

# RAF COLLEGE CRANWELL

## “Operation Crossbow”



### A Review of Cranwellian Involvement in the Destruction of V1 and V2 Rockets

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# German Development of V Weapons

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## TWO Operation Crossbow

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**The Germans develop the V Weapon**

Throughout the war, the Nazis were developing missiles at Peenemunde, their research centre on the Baltic coast of Germany. By 1942 they had successfully test-launched a flying bomb (the V-1) and a supersonic missile (the V-2). Hitler believed these 'vengeance' weapons would win him the war.

12 May 2011  
2 minutes

This clip is from

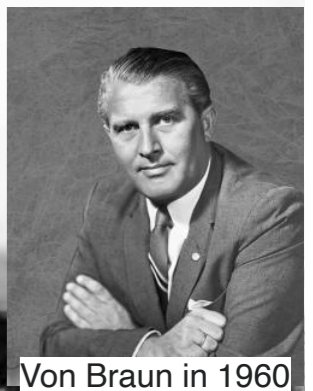
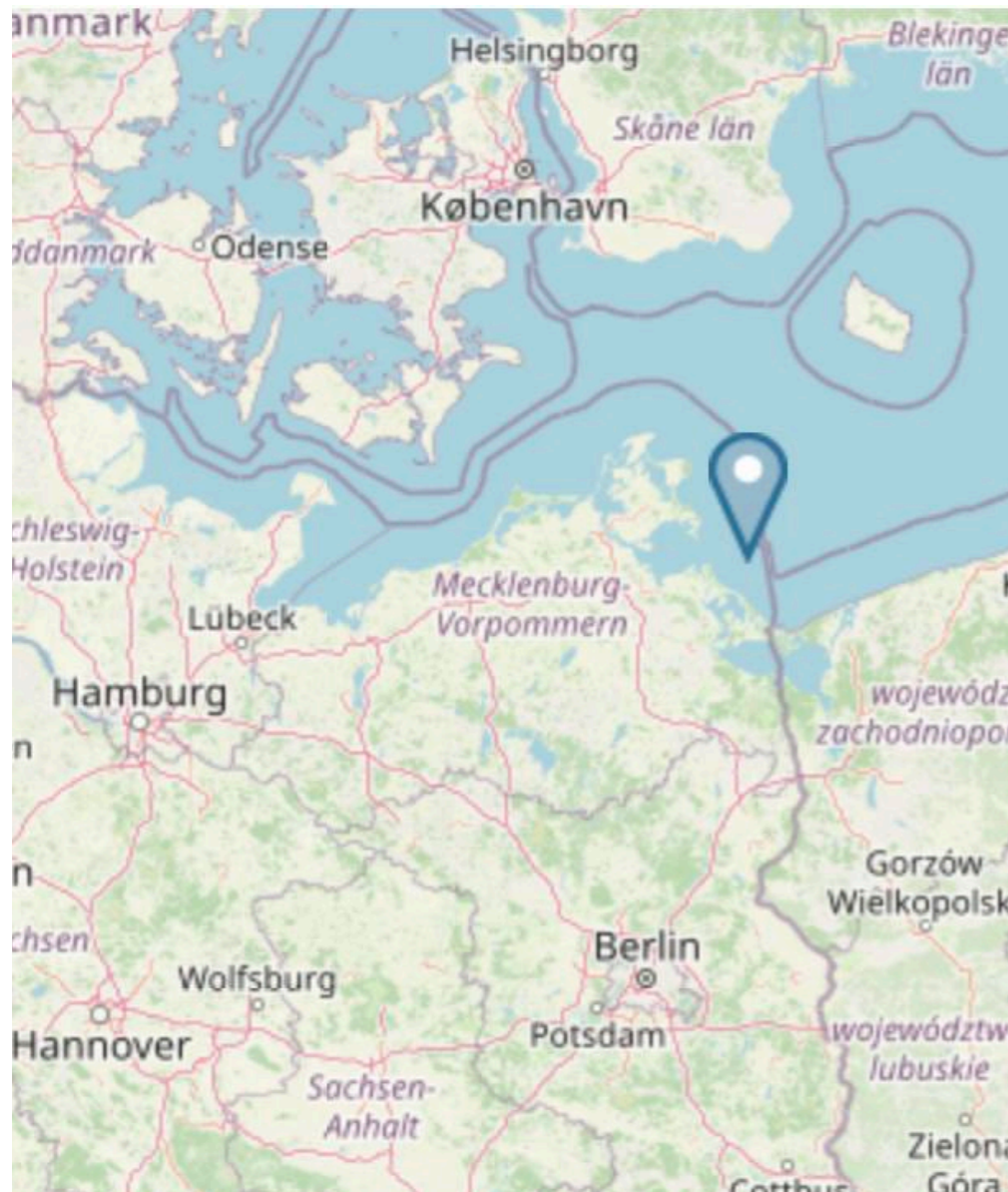


