



Commonwealth War Graves Commission

Operation Chastise

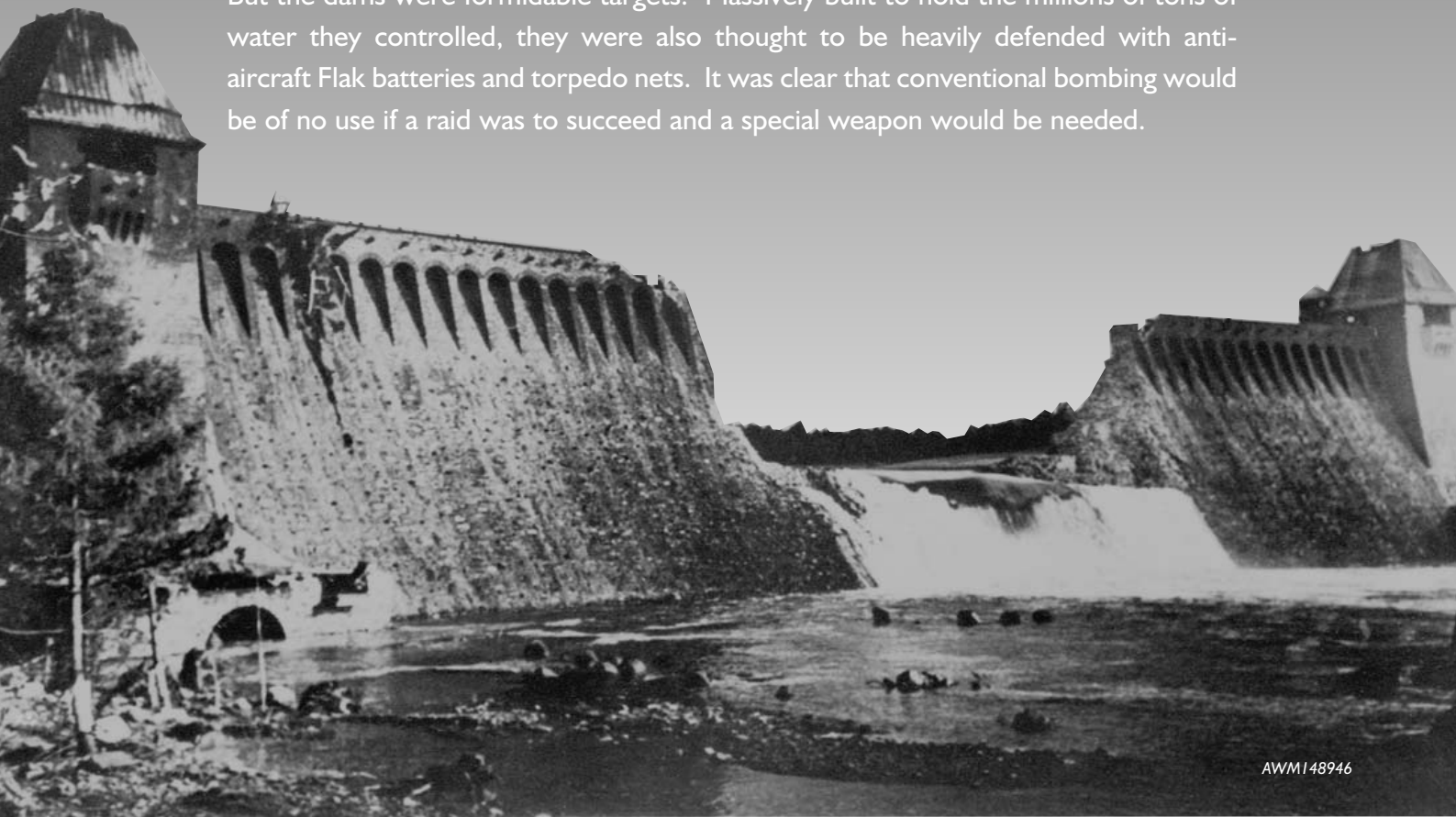
The Dams Raid, 16/17 May 1943

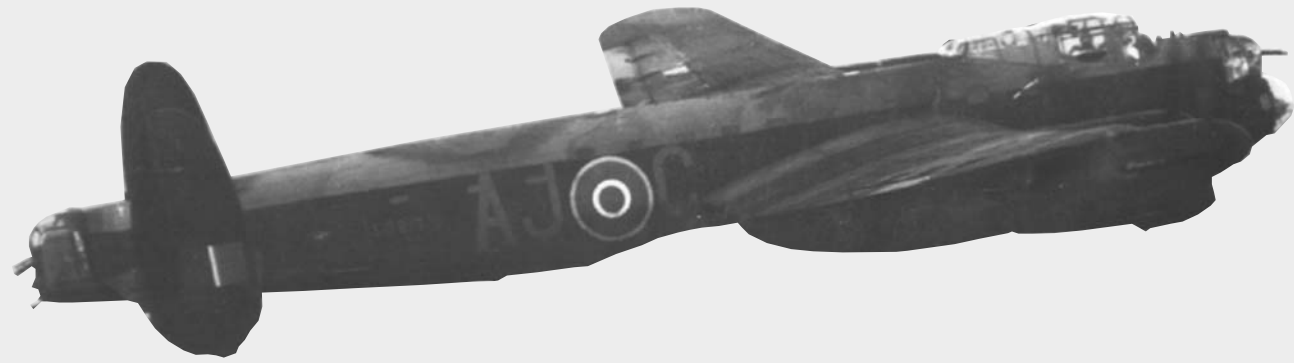
The Targets

The idea of a bombing raid on the dams that fed the industrial heartland of Germany was first conceived early in 1941 when Britain stood isolated at the edge of a Europe largely under German occupation.

The United States had not yet entered the war and, with no immediate prospect of a renewed land campaign, it was the Commonwealth air forces who were taking the fight to Germany with strategic bombing of industrial and manufacturing targets aimed at disrupting production and slowing the German war machine. The six hydroelectric dams in the Ruhr Valley supplied much of the water, power and canal communication network for Germany's industry and it was anticipated that a successful strike to just one of the largest would seriously disrupt steel production and consequently the manufacture of tanks, aircraft, locomotives and weapons.

But the dams were formidable targets. Massively built to hold the millions of tons of water they controlled, they were also thought to be heavily defended with anti-aircraft Flak batteries and torpedo nets. It was clear that conventional bombing would be of no use if a raid was to succeed and a special weapon would be needed.





The Bouncing Bomb

It was British designer and inventor Barnes Wallis who came up with the "childishly simple" idea of a bomb that would skip across the surface of the water clearing the defensive nets, hit the dam wall, sink to the required depth then explode. Wallis was given the go-ahead to develop the bomb, more accurately a mine, but the technical difficulties of the "childishly simple" idea were such that a tried and tested design was not ready until January 1943; even then the bomb, now code named 'Upkeep', would be fiendishly difficult to deliver.

'Upkeep' was massive and awkward. Cylindrical in shape, 60 inches long and 50 inches in diameter, it weighed almost 9,500 lbs of which 6,600 lbs were powerful explosive. Because of its size, shape and release requirements it had to be carried in adapted Lancaster bombers with each Lancaster carrying just one bomb slung underneath the aircraft on a special mounting fitted with