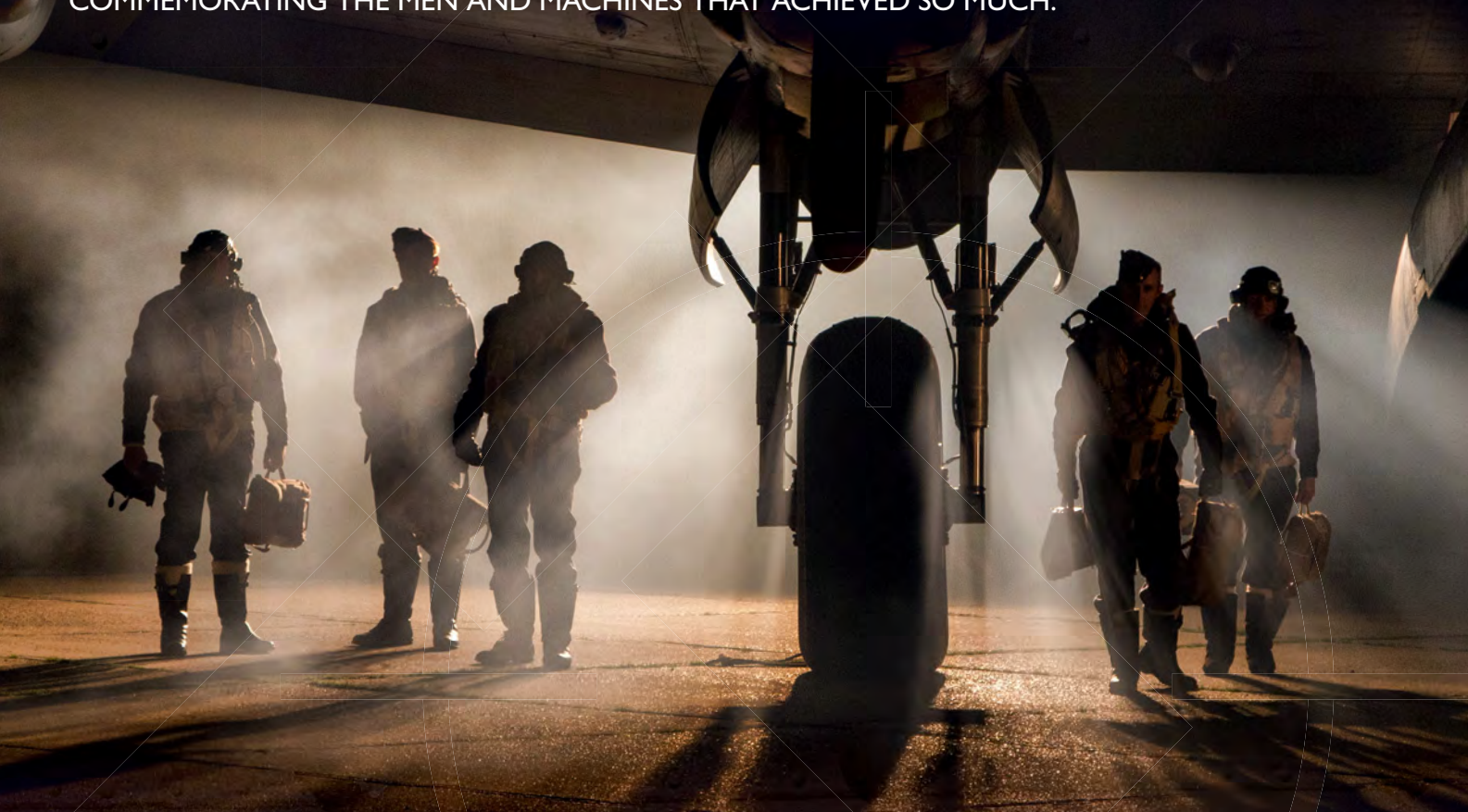


COURAGE IN THE AIR

THE WORK OF BOMBER COMMAND DURING WORLD WAR TWO CANNOT BE UNDERESTIMATED, AND IS A TALE OF COURAGE AGAINST THE ODDS, FROM THE BEGINNING TO THE END OF THE CONFLICT. OUT OF 125,000 AIRCREW, 55,573 – A TOTAL OF 44.4% – MADE THE ULTIMATE SACRIFICE, AND NEVER RETURNED HOME. IN THIS SPECIAL TRIBUTE, **FLYPAST** PRESENTS SEVEN FEATURES COMMEMORATING THE MEN AND MACHINES THAT ACHIEVED SO MUCH.



- 30** In April 1940, two Vickers Wellingtons were sent to Norway on an urgent reconnaissance mission. Tom Spencer explains the reason why.
- 34** When a 429 Squadron crew were entrusted with the CO's Halifax, they didn't expect to earn a 'Goldfish Badge' in the process. Ken Cothliff tells the story of a very wet landing.
- 38** When the war ended in September 1945, the RAF was planning to send out a contingent of Lancasters to the Far East theatre to offer support. Graham Pitchfork finds out what happened to Tiger Force.
- 44** Many young aircrew lost their lives with Bomber Command. Tom Milner narrates how one 207 Squadron crew failed to return from the famous mission to Mailly-le-Camp.
- 50** Hampdens of 83 Squadron helped open the bombing war by attacking German barges intended for use during Operation Sealion, the invasion of England. Andrew Thomas recounts how the obsolete bomber made its mark.
- 56** There is a major gap in the list of preserved airframes – the Short Stirling heavy bomber. John Lathwell details how the Stirling Project aims to recreate a historic aircraft.
- 60** Probably Britain's best-loved warbird, the Battle of Britain Memorial Flight's Lancaster, PA474, is being overhauled by the Aircraft Restoration Company at Duxford. Chris Gilson went to find out how the work is progressing.



ARCTIC ADVENTURE

IN APRIL 1940, A PAIR OF WELLINGTONS WERE HASTILY DEPLOYED TO NORWAY IN RESPONSE TO A ROYAL NAVY REQUEST FOR URGENT RECONNAISSANCE, AS **TOM SPENCER** EXPLAINS

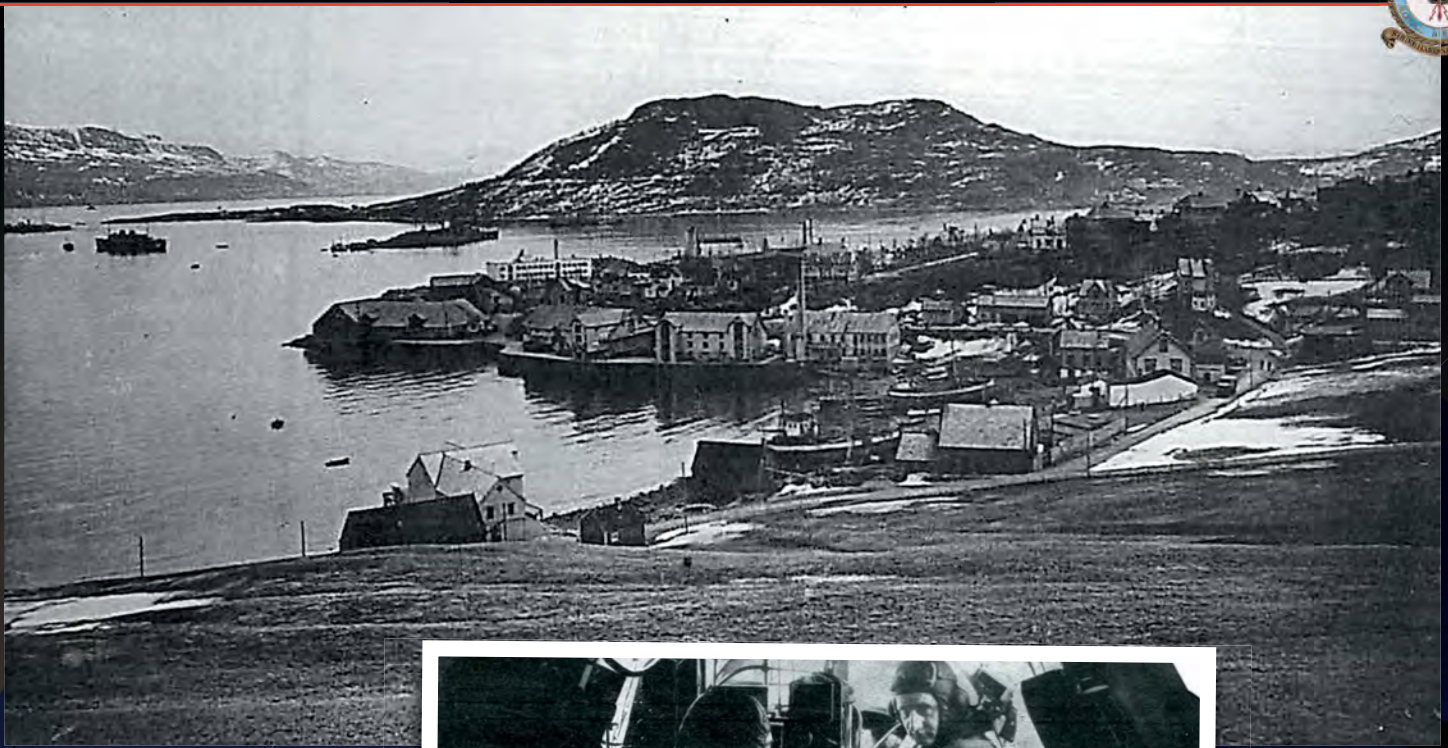
Beyond the Arctic Circle, opposite the Lofoten Islands and nestled at the head of Ofotfjord is the Norwegian port of Narvik. With the German invasion of Norway on April 9, 1940, the town and its harbour took on huge importance for the Allies.

The next day a Royal Navy force entered Ofotfjord and sank two German warships and eleven merchant vessels before being engaged, losing two ships in the



ensuing action. The Admiralty planned to re-enter the fjord on the 13th to complete the destruction of the German naval presence, but first requested RAF reconnaissance of the area.

For the task, two Wellingtons, L4387 and L4339, from 11 Operational Training Unit at Basingbourn, Cambridgeshire, were immediately modified with additional long-range fuel tanks



and other equipment. Neither was fitted with direction finding (D/F) loop antennas, self-sealing tanks, armour plating or power-operated gun turrets and would fly with just a single 0.303in machine gun in the nose and two in the tail.

Two operational crews were ordered to Bassingbourn – one from 38 Squadron at Marham, Norfolk, led by Plt Off George Willis, and the other from 75 (New Zealand) Squadron at Feltwell, Norfolk, skippered by Flt Lt Aubrey Breckon.

Originally from Ohakea, Breckon joined the RAF in 1935 and qualified as a pilot, transferring to the RNZAF in June 1939. His crew comprised co-pilot Plt Off Donald Harkness (a 'Kiwi' in the RAF), wireless operator LAC Edwin Williams RNZAF and two 'Brits', observer Sgt Robert Hughes and gunner AC Tom Mumby. Both crews had instructions to proceed to Wick in northern Scotland as soon as possible.

The resourceful Williams managed to acquire a D/F loop which was rapidly fitted to his aircraft, L4387. The aircraft did not have identification, friend or foe (IFF) equipment and carried normal general-purpose R.1082 and T.1083 wireless sets.

SCOTTISH BASE

The Wellingtons left Bassingbourn at daybreak on the 11th, landing briefly at Feltwell and Marham to pick up ground crew. At Wick both aircrews were temporarily attached



Clockwise from top left
After the Narvik operation the crew simulated their pre-flight brief. Left to right: Williams, Breckon, Howie, Hughes, Harkness, Mumby.

Narvik in April 1940, at the time of the 75 Squadron crew's reconnaissance. AUTHOR'S COLLECTION

Co-pilot Plt Off Harkness receives a wireless message during the outbound flight.

The first CO of 75 (NZ) Squadron, Wg Cdr Maurice Buckley (fourth from right), nominated Flt Lt Breckon (on right) for the Narvik operation.

to the resident 269 Squadron, a Coastal Command unit, and informed they were to carry out a special long-range reconnaissance of the Norwegian coast, up Vestefjord and Ofotfjord to Narvik.

Royal Navy officers joined each crew as specialist observers: Lt Cdr F O Howie was attached to Breckon's with Sub Lt Lionel Franklin joining Crosby's.

Although handicapped by the absence of tool kits and trestles, to lighten the aircraft the ground crew removed oxygen bottles and other items considered unnecessary. The aircrews meanwhile spent the rest of the afternoon thoroughly inspecting the aircraft while emergency rations and other necessities for long flights were stowed.

Finally, the tanks were topped to full capacity of 1,000 gallons (4,546 litres) and the nacelle and reserve oil tanks filled. The Wellingtons carried 2,000 rounds per gun, with a reserve of 4,000 rounds stowed on the bunk in the fuselage.

LOW-LEVEL IN SNOW

At 08:00 hours on April 12, Breckon opened the throttles and began the take-off roll. He encountered difficulty given the aircraft's weight and the prevailing light wind but L4387 lifted off safely and set course for the Lofoten Islands.

Navigating entirely by 'dead reckoning', Hughes measured drift with the bombsight when he could see the water. After a crossing in extremely bad weather with heavy rain squalls and occasional snowstorms, the Wellington approached the Lofoten Islands at 13:05.

