

A world first - the story of Bawdsey Radar

On 24th September 1937, RAF Bawdsey became the first fully operational Radar station in the world.

Remarkably, this was only a short eighteen months after the first experiment, conducted by Robert Watson Watt and Arnold Wilkins, which established that by using transmitted radio waves it was possible to detect an approaching aircraft.

A challenge identified after the Great War

In the years immediately following the Great War, protecting the UK from attack was discussed at length by those responsible for the country's defence.

It took more than a decade for an air-defence exercise to be carried out.

In 1934, more than half of the bombers involved in the exercise got past the defences, despite their routes being known. This less-than-satisfactory outcome led the Air Ministry to investigate the idea of radio 'death rays' which would eliminate or disable pilots and their aircraft.

Watson-Watt and Wilkins

The Scots physicist Robert Watson-Watt, supervisor of a national radio research laboratory and descendant of James Watt, inventor of the first practical steam engine, was contacted and asked for his views.

Watson-Watt dismissed the idea of death rays but said that radio beams could be bounced off enemy aircraft to detect them. He asked his assistant, Arnold "Skip" Wilkins, to undertake calculations to demonstrate the feasibility of 'aircraft detection by radio waves'.

With the calculations in place, he drew up a memo and covering letter outlining his ideas. Although it was met with enthusiasm, proof that the system could work was demanded.

Test target identified

On 26 February 1935, Watson-Watt and Arnold Wilkins successfully demonstrated their system using a BBC transmitter, and managed to pick up a bomber being used as a test target.

In May 1935 Watson-Watt, Wilkins and a small team of scientists moved to Orfordness to conduct a series of historic experiments over the sea that would lead to the world's first working 'RADAR' system.

It soon became apparent that Orfordness was inadequate for further research and the Bawdsey Manor Estate was purchased for £24,000.

The birth of the radar chain

In February 1936, the research scientists occupied Bawdsey Manor House and the stables and outbuildings were converted into workshops.

240ft wooden receiver towers and 360ft steel transmitter towers were built and Bawdsey became the first Chain Home Radar Station. By the outbreak of World War 2 a chain of radar stations was in place around the coast of Britain. RAF Bawdsey was unique in that it had Coast Defence (CD), Chain Home Low (CHL) and Chain Home (CH) equipment together on one site. More usually, CH stations only operated one system and acted as a parent station to those operating the CHL role.

On 3rd September 1939, the scientific team was moved from this vulnerable east coast site to Dundee and Bawdsey became an operational rather than a research station.

Anti-aircraft installations

During WW2, RAF Bawdsey was identified as a potential target and in September 1939 three 40mm Bofors guns and two .303 Lewis anti-aircraft guns were installed.

With an increased fear of a German invasion, these defences were supplemented in 1940 by slit trenches, sandbag gun emplacements, a concrete gun post and at least ten type 24 pillboxes; nine of these still survive.

Battle of Britain

Radar stations such as Bawdsey were to prove invaluable intelligence during the Second World War and particularly during the Battle of Britain when 2,600 Luftwaffe planes were set against the RAF's 640.

Bawdsey bombings

As a high-priority target for the Luftwaffe, Bawdsey didn't get off lightly. It was bombed on at least 12 occasions. However, huge earth revetments supported by reinforced concrete walls and a roof specially designed to dissipate the force of an overhead blast, prevented the destruction of the station.

On 18th October 1940 anti-aircraft gunners shot down a German bomber before it could release its load.

Sporadic attacks continued for the rest of the war. The last bombing raid near Bawdsey was on 30th June 1944 and in September of that year. A V1 rocket crashed on the beach. In October, a V2 detonated over the sea.

Bloodhound missiles

Bawdsey was used as an RAF base through the Cold War until the 1990s when the Bloodhound Missile was the last 'tenant' in this base.

On 31st May 1990 the Bloodhound force ceased operations and in June all the missiles were withdrawn to RAF West Raynham. The RAF Ensign was lowered for the last time on the 25th March 1991 and the station closed on the 31st March. Sadly, the last of the giant transmitter masts came down in 2000.