

GRAND SLAM

Although the 12,000 pound Tallboy had been in service for nine months, Barnes Wallis's original concept had been to build a similar, but much larger weapon that would have a weight of 22,000 pounds. When the Grand Slam became available during March 1945, it was the culmination of five years-worth of bomb design. Identical in shape to the Tallboy, when in production the Grand Slams weighed 22,400 pounds, had a length of twenty-five feet, five inches and a diameter of 3 three feet ten inches.

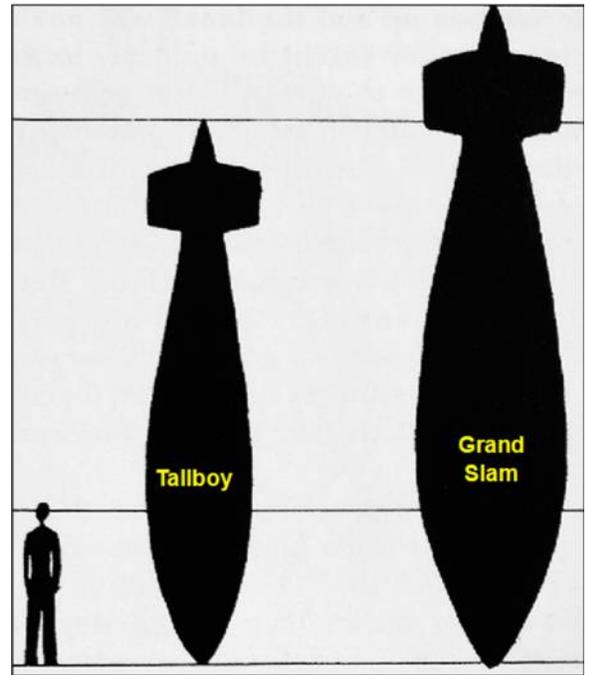
To deliver the Grand Slam, thirty-two 'B1 Special' Lancasters were built. The modifications included more powerful Rolls-Royce Merlin 24 engines, the removal of the bomb doors to accommodate the weapon, the removal of the front and mid-upper gun turrets and the H2S radar equipment to save weight, and the strengthening of the undercarriage to enable the aircraft to land with the huge bomb still aboard. Minor weight-lessening even included the removal of three of the Lancaster's four fire axes and its crew door ladder.

Like the Tallboy, the Grand Slam's fins were designed to generate a stabilizing spin of up to sixty revolutions per minute and, like the Tallboy, it had a thicker case than a conventional bomb, allowing it to penetrate deep into the earth or to pass through extremely thick reinforced concrete roofs. The explosive was Torpex and it was poured into the casing as a liquid and took a month to cool and set. Because of the low rate of production and high value of each bomb, the crews were told to land with their Grand Slams on board rather than jettison them if a sortie had to be aborted.

Barnes Wallis had determined that the bomb would need to be dropped from an altitude of 40,000 feet to reach its terminal velocity. Although even the modified Lancasters struggled to carry it to an altitude approaching 20,000 feet, it was still a formidable weapon and one that allowed Bomber Command to attack a range of new and difficult targets. The Grand Slam carried slightly less than twice the explosive material as Tallboy but is said to have been five times as powerful. Grand Slam was by far the most powerful, non-atomic bomb used during the Second World War. 617 Squadron, based at Woodhall Spa, was the only squadron to deliver the Grand Slam.

As with the Tallboy, the use of the 'Stabilizing Automatic Bomb Sight' (SABS) was vital to obtain the accuracy required to strike railway viaducts and other small targets from high altitude. The accuracy that 617 Squadron was able to attain with the SABS was truly remarkable. Their bombs were generally dropped from between 12,000 and 15,000 feet while flying at a speed of 200 miles per hour and several miles back from the target. From that height and distance even the white square on the bombing range looked like the size of a pin-head.

The first Grand Slam was delivered to Woodhall Spa on 20 January, however the B1 Special Lancasters that were to carry them had not yet been delivered. So, the bomb had never even been taken off the ground or test-dropped at that point. Referring



Lancaster B1 Special



Grand Slams at Wood Hall Spa

to the weapon by the name 'Grand Slam' seems to have been discouraged, and the 617 ORB's refer to it simply as a 'Special Store'.