a small motor. The motor was needed because for the bomb to bounce it had to be rotating backwards at 500 rpm on release. The speed and altitude of the aircraft - exactly 220 mph and 60 feet - were also critical and the bomb would have to be dropped just 400 to 450 yards from the dam wall. The margin for error was very tight. To add to the difficulties, the raid would have to be carried out at night.

above: Lancaster AJ-C, shot down en route for the Lister dam

right: The Upkeep bomb in its special mounting beneath AJ-G, Gibson's Lancaster

The Dambusters Squadron

Precision bombing of this kind called for special skills and in March 1943 the Air Ministry authorised a new squadron to be formed at Scampton in Lincolnshire. Wing Commander Guy Gibson, highly decorated and at 24 already considered a veteran pilot, was given a free hand to select the British, Canadian, Australian and New Zealand airmen who would form 617 Squadron. All were highly experienced flyers, most having already survived sixty bombing raids.

The squadron would not know the exact details of their targets until the briefing on the day of the mission itself, but training began immediately. Low level night flying and navigation exercises were soon extended to daylight hours with moonlit conditions simulated by tinted cockpit windows and special goggles. Maintaining the required speed of 220mph was no difficulty for the experienced pilots, but flying at the critical height of



60 feet became a real concern: cockpit instrumentation was simply not accurate enough. The problem was eventually solved by fitting two spotlights to the underside of the aircraft and aligning each beam until they converged on the water at the critical height. Bombing technique

The Mission

Chastise' called for nineteen Lancasters, each with a crew of seven, flying in three waves, their primary targets the Möhne, Eder and Sorpe dams. The first wave of nine aircraft, led by Gibson,



Wing Commander Guy Gibson (on the steps) and crew board Lancaster AJ-G

AWM148946

over water was improved by practice attacks on the Derwent and Uppingham reservoirs. The arrival at Scampton of Lancasters configured for the mission allowed practice drops with inert cylinders on the Kent coast, and eventually against dams in central England.