Breckon later reported: "As we reached the Norwegian coast we got ready for anything. The wireless operator manned the front gun; the second pilot stood at the astro hatch, acting as a fire control officer and the rear gunner took his place in his turret.

"Norway, covered in deep snow, was an awe-inspiring sight, and at the time any land was very welcome to us. Our real work had now begun, ➤



Above
Wireless operator LAC Williams at his station in L7387.

Right
Wellington I L7387, flown by Breckon's crew, leave Wick, flying over the resident Hurricanes en route to Narvik. ALL RNZAF ARCHIVE UNLESS NOTED

though the weather was steadily deteriorating. There was a high wind and we were flying in and out of snow and sleet about 300 feet above the sea.

"On a reconnaissance of the Vestefjord, photographs were taken between 13:30 and 14:30 hours. Flying conditions in the fjord were very treacherous indeed and great difficulty was experienced in controlling the aircraft, the gunners frequently bumping their heads on the turret roofs.

"We met an enemy aircraft [a Focke-Wulf Fw 200 Condor of I/KG 40] as we went towards the Vestefjord but he sheered off when he saw us. We flew up the fjord through driving snow at only 200 feet. The clouds and sea seemed to be closing in on us.

"Near Narvik the weather deteriorated; clouds came down to almost sea level in places, causing visibility to decrease to 500 yards and lower. A great effort was made to reach the town of Narvik, but although we were nearly over the top of it we had to turn back for our own safety.

"We had covered over 2,000 miles... The second pilot and I, having no automatic pilot, had shared 14½ hours at the controls"

"We were flying at 200 feet in a heavy snowstorm with the cloud closing in on us, making us wonder if we could make a safe exit. When we got to the end [the mouth of the fjord], we swung round, made a sharp turn and continued the reconnaissance southward down the coast as far as Kristiansand. Then we turned for home."

2,000-MILE TRIP

The trip back was relatively uneventful though the weather remained awful. The crew finally spotted the Shetland Islands at almost 20:30 and, after having some difficulty finding the airfield, Breckon eventually eased the Wellington onto Wick's runway.

He noted: "We had covered over 2,000 miles and as soon as we landed we were given hot drinks before we made out our reports and our photographs were developed. The second pilot and I, having no automatic pilot, had shared 14½ hours at the controls."

Their report that

the main fjord was clear of enemy ships enabled a force, led by the battleship HMS *Warspite*, to sail into Narvik the next day and destroy the moored German warships. In all, the Kriegsmarine had lost ten destroyers and a U-boat to the Royal Navy in a matter of days.

It was a fine start for the newly formed New Zealand-manned 75 Squadron, Breckon's crew receiving the congratulations of the C-in-Cs of both the Home Fleet and Coastal Command.

LOST CONTACT

The following day, April 13, it was the turn of George Crosby's crew. They left Wick in L4339 for a reconnaissance of Trondheim. It's known they had a brush with a Messerschmitt Bf 110, sustaining some damage, but other than a report shortly after midnight, nothing more was heard from them.

Later that day L4387 flew back to Bassingbourn for maintenance, Breckon and his crew returning by train to Wick. They then made another special reconnaissance trip to Trondheim, again in a modified Wellington I, this time without a D/F loop.

As they approached the target area at dawn, accurate anti-aircraft fire targeted the Wellington, as Breckon described: "A piece of shrapnel struck the first pilot's window and badly splintered the Triplex glass. Fortunately, I wore goggles and used them immediately.

"Much useful information was obtained and many photographs taken, mainly of aircraft on a frozen lake, Vaernes aerodrome, Trondheim and the harbour in which quite a few seaplanes were moored.

"When we were proceeding down the coast, a destroyer, which fired at us, was observed 2½ miles on our port beam near Haro Island. The information and photos obtained were found to be extremely valuable and Coastal Command was very satisfied."

The crew flew no further long-range reces, but remained at Wick before returning to Feltwell on May 9 for bomber operations. Breckon and Harkness received the DFC while DFMs went to Hughes, Williams and Mumby. Their epic flight to Narvik was the RAF's longest reconnaissance of the war up to that time. ●





FOR SALE An original oil painting of the
RAF's most daring raid by the legendary
aviation artist, Frank Wootton

Frank Wootton (1916-1998) OBE, FPGAvA

*Avro Lancasters of 617 Squadron attack the Mohne dam in
the early hours of 17th May 1943*

oil on canvas, 28 x 31in (71 x 79 cm)
signed lower right

PROVENANCE

purchased directly from the artist in the 1960s by the family
of General Henry 'Hap' Arnold, USAAF, (1886-1950);
thence by descent in a private collection, USA.

LITERATURE

Paul Brickhill, *The Dam Busters* (Bantam Books Inc., 1979),
front cover illustration [detail] and fold-out frontispiece

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EARNING A 'GOLDFISH'

ENTRUSTED WITH THE CO'S HALIFAX, CANADIAN STEVE PUSKAS CAME HOME WITHOUT IT. KEN COTHLIFF TELLS THE TALE OF AN EXTREMELY LUCKY CREW



Above
Steve Puskas, crew and groundcrew with a 4,000lb 'Cookie' bomb. Behind is their regular Halifax, Mk.III MZ282 'Sweet Adeline'. RCAF ARCHIVES VIA R KOVAL

As the bomber hit the cold North Sea off the Scottish Coast, it bounced once then rested back on the swell. The front nose fairing of the Halifax had collapsed in and Canadian Steve Puskas found himself pinned in the pilot's seat by the rushing waves. He struggled to undo his harness, gulping in the sea water.

The escape hatch over his head was locked, so his only option was to try further aft. As he struggled to get out of the slowly sinking aircraft, he seriously thought his time had come. It had been just over two years since he had

volunteered for the Royal Canadian Air Force (RCAF).

After attending the British Commonwealth Air Training Plan at 9 Elementary Flying Training School (FTS), St Catharines, near Niagara Falls, he progressed to multi-engine types at 5 Service FTS, Brantford, close to his home in Hamilton. Steve was then posted to Britain. After various training units, he got his chance to fly bombers, Armstrong Whitworth Whitleys, at Honeybourne, Worcestershire, with 24 Operational Training Unit.

From there Steve ended up in the

Canadian-run 6 Group. Like the majority of Canadian aircrew, he had volunteered three times, first to join the RCAF, second to become aircrew, and third to go overseas.

CREWING UP

At Honeybourne the personnel were left to form their own crews. Steve was in a room with four pilots and five navigators, and they were told to get on with it. He asked one chap if he could join his crew, but was rebuffed in favour of another pilot, 'Doc' Murray.

In the end, there were only two left and by process of elimination



Steve and Fg Off James 'Jasper' Still crewed up. Eventually the pair bonded and became good friends.

The same sequence happened with the bomb aimers, but Sgt Ted Bowles struck up a good rapport with Steve immediately. Steve was confident that Ted knew his job, given his positive attitude during the meeting. Next, Steve asked a tall, lanky, easy-going gunner, Sgt Alvin Williams to be his 'mid-upper', and he agreed.

Alvin knew of another gunner who was not crewed and Sgt Wilf Faulkner joined for the rear position. Wilf gave the impression of being a 'farm boy', but he had an accurate eye and knew his guns well. Last to join was their wireless operator/air gunner, Sgt Wilbur 'Gopher' Wilson.

THE CO'S PLANE

After learning to master the Halifax at 1664 Heavy Conversion Unit at Dishforth, Yorkshire, their posting came through to 429 'Bison' Squadron at Leeming, Yorkshire, under the command of Wg Cdr J D Pattison, in February 1944. While at 1664, the crew was joined by RAF man Jack Phillips as flight engineer.

A Bullseye was a night operation, a mock bombing raid. Steve had been told to "take care of the 'Boss's plane" but after an hour or so, over the North Sea, the port outer started to vibrate and run hot. The flight engineer, Jack, kept an eye on the temperatures as they steadily increased.

Flying at 19,000ft (5,800m), the port outer suddenly let out a roar and the aircraft was thrown over

Ted. Bomb aimer Ted had struggled back from his position in the nose to help his pilot.

There were signs of fire, and the cowlings started to come apart. Steve put the nose down to roll the aircraft level, and soon they were at 11,000ft. As Steve pressed the fire extinguisher button the nacelle started to burn and the cowlings finally came off. The extinguisher didn't do much good and the propeller was feathered.



STRAPPED IN AND UNDER WATER

Steve considered asking the crew to bale out, but decided to try to keep the aircraft in the air and make for the coast. As they approached the shore, their speed was down to 150mph, and ditching was the only option, so he told the crew to take up their positions.

The whole wing was on fire and, as pieces came away, Charlie hit the crest of a wave at about 125mph. The aircraft slid along before the starboard wing dropped and it cartwheeled into another wave with an almighty crash. This shattered the Perspex nose and the sea rushed in.

Steve was the only one left in the nose section, strapped in and under water. The pilot's escape hatch above his head was still in position; He struggled to undo his 'Sutton' harness and tear off his mask and radio connections. He also tried to kick the hatch free, but failed.

He could hear the others walking about on the wing and he

Above
The Puskas crew with a Whitley at 24 OTU, Honeybourne. Left to right: Wilf Faulkner, Steve, 'Gopher' Wilson, Ted Bowles, Alvin Williams, James Still.

Left
Steve Puskas alongside an Anson while under training at 5 SFTS, Brantford, Canada, 1942.

"Like the majority of Canadian aircrew, Steve had volunteered three times, first to join the RCAF, second to become aircrew, and third to go overseas"

On March 10, they took off in the CO's brand new Halifax III LW685 C-for-Charlie on a 'Bullseye' exercise with 12 other crews. The CO was recovering in hospital – he had suffered serious leg injuries when helping to remove some incendiaries from the runway.

to starboard. The tachometer was showing 4,300rpm; cruising revs for the Mk.III were 2,650rpm.

The crew was yelling to Steve, "What's going on?" Engine and wing vibration was so bad that the throttles would not stay open without intervention from Steve and



“Wilf, the radio operator, had done his job well, and had sent out an SOS and locked his transmit key down to give a fix on their position”

started to panic. Then his training took over and he swam towards the back, eventually coming to the surface. He, along with all Canadian aircrews, was grateful for the wide fuselage of the Halifax.

The crew was standing on the wing waiting for the dinghy to pop out of its housing. It was supposed to automatically deploy and inflate as the immersion switch came into contact with the water, but nothing happened.

So tail gunner Wilf kicked in the wing, pulled the dinghy out, threw it into the water, topped up the inflation with the bellows and they all piled in. They cut the cord that attached the dinghy to the aircraft, and floated free - all unharmed.

The crew had often teased Steve when they had endured a heavy landing, but this time they laughed, and said how smooth it had been. Steve admitted later: “I probably could not land as well again if I tried in the same circumstances.”

NOT A GOOD SHOW

As they gathered their wits around them, Steve asked: “Have we brought the survival container?” “No,” came the reply. “What else have we got?” “Nothing but four tins of water.”

Despite extensive briefing on this subject, they were not well organised. Not a good show!

Steve asked Jack to fire off the flare pistol, but flight engineer Jack was fumbling with it.

“It’s a new model and I can’t find the safely catch,” he admitted.

“Give it to me,” said Steve, but he failed to find the catch in the pitch dark. Then Ted, the bomb aimer, took control of it. Eventually a bright red flare roared across the sky, shortly followed by another.

Before long, they saw a light and realised someone was looking for them. A Scottish fishing boat came across; the crew had seen the burning Halifax and altered course to help. The airmen were pulled aboard and plied with hot tea. Steve was the only one soaked through to the skin.

As they were chatting to the fishermen an RAF officer joined them from an air-sea rescue launch, which moored alongside. He came down the stairs and told the shivering airmen the craft had arrived to pick them up.

Wilf, the radio operator, had done his job well, and had sent out an SOS and locked his transmit key down to give a fix on their position before the crew abandoned the dying Halifax. As they climbed out of the fishing boat the fishermen gave them a 20-pack of Woodbines cigarettes, known colloquially as ‘coffin nails’. A generous gesture indeed and the Halifax crew were grateful for their hospitality.





MENACE TO SHIPPING

The launch took them to Aberdeen, where they were given spare clothing, but Steve refused to surrender his battledress jacket. They were taken up to Dyce, the nearest RAF station, which is today a busy regional airport. They were interviewed three times: first by an intelligence officer, then a maintenance officer, then finally by a wing commander.

They gave the same information over and over again, after which Steve requested to phone Leeming to inform them what had happened. He spoke to Sqd Ldr Kenney, who was in charge in the CO's absence, and told him he had ditched the aircraft.

All Kenney said was: "Everyone OK?"

Steve replied: "Yes, everyone but the aircraft."

"We'll talk about it when you get back," came the succinct reply.

Later that morning they were lounging around in the mess awaiting transport when another officer approached them. Steve was tired and not in the mood to be quizzed yet again. He was inclined to be terse with this latest interrogator until he realised the officer was the station commander with the rank of group captain.

"What about the 'Hali'?" Steve asked.

"Well, it's still floating, and the Navy is going to sink it, before it becomes a menace to shipping. You were very lucky. You ditched less than a mile from a minefield!"

VIP LIFT

The group captain offered the crew a lift back to Leeming with the Group Air Officer Commanding who would be visiting the following day. They jumped at the chance of a quick flight home.

