



Avro Lancaster BI "City of Lincoln"

Avro built Lancaster BI PA474 of the Royal Air Force Battle of Britain Memorial Flight

PA474 is flown in the markings of W5005 a Lancaster BIII 'Leader' of No 640 Squadron Royal Australian Air Force Stationed at RAF Binbrook. The RAF Coningsby based BBMF keep PA474 airborne as a lasting memorial to the personnel of Bomber Command who flew over 360,000 combat missions. 55,573 aircrew failed to return, 3814 Lancasters were lost, out of a total of 8325 Bomber Command aircraft lost during the Second World War.



In 1965, Wing Commader D'Arcy, the Commanding Officer of 44 Squadron (then flying Vulcans at RAF Waddington) asked permission for PA474 to be transferred into the care of the Squadron. An inspection found that the aircraft was structurally sound so permission was granted for PA474 to make a single flight from Henlow to Waddington, which it completed in August 1965. At Waddington a restoration programme began on the Lancaster and by 1966 work was progressing well with both the front and rear turrets in place. Permission to fly PA474 regularly was granted in 1967, whilst restoration continued. The Lancaster joined the Battle of Britain Memorial Flight in November 1973 and restoration work on various parts of the aircraft has continued ever since. A mid-upper turret was discovered in Argentina and was brought to Britain aboard HMS HAMPSHIRE; it was fitted to PA474 in 1975. In the same year, the aircraft was adopted by the City of Lincoln, permission being granted for her to display the City's coat of arms, which will always be displayed on PA474 regardless of what colour scheme she wears. For the 60th Anniversary year the left-hand side will be painted as 460 (RAAF) Squadron Lancaster W5005, coded AR-L. The original Lancaster W5005 completed at least 44 operations while it was with 460 Squadron at RAF Binbrook in Lincolnshire, including four to Italy and four to Berlin, between 1943 and 1944.



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Lincoln

W5005 was then transferred to 550 Squadron, where it kept its nose art but was recoded BQ-N. It made another 50 trips and was well on its way to becoming one of the rare 'centurions' (more than 100 operations). On her 94th trip while returning to RAF North Killingholme following a heavily defended attack on Kiel Harbor in August 1944, she was ditched in the Humber Estuary, No-one was injured but the aircraft was lost.



The Dambusters

The Dambusters have been immortalised in WWII folklore as a result of their attack on the dams of the Ruhr. As part of the Allies' bombing campaign against Germany during the war, the Dambusters were established as an elite Lancaster bomber unit led by Wing Commander Guy Penrose Gibson VC DSO & Bar DFC & Bar.

Rationale for the Raid

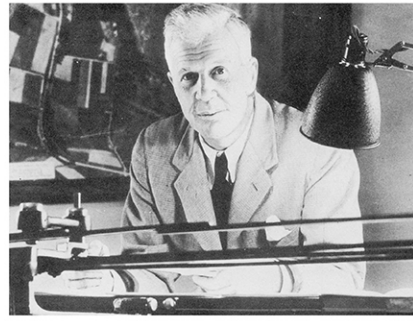
Since the beginning of the re-armament of Germany in contravention of the terms of the Versailles Treaty, the British Government had looked at ways to degrade Germany's industrial capacity in the event of war. With the likelihood of war looming, a meeting of the Air Ministry's Bombing Committee concluded that direct attacks against the German reservoir dams should be examined as a possible option.

A large proportion of Germany's heavy industry and domestic water supply in their industrial heartland depended to a large degree on the water storage in the upper reaches of the River Ruhr. The dams in this region also produced a substantial amount of hydro electricity supplying a large number of munitions factories. Research concluded that attacks on dams in the region would deliver a devastating blow to German industry, the country's power supplies and importantly, morale.

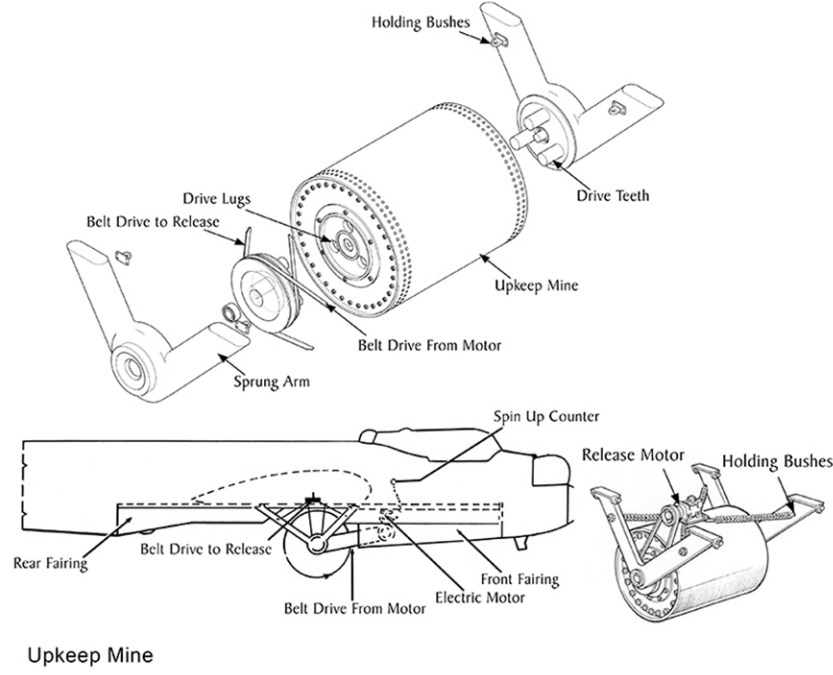
Technology and Research

The Air Ministry realised that to be effective, any attack on the dams would need to be launched during the spring months when the water flow was at its greatest. Previous attacks on such targets illustrated that the narrow structures were difficult to target and were resistant to conventional bombing attacks. Research continued into larger bombs including a proposal to commission a 6 engine stratospheric bomber code-named "Victory", designed to carry huge armaments including a 10 tonne bomb. The design for "Victory" never got past the drawing board as research turned to alternative methods.

In April 1942 the Assistant Chief Designer at Vickers Armstrong, Dr Barnes Wallis, began work in earnest on a spherical bomb that could be mechanically back-spun by the launching aircraft and released from low level towards the dam face. The bomb would then skim across the surface of the reservoir until it reached the dam wall before sinking to an optimum depth before exploding. Small-scale trials were conducted before full-scale live trials were sanctioned. Initially a number of twin-engined Wellington Bombers were modified for the initial trials off Chesil Beach in Dorset. Not all the trials went smoothly and the experiment encountered stiff resistance over its future feasibility. It took the personal intervention of Sir Charles Portal, Chief of the Air Staff, to save the project. In Feb 1943, orders were issued for the immediate conversion of 3 Avro Lancaster Bombers for trials and a further 20 for conversion for operational use and a total of 150 bombs, code-named "Upkeep" for use on Operation "CHASTISE", although the exact targets for the mission were to remain a secret.



Dr Barnes Wallis



Upkeep Mine