When Bomber Command issued the order to carry out Operation 'Chastise' on the night of 16-17 May 1943, the squadron had been training for only six weeks.

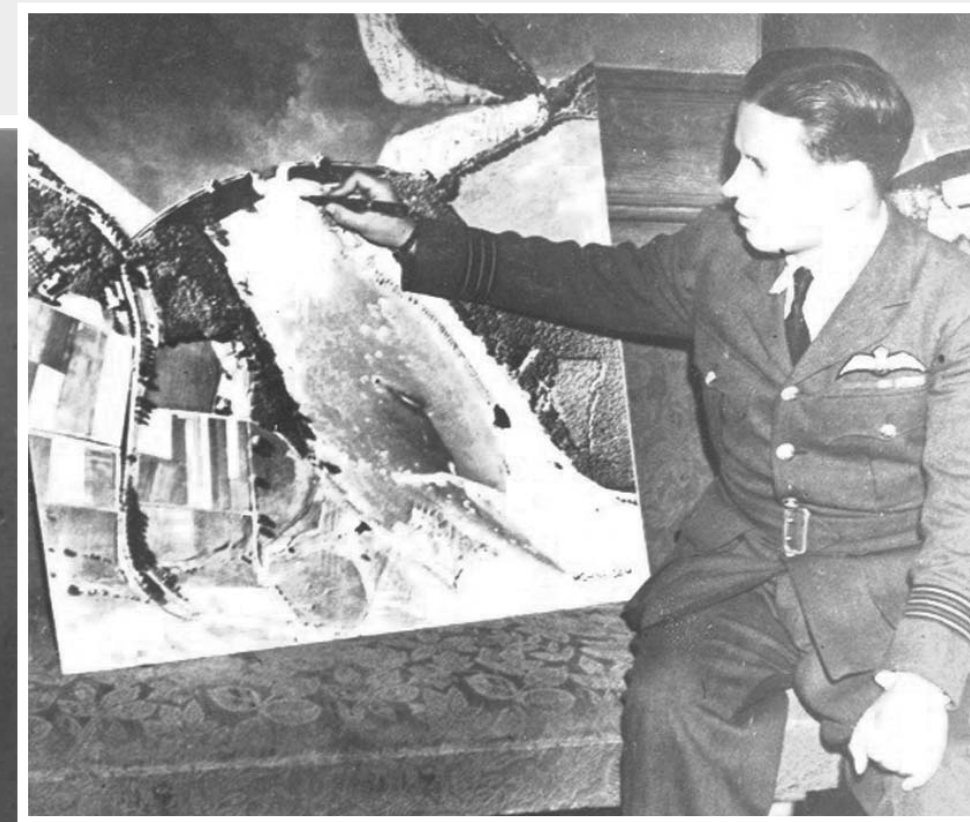
would attack the Möhne dam and, if successful, would fly on to the Eder. The second wave of five aircraft would attack the Sorpe. The third wave, also of five aircraft, would act as airborne reserve, following in to attack the Möhne or Sorpe dams if not breached in the primary attack, or going on to the secondary targets, the Diemel, Eneppe and Lister dams.

The First Wave

At 21.30 hrs on the evening of 16 May, the first wave left Scampton. Flying at very low level across the North Sea to avoid detection, they crossed the Dutch coast and turned for the Ruhr. The first loss was Lancaster AJ-B which flew into high tension electricity cables and crashed killing all of the crew. The remaining eight bombers reached the Möhne dam around midnight.

Gibson and his crew in Lancaster AJ-G opened the attack with an accurate strike which damaged but failed to breach the dam wall. The anti-aircraft batteries were now active and the second Lancaster, AJ-M, was hit on the approach run before being crippled by the blast from its own mine which overshot and exploded beyond the dam's parapet. The plane crashed shortly afterwards and five of the crew were killed.

Gibson escorted the next two Lancasters (AJ-P and AJ-A) in their attack, returning fire to the German gunners. The first mine fell short of the



above:and after, Gibson explains how the dam was breached

target, the second hit, but again failed to cause a breach. The next Lancaster, AJ-J, receiving covering fire from those who had already delivered their bombs, was more successful; the mine was perfectly placed and the already weakened wall of the Möhne dam finally crumbled, releasing millions of tons of water into the Ruhr valley below.

With three 'Upkeep' mines remaining, Gibson turned for the Eder dam about 60 miles away, where the target was found to be undefended allowing the crews time to weigh up the difficult approach before delivering their mines. The first, dropped by Lancaster AJ-L, hit the dam but the wall held. The delivery of the second was mistimed and the bomber (AJ-Z) was hit by the resulting blast as the mine exploded on the dam's parapet. With only one 'Upkeep' remaining, Lancaster AJ-N began its approach. The strike was good and with the Eder dam now holed in two places, the remaining Lancasters turned for home. Already damaged, AJ-Z was soon brought down by anti-aircraft Flak and another, AJ-A, was shot down while clearing the Dutch coast. There were no survivors from the two crews.



above: Gibson and King George VI examine a model of the Möhne dam at Scampton

right: an air reconnaissance photograph of the Möhne dam before the raid

The Second Wave

The five Lancasters of the second wave suffered heavily before the Sorpe dam was even reached. Flying very low over the Zuider Zee AJ-H struck the water a glancing blow and lost its mine, and with the vital crew intercom system on AJ-W damaged by Flak, both aircraft were forced to turn back. AJ-E crashed after flying into high tension cables and AJ-K was shot down killing both crews. The remaining aircraft (AJ-T) reached the target, its mine causing some damage to the crown of the Sorpe dam, but no breach.

The Third Wave

Two of the third wave of Lancasters, which left Scampton around midnight, were also lost en route to their targets. AJ-S, heading for the Sorpe dam, strayed off course and was brought down by Flak with the loss of all crew. AJ-C was also downed on the way to the Lister Dam but one member of the crew survived and was taken prisoner. AJ-Y, also bound for the Lister, was forced to turn back when the rear gun turret failed. The two remaining Lancasters, AJ-F and AJ-O, made successful attacks on the Sorpe and Enappe dams but caused no further significant damage.

617 Squadron pictured shortly after the raid



The Outcome and the Cost

Air reconnaissance immediately after the raid gave some indication of the damage inflicted on the dams and the spectacular flooding that resulted. The breach in the Möhne dam, which was capable of holding 134 million tons of water, caused flooding to extend 20 miles along the Ruhr valley. More than 1,200 people were killed in the deluge. Water escaping from the 202 million ton Eder dam caused a tidal wave 30 feet high to surge down the valley below, sweeping away power and pumping stations, the flood waters reaching as far as Dortmund 30 miles away.

The widespread flooding caused immediate disruption of the water supply network and rail, road and canal communications, but later reports indicated that only 10-15 per cent of industrial output was lost and production was not seriously affected in the long term. Both dams were back in operation in time for the reservoirs to be refilled by the winter rains, although the huge labour force needed for the repair work and troops for improved defence had to be redeployed from areas where they were sorely missed.

But on the home front, where the operation was widely reported in the press, photographs of the shattered dams did much to boost the morale of the British people hungry for success, and the 'Dambusters' raid was hailed as an unqualified triumph.

The dams raid was just one operation carried out as part of Bomber Command's strategic bombing campaign against Germany, but in the public imagination it has come to embody many of the qualities most readily associated with the struggle against overwhelming might and tyranny during the Second World War - ingenuity, skill, comradeship, selfless sacrifice, but perhaps most of all, courage. Guy Gibson (who would be killed in action the

following year) earned the Victoria Cross for his part in the raid, one of 34 awards for gallantry made to the 133 airmen who took part. But of the nineteen Lancasters that left Scampton that night, eight failed to return. With 53 men dead the human cost was unacceptably high and no similar operation involving Wallis's 'Upkeep' bomb was attempted for the remainder of the war.

617 Squadron - The Dead



From Lancaster **ED864 AJ-B**, buried in **Reichswald Forest War Cemetery, Germany**:

Flight Lieutenant William **ASTELL**, DFC, RAFVR; Sergeant John **KINNEAR**, RAF; Pilot Officer Floyd Alvin **WILE**, RCAF; Flying Officer Donald **HOPKINSON**, RAFVR; WOII Abram **GARSHOWITZ**, RCAF; Flight Sgt Francis Anthony **GARBAS**, RCAF; Sergeant Richard **BOLITHO**, RAFVR

From Lancaster **ED925 AJ-M**, buried in **Rheinberg War Cemetery, Germany**: (above)

Flight Lieutenant John Vere **HOPGOOD**, DFC and BAR, RAFVR; Sergeant Charles **BRENNAN**, RAFVR; Flying Officer Kenneth **EARNSHAW**, RCAF; Sergeant John William **MINCHIN**, RAFVR; Flying Officer George Henry Ford Goodwin **GREGORY**, DFM, RAFVR

From Lancaster **ED937 AJ-Z**, buried in **Reichswald Forest War Cemetery, Germany**:

Squadron Leader Henry Eric **MAUDSLEY**, DFC, RAFVR; Sergeant John **MARRIOTT**, DFM, RAFVR; Flying Officer Robert Alexander **URQUHART**, DFC, RCAF; Pilot Officer Michael John David **FULLER**, RAFVR; WOII Alden Preston **COTTAM**, RCAF; Flying Officer William John **TYTHERLEIGH**, DFC, RAFVR; Sergeant Norman Rupert **BURROWS**, RAFVR

From Lancaster **ED887 AJ-A**, buried in **Bergen General Cemetery, Netherlands**:

Squadron Leader Henry Melvin **YOUNG**, DFC and BAR, RAFVR; Sergeant David Taylor **HORSFALL**, RAF; Flight Sgt Charles Walpole **ROBERTS**, RAFVR; Flying Officer Vincent Sandford **MacCAUSLAND**, RCAF; Sergeant Lawrence William **NICHOLS**, RAFVR; Sergeant Gordon Arthur **YEO**, RAFVR; Sergeant Wilfred **IBBOTSON**, RAFVR

From Lancaster **ED927 AJ-E**, buried in **Reichswald Forest War Cemetery, Germany**:

Flight Lieutenant Robert Norman George **BARLOW**, DFC, RAAF; Pilot Officer Samuel Leslie **WHILLIS**, RAFVR; Flying Officer Philip Sydney **BURGESS**, RAFVR; Pilot Officer Alan **GILLESPIE**, DFM, RAFVR; Flying Officer Charles Rowland **WILLIAMS**, DFC, RAAF; Flying Officer Harvey Sterling **GLINZ**, RCAF; Sergeant Jack Robert George **LIDDELL**, RAFVR

From Lancaster **ED934 AJ-K**, commemorated on the **Runnymede Memorial, United Kingdom:**

Pilot Officer Vernon William **BYERS**, RCAF; Sergeant Alastair James **TAYLOR**, RAF; Flying Officer James Herbert **WARNER**, RAFVR; Pilot Officer Arthur Neville **WHITAKER**, RAF; Sergeant John **WILKINSON**, RAFVR; Sergeant Charles McAllister **JARVIE**, RAFVR; and buried at **Harlingen General Cemetery, Netherlands:** Flight Sergeant James **McDOWELL**, RCAF

From Lancaster **ED865 AJ-S**, buried **Bergen-op-Zoom Cemetery, Netherlands:**

Pilot Officer Lewis Johnstone **BURPEE**, DFM, RCAF; Sergeant Guy **PEGLER**, RAF; Sergeant Thomas **JAYE**, RAFVR; WOII James Lamb **ARTHUR**, RCAF; Pilot Officer Leonard George **WELLER**, RAFVR; Sergeant William Charles Arthur **LONG**, RAFVR; WOII Joseph Gordon **BRADY**, RCAF

From Lancaster **ED910 AJ-C**, buried in **Reichswald Forest War Cemetery, Germany:**

Pilot Officer Warner **OTTLEY**, DFC, RAFVR; Sergeant Ronald **MARSDEN**, DFM, RAF; Flying Officer Jack Kenneth **BARRATT**, DFC, RAFVR; Flight Sergeant Thomas Barr **JOHNSTON**, RAFVR; Sergeant Jack **GUTERMAN**, DFM, RAFVR; Sergeant Harry John **STRANGE**, RAFVR

Runnymede Memorial, United Kingdom



The Commonwealth War Graves Commission

The Commonwealth War Graves Commission is responsible for marking and maintaining the graves of those members of the Commonwealth forces who died during the two world wars, for building and maintaining memorials to the dead whose graves are unknown and for providing records and registers of these burials and commemorations, totalling 1.7 million and found in most countries throughout the world.

For further information contact:

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Enquiries on location of individual burials or commemorations may be directed to the office below or through the Commission's Internet site at **www.cwgc.org**

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