WORLD WAR II DECOYS, DECEPTIONS AND CONCEALMENTS IN WARWICKSHIRE

Situated geographically at the centre of England, Warwickshire was during the Second World War the home to many of the nation's most important war industries, including aircraft and aero-engine manufacture, aircraft and automotive components, machine tools, magnetos, military vehicles, munitions and a host of other war *materiel.* At that time contained within the boundaries of the county were situated two major manufacturing cities, Birmingham and Coventry. As the war progressed both these cities became targets for many enemy air attacks and in the case of Coventry, a particularly devastating one on the night of 14th/15th November, 1940.

In the late 1930s the government started to investigate the possibility of using various types of decoys and deceptions to mitigate the possible effects of enemy bombing. These deceptions took many forms and included dummy aircraft and airfields, decoy aircraft factories and other important manufacturing installations and the use of camouflage, decoy fires and other subterfuges to mislead or confuse an attacking force of bombers.

It was realised by the government that perhaps the skills of the motion picture industry could possibly be enlisted to assist with these deception plans. Initially Warner Brothers and Korda's London Film Studios at Denham were contacted with a view to the manufacture of certain dummy British aircraft, including Wellington and Blenheim bombers. These particular plans came to nothing. However, discussions with another studio, Sound City Films at Shepperton, were more successful and finally a contract was signed for the manufacture of dummy Wellington bombers and subsequently Blenheims. Eventually, Sound City studios were to become a major contributor to the government's deception plans.

In addition to the supply of dummy aircraft, the government, in the guise of the Air Ministry, decided to draw up plans for the provision of decoy aircraft factories, initially listing nine major manufacturers. Possibly due to pressure from the treasury, these plans were scaled back and only the factories of four aircraft manufacturers were actually decoyed. These were Short Brothers at Rochester, the De-Havilland Aircraft Company at Hatfield, Armstrong - Whitworth at Baginton and Boulton Paul Aircraft at Pendeford near Wolverhampton. These "M" series decoy sites were respectively situated at Chatham for Shorts, Holwellhyde for De Havilland, Leamington Hastings (Kites Hardwick) for Armstrong - Whitworth and Coven for Bouton Paul.

During the construction of the Sound City Armstrong - Whitworth decoy factory at Leamington Hastings (Kites Hardwick) in August 1940, personnel working on the site came under attack from a lone German aircraft. One man sustained a bullet injury and several others were hurt when they jumped down from scaffolding. See Warwickshire Incident Report CR 1499 Box 1. The construction and maintenance of large and complex decoy aircraft factories was a big undertaking and this probably explains why only four such sites were completed. To illustrate this point the Sound City decoy Boulton Paul factory, which was situated at Coven 1.24 miles from the actual factory at Pendeford, was almost completely destroyed by very heavy falls of snow in the winter of 1940 and had to be virtually rebuilt in March 1941. It may have been purely coincidental but the four decoy factories mentioned above were almost in a straight line across the country, from Shorts in the South East to Boulton Paul in the West Midlands. Very possibly German photographic reconnaissance had determined in all cases the exact locations of both the real and decoy aircraft factories. Three of the decoy factory sites viz, Holwellhyde, Leamington Hastings and Coven were abandoned in June 1942, with Chatham remaining until April 1943.

Although situated in Oxfordshire and therefore strictly speaking outside the remit of this paper, another wartime factory and its decoy have been included. This inclusion has been made for two main reasons; the factory's strategic importance in WW II and the proximity of its decoy to the Warwickshire county boundary. The factory was that of the Northern Aluminium Company (Alcan) whose aluminium processing plant was located on the northern fringes of Banbury adjacent to the Oxford Canal and the River Cherwell. Alcan was a very important supplier of extrusions and rolled aluminium products to the aircraft industry and in the early stages of the war was the only manufacturer of this critically important material. It was therefore of vital importance that this plant was not destroyed by enemy action. The factory itself was heavily camouflaged. The decoy factory, known colloquially as "Dummy Ally", was constructed by Sound City and located approximately 2.5 miles to the north of the actual factory, sited between the villages of Great Bourton and Mollington, about a mile from the Warwickshire boundary. Although the Banbury factory was destined never to be attacked during the war, "Dummy Ally" was actually bombed on 3rd October 1940; a clear demonstration of the art of deception working to perfection.

Other decoys took the form of fires set in open countryside to simulate burning towns and cities. These sites with the generic title, "Starfish", although they had many sub-designations, were eventually situated throughout the country and became quite sophisticated in operation, being automatically ignited upon the threat of a raid. A very early form of Starfish was used to protect Birmingham and Coventry. In its simplest form the decoy consisted of a long series of trenches dug in various locations to the east, south east and south of Coventry at respectively, Brinklow, Princethorpe and Stoneleigh. The trenches were then filled with several hundred gallons of a petrol/ oil mix, to be ignited as and when required. The sites were very hastily constructed on 23rd November 1940, shortly after the devastating 14th/15th November raid, and were based on the presumption that another attack upon either Birmingham or Coventry was likely. This mini - herculean task was performed in just one day with its headquarters centred on Princethorpe Farm. In the event this particular threat did not materialise as the Luftwaffe had cast their sights elsewhere, namely on Southampton, which they raided on the nights of 23rd and 30th November 1st December 1940 causing extensive damage to the city.

Whilst Starfish sites did provide some protection against bombing, they were not very effective when the Luftwaffe employed radio navigational aids such as *Knickebein ("Crooked Leg")* and the more sophisticated *X-Gerat* systems. Both these devices had been developed by the Germans from the Lorenz blind landing system of the mid- 1930s. The devastating "*Moonlight Sonata"* raid on Coventry on 14th/15th November 1940, which was preceded by special pathfinder aircraft of *KGr100* using *X-Gerat,* demonstrated the accuracy and concentration of bombing that could be achieved using such electronic navigational aids. Only when jamming devices code-named "Aspirin" and "Bromide", for use respectively against *Knickebein and X-Gerat,* were fully developed by the British and employed efficiently against these systems did the German bombing offensive become less effective. In favourable defensive circumstances Starfish sites could prove useful and when combined with jammed navigational signals the outcome often resulted in confused aircrews and inaccurate bombing. A "Bromide" jammer, one of only six in use at that time, operated in the vicinity of Kenilworth on the night of 14th/15th November 1940, but the jamming frequency was incorrectly set and thus it was rendered ineffective against *X-Gerat* at the time of its greatest need. Such are the fortunes of war.

The final German development in radio navigational beams was *Y-Gerat*. Confirmation of a new type of navigational aid being used was first detected on the night of 21/22 December 1940 by RAF Radio Surveillance, based at Kingsdown in Kent. More sophisticated than the previous two devices, *Y-Gerat* relied on a single multi-pattern beam to direct the aircraft to its target. Although more complex than its predecessors, the *Y-Gerat* system suffered from a number of inherent potential weaknesses that were subtly exploited by British radio countermeasures. These countermeasures included the use of the powerful pre-war BBC Television transmitter located at the Alexandra Palace, in North London. By March 1941 the "Battle of the Beams" was all but over and although the night-time Blitz continued, its ferocity, as demonstrated so effectively at Coventry in November 1940, was greatly diminished by the use of radio countermeasures. Gradually the Luftwaffe bomber squadrons ranged against Britain were withdrawn from northern France to be assembled to attack elsewhere, namely against the Soviet Union, on the 22nd June 1941.

Camouflage is one of the main planks in the art of concealment and deception, and Leamington Spa was a key centre for its development during the Second World War. In 1937 the Camouflage Research Establishment was set up at Farnborough, Hampshire, with the primary responsibility of concealing possible military targets. In October 1939 The Civil Defence Camouflage Establishment was formed in Leamington Spa with its main premises in The Regent Hotel and the Roller Skating Rink in Dormer Place. By February 1941 the Camouflage Directorate was fully operational in Leamington Spa when its administration and finance departments were transferred from London. Under the direction of its head, Wing Commander Thomas Reginald Cave-Brown-Cave, the Camouflage Directorate's task was to co-ordinate the design, practice and methods of maintenance of camouflage.

In the autumn of 1941 a naval camouflage section was created by the Admiralty and this was attached to the Camouflage Directorate in Leamington Spa, using the requisitioned Art Gallery in Avenue Road as its Laboratory. Testing of ships' camouflage for both the navy and merchant marine took place here. Two camouflage viewing tanks were installed in the building. The larger of the two was located indoors in the eastern arm of the gallery and the outdoor tank at roof level in a space between the Art Gallery and the adjacent girls' school. Scale models of numerous types of naval vessels were floated in the tanks using both natural lighting conditions outside and also indoors where special effects using spotlights could be applied to simulate varying sea-like conditions. Haze, mist and fog could be reproduced by a "haze box" and the surface of the water in the tank could be rippled by fans. On some occasions the priority was not solely to disguise a vessel at sea but perhaps also render it invisible against a particular type of shoreline.

Having tested a variety of colour schemes and designs for a specific type of ship and its intended theatre of operations, the optimum combination was selected and this was then transferred to scale drawings of the vessel. A despatch rider on a bicycle then took the completed drawings to a naval section situated at Thornley's Brewery at Radford Semele, on the outskirts of Leamington Spa. From there the drawings went to the Admiralty for approval and then to an appropriate dockyard for the application of the camouflage scheme to the selected vessel whilst it was in dry dock. After the ship had been painted, two senior camouflage officers flew over the vessel whilst at sea to determine the overall effectiveness of the camouflage design. It is said that no scheme was ever changed as a result of this inspection. It perhaps seems strange, even mildly comical, that

the navy's wartime camouflage schemes were devised in a town in England about as far from the sea and ships as it is possible to be!

In January 1942, The Civil Camouflage Assessment Committee embarked