The following morning Steve was told to get the crew out to the watch office. Air Cdre Boothman asked Steve if he had flown a Hudson before. Steve said he hadn't, but Boothman assured him "Don't worry, we'll manage."

On arriving at Leeming, Boothman taxied to Flying Control. He asked Steve to tell air traffic he was on his way to London, via Grantham. Steve ran to the watch office and said: "Quick, give Air Commodore Boothman a green light. We don't want to keep him waiting."

After a short delay Boothman was on his way again.

Following a further debrief at Leeming, the crew were given a few days 'survivor's leave'. After rekitting their missing uniforms they set off for London.

Steve's much-loved Gruen wristwatch was full of water and would not dry out. He took the case off and tried to dry it out in a warm oven in the billet. But the watch was wrecked – and it was his greatest loss.

CONFESSION

P B Cow and Company of Farnborough, Hampshire, was one of the foremost British manufacturers of sea-rescue

equipment, including dinghies. The company decided to give an award to downed airmen who were saved by their product.

It was an embroidered badge of a goldfish with wings, over a couple of wavy lines representing the sea. This was accepted by the RAF as special recognition for those who survived a ditching. Steve and his crew were about to join this select group, much to their surprise and delight.

After the war Steve visited Ted Bowles at his home in Victoria, British Columbia. During a walk along the beach Ted said something had been bothering him, and he had a confession to make.

"Do you remember when we ditched? Well, I forgot to release the escape hatch for you to get out."

Steve responded: "Don't worry about it. It all turned out alright, didn't it?"

Ted continued: "Another thing. Every time we took off you cracked your knuckles with the 'mic' turned on. It used to drive me nuts!"

Steve hadn't considered his way of easing tension could have had the opposite effect on his crew mates. Steve Puskas went on to complete his tour on August 15, 1944.

Gazetted for a DFC earlier in the year, he eventually returned home to Canada at the end of the year. Rather than the DFC, he told the author he was always very proud to wear his goldfish badge.

All images courtesy Mrs M Puskas unless noted.

Above
Steve Puskas with James Still (left) and Jack Findlay (right).

Top left
Alvin Williams cleaning the guns of 'Sweet Adeline's' rear turret.

Bottom left
Ground and aircrew at Leeming. Standing left to right: N Osborne, Rod Williams, James Still, crew chief John Oliver, Steve, Alvin Williams. Front row, left to right: Jack Phillips, Harry Venn and Wilbur Wilson.

Consideration had been given to using RAF Lancasters in attacks against Japan in late 1943 but it was not until the Quebec Conference held in September 1944, when the Allies were firmly established on mainland Europe, that the idea was raised formally.

Ever aware of the enormous contribution of the USA in the struggle against Germany, British Prime Minister Winston Churchill was determined that the UK should contribute to the war against mainland Japan. Allied war strategy had always been to defeat Germany first and then concentrate on Japan

so a Pacific venture was recognised as a so-called 'Phase II' project to be implemented upon the surrender of Germany.

On October 27, 1944 US Chiefs of Staff accepted in principle Churchill's offer to send around 40 Lancaster squadrons to the Pacific area once the war in Europe was over. The chiefs made it clear that the deployment would be governed by the availability of airfields within effective range of Japan. Detailed planning to place a British Commonwealth bomber force in the Pacific to participate with the Americans in the direct attack against Japan began immediately.

An initial proposal was produced by November 23, 1944 under the title Operation Mould which on February 24, 1945 was renamed Tiger Force. The intention was to create 12 heavy bomber and six long-range fighter squadrons.

With the offensive against Germany still the priority, the huge task was tackled by a Nucleus Planning Staff working directly to the newly appointed Tiger Force commander, Air Marshal Sir Hugh Lloyd. He summed up the size of the undertaking as: "A small Bomber Command, but with the many implications inherent in it being based upon a small island



TIGER FORCE

WITH ITS TASK OVER IN EUROPE, BOMBER COMMAND WAS ALREADY ADDRESSING ITS NEXT OBJECTIVE – JAPAN. **GRAHAM PITCHFORK** DESCRIBES THE FORCE THAT NEVER WAS



in the Pacific 14,000 miles by sea away from its home base.

“It had to take the equivalent of Maintenance Command, Civil Repair Organisation, Signals Groups etc. Everything, in fact, had to be taken with it, and except for a few spares by air, it would have been two and a half months away by sea from its sources of supply.”

LONG-RANGE SCHEME

A key issue was to consider likely bases for such a large force but the unpredictability of US military progress in the region created the need to consider numerous options. It was clear that any

operations in the Pacific area would inevitably involve very long-range sorties and development work was already in hand to increase the range of the Lancaster - see the panel on page 40.

In the New Year, the Air Ministry decided it was more practicable to allow Lancasters to take off overloaded so the in-flight refuelling option was abandoned. Also, the successful attack by Lancasters against the warship *Tirpitz* in November 1944 had highlighted that the removal of the mid-upper turret and some armour enabled a bomb load of 4,000lb (1,814kg) to be carried over a range of 1,500

miles (2,413km). This could be achieved without the need for complex additional fuel tanks.

Difficulties increased in early 1945 when the US announced that the RAF would have to develop its own bases “from tide-water to aircraft”. Logistic implications were enormous and soon became more difficult when it was suggested that the RAF would have to fly from North Luzon in the Philippines, between 1,000 and 1,700 miles distant from the main targets. Operationally this was almost impossible, but at this stage of the war in the Pacific it remained the only option.

Below left
Had things gone differently, this might have been a sight in the skies over Okinawa and ultimately, Japan: Lancasters of 35 Squadron. KEY COLLECTION

Bottom right
Air Marshal Sir Hugh Lloyd, Commander of Tiger Force.





Above
AVM Hugh Constantine,
Air Officer Commanding
5 Group.

Below
Lancaster I(FE) PA417
newly prepared with
the Tiger Force finish.
KEY COLLECTION

Over the next few weeks, during which time AM Lloyd made several visits to the USA and to Canada, the composition of the force was changed and a large airfield construction party was added with the RAF providing 2,500 men for this crucial task.

The fighter element was dropped by the end of February and Canada expressed a wish to make a considerable contribution. Australia and New Zealand also wanted to be represented. By April it had been decided that Tiger Force should constitute the following squadrons: 20 heavy bomber, one Pathfinder, one photo-recce/meteorological and one air-sea rescue. Four transport squadrons and army and RAF ancillary units would provide support.

It was estimated that 106,000 men would be required until the completion of the major construction tasks. This was a huge commitment, not least because there remained a priority requirement to maintain force levels in Europe until the defeat of Germany.

WAYS TO INCREASE THE 'LANC'S' RANGE

1. Create an in-flight refuelling capability using Lancaster tankers. Flight Refuelling conducted a series of trials, some at night, and advance plans were drawn up to convert 600 Lancasters as either receivers or tankers.
2. Produce a very long-range Lancaster carrying an increased fuel capacity and a reduced bomb load. Two aircraft were modified to carry a 'saddle tank' on the spine behind the cockpit, which involved the removal of the mid-upper turret.
3. Accelerate the production of the more powerful Lancaster IV and V, later renamed the Lincoln I and II respectively.



"Tiger Force would be a small Bomber Command, but with the many implications inherent in it being based upon a small island in the Pacific 14,000 miles by sea away from its home base"

OKINAWA BASE

After a meeting in the USA, it became clear that American progress in the Pacific war allowed planning on the basis that Okinawa would soon be occupied. Organised resistance on the island was finally overcome in June.

A very large USAAF force had to be accommodated and a great deal of reconstruction was needed in addition to the building of new airstrips. When fully developed the Americans would have 22 airfields on Okinawa with total holdings of 2,552 operational aircraft of which 1,020 would be heavy bombers. These figures excluded Tiger Force for which no allocation of airfields had been made at that stage.

Following negotiations with the US authorities, the US Chiefs of Staff offered a base on Okinawa but it would, in the first instance, only accommodate ten of the proposed RAF squadrons. The British accepted the offer and to share the logistical and engineer requirement and a signal was sent to Washington on June 4 to confirm the Prime Minister's approval.

Despite the uncertainties of basing, it was decided to sail a convoy, codenamed Shield, to the Pacific without waiting for the US instructions on the destination. On board were 3,000 RAF personnel, the majority from 5358 Airfield Construction Wing, and elements of the Tiger Force headquarters staff. Cargo included 15,000 tons of construction material and 522 vehicles and trailers.

Shield sailed at the end of June from Liverpool for the Panama Canal and then on to the Marshall Islands and the Admiralty Islands. A second convoy, Vacuum, left on July 23 with a further 3,000 men, stores and equipment.

FORCE SELECTION

Once the war in Europe was over, squadrons and personnel could be allocated and prepared for Tiger Force. Lancasters drawn from 5 and 6 (Canadian) Groups were to make up the 20 squadrons. Under the command of AVM





H A Constantine, 5 Group was selected as the first to deploy with ten squadrons. Lincolns, once available, would steadily replace the Lancasters but there were delays in developing the Merlin 68 engine.

Initial planning was based on a force of about 400 Lancasters and 627 Squadron with Mosquitos. The first contingent, codenamed Hurst was announced on May 16, 1945 - see the panel on page 42.

Each Lancaster squadron was to be established with 20 aircraft and on an overseas basis. A maintenance wing was to be formed to proceed with each party: 242 Wing at Woodhall Spa and 243 Wing at Strubby, both in Lincolnshire.

The second contingent - Peace - was to be provided by eight Lancaster squadrons of 6 Group RCAF. At the end of the European war these units started to fly back to Canada to be prepared for the

Far East and would eventually move to the operational area via the USAAF reinforcement route in early 1946.

To meet the requirement that Tiger Force should be a Commonwealth commitment 75 (RNZAF) Squadron was transferred from its base at Mepal, Cambridgeshire in 3 Group to replace 44 Squadron at Spilsby, Lincolnshire.

A letter from HQ 5 Group addressed to all its squadrons detailed the need to maintain crew efficiency and how training should continue. On May 30, HQ 5 Group issued Tiger Force Instruction 1/45 listing the units to be deployed for overseas service and these included 9 and 617 Squadrons, which would form a third contingent with 44, and 156 or 189 Squadrons along with a maintenance wing and two signals wings.

AIRCRAFT PREPARATION

With delays in Lincoln development, a revised Lancaster production programme was produced with the first eight squadrons equipped with Lancaster Is and VIIs with Merlin 24s and modified for operation at 72,000lb all-up weight and designated Mk.I(FE) and VII(FE).

Conditions in the Pacific theatre would be very different from those in Europe and it was decided that the camouflage was unnecessary and upper and side surfaces would have heat-reflecting white while under surfaces would retain the black anti-searchlight finish. Unlike Bomber Command squadrons, the Lancasters would carry a crew of six.

The standard of preparation included the fitting of tropical powerplants, Lincoln undercarriage, a Frazer-Nash FN.82 rear turret, 8,000lb capacity bomb doors, a bomb bay fuel tank and the removal of the mid-upper turret and fitting of blanking plate. The aircraft were also to be fitted with special radio and navigation equipment suitable for the Pacific theatre.

At a meeting held at Austin Motors, Longbridge in the Midlands, on May 23, 1945, the delivery programme was formulated although it did not meet the Tiger Force requirement in full. The schedule ran as follows: By July 15 a total of 30 Lancaster VIIs were to be fitted retrospectively by Austin at Elmdon (now Birmingham Airport) with Lincoln undercarriage, air cleaners for the existing powerplants and as many other

Above
Lancaster VII(FE)s of 617 Squadron on a visit to India in 1946.

VIA ROBERT OWEN

Left
Lancasters of 431 Squadron RCAF at Yarmouth, Nova Scotia, shortly after arrival from the UK in June 1945 to be prepared for Tiger Force.

VIA ANDREW THOMAS

TIGER FORCE FIRST CONTINGENT 'HURST'

Squadron	Location	Assembly Station
First Party		
83 Sqn	Coningsby	Coningsby
97 Sqn	Coningsby	Coningsby
106 Sqn	Metheringham	Metheringham
467 (RAAF) Sqn	Waddington	Metheringham
627 Sqn	Woodhall Spa	Woodhall Spa
Second Party		
44 Sqn	Spilsby	Spilsby
57 Sqn	East Kirkby	East Kirkby
207 Sqn	Spilsby	Spilsby
460 (RAAF) Sqn	Binbrook	East Kirkby

"Gen Spaatz asked for two 'Tallboy' squadrons to be operational on Okinawa by October 15 as the USAAF would have no similar units before 1946. The 12,000lb, so-called 'earthquake' weapon would be required before the assault on Kyushu..."



Above
The top turret gives Armstrong Whitworth-built Lancaster I TW657 of 35 Squadron away as not destined for Tiger Force. The white upper and black under surfaces were ultimately adopted throughout post-war Bomber Command Lancaster units. KEY COLLECTION

Right
Austin Motors-built Lancaster VII(FE) NX612 shortly after allocation to Aston Down-based 1689 Flight following the disbandment of Tiger Force.

modifications as possible and delivered to units.

By August 15, another 50 Mk.VIIs were to be prepared. By September 30 more Mk.VIIs were to be similarly fitted, along with 70 Mk.Is and IIIs which were to be fitted retrospectively with Lincoln undercarriage, FN.82 turrets and tropical powerplants. Sixty Mk.Is, IIIs or VIIs fitted to the full Tiger standard were to be ready by October 31.