When the first Lancaster B1 Special (PB997) arrived at Downham Market on 5 March, Johnny Fauquier, the Canadian C/O of 617 Squadron, was eager to try it out. During a post-war interview, he recalled his first flight with a Grand Slam on board - the first time anyone had tried to take off, and land, with the huge bomb,

"The first one (Grand Slam) arrived and was put in the bomb dump with no instructions from Bomber Command whatsoever. Everybody, I think, realized that the war was drawing to a close and I thought what a pity that this should never be dropped. So, without authority from Bomber Command, I ordered the bomb hoisted onto my own aircraft and cleared the personnel out of the station and started to take-off.

"At one point, I didn't think we would make it because usually we got airborne with a full load at around 110 miles an hour and I was at 145. The wing tips of the airplane started to bend up and I was wondering whether the wings would come off or what would happen, but finally she did take-off.

"So, I flew it around for about twenty minutes and brought it back and landed and then called up Bomber Command and said it was quite safe."

Then on the morning of 13 March, the first Grand Slam was test-dropped over the RAF's Ashley Walk bombing range. A witness on the ground described the drop as follows,

"We had a job to see it when it came down. It was all marked in black and white, so you could see it rotating. Then there was this almighty explosion when it went into the ground. After that had settled a bit we motored round to stand on the edge of the crater (It was 124 feet in diameter and 34 feet deep). There were minor explosions, like a volcano going off, from the gases still coming up. So that proved the ten ton bomb to be able to be dropped from a Lancaster, and to work."

Later that day, two Grand Slams were prepared and fused for eleven second delays. One was loaded onto Johnny's Lancaster B-1 Special. A second was hoisted into the bomb-bay of his Flight Commander, S/Ldr. Charles 'Jock' Calder's, aircraft.

The two took off, again headed for the Bielefeld Viaduct, a target that Johnny and his squadron were by now quite familiar with. It had been subjected to attack since the beginning of the war by an estimated seven million pounds of explosive. It was damaged but remained in regular use.

However, the raid was aborted when the pilots were advised that the target was shrouded by 10/10ths cloud. Both returned with their Grand Slams, landing very carefully at RAF Carnaby which had a longer runway than Woodhall Spa. Ground crew travelled from Woodhall Spa to Carnaby to service the bombers to make them ready for the next day.

The next day, Johnny and the squadron were again authorized to drop the first Grand Slams and the target was again the Bielefeld Viaduct. Thirteen other squadron aircraft were loaded with Tallboys. The Lancasters roared to life and Johnny prepared



Johnny Fauquier and a Grand Slam



to make history by dropping the largest weapon ever built.

Then, a huge disappointment. Just prior to take-off, Johnny's SABS began leaking oil and his starboard-inner engine seized up. Not even Johnny Fauquier would consider taking off with a Grand Slam on three engines.

Johnny ran towards S/Ldr. Calder's aircraft and tried to get his attention so that he could 'commandeer' his Lancaster. S/Ldr. Calder, very likely wanting to be part of this historic raid just as badly as Johnny did, later claimed that he was unable to make sense of Johnny's frantic waving and sign language. He cracked open the throttles and took off for Bielefeld, leaving Johnny fuming on the tarmac.

As S/Ldr. Calder flew to the target, he began to realize the intense pressure he was under. He would clearly be facing the wrath of Johnny Fauquier when he returned and, doubly-so, if he had failed to destroy the viaduct. S/Ldr. Calder's Grand Slam was released from 11,965 feet, and he estimated that it landed thirty yards short of the structure. Other 617 pilots reported accurate drops with their Tallboys. Eleven seconds after penetrating the ground, the Grand Slam exploded and 260 feet of the span was destroyed.

The following day, Arthur Harris was briefed on the first use of the Grand Slam and sent a note to 617 Squadron that read:

"I have just seen a stereo-pair of the Bielefeld Viaduct taken after your visit yesterday afternoon, my congratulations on your accurate bombing. You have certainly made a proper mess of it this time and incidentally added another page to your history by being the first squadron to drop the biggest bomb on Germany so far, good work. Keep up the training. We can't afford to put these new little pets in the wrong place."

Additional Grand Slam attacks were made on other viaducts, submarine pens, and enemy warships. 617 Squadron dropped a total of forty-one Grand Slams during the closing weeks of the war. Johnny and S/Ldr. Calder each dropped six of them.



Bielefeld Viaduct



**Grand Slams struck the
Submarine Pens at Farge**