

THE BATTLE OF BRITAIN

AND THE HISTORY OF THE SCHOOL OF AEROSPACE BATTLE MANAGEMENT

RAF Shawbury's own School of Aerospace Battle Management, part of the Defence College of Air and Space Operations, has a distinguished history which it can trace all the way back to the birth of radar and the Battle of Britain.

In the mid 1930s, as war with Germany became increasingly likely, the problem facing those charged with the Air Defence of Great Britain was the increasing speed and height of new German bombers, such as the Junkers 88 and Heinkel 111 (pictured).



Even with the improved performance of the new Spitfire and Hurricane, it was doubtful if they would catch attacking German bombers from a standing start. What was needed was the ability to detect approaching German bombers in sufficient time to scramble our fighters to the right position and height in order to defend British airspace.

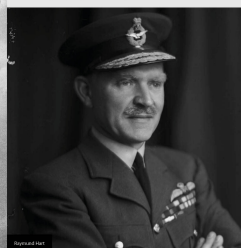
No detection system in use at the time looked like giving sufficient warning until, on 26 February 1935 near Darenty, Robert Watson-Watt demonstrated that the disturbance of radio waves by aircraft could be measured and shown on an oscilloscope.



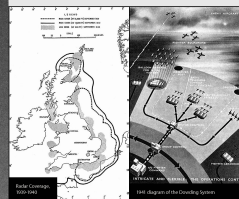
Having demonstrated the concept of radar, then known as Radio Direction Finding or RDF, the Air Ministry set up a research station at Bentley Moor, Suffolk, which became the 'home' of radar development and key to Fighter Command's success in the Battle of Britain.



The initial rush to develop radar to the point where it could be used operationally to defend Britain was led by civilian scientists under Watson-Watt. In 1937, Squadron Leader Raymond Hart was posted to Bentley. His task was to study radar with a view to ensuring that he had sufficient knowledge and staff to train any Service personnel necessary for maintaining and operating radar equipment, so that immediately anything was made by the scientists the RAF could use it.



Having been trained in the use of radar, Squadron Leader Hart, together with a Flight Sergeant, Sergeant and Corporal, set up a training course for RAF personnel in the use and maintenance of this top-secret equipment. Although still part of the Bentley research station, 1937 marks the start of the history of what would become the School of Aerospace Battle Management.



The training station at Bentley was crucial because the radar chain, starting from the single station at Bentley, was expanding rapidly through 1938 and 1939 in the rush to provide sufficient detection capability on the east and south coasts prior to the outbreak of war. By July 1940, Squadron Leader Hart's system had trained personnel for 28 larger Chain Home stations, each with 40 operators and technicians, and 36 smaller Chain Home Low stations, each with 25 operators and technicians.

The radar stations were just one part of a complex and widespread organisation that defended UK airspace. This system is known as the Dowding System, after Air Chief Marshal Dowding, Commander in Chief Fighter Command. Detecting every aircraft in time, and having enough trained personnel to do it, was only the first problem that had been solved. The next issue was how to combine the detection provided by the radar chain and the Observer Corps into timely information that could be used to direct a defensive air battle.

This problem was solved by another of Squadron Leader Hart's innovations, the Filter Room at HQ Fighter Command. The range of detection information was presented rapidly on a 'filter table' by 'plotter', and assessed by a 'Filter Officer' - were those plots two separate German raids being detected by two different radars, with overlapping coverage, or the same raid being double-tracked? Their decision then appeared on ops room tables across the rest of the system. Filter Officers and their Plotters required intensive training to ensure accuracy, speed and good judgement. A training action for Filter Officers was established at RAF Uxbridge, close to the Headquarters of No 11 Group.



The final part of the system were the various Operations Room, and their Controllers, Assistants and Plotters. The Controllers used the air picture provided by the Filter Room to decide when to scramble the fighters, and where to place them for best advantage to attack the enemy. Plotters and Assistants were trained at a new training establishment at RAF Leighton Buzzard.

Controllers had a difficult task, both in terms of decision-making and the ability to relate what they saw on the plotting table to what their pilots were seeing in the air. A Controller Training Unit was established at RAF Stammore, beside HQ Fighter Command at RAF Bentley Priory, to teach these skills to a range of officers.

The Controller Training Unit used tricycles, obtained from an ice-cream company, to simulate friendly and hostile aircraft. 'Typing' in a nearby field. Observers around the field reported the tricycles' positions to the Units ops room, which created an 'air' picture on the plotting table. The trainee controller then transmitted intercept instructions via a VHF radio to the pilots through portable sets in the baskets of the tricycles, which were also fitted with a compass and a metronome to judge heading and speed. This novel system qualified on average 70 controllers per month!



The various training establishments for radar operators, Filter Officers, Controllers, their assistants and technical personnel continued to expand throughout the war to meet the growing requirement for detection and defence in the air. They served throughout all theatres, from Europe to the Middle East and as far as Burma.



At the start of 1946, the training establishments were brought together at RAF Ruffee Manor (Wilt), with the formation of the Fighter Command Control and Reporting School. The School then moved to RAF Middle Wallop (Hants) in 1948, RAF Hope Cove (Devon) in 1957, and RAF Sopley (Hants) in 1958. It returned to its ancestral home at RAF Bentley in 1964, RAF West Drayton in 1974, and RAF Brizeham in 1990.



In 2019, the School moved to its synthetic training at RAF Shawbury, leaving behind the live and advanced training in the newly formed Air Surveillance and Control System Operational Conversion Unit. Both Units continue the legacy of the training Units who helped to detect and defend British airspace in 1940.



Churchill writing on the role of the Dowding System in the Battle of Britain:

"All the ascendancy of the Hurricanes and Spitfires would have been fruitless but for this system which had been devised and built before the war. It had been shaped and refined in constant action, and all was now fused together into a most elaborate instrument of war, the like of which existed nowhere in the world"



Winston Churchill, The Second World War, Volume 2, 1948



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