After that a monthly target of 40 Mk.Is, IIIs or VIIs were to be delivered to the full Tiger standard until the planned supply of 450 tropical powerplants was exhausted.

The aircraft would have to be delivered to 32 Maintenance Unit at St Athan in south Wales two weeks earlier to give sufficient time for the incorporation of the necessary radio fits and modifications to the H2S radar.

The Ministry of Aircraft Production was unable to give a firm forecast for the availability of the very long-range Lincoln II but assumed that the first squadrons would be available in February 1946. Within six months a dozen units would be in theatre bringing the RAF and Commonwealth contingent up to the 20, the initial target. From August, Lancaster squadrons would be withdrawn as more Lincoln squadrons arrived.



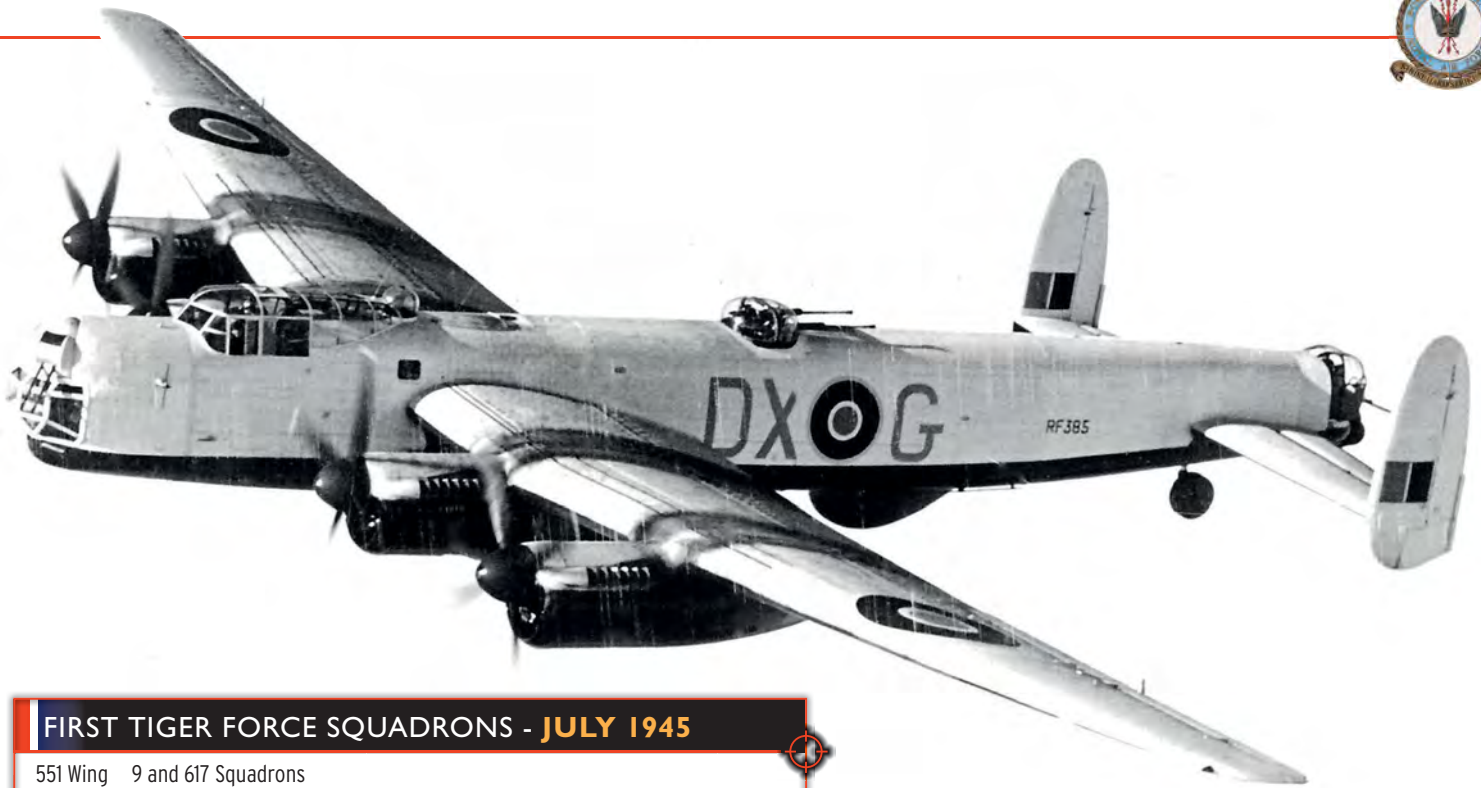
CALL FOR TALLBOYS

In early July AM Lloyd and key members of his staff visited the Pacific where they inspected the sites on Okinawa, the likely air staging posts and the port facilities. They carried out a detailed survey and were able to identify the essential needs and where duplication of effort with the Americans could save RAF capabilities, such as photographic reconnaissance.

AM Lloyd and his party returned to the UK via Washington where he held talks with Gen 'Tooey' Spaatz,

recently appointed Commanding General of the Strategic Air Forces in the Pacific. Final basing options had not yet been determined but Gen Spaatz indicated that the 5 Group squadrons would be based on Okinawa alongside their old wartime comrades of the USAAF Eighth Air Force and would operate directly under HQ Strategic Air Force. He also requested RAF representation on his staff of an air vice-marshal, three air commodores, three group captains and a wing commander.

It was at this meeting that Gen



FIRST TIGER FORCE SQUADRONS - JULY 1945

- 551 Wing 9 and 617 Squadrons
- 552 Wing 106 and 467 (RAAF) Squadrons
- 553 Wing 83, 97 and 627 Squadrons
- 554 Wing 75 (RNZAF) and 207 Squadrons
- 661 Wing 419 (RCAF) and 428 (RCAF) Squadrons

Note: As only ten squadrons were to be deployed in the first phase it was expected that 207 Squadron would deploy with the second contingent.

Spaatz asked for two Tallboy squadrons to be operational on Okinawa by October 15 as the USAAF would have no similar units before 1946. The 12,000lb, so-called 'earthquake' weapon would be required before the assault on Kyushu planned for November 1 when the targets would be large-span road and rail bridges and a tunnel. AM Lloyd accepted this request.

Gen Spaatz acknowledged the deployment of the second half of Tiger Force when a further ten squadrons would deploy early in 1946.

GEARING UP

The composition of the first force of ten squadrons had been revised numerous times and after AM Lloyd's Pacific visit it had to accommodate the two Tallboy squadrons. It was also decided to increase the Commonwealth contribution of the first deployment. On his return, AM Lloyd chaired a meeting on July 26 when the first ten squadrons to be deployed were decided - see panel above.

Immediate actions were put in hand to ready the two Tallboy squadrons for operations from Okinawa on October 15. The preparation of

bombs, special cranes and trolleys, as well as the huge amount of equipment required by the two units was a task of the utmost urgency. A special fast ship, the *Chinese Prince*, was chartered and was to sail on August 25.

From the early days of identifying the composition of the force, it was envisaged that a Pathfinder Force would be required. The method adopted by 5 Group was preferred but only Mosquitos could carry it out and they had insufficient range to operate from the Philippines.

Once a base on Okinawa became available, the decision was taken to include 627 Squadron equipped with 30 Mosquito B.35s. All would carry H2S and Loran (long-range air navigation equipment) with one flight of ten aircraft equipped with the latest H2S, the Mk.VI. All the crews would have completed training by August 15 when the marking error was expected to be less than 150 yards (137m).

Following AM Lloyd's meeting with Gen Spaatz the first five squadrons were to be operational by December 1 with the remaining five being available two months later. By the beginning of August 1945, Tiger Force was very much up and running.

JAPAN SURRENDERS

On August 6, 1945 the first atomic bomb was dropped on Hiroshima, followed three days later by a second on Nagasaki. On August 15 the Japanese accepted the terms of unconditional surrender.

The Shield convoy had arrived in Eniwetok and was due in Okinawa on August 24 but was diverted to Hong Kong where the men and their equipment gave essential support to the colony. They took a leading role in restoring many key services, including the building of a new airfield.

In the event Hong Kong was the main beneficiary of Tiger Force. Convoy Vacuum, consisting of eight cargo vessels, was diverted to Singapore. Steps were taken to reduce the force HQ and it was finally closed down on October 31.

The creation of Tiger Force was a massive undertaking and it is astonishing to reflect on what was achieved in such a short space of time. In his final despatch, AM Lloyd wrote: "The Japanese surrender naturally meant the end of Tiger Force. We had attempted something new in the history of the Royal Air Force, and it is unfortunate that the force never operated for the experience gained and lessons learned would have been most beneficial to posterity."

Above
Lincoln B.2 RF385 of 57 Squadron in the Tiger Force paint scheme. ALL VIA AUTHOR UNLESS NOTED

Below
A flight of Avro Lancaster
Is of 207 Squadron. WW2
IMAGES

With 55,573 men killed in action, and thousands more lost in training accidents it is easy to forget individual lives and experiences within wartime Bomber Command. This story provides a glimpse into the experiences of one crew; from one squadron, one group, one airfield, and one raid in the dark years between 1939 and 1945.

On the evening of May 3, 1944, Plt Off Cyril Bell, aged 22, and his crew climbed into their Lancaster, on a dispersal pan at Spilsby, Lincolnshire. Their target was the barracks and troop depot at Mailly-le-Camp, east of Paris.

Although the crew originated from all over the world, including

Canada, by this stage of the war, their comradeship had been forged and reinforced by common experiences in previous raids. This was to be the 18th time they left Spilsby on their way to attack a distant target.

By this stage they had experienced the full might and wrath of the German response to the efforts of the RAF, on operations including Berlin, Leipzig, Stuttgart, Schweinfurt, Augsburg, Frankfurt, and Essen. They had also survived Bomber Command's most costly raid, attacking Nuremberg on March 30/31, 1944 when 95 aircraft were lost. By the standards of the time, they would have been considered an experienced crew.

BERLIN BAPTISM

Cyril Bell was a fair-haired and sturdy-looking man from London. He had begun his flying career in Canada at 36 Elementary Flying Training School at Pearce, Alberta, in July, 1942. There he was taught the fundamentals of flying on Tiger Moths and Boeing 'Stearman' biplanes.

At the end of 1943 Bell moved to 1660 Heavy Conversion Unit based at Swinderby, Nottinghamshire, operating the Stirling; his first taste of a four-engined 'heavy'. As well as practising the usual circuits and handling exercises, Bell would have been subjected to the rigours of handling a Stirling during the 'corkscrew', a manoeuvre designed to

MISSING

CYRIL BELL'S LOGBOOK ENDED WITH THAT SINGLE, CHILLING WORD – ADDED POSTHUMOUSLY AFTER HE FAILED TO RETURN FROM HIS LAST 'OP'.

TOM MILNER EXPLORES THE LIVES OF A YOUNG CREW WHO MADE THE ULTIMATE SACRIFICE



avoid night-fighters should they be 'coned' in a searchlight beam.

Having formed up with his crew, in January 1944 Bell moved to 5 Lancaster Finishing School at Syerston, also in Nottinghamshire. There he was able to apply his skills to the famous Lancaster.

Not only was this period of training designed to mould his technical skills and provide him with almost robotic and automatic responses, it was also a critical time for the crew to harmonise and develop a working relationship. Bell would be the fulcrum of this change, guiding and moulding 'his' crew in preparation for the forthcoming challenges.

A great deal of effort and money

had been expended to get Cyril Bell and his crew to this standard, and now the purpose of this training was about to be realised. They would form part of Bomber Command's might, delivering a destructive blow to the enemy's will and ability to continue with its war strategy.

With his crew (see panel on page 47) Bell joined 207 Squadron at Spilsby in February 1944 and soon realised the scale of the task asked of him. On February 15, 1944 flying with Sqn Ldr Pattinson aboard Lancaster I ME631, as both second pilot and observer, he experienced his first 'op', to Berlin, the heart of the Third Reich.

Experiencing the full venom of the enemy's reaction and the dangers

he and his crew were destined to face together must have been a harrowing experience for the young man. Questions may well have arisen in his mind about whether he had the character to face such a task and how he would survive a 30-trip 'tour'.

Whatever doubts he may have had, his training overcame them, and from February to May 1944 a total of 17 completed trips were made by Bell and his crew to various locations deep into Germany and France.

ANATOMY OF A RAID

On the fateful night of May 3, 1944, the individually assigned ground crew of Lancaster III ND575 M-for-Mother, along

Below, top to bottom
Sgt Raymond Dance. At 18, he was among the youngest killed on RAF operations in World War Two.

Plt Off Cyril Bell at Spilsby, April 1944.

Plt Off Sidney Willes.





Top
An image taken from another bomber during the attack on Mailly, May 3/4, 1944 showing a Lancaster flying just above the towering columns of smoke.

Above
Left to right: Sgt 'Taffy' Jones; Plt Off Norm Baskerville RCAF; Flt Sgt Ray Cross.

Above right
Sgt Raymond Barker in a Nissen hut at Spilsby, April 1944.

with an array of armourers, electricians and other specialists, completed their checks and tasks. Earlier on in the day the payload of one 4,000lb 'Cookie' and sixteen 500-pounders had been fused and loaded; a dangerous and strenuous task.

No doubt the armourers still had fresh memories of the previous month when an explosion at the bomb dump had cost the lives of ten colleagues.

With the crew on board, the cold Merlin engines were started individually and warmed up. All crew members checked and re-checked the equipment at their specific position while around them, Spilsby came alive with the sights and sounds of a Bomber Command squadron readying itself once more for battle.

"It is possible that 20 miles away in Boston, Lincolnshire, the parents of 26-year-old Ray Cross, the navigator, might have heard the dull tones from the nearby airfields and worried about the fate of their son"

The drone from the airfield drifted to the local inhabitants; a reminder that very shortly the exuberant young men they saw cycling around the country lanes and drinking in the local pubs would be on their way to a distant target and an uncertain fate.

Bell started to taxi ND575 towards the start of the active runway.

Turning into wind, assisted by his flight engineer, 18-year-old 'Red' Dance, Bell ran the engines up and carried out a series of power checks before the bomber started to roll. At 21:51 hours, M-for-Mother lifted into the night air.

It is possible that 20 miles away in Boston, Lincolnshire, the parents of 26-year-old Ray Cross, the



navigator, might have heard the dull tones from the nearby airfields and worried about the fate of their son. They had been greeted occasionally with a low-level flypast by the crew performing routine exercises.

BOMBS GONE

About 450 miles away, the people of Donnemarie and Dontilly were living their everyday lives as the evening set in. They could not know the harsh realities of the bombing war about to be visited on them and that a lasting link between England and France, Donnemarie-Dontilly and Spilsby, would be forged.

After circling over the Lincolnshire Wolds at dusk, the crew of ND575, along with the rest of 207 Squadron in a total force of 360 Allied aircraft, set course for Mailly-le-Camp at a cruising height of 12,000ft (3,660m). The route involved heading towards Reading, leaving England at Beachy Head and crossing the French coast

YEAR		AIRCRAFT		PILOT, OR 1ST PILOT	2ND PILOT, PUPIL OR PASSENGER	DUTY (INCLUDING RESULTS AND REMARKS)
MONTH	DATE	Type	No.			
MAY	1	LANCASTER	ND575	SELF	CREW	N.F.T. BOMBING
		1	LANCASTER ND575	SELF	CREW	OPS - TOURS
		3	LANCASTER ND575	SELF	CREW	OPS - MAILLY (MISSING) TOWK DEPT AT MAILLY
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Summary for MAY 44 Unit 207 SQDN Date 4.5.44 Signature B. Portne </div>				<div style="border: 1px solid black; padding: 5px; width: fit-content;"> LANCASTER O.C. "A" FLT. 207 SQDN </div>		
<i>Retelling of F/O SLDG</i> O.C. "A" FLT. 207 SQDN						



just north of Dieppe.

Then the bomber stream headed for an assembly point north of Mailly-le-Camp.

There, they were ready to be called in by the Pathfinder Force, which would command them where to bomb in relation to the flares and markers that had been already dropped.

Unfortunately, events did not work out as planned. The main force was delayed at the assembly point waiting for the Pathfinders to mark the target. German night-fighters used this to their advantage and many orbiting RAF bombers were hit and seen to go down.

CREW OF LANCASTER ND575 M-FOR-MOTHER, MAY 3/4, 1944

Name and Rank	Role	Birthplace
Plt Off Cyril Bell	Pilot	Whetstone, London
Sgt Raymond Ernest 'Red' Dance	Flight Engineer	Benson, Oxfordshire
Plt Off Norman 'Norm' George Baskerville (RCAF)	Bomb aimer	Toronto, Ontario, Canada
Sgt Raymond 'Doggie' Barker	Wireless Operator	Sheffield, South Yorkshire
Flt Sgt Raymond 'Ray' Jack Cross	Navigator	Boston, Lincolnshire
Plt Off Sidney Hubert Willes	Mid-upper Gunner	Reading, Berkshire
Sgt Howard 'Taffy' Cullimore Jones	Rear Gunner	Wells, Somerset



The original wooden grave marker for the Bell crew at Dontilly.

Above
The final page of Cyril Bell's Logbook, the details in red, were filled in posthumously by 207 Squadron.

Left centre
On May 7, 1950, in the presence of about 1,000 people including French troops and members of the French Resistance, a White Cross of Lorraine and a cairn were placed at the crash site.

Undisciplined radio traffic added to the chaos with many angry and concerned aircrews urging action. To make matters worse, there was also considerable interference on the radio from an innocent American broadcast station playing music over the airwaves. This made it very difficult, for the main force to hear instructions from the target markers, adding to the tension and panic among some crews.

Despite this, Bell and his crew made their way through the mêlée. All must have had a sense of relief when the bomb aimer, 24-year-old 'Norm' Baskerville, declared the bomb load had been dropped, and handed control back to Bell who steered the aircraft homeward.

SHRÄGE MUSIK

Then the Luftwaffe pounced. Lancaster ND575 was attacked out of the darkness by a night-fighter. Little is known about the last few moments of the crew, but it is possible that a Messerschmitt Bf 110 piloted by Oberleutnant Jakob Schaus or Hauptmann Martin Drewes, both highly experienced 'aces', inflicted the fatal assault on M-for-Mother.

Right
Correspondence sent to Cyril Bell's wife, officially notifying her of the circumstances in which her husband lost his life and giving details of his final resting place.

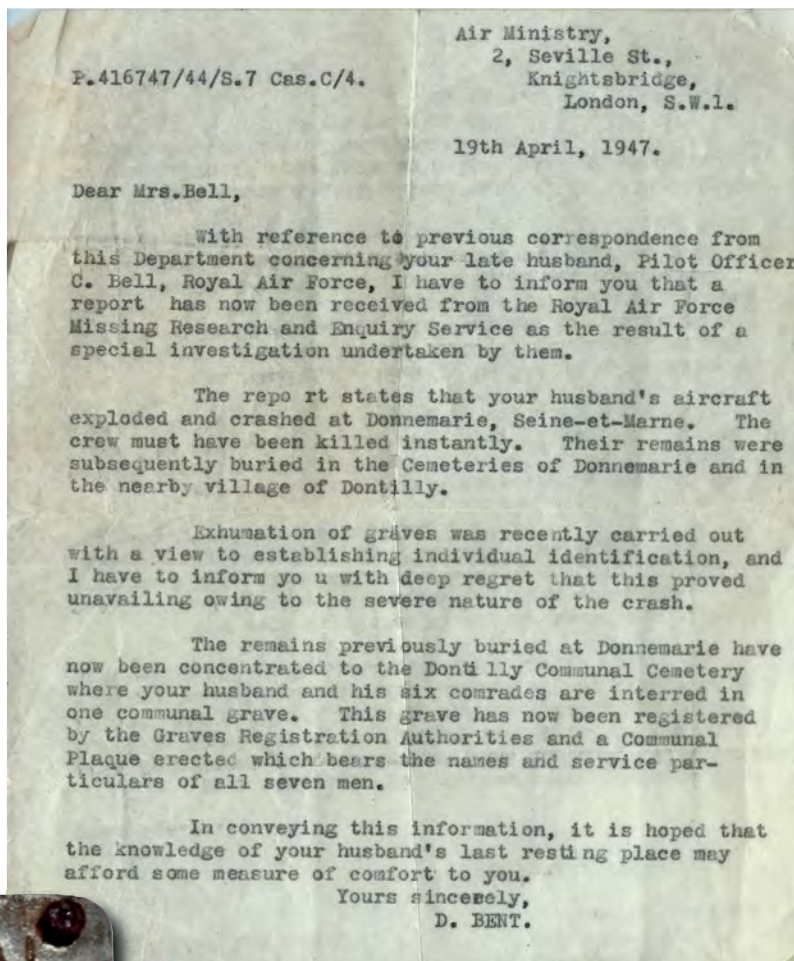
Right
A fragment of wreckage found at the crash site - part of an escape hatch.

Right centre
The crew of Lancaster ND575 are buried in the communal civilian cemetery at Donnemarie-Dontilly.



The violent attack may well have been made from below the Lancaster, possibly employing Shräge Musik, upward-firing guns to penetrate the vulnerable underbelly of the bombers. Experienced Luftwaffe pilots such as Schaus and Drewes had perfected the technique, easing their fighter to as near as 300ft underneath the target before releasing a short burst of cannon fire. They frequently aimed at the fuel tanks in the wings, then quickly dived away, before debris from the stricken aircraft caused damage to their own machines.

On the ground, a local resistance fighter, Andre Guillet, and his family were shocked when they witnessed the dramatic scene of the aircraft on fire. At approximately 3,000ft the plunging bomber exploded, breaking into two sections. The bulk of the wreckage fell in a small copse next to the village of Donnemarie-en-Montois.



The impact must have been heard by the villagers of Donnemarie and Dontilly. Some may well have gone out to see the remains of ND575 burning on the shallow hillside as the once graceful Lancaster turned into a molten ruin.

None of the crew escaped the doomed aircraft. It is doubtful they had time, or were even able to make any attempt to put on their

parachutes, being pressed into their seats by the mounting centrifugal force.

THIRD OF AN 'OP'

From one perspective, the raid on Mailly-le-Camp was an Allied triumph because it delivered a costly strike to the German war machine prior to D-Day. Approximately 1,500 tons of bombs ensured that

“The following morning the grim job began of informing the families of lost crew that their sons, fathers or brothers would not be returning”

102 vehicles, including 37 tanks, were destroyed and 218 German troops were killed with 156 wounded.

Such results came at an extremely high cost in men and their machines for Bomber Command. Of the total force on the raid, 11.6% failed to return, 42 Lancasters were lost.

The following morning the grim job began of informing the families of lost crew that their sons, fathers or brothers would not be returning. Lockers and huts were emptied at Spilsby to make way for new warriors to take the place of those lost on the Maily raid.

This raid forced a change of policy at Bomber Command. French targets had previously counted as one-third of an operation towards

the required 30-trip ‘tour’. This stipulation was discontinued.

REMEMBRANCE

The Germans were quickly on the scene and took control of the crash site. The morning light revealed the rear turret and tail section had fallen about 2,000ft away with the body of the rear gunner, 19-year-old Howard Jones still inside it.

The remains of the crew were initially buried in the cemetery of Donnemarie-en-Montois with locals placing flowers and memorial messages on the graves. All the crew were reburied in 1947 at Dontilly.

Today little remains of the once bustling airfield that Bell and his crew would have known. The roar of Merlins and sounds of activity have been replaced with the serenity

and calm of a country scene. In 2012 a service was held and a new memorial erected to commemorate the personnel of 207 and 44 Squadrons who served at Spilsby.

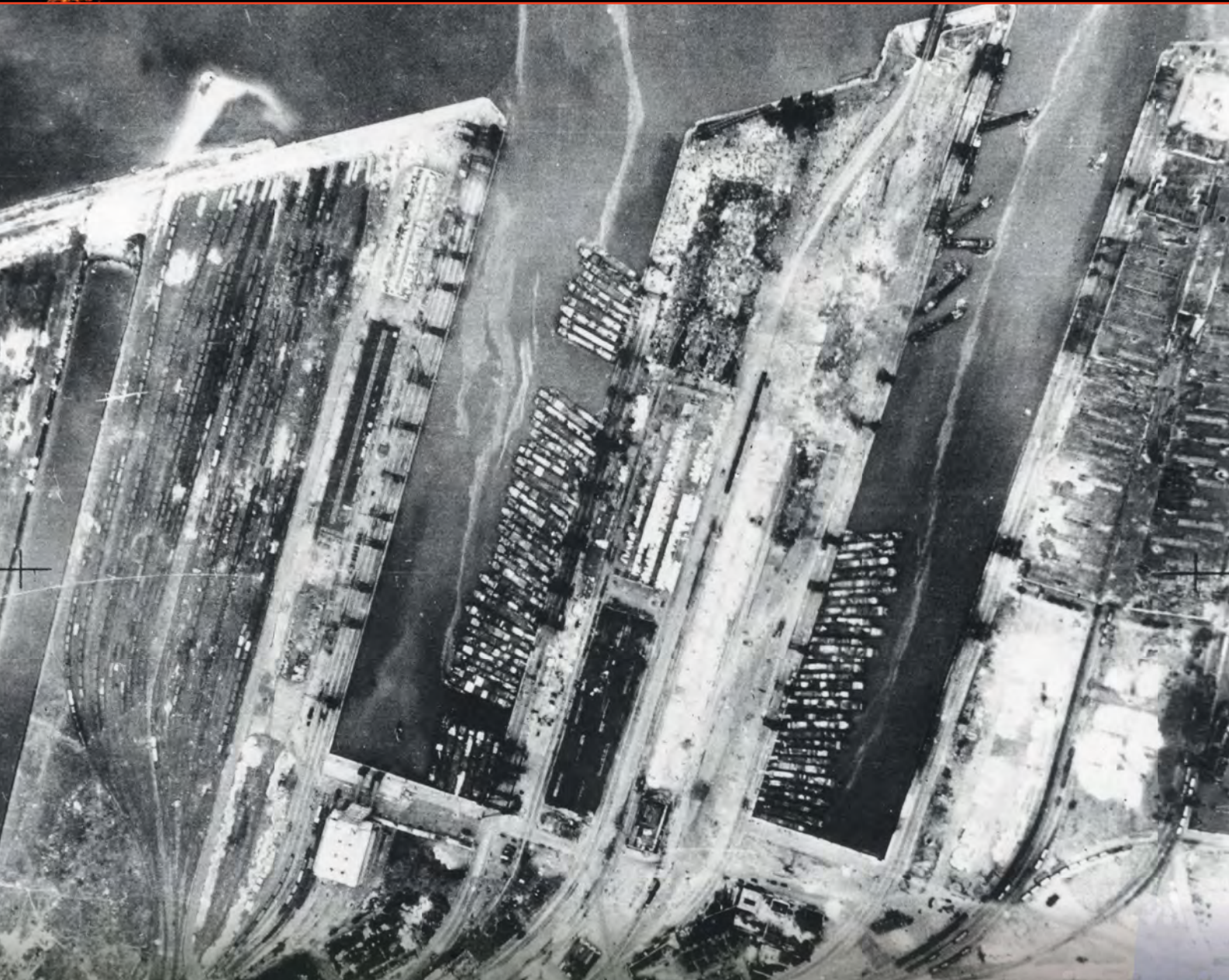
The sacrifices of Bell and his crew – recorded in his logbook with the sad finality of the single word ‘Missing’ – are not forgotten at the twin villages of Donnemarie-Dontilly. Every year representatives of the local marie (mayor), the local veteran associations and other public services attend a commemorative service at a memorial at the crash site. Most poignantly, the service invariably involves a selected child from the village placing a bouquet of flowers to honour the crew’s bravery. Thus, the duty of remembrance is passed to the next generation. ●

Above
The former Spilsby operations block.

Bottom left
The memorial cairn forms a focal point for the people of Donnemarie-Dontilly.

Bottom right
The memorial at Maily-le-Camp commemorates the aircrew lost on the raid and includes a propeller blade from a Lancaster.





BLUNTING SEALION

Above
*Invasion barges in the
harbour at Dunkirk in
September 1940.*
AUTHOR'S COLLECTION

HAMPDENS OF 83 SQUADRON PLAYED A VITAL ROLE IN ATTACKING INVASION VESSELS IN THE CHANNEL PORTS, AS ANDREW THOMAS RELATES

Führer Directive 16 pulled no punches. Issued by Hitler on July 16, 1940 its aim was: "... to eliminate the English Motherland as a base from which the war against Germany can be continued, and, if necessary, to occupy the country completely." Operation Seelöwe (Sealion), the invasion of Great

Britain, was taking shape.

During July, the British Prime Minister Winston Churchill became increasingly concerned at the prospect and warned that the priority for Bomber Command might become enemy ports and shipping rather than German industry. Reconnaissance of possible ports of embarkation was

increased and shipping movements, including shallow-draught barges, were monitored.

The presence of increasing numbers of barges in the Channel ports resulted in the issue of 'Alert No.1 – invasion imminent and probable within 12 hours' on September 7. Bomber Command was immediately



attacked in the face of intense flak. On the night of September 9, the unit ventured further afield to the German North Sea port of Cuxhaven through which much of the shipping assembling in the Channel ports was routed. Calais and Ostend were hit two nights later, although half of 83's ten aircraft that flew that night dropped mines off the enemy ports. Between the September 12 and 14, the Hampdens of 83 Squadron

Left
A weary crew climbing out of Hampden I P1183 at Scampton. It was lost over Le Havre on September 18. VIA M POSTLETHWAITE

Below left
Sgt John Hannah (left) was awarded the VC for his courage during the attack on Antwerp on September 15. RAF SCAMPTON



Below
Hampden I X2898 was flown by 83 Squadron crews in attacks on Antwerp and Dunkirk during September 1940. D GARTON

ordered to prioritise attacks on shipping in potential invasion ports and the communications links leading to them.

Two days previously, Hampden-equipped 83 Squadron at Scampton, Lincolnshire, had been attacking Germany. An intensive 15 days of cross-Channel raids awaited the crews of the unit.

BARGES AND HARBOURS

Shortly after 2000hrs on September 7, 1940, five Hampdens of 83 Squadron lifted off from Scampton to attack the Belgian port of Ostend. With the short distance to the target, the Hampdens were able to carry a full bomb load and began their raids 90 minutes later.

Flying P2097, Flt Lt Bird's crew

dropped and saw sparks amongst the barges while Plt Off Clayton (L4051) and Sgt Noble (P1355) also bombed. Plt Off Snooke reported that he placed his stick of bombs across the harbour while Plt Off Cook saw two of his bombs burst among the barges and others start blazes in the corner of the dock basin.

Four more of the squadron's Hampdens, led by Flt Lt Jamie Pitcairn-Hill in P1193, bombed the ports the following night. All reported success with Fg Off Guy Gibson flying X2097 seeing three of his bombs burst in the dockyard. From the cockpit of P4402 Plt Off Harwood observed his payload bursting in some buildings and starting fires. All

did not operate. By September 15 more than 100 barges were seen in Boulogne and 136 at Calais. Within days Calais had more than 260 gathered. The Channel ports →

"By September 15 more than 100 barges were seen in Boulogne and 136 at Calais. ...The Channel ports were assessed as housing at least 1,000 vessels with a further 600 positioned at Antwerp"





“...with his cockpit floor melting wireless operator Sgt John Hannah fought the flames with two small extinguishers before beating at the flames with his logbook and finally his hands”

Above
The burned underside of 1355 bears mute testimony to the intensity of the flames braved by Sgt Hannah.
RAF SCAMPTON

Right
The port of Antwerp, with invasion barges marked, in mid-September 1940.
AUTHOR'S COLLECTION

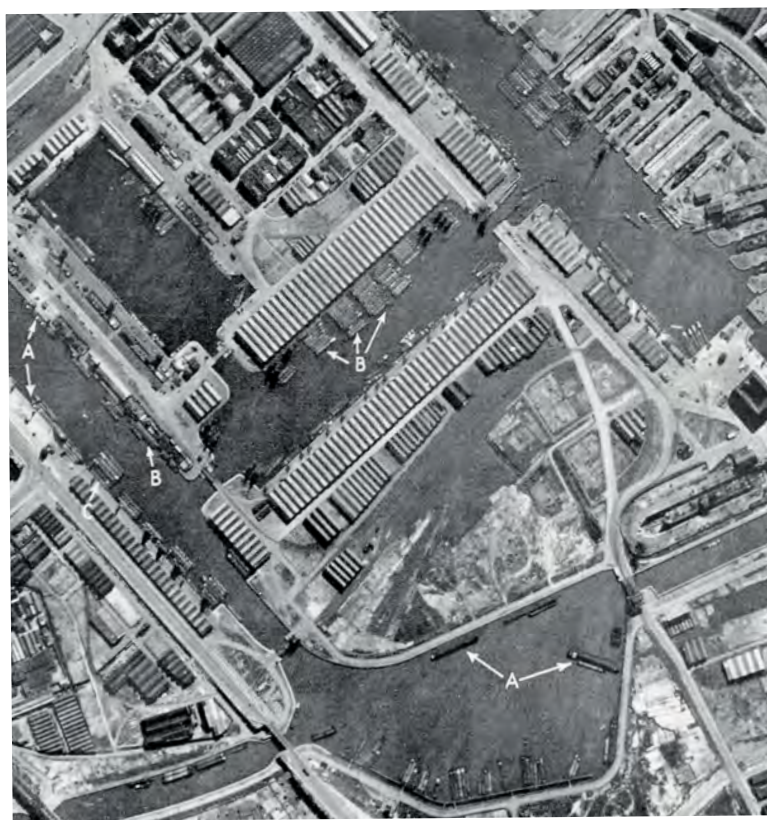
were assessed as housing at least 1,000 vessels with a further 600 positioned at Antwerp.

EXTREME COURAGE

It was the Belgian port that was the destination of 15 Hampdens from 83 Squadron on September 15. The aircraft began taking off just after 2100hrs on what was the unit's largest raid so far. Confronting indifferent weather nine Hampdens bombed the docks and town while three others turned their attentions on Flushing and Dunkirk instead.

Running in from just 800ft (243m) Fg Off Gibson saw several big explosions and he also hit another barge up river. Harwood made a glide attack hitting barges and wharves on the Bassin Lefebvre while Bird dived and saw his bombs explode among the barges.

The flak over Antwerp was intense and just after releasing its bombs P1355, flown by Plt Off Clare Connor, was caught by the





searchlights, hit and set on fire. The rear fuselage swiftly became an inferno forcing the gunner to bale out.

Plt Off Connor said afterwards: "I could see we were in trouble when I saw the reflection of flames in my windscreen - the flames were getting very close to the back of my neck."

Despite being surrounded by flames and with his cockpit floor melting wireless operator Sgt John



Left
Hampden I L4057 was named 'Admiral Imaz Dryazel' and was regularly flown by Fg Off Guy Gibson. D GARTON

Below left
Sqn Ldr Jamie Pitcairn-Hill was lost during a raid on Le Havre.
VIA M POSTLETHWAITE

Below
Hampden I L4095 showing damage from German flak during the attack on Antwerp, September 15.
VIA M POSTLETHWAITE



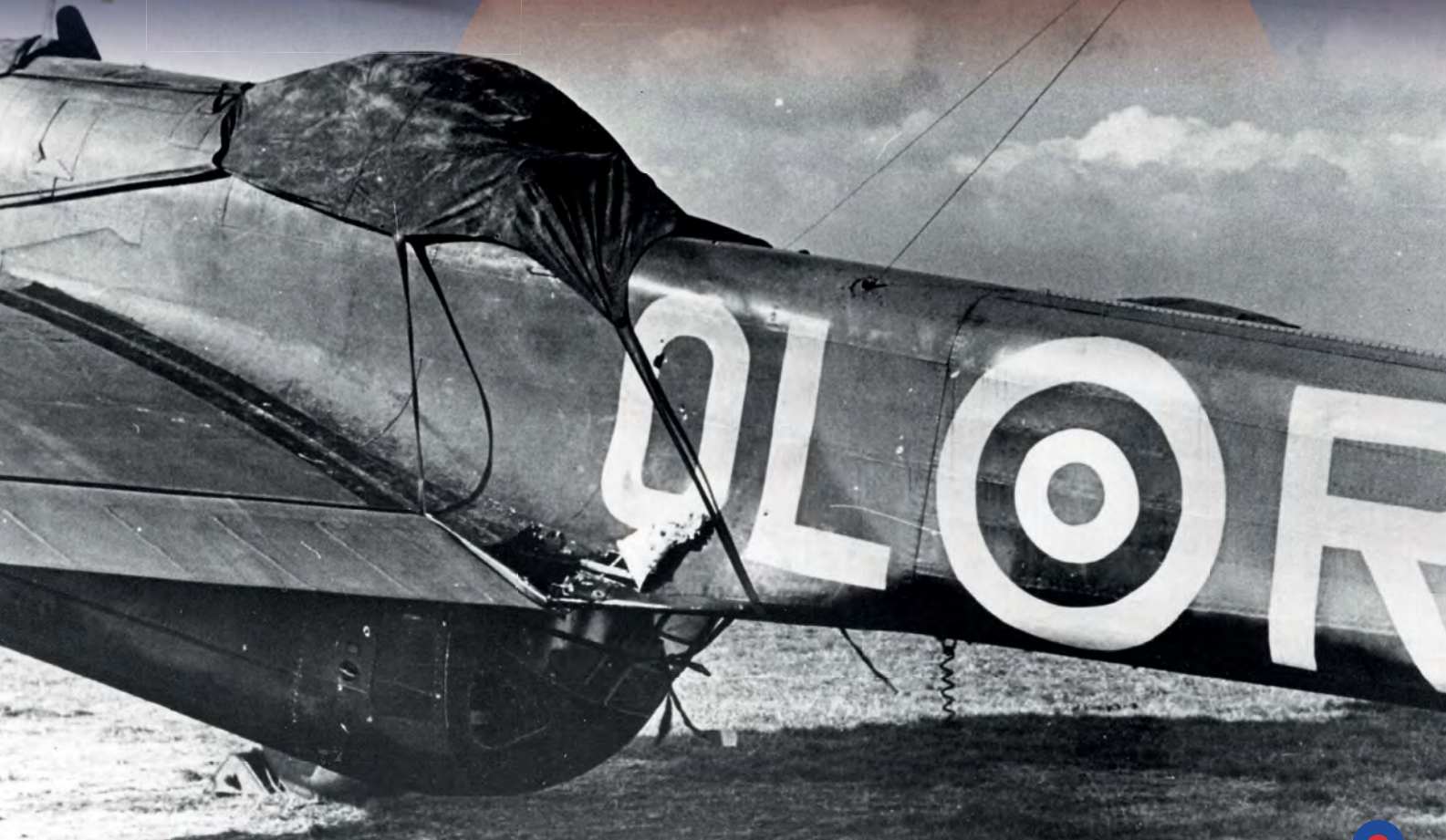
Hannah fought the flames with two small extinguishers before beating at the flames with his logbook and finally his hands. He succeeded in putting out the blaze but the heat was making the machine gun ammunition explode and he disposed of it through the gaping hole in the fuselage.

Crawling painfully forward he discovered that the observer had also been forced to bale out. He assisted Plt Off Connor in bringing *P-for-Pip* back to Scampton. Badly burned, the 18-year-

old Sgt Hannah was taken to hospital for treatment to his injuries and soon afterwards he was awarded the Victoria Cross. On the recommendation, AVM Arthur Harris wrote: "I can only add that no one who has seen the condition of the aircraft can be otherwise than amazed at the extraordinary presence of mind and extreme courage which Sgt Hannah displayed in remaining in it." For his part, Connor was awarded the DFC.

WHEELS-UP

There were no ops for 83 Squadron on the next couple of nights but ➡





Right
The crew of an 83 Squadron Hampden at Scampton before another raid on the invasion ports.
RAF SCAMPTON



Above
Laid up in the Airman's Chapel in Lincoln Cathedral, the Colours of 83 Squadron proudly carry the Battle Honour 'Invasion Ports 1940'. **AUTHOR**

Above right
The concluding comments of Sgt John Hannah's VC recommendation signed by AVM Arthur Harris. **AUTHOR'S COLLECTION**

the action against invasion forces continued with the Joint Planning Staff assessing that: "...the Germans had 'virtually unlimited' numbers of barges for a short sea crossing. It was thought possible for craft from all ports between Ostend and Boulogne to reach the Kent coast moving by night."

Other harbours further along the French coast were attacked and 83 sent five Hampdens to drop mines and nine to Le Havre docks on the night of September 18, 1940. Seven aircraft were involved in the bombing; Sqn Ldr Bridgeman claiming hits on two merchant ships and Plt Off Svendsen saw his stick of bombs explode along the Bassin de Marie.

Over the target P1183, flown by Flt Lt Pitcairn-Hill suffered a direct hit, exploded and crashed into the Seine Estuary, killing all four on board. Sgt G B Dawkins in L4070 was also hit by flak that severed many pipes and it lost all hydraulic pressure. He struggled to bring *C-for-Charlie* back to Scampton where he ordered the crew to bale out before skilfully bringing it in

8. I can only add that no one who has seen the condition of the aircraft can be otherwise than amazed at the extraordinary presence of mind and extreme courage which Sgt. Hannah displayed in remaining in it.

A. I. Harris

17th. September,
1 9 4 0.

Air Vice-Marshal,
Commanding, No. 5 Group, R.A.F.

for a wheels-up landing – still with the underwing bombs in place! He received a well-earned DFM.

INVASION POSTPONED

There was no flying on September 19, 1940 but the following night six 83 Squadron Hampdens bombed barges in the Dutch port of Flushing. Sgt Whitehead identified the target and saw large fires burning but, seeing no barges, attacked the nearby canal instead.

Fg Off Gibson's aircraft was hit by a heavy shell that passed through the cockpit near the rudder bar, fortunately without exploding. With the intercom unserviceable he released the bombs himself before returning to Scampton.

Four more of 83's Hampdens headed for Le Havre where Plt Off Cook in L4095 saw his weapons straddle the Bassin de Marie. Sgt Mayberry's aircraft was hit by fire from a flak ship off the coast and he had to jettison the bombload while others dropped mines offshore.

On September 21 four Hampdens flown by Fg Off Barker, Plt Off Mills, Plt Off Lyster and Svendsen

successfully hit barges in Boulogne. There was no flying the next day but a dozen aircraft were held on standby against another invasion alert.

Although unknown at the time, Operation Seelöwe had been indefinitely postponed and on September 23, when 83 ventured to Berlin, reconnaissance began to detect a significant reduction in the numbers of barges, particularly in Flushing and Boulogne.

Attacks continued including other French ports to which some naval assets had transferred. In the early hours of September 24 six Hampdens set off to bomb the lock gates at Calais, although most could not identify the target. Sgt Baxter did and saw three of his bombs explode in the vicinity of the lock.

Within days it was assessed that the risk of invasion had receded. Around 10% of the invasion vessels had been destroyed and authority was given to return to attacking Germany. Bomber Command had helped to prevent the Germans launching a seaborne invasion and the crisis passed. ●



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RESURRECTION

Above
An artist's impression of the Stirling Aircraft Project workshop with the fuselage in its jig.

JOHN LATHWELL AND DAVID COLLINS OF THE STIRLING AIRCRAFT PROJECT EXPLAIN HOW HIGH-TECH METHODS ARE HELPING TO BRING A FAMOUS BOMBER BACK FROM EXTINCTION

One of the largest and heaviest land-based aircraft of its time lumbered into the sky for its first flight, at Rochester, Kent, on May 14, 1939. This was the Short Stirling prototype, L7600, in the hands of John Lankester Parker – his 32nd maiden flight since his career as a test pilot started in May 1918. It would end in less than ideal circumstances.

Contradictory requirements stipulated by the Air Ministry – the Stirling needed a wingspan to fit in standard hangars yet be capable of operating as an effective bomber from existing runways – gave the original design a high wing loading. With construction of the prototype and production jigs under way, it became apparent the design would not produce enough lift during take-off.

The solution was to extend the undercarriage to increase the wing angle of attack at take-off and so

increase lift. This gave the Stirling its characteristic stance on the ground. The 'fix' avoided scrapping the existing tooling and a considerable delay in service entry but led directly to failures of the main undercarriage.

Unfortunately, the weakness reared its head on L7600's first, and only, landing. Most of the 20-minute flight was uneventful, but on touchdown the big machine spun around and the undercarriage crumpled and collapsed. Nobody was hurt and it was discovered that a brake had seized. The precious prototype was beyond repair, and it was December 3 before its replacement, with reinforced main gear, took to the air.

Problems with the landing gear dogged the Stirling throughout its service and led to a number being written off. Stripped of all usable components, L7600 was taken to the ranges at Orford Ness in Suffolk and used as a target to test the destructive

capabilities of captured German munitions. As revealed in the May edition of *FlyPast*, an element of this unfortunate prototype *might* still survive.

Stirlings served as bombers, paratroop and supply drop platforms, cargo transporters and glider tugs. In continuous production from 1939 to 1945, this aircraft of immense historical importance has since disappeared into oblivion, leaving only scattered remnants as evidence of its existence.

FINAL RESTING PLACE

In the mid-1990s members of the Stirling Aircraft Association gathered to discuss the possibility of resurrecting as much of the bomber as possible in memory of those who designed, built, flew and maintained it. Under the chairmanship of the late Brian Harris DFC, who had been a navigator on Stirlings and



Mosquitos, they established the Stirling Aircraft Project, which became a charity in 1997.

The group made strenuous efforts to garner as much technical information and original material as possible but discovered that, post-war, many of the manufacturer's drawings were destroyed along with all the plans of the magnificent Short flying-boats and earlier types.

At that stage we hoped that a surviving airframe, or substantial parts, might be discovered and made efforts to account for the final resting place of all 2,371 Stirlings built.

Candidates that could possibly be recovered were mostly in saltwater environments and would be prohibitively expensive to recover, even if they had survived the years of immersion. There's still hope that considerable remains may yet be sourced, and rumours persist about a Russian Stirling – see panel overleaf.

CAMBRIDGESHIRE BASE

In the early days of the project, members were scattered far and wide. But early work gravitated towards the natural home of the Stirling – Cambridgeshire. Large numbers had flown operationally from the

Left
Brian Harris DFC, former Stirling navigator and founding chairman of the Stirling Aircraft Project.

"Parts still occasionally turn up. While adding missing elements would be at the top of the list, just gaining access to measure or photograph in detail is of great benefit to our progress"



Above
Part of the stock of stringer sections manufactured for the project.



Left
The project's FN5a front turret in the Pathfinder Museum at RAF Wyton.

county or undergone repair with the Sebro organisation at Madingley and Bourn.

The team set up a small workshop in a Cambridgeshire village and acquired the remains of a Fraser-Nash FN5a nose gun turret, as fitted to Stirlings. This early accommodation – a converted stable with limited electrical supplies and no heating – was spartan to say the least, and into its small space were crammed the turret, two benches, a lathe and a pillar drill, leaving room for no more than two people to work at any one time.

The stable would be the first





Right
Pilots' seats, throttle box and control columns, destined to be the centrepiece of the project's forward fuselage.

SOVIET STIRLING

Rumours persist about the survival of Austin Motors-built Stirling III LK615, the only British heavy bomber officially supplied to the Soviet Union (others crash-landed in the USSR). The aircraft is known to have been evaluated at Kratovo, near Moscow, in the autumn of 1944. It later transferred to the polar aviation institute as SSSR-N-415 but is believed not to have operated and was struck off charge in 1947.

of several homes for the project. The team then approached RAF Wyton – from where, by coincidence, the RAF Museum restoration facility was about to relocate to Cosford in Shropshire – and gratefully accepted the offer of a considerable amount of space.

The move to Wyton enabled all the collected material to be gathered in one place for the first time. It included at least enough parts to reconstruct two complete undercarriage legs, main wheels, a Bristol Hercules engine, wing sections and flying surfaces.

But Wyton had a downside. As a grace and favour 'tenant', the Stirling project was subject to the whims of the landlord, and the RAF decided to refurbish the hangar so it could be used by other resident organisations. This halted work on the turret and flight deck components for nearly a year.

Early in 2007 we returned to this refurbished accommodation, complete with double glazing and heating, and work restarted. With the turret virtually complete, it was placed on long-term loan, along with other sizeable artefacts, to the Pathfinder

"Team members have travelled across Europe looking for surviving parts, forming strong links with organisations such as the RAF Museum and, in Holland, the Stichting Aviation Group, which lent us salvaged parts from Stirling Mk.III BK710"

Museum, also at Wyton.

A change in Ministry of Defence policy then required we be charged commercial rates for the workspace. This was unsustainable so the team relocated again, this time to much smaller premises in St Neots.

Progress continued on the flight deck, and the bare seat frames and control columns were mounted together for the first time. With space at a premium, we decided to lend some of the larger flying surface sections from Stirling III LJ628 to the museum at Fort Perch Rock at New Brighton, Merseyside, where they can be viewed today.

MEASURING UP

Team members have travelled across Europe looking for surviving parts, forming strong links with organisations such as the RAF Museum and, in Holland, the Stichting Aviation Group, which lent us salvaged parts from the cockpit frame of Stirling Mk.III BK710 of 149 Squadron which failed to return from a raid on Düsseldorf, Germany,

on May 25-26, 1943. The parts have proved extremely useful in designing this large assembly.

Two large sections of fuselage found on farms in France provided useful measurements and excellent photographic opportunities to confirm how the structure was assembled and joined.

Parts still occasionally turn up and we're always keen to hear from those who own or display them. While adding missing elements would be at the top of the list, just gaining access to measure or photograph in detail is of great benefit to our progress.

One such item was the pilot's instrument panel. We traced an original some ten years ago, but further, more accurate dimensions are very important to the surrounding structure.

The upper curvature of the panel is a direct offset of the fuselage skin in that area. With more data, our computer-aided design (CAD) model could be accurately checked to help improve the panel we've made.

Some project members have been



continually measuring wreckage or parts and calculating key dimensions for accurate drawings. The plans have gradually become more refined, and in themselves represent a way of preserving once lost details about the Stirling. Much of this work is now transferred into three-dimensional CAD which can be used to verify larger assemblies before any metal is cut.

ALCONBURY HOME

Eventually, we had to vacate the St Neots workshop and make another transfer, this time to Alconbury, near Huntingdon. The former USAF airfield at Alconbury has been designated a government-supported enterprise zone and our landlords have been very kind and given us accommodation at peppercorn rates.

Unfortunately, much of the airfield is also designated for development and we've had to move between four buildings in three years, disrupting progress. We hope our current home



will see us secure for the foreseeable future.

With a team of professional engineers and draftsmen of complementary disciplines on the all-volunteer team, current plans are to build the forward fuselage section from the nose turret to the transport joint at Frame 26. This will incorporate all the main crew stations: nose gunner, bomb aimer, first and second pilots, navigator, flight engineer and wireless operator.

This massive undertaking will be 6½ft (1.98m) wide, 10ft high and 31ft long. The decision to create such an extensive section was not taken lightly, but reached with an eye to the future: should the project ever be in a position to extend the fuselage, there could be no better place to start than at Frame 26.

While the task of gathering design data has gained pace, work has progressed on the flight deck with pilot seats, flying controls and throttle box faithfully replicated, incorporating original parts wherever possible. They are all in store, ready

to mount into the new fuselage structure when finished.

Having several trades represented across the team has led to excellent opportunities to cross-learn skills and train others interested in helping. An assembly such as the throttle box, reconstructed from a heavily distorted example, called for expertise in sheet metal fabrication, casting and pattern-making, machining, assembly and painting.

HIGH-TECH FUTURE

The starting point for the forward fuselage will be the bomb bay, which comprised three longitudinal cells offering great strength at the expense of operational load flexibility. At each frame station is an inverted sheet-metal U-section sub-frame and, with very little commonality, each has to be investigated and designed

minimal specialist equipment.

In a departure from the original Short production line, which used two large separate jigs, we have designed one for both functions, saving considerable workshop space.

Our nomadic past has influenced our plans. Any jig will also have to act as a transport cradle – being prepared to move in the future is a wise thing.

We're exploring avenues of sponsorship for this next build phase as it will be a significant undertaking. This is an opportunity to provide a vivid memorial to the crews that took Britain's first 'heavy' to war.

The Stirling Aircraft Project thanks the following for their support: SAPA UK Ltd, Savills UK, Marshall ADG (Land Systems), Cambridge Precision Ltd, RRB Engineering, James Harris. www.stirlingproject.co.uk

Below far left

A trial frame section for the complex three-bay Stirling bomb cells.

Below left

The large undercarriage assembly of the Stirling can clearly be seen in this image. In early prototypes, it proved a weak point of the airframe. KEY

Bottom

The project team holds many original sub-assemblies, including fuel levers, either for installation in the forward fuselage or to serve as patterns. ALL IMAGES STIRLING AIRCRAFT PROJECT UNLESS NOTED



to suit. This adds to the complexity and time taken to get to the point of fabrication.

We have several companies lined up to laser-cut the metal and, using computer numerical control, fabricate the frame jigs. Our special thanks go to SAPA Ltd for the design of a bespoke extrusion die and for providing us with more than 100ft of special to-type extrusion, which has to run the length of the bomb bay. We have also had nearly 800ft of stringer section manufactured for use in the fuselage structure.

A jig has been designed that will encompass the fuselage from the first production break at Frame 3 to the second at Frame 26. This will need pre-welded sub-assemblies which can be bolted together accurately on-site with



LOOKING AFTER A LEGEND

BRITAIN'S MOST FAMOUS WARBIRD IS BEING SERVICED BY THE AIRCRAFT RESTORATION COMPANY AT DUXFORD. **CHRIS GILSON** PAID A VISIT TO CHECK UP ON THE PROGRESS



Above
Both port engines have had the bearers removed.

Right
Preparation work on PA474 started by marking out all areas that need attention or have flaws.

Right centre
The starboard inner engine of PA474 has been removed, exposing the engine bearer.



Of all the historic aircraft gracing British skies, the Battle of Britain Memorial Flight's (BBMF) Avro Lancaster B.1 PA474 is arguably the most well-loved. The Lancaster, which has been a regular feature at air shows since November 1973 when it joined the BBMF, is just one of two flying from a total of 7,377 built. The iconic aircraft symbolises the sacrifices made by the crews of

Bomber Command during World War Two. When the time came for PA474 to receive an overhaul, the successful bidder for the job was John Romain's Duxford-based Aircraft Restoration Company (ARC), which has a long record of historic aviation restorations and overhauls. Clearly, PA474 is in an extremely safe pair of hands.

To accommodate the Lancaster – the biggest project undertaken

by ARC to date – the spacious Stephenson Hangar was constructed, with the Lancaster flying in from the BBMF home at RAF Coningsby, Lincolnshire, shortly afterwards. ARC Hangar manager James Gilmour and Aircraft Engineer Col Pope take up the story.

“It's important to stress that this is an in-depth servicing and major inspection, not a restoration,” says James. “PA474 is a working aircraft,



and our job is to ensure she's fit to fly for years to come."

James's task is not an easy one. The Lancaster will be a new chapter for ARC, and it is one that is not only significant for the company but places it firmly in the public eye.

"This is a very prestigious project for ARC," he continues. "Because we work with historic aeroplanes every day of the week, it didn't register just *what* was arriving, but when it landed and came through the doors we all thought 'Oh my goodness'. It's as good as it gets. Having an aircraft like this, probably the most well-loved aeroplane in the country here is a very big occasion for us, and we're very proud indeed."

I ask James to describe the main

programme of work.

"We'll be depanelelling the whole aircraft, with the removal of all major components following. This will include all the flying controls, engines and one of the gun turrets, the fin units, bomb doors and the undercarriage and doors.

"As additional work, we'll also be replacing cowlings on numbers one to three engines, plus the associated firewalls. The engine bearers will also come out for inspection. In this respect though, we'll be able to use our own tooling and extensive experience of Rolls-Royce Merlin engines. The installation and principles are the same as for the Merlin fitted to a Spitfire, although the various connections are different.

"Finally, we'll be adding a fairing on the rear of the bomb bay doors that was removed at some time during the aircraft's history and never reinstalled. All the parts for the fairing and mounting structure have been manufactured, and are ready to be fitted."

"After that," he continues, "there will be an inspection of all items for damage, corrosion and anything else untoward. Nowadays, there's a policy of 'baselining', where we go through the structure and take it back to a known level. This means we check for any unauthorised or sub-standard repairs, or anything that shouldn't be there. If we do find things we document them, or replace them as necessary."



Centre left
The bomb bay doors will also have to be removed.

Left
The interior of the Lancaster, showing the main wing spar. This is structurally sound and does not require attention.

Below
Disassembly of PA474 is proceeding at a rapid rate.





Above
All major components are being removed and serviced as necessary.

Above right
New cowlings will be made for engines one, two and three.

Below
One of the Rolls-Royce Merlin engines sits on its stand after removal.

“However, it’s unlikely we’ll find much corrosion on the aeroplane. Common places are behind the engines, where exhaust, smoke and carbon builds up on the wings, but we’ll go through the whole airframe regardless.”

It will be a long process, although as James acknowledges, the timescale is tight.

“Timing is our biggest challenge. The RAF wants the aircraft back on March 31, 2017 in time for the display season. We’ll be working additional hours to make sure we get the job done and we’ve taken on eight additional members of staff to help.”



A HELPING HAND

In order to facilitate the job, the BBMF has offered as much help as is needed to ensure things run smoothly.

“The BBMF has really helped throughout the process,” says James. “They’re always on hand if we need them, and they’ve told us about the areas unique to this aircraft, all the hidden ‘gotchas’ and so forth.

“We purchased a lot of equipment to help with the overhaul, but many items have come down from RAF Coningsby, including engine and propeller stands, jacks and staging. The BBMF also holds a lot of available parts, so we shouldn’t want for much.”

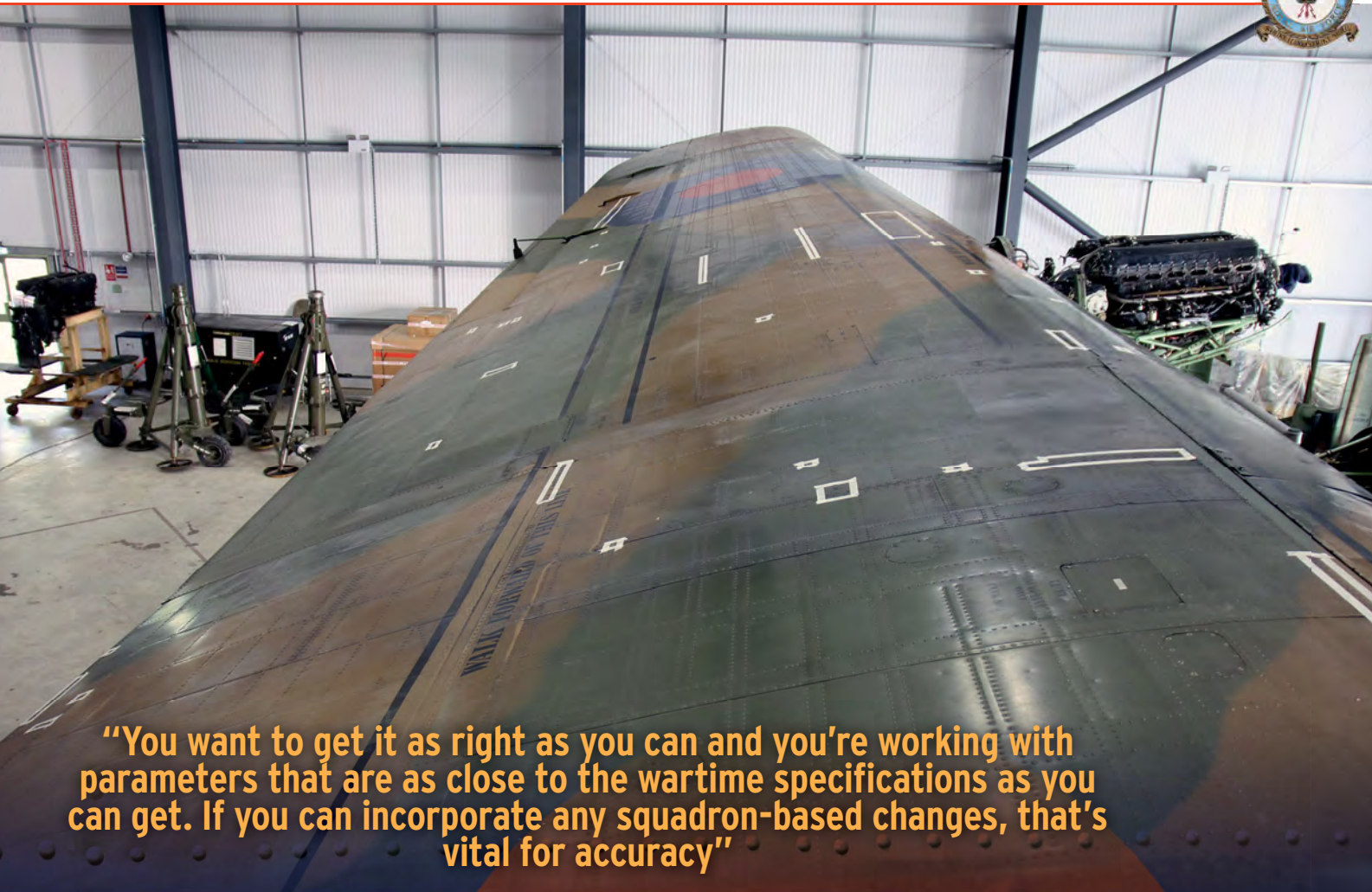
What happens if a part isn’t available?

“If something isn’t accessible, then we’ll get the drawings from BAE and manufacture in-house as need be. Approximately 80% of the drawings for the Lancaster still exist, so we’re confident we can get the information needed to produce a replacement part.”

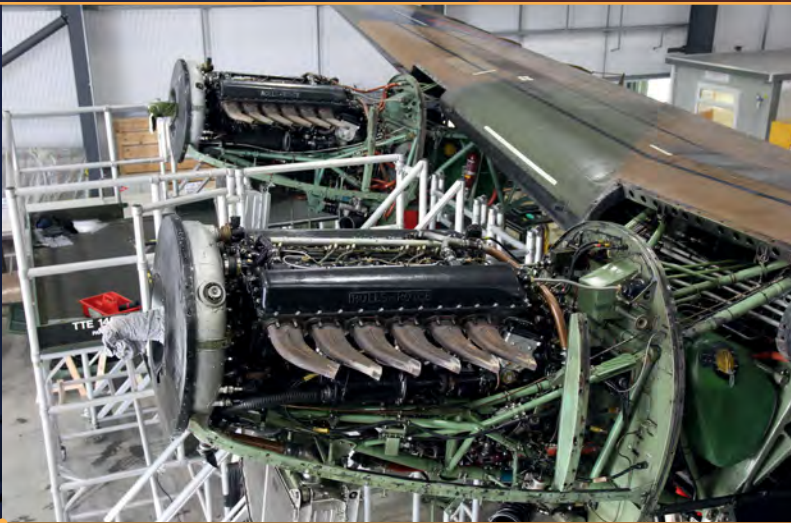
James also mentions that following this overhaul, there may be more to come.

“The tailplane spar will need to be replaced within the next three years. This is something that’s never been done before on PA474, and our intent – if we get the contract – is to produce





“You want to get it as right as you can and you’re working with parameters that are as close to the wartime specifications as you can get. If you can incorporate any squadron-based changes, that’s vital for accuracy”



“You want to get it as right as you can,” Col adds, “and you’re working with parameters that are as close to the wartime specifications as you can get. If you can incorporate any squadron-based changes, that’s vital for accuracy.”

Above
A view over the wing. Note the tape marks indicating areas for attention.

Left
The complex layout of engine pipework is apparent in this view of the partially stripped starboard engines.
ALL IMAGES BY COL POPE

Col has an impressive track record, with his latest scheme for the BBMF being the popular silver scheme applied to the Flight’s Supermarine Spitfire PR.XIX PS915, which is currently flying as PS852 (see feature in *FlyPast* December 2016 issue).

“We’re used to working with the Ministry of Defence,” he says. “As a result we’re very familiar with its processes and methods, and that puts us in good stead and promotes a good relationship.”

The overhaul of such a historic aircraft is a flag in the sand for ARC, and one that will see the company move from strength to strength.

Come March, all eyes will be firmly on Duxford to see the triumphant return of what is truly a national symbol.

FlyPast thanks John Romain for his help in preparing this feature ●

a new spar from original drawings. It’s a very difficult task, but given our expertise in the field, one that I think we can handle with confidence.”

Col Pope is the Aircraft Restoration Company’s specialist in researching and applying historic markings and schemes, and he will be the person responsible for getting it right on the BBMF Lancaster.

“The RAF always chooses the colour scheme to represent a famous aircraft that may have taken part in a certain event, has relevance to

Lincolnshire, or commemorates a certain pilot. It gives us a basic plan and idea, and usually a single photograph, and it starts from there.

“As a rule, one looks for views of not just that one aircraft, but others in the same serial range and on that squadron, if possible. While all aircraft left the factories in the same scheme, that often changed when they reached the squadrons, with variations between lettering styles, camouflage and motifs being commonplace.”