Operation Crossbow

(Control/Command) Click on the Graphic above to see BBC clip explaining the origins of the V1/V2 Force

# Development & Manufacturing Sites

In 1936, Peenemunde had been a small fishing village on the remote peninsula of Usedom, on the Baltic Sea. In that year, the decision was made by the Germans to establish a joint research facility for the Army and Air Force, where they could develop and test large rockets. By 1940, more than 18,000 scientists, engineers, technicians worked at Peenemunde - under the technical direction of Dr Wernher von Braun - and on 3 October 1942, they succeeded in firing a rocket 84 kilometres into space, which landed only four kilometres from its predicted impact point. Whilst many of the rocket scientists were interested in the potential of this technology for space travel, the German High Command were far more interested in its military application, and the potential of this new revolutionary technology to change the course of the war.



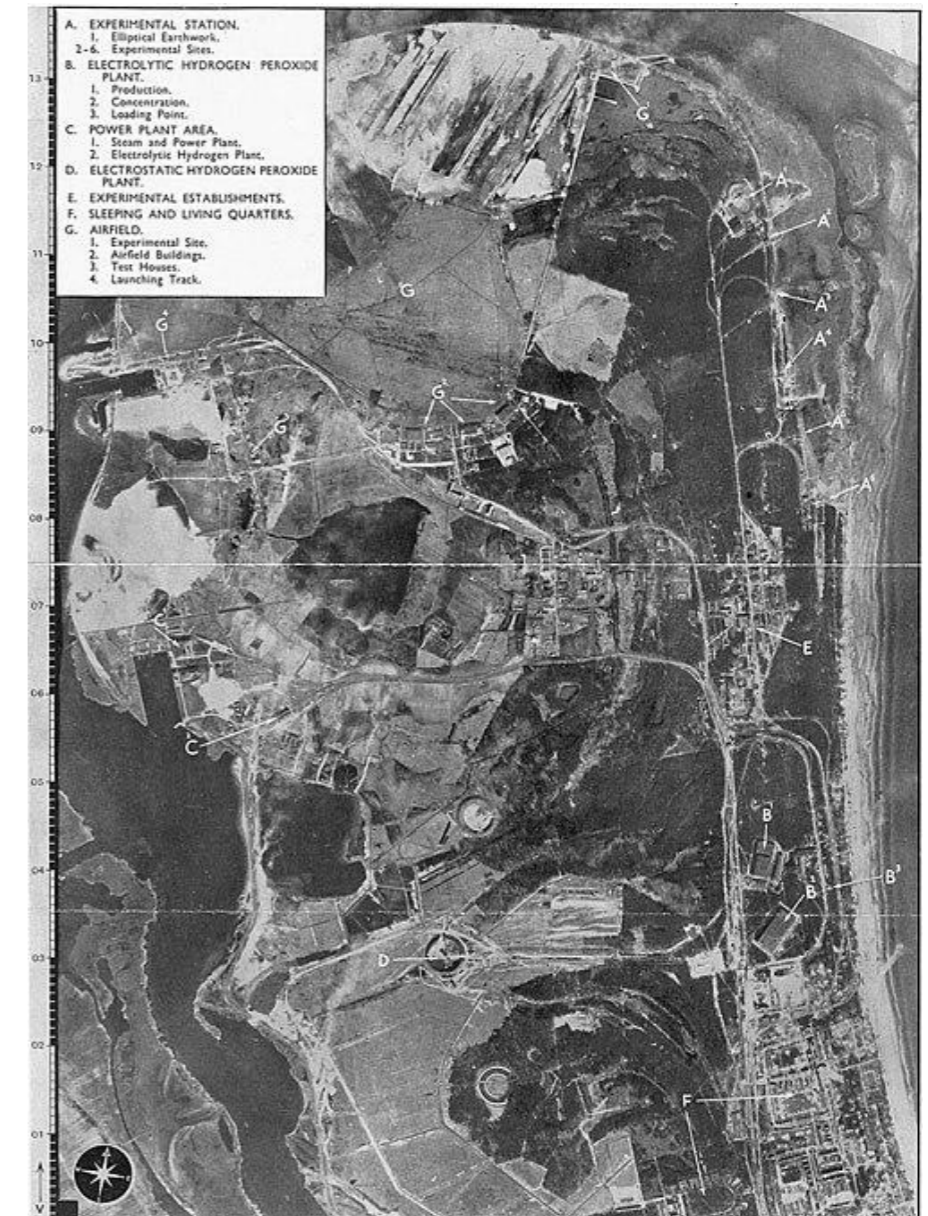
Von Braun in 1960

# First CROSSBOW Mission - Operation HYDRA

Employed 596 aircraft, including Lancasters, Halifaxes and Stirlings; 40 losses (6.7%)

The first Allied raid on the Peenemunde facility, was on the night of 17/18 August 1943 when RAF Bomber Command dropped 1,600 tons of high explosives and 250 tons of incendiary bombs.

Although no important parts of the facility were hit, this and subsequent raids forced the Germans to relocate the facilities for the mass production of rockets to a factory that was built in a network of tunnels under the Kohnstein Mountain at Niedersachswerfen. Located near the town of Nordhausen, in central Germany, thousands of prisoners from the specially built Mittelbau-Dora labour camp were used to convert the tunnels and work in the factory. Rocket testing would also be largely relocated to south east Poland, close to the remote village of Blizna.



Casualty	Entry	Description	Date
Dixon A	SFTS29	KIA 419 Sqn; Halifax II JD163 VR-N; Middleton St. George-Peenemünde; last heard over Norfolk.	17/8/43
Meredith JL	1ATU	KIA 15 Sqn; Stirling I W7634 LS-G; Bourn-Lubeck; one of 3 ac lost (out of 25 on raid); near Peenemunde.	1/10/42



# Fighter Interception Unit



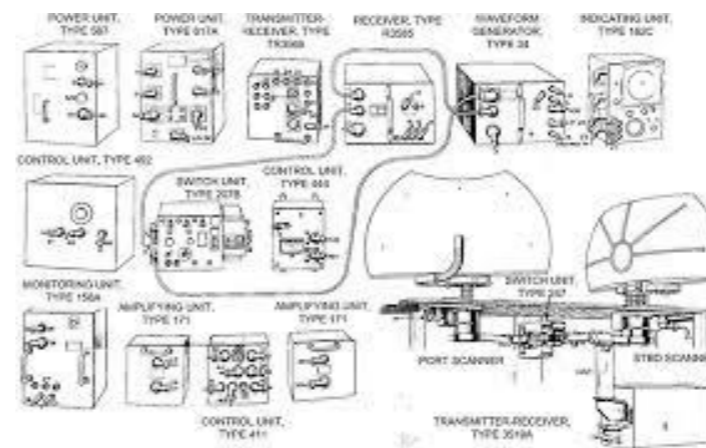
The Fighter Interception Unit (FIU) was the inspiration of Cranwellian, Squadron Leader George Philip (Peter) Chamberlain who took command of the unit on its formation at RAF Tangmere in April 1940, with a strength of 5 Blenheims equipped with the latest A.I. Mk III radars. It was initially set up to evaluate technological advances such as airborne interception (AI) radar and other operational innovations, to counter increasing night raids by the *Luftwaffe*. Operations initially consisted of daytime practice interceptions and operational night defence flights.



AI Mk III radar

However, on 23 August 1944 the FIU became the Fighter Interception Development Squadron (FIDS) and, later in 1944, carried out operational trials at RAF Ford (and later Manston) under the code name Operation *Vapour* to counter Heinkel He 111 H-22 aircraft of III/KG 53 air launching V-1 flying bombs. A radar-equipped Wellington was modified for use by the FIDS as one of the first Airborne Early Warning and Control (AEW&C) aircraft. It operated at an altitude of 4,000 feet over the North Sea to control Mosquito night fighters intercepting the Heinkel He 111s flying from Dutch airbases and carrying out airborne launches of the V-1 flying bomb.

The modus operandi typically involved the Heinkels leaving bases in the Netherlands and flying out over the North Sea at a height of less than 300 feet. Once the Heinkels neared the East Anglian coast they would increase speed and release their flying bombs before turning for home at low level. To assist in detecting the Heinkels, the FIDS borrowed a Coastal Command Wellington equipped with a modified ASV Mk VI radar set and PPI to act as Airborne Early Warning and Control.



ASV Mk VI radar set

After trials, low level night patrols off the north of the Netherlands were carried out by the Wellington with several Mosquito night fighters. For the night fighters to locate and keep station with the Wellington, the aircraft was fitted with a special homing beacon. Despite encouraging results, the *Luftwaffe* stopped air launches by mid January 1945 and the operational trials ended.

# “Checking What Gerry Was Up To”

Harold Macdonald Steward



Sir Harold Macdonald (Mac) Steward was born in Rainhill, near St Helens. He went to the local secondary school and to Cowley School in St Helens. He went into business at the age of 14, continuing to train in engineering at the St Helens Municipal Technical College. Steward later became a production engineering manager, and later still a development engineer; he worked for the same company, British Insulator Calendar Cables (BICC), throughout his engineering career.

During the Second World War, he was seconded to work on radar research, and after the end of the war, served on an inter-services mission to former enemy countries.

His son, the author of this document and owner of the CHS website where it is stored, only twice overheard his father talk of war exploits and to a very close friend in the 1960s, such was the secrecy that members of his generation maintained of the war years for the rest of their lives.

The first 'snippet' was that Steward was a member of the research and development team that developed the degaussing cables for allied shipping to counter magnetic mines. The second was that he was detached to Germany in 1945 - the passes to the left record his detachment as an 'affiliated Squadron Leader' - to, as he put it, see what Gerry had been up to on V weapons.

