sqn.	Died 26/02/1988	UK
WO	Sgt	Percy Pigeon	97 Sqn.	Died 23/03/1967	CAN
BA	Sgt	James ‘Jimmy’ Clay	97 Sqn.	Died 06/08/1995	UK
FG	Sgt	William ‘Bill’ Howarth	97 Sqn.	Died 12/01/1990	UK
RG	Flt Sgt	Harvey Weeks	97 Sqn.	Died 22/03/1992	CAN
Take off: Landing:	21:29 00:36	Damaged by Flak outbound. Returned to base.		Duration:	3:07

Avro Lancaster B.III(S) Type 464 – ED934 (AJ-K)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Plt Off	Vernon Byers	467 Sqn.	KIA 16/05/1943	CAN
FE	Sgt	Alastair Taylor	467 Sqn.	KIA 16/05/1943	UK
Nav	Fg Off	James Warner	467 Sqn.	KIA 16/05/1943	UK
WO	Sgt	John Wilkinson	467 Sqn.	KIA 16/05/1943	UK
BA	Plt Off	Arthur ‘Neville’ Whitaker	467 Sqn.	KIA 16/05/1943	UK
FG	Sgt	Charles Jarvie	467 Sqn.	KIA 16/05/1943	UK
RG	Flt Sgt	James McDowell	467 Sqn.	KIA 16/05/1943	UK
Take off: Crashed:	21:30 22:57	Crashed outbound.		Duration:	1:28

Avro Lancaster B.III(S) Type 464 – ED936 (AJ-H)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Plt Off	Geoffrey Rice	57 Sqn.	Died 24/11/1981	UK
FE	Sgt	Edward Smith	57 Sqn.	KIA 20/12/1943	UK
Nav	Fg Off	Richard Macfarlane	57 Sqn.	KIA 20/12/1943	UK
WO	Sgt	Chester ‘Bruce’ Gowrie	57 Sqn.	KIA 20/12/1943	CAN
BA	Sgt	John Thrasher	57 Sqn.	KIA 20/12/1943	CAN
FG	Sgt	Thomas ‘Bill’ Maynard	57 Sqn.	KIA 20/12/1943	UK
RG	Sgt	Stephen Burns	57 Sqn.	KIA 20/12/1943	UK
Take off: Landing:	21:31 00:47	Lost Upkeep after flying too low. Returned to base.		Duration:	3:16

WAVE 3

Avro Lancaster B.III(S) Type 464 – ED910 (AJ-C)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Plt Off	Warner 'Bill' Ottley	207 Sqn.	KIA 17/05/1943	UK
FE	Sgt	Ronald Marsden	207 Sqn.	KIA 17/05/1943	UK
Nav	Fg Off	Jack Barrett	207 Sqn.	KIA 17/05/1943	UK
WO	Sgt	Jack Guterman	207 Sqn.	KIA 17/05/1943	UK
BA	Sgt	Thomas Johnston	207 Sqn.	KIA 17/05/1943	UK
FG	Sgt	Harry Strange	207 Sqn.	KIA 17/05/1943	UK
RG	Sgt	Frederick Tees	207 Sqn.	Died 15/03/1982	UK
Take off: Crashed:	00:09 02:35	Crashed outbound.		Duration:	2:26

Avro Lancaster B.III(S) Type 464 – ED865 (AJ-S)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Plt Off	Lewis Burpee	106 Sqn.	KIA 17/05/1943	CAN
FE	Sgt	Guy Pegler	106 Sqn.	KIA 17/05/1943	UK
Nav	Sgt	Thomas Jaye	106 Sqn.	KIA 17/05/1943	UK
WO	Plt Off	Leonard Weller	106 Sqn.	KIA 17/05/1943	UK
BA	Flt Sgt	James Arthur	106 Sqn.	KIA 17/05/1943	CAN
FG	Sgt	William Long	106 Sqn.	KIA 17/05/1943	UK
RG	Sgt	Joseph Brady	106 Sqn.	KIA 17/05/1943	CAN
Take off: Crashed:	00:09 02:35	Crashed outbound.		Duration:	2:26

Avro Lancaster B.III(S) Type 464 – ED918 (AJ-F)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Sgt	Kenneth Brown	44 Sqn.	Died 23/12/2002	CAN
FE	Sgt	Harry Feneron	44 Sqn.	Died 18/11/1993	UK
Nav	Sgt	Dudley Heal	44 Sqn.	Died 07/02/1999	UK
WO	Sgt	Herbert Hewstone	44 Sqn.	Died 28/05/1980	UK
BA	Sgt	Stefan Oancia	44 Sqn.	Died 06/05/1999	CAN
FG	Sgt	Daniel Allatson	57 Sqn.	KIA 16/09/1943	UK
RG	Flt Sgt	Grant McDonald	44 Sqn.	Died 13/05/2012	CAN
Take off: Landing:	00:12 05:33	Dropped Upkeep at Sorpe Dam. Returned safely.		Duration:	5:21

Avro Lancaster B.III(S) Type 464 – ED886 (AJ-O)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Sgt	William Townsend	49 Sqn.	Died 09/04/1991	UK
FE	Sgt	Dennis Powell	49 Sqn.	KIA 16/09/1943	UK
Nav	Plt Off	Cecil 'Lance' Howard	49 Sqn.	Died 26/12/1989	AUS
WO	Flt Sgt	George 'Jock' Chalmers	49 Sqn.	Died 06/08/2002	UK
BA	Sgt	Charles Franklin	49 Sqn.	Died 25/01/1975	UK
FG	Sgt	Douglas Webb	49 Sqn.	Died 08/12/1996	UK
RG	Sgt	Raymond Wilkinson	49 Sqn.	Died 27/07/1980	UK
Take off: Landing:	00:14 06:15	Dropped Upkeep at Ennepe Dam. Returned safely.		Duration:	6:01

Avro Lancaster B.III(S) Type 464 – ED924 (AJ-Y)					
Role	**Rank**	**Name**	**From**	**Fate**	
Pilot	Flt Sgt	Cyril Anderson	49 Sqn.	KIA 23/09/1943	UK
FE	Sgt	Robert Paterson	49 Sqn.	KIA 23/09/1943	UK
Nav	Sgt	John Nugent	49 Sqn.	KIA 23/09/1943	UK
WO	Sgt	William 'Douglas' Bickle	49 Sqn.	KIA 23/09/1943	UK
BA	Sgt	Gilbert Green	49 Sqn.	KIA 23/09/1943	UK
FG	Sgt	Eric Ewan	49 Sqn.	KIA 23/09/1943	UK
RG	Sgt	Arthur Buck	49 Sqn.	KIA 23/09/1943	UK
Take off: Landing:	00:15 05:30	Unable to find Sorpe Dam. Returned safely.		Duration:	5:15

Summary of nationalities of the aircrew of the 19 Lancasters used on Operation Chastise.

	Pilot	FE	Nav	WO	BA	FR	RG	Total
UK	10	17	12	12	12	15	12	90
Canada	3	2	5	4	5	3	5	27
Australia	4	0	2	2	2	1	2	13
USA	1	0	0	0	0	0	0	1
New Zealand	1	0	0	1	0	0	0	2
Total	19	19	19	19	19	19	19	133

Key: FE=Flight Engineer, Nav=Navigator, WO=Wireless Operator, BA=Bomb-Aimer, FG=Front Gunner, RG=Rear Gunner.

Fate of the aircrew who took part in Operation Chastise.

Total Aircrew who participated	133
Killed on Operation Chastise	53
Prisoner of War	3
Killed in Action after Operation Chastise	32
Survived WW2	48

Appendix 4: AVRO 693 LANCASTER B.III(S)

Appendix 5: AVRO 693 LANCASTER B.III(S) FLIGHT ENGINEER'S PANEL

Appendix 6: FATE OF THE LANCASTERS USED ON OPERATION CHASTISE

Appendix 7: VICKERS TYPE 464 UPKEEP

Appendix 8: MEDALS AND DECORATIONS

Medals and ribbon bar in order of precedence received by crew members following Operation Chastise. Recipient shown with decorations at the time of the raid.

Decorations

Victoria Cross (VC)

Recipients
Wg Cdr G Gibson DSO & Bar, DFC & Bar

Distinguished Service Order (DSO)

Recipients
Flt Lt H B Martin DFC

Flt Lt D J H Maltby DFC
Flt LT D J Shannon DFC
Plt Off L G Knight
Flt Lt J C McCarthy DFC

Bar to Distinguished Flying Cross (DFC)

Recipients
Flt Lt R E G Hutchison DFC
Flt Lt J F Leggo DFC
Flt Lt R C Hay DFC
Fg Off D R WalkerDFC

Distinguished Flying Cross (DFC)

Recipients
Plt Off H T Taerum
Plt Off F M Spafford DFM
Plt Off G A Deering
Flt Lt R D Trevor-Roper DFM
Fg Off L Chambers
Plt Off J Fort
Fg Off J Buckley
Fg Off H S Hobday
Fg Off E C Johnson
Plt Off C L Howard

Conspicuous Gallantry Medal (CGM)

Recipients
Flt Sgt K W Brown
Flt Sgt W C Townsend DFM

Bar to Distinguished Flying Medal (DFM)

Recipients
Sgt C E Franklin DFM

Distinguished Flying Medal (DFM)

Recipients

Sgt J Pulford
Flt Sgt T D Simpson
Sgt V Nicholson
Flt Sgt L J Sumpter
Flt Sgt D A MacLean
Sgt G L Johnson
Sgt D P Heal
Sgt S Oancia
Flt Sgt G A Chalmers
Sgt D E Webb
Sgt R Wilkinson

Distribution of Medals within aircraft that attacked and returned

	Captain	P	FE	N	WO	BA	FG	RG
AJ-G	Gibson	VC	DFM	DFC	DFC-B	DFC	DFC	DFC
AJ-P	Martin	DSO		DFC-B	DFC	DFC-B		DFM
AJ-J	Maltby	DSO		DFM		DFC		
AJ-L	Shannon	DSO		DFC-B		DFM		DFC
AJ-N	Knight	DSO		DFC		DFC		
AJ-T	McCarthy	DSO		DFM		DFM		
AJ-F	Brown	CGM		DFM		DFM		
AJ-O	Townsend	CGM		DFC	DFM	DFM-B	DFM	DFM

Key: P=Pilot, FE=Flight Engineer, N=Navigator, WO=Wireless Operator, BA= Bomb Aimer, FG=Front Gunner, RG=Rear Gunner. DFC-B= Bar to DFC, DFM-B= Bar to DFM.

Jack's Decorations and Medals

Unofficial Bomber command Medal

No official campaign medal was issued to the aircrew of Bomber Command despite the loss of more than 55,000 personnel during World War II. Following a campaign an unofficial medal was produced in 1985 to a design resulting from a competition in the British magazine 'Medal News' and made available for sale to veterans of Bomber Command and their next of kin.

Appendix 9: PHONETIC ALPHABET

Phonetic alphabet as used in 1943 and as currently used.

Letter	1943	Current
A	Able	Alpha
B	Baker	Bravo
C	Charlie	Charlie
D	Dog	Delta
E	Easy	Echo
F	Fox	Foxtrot
G	George	Golf
H	How	Hotel
I	Item	India
J	Jig	Juliet
K	King	Kilo
L	Love	Lima
M	Mike	Mike
N	Nan	November
O	Oboe	Oscar
P	Peter[29]	Papa
Q	Queen	Quebec
R	Roger	Romeo
S	Sugar	Sierra
T	Tare	Tango
U	Uncle	Uniform
V	Victor	Victor
W	William	Whisky
X	Xray	Xray
Y	Yoke	Yankee
Z	Zebra	Zulu

[29] AJ-P was identified by its pilot Flt Lt Martin as P–Popsie rather than the official used 1943 phonetic name of P-Peter.

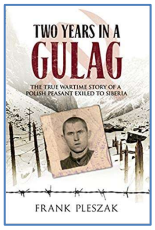
Appendix 10: OPERATION CHASTISE CODEWORDS

Appendix 11: THE DAMS

Appendix 12: JACK MARRIOTT'S RAF SERVICE RECORD

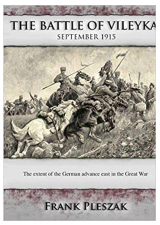
Other works by Frank Pleszak

Two Years in a Gulag



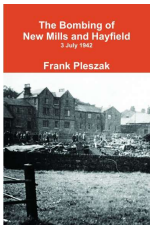
At the onset of the Second World War, my father Mikołaj, aged nineteen, was forcibly removed from his family in Poland by the Russian secret police and exiled to the harshest of the Siberian labour camps, the dreaded Soviet gulags of Kolyma. He spoke very little about it. Only very occasionally would his painful memories allow him to tell me and my siblings a little snippet of information. After his death, I became intrigued and began researching his early life. As I discovered more and more, I became amazed and shocked at the ordeals my father had endured. When Germany invaded Russia, my father was freed from Kolyma but still had many trials yet to face. He survived gulags, torture, and the war, but was never allowed to return home. I followed my father's footsteps on a journey of 40,000 kilometres, through places most of us have never heard of, a journey through despair, fear, hope and disappointment, and in these pages recount everything I discovered along the way. This true story occurred during a largely unknown and poorly documented period of modern history that has been denied by successive Russian Governments and largely ignored by western governments and media. Two Years in a Gulag provides a valuable insight into not only my father's story but the story of a whole Polish nation.

The Battle of Vileyka



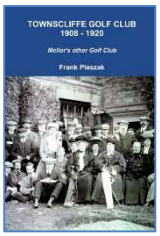
Very little is known in the west about the battles on the Eastern Front in the Great War. The Battle for the small town of Vileyka (now in Belarus), about 100km east of Vilnius, at the end of September 1915 is one such battle. It is rarely, if ever, mentioned in English historical text, but it marked the extent of the German advance east at the end of the Russian Army's 'Great Retreat' of 1915. It constituted one of the few military successes of Russia's Army, and was instrumental in defining Germany's Eastern Front for the remainder of the war with Russia.

The Bombing of New Mills and Hayfield



The fatal WW2 bombing raid on two remote Derbyshire villages with an attack on the iconic Chatsworth House after which the German raiders were shot down by Spitfires of the famous Battle of Britain 303 Polish Squadron.

Townscliffe Golf Club



The small town of Marple, formally in Cheshire, now on Greater Manchester's south eastern border with Derbyshire, can still boast two nearby and spectacular golf courses. A short distance to the south west of Marple town centre is Marple Golf Club which was established in 1892. About a mile to the east of Marple, high up on the beautiful foothills of the Pennines, the village of Mellor, often and accurately described as the remotest village in Greater Manchester, is home to Mellor and Townscliffe Golf Club – a golf club created from the merger of two independent Mellor Golf Clubs. This book outlines the intriguing history of Mellor's two golf clubs and some of the people associated with them, many whose names appear in several different contexts as the story unfolds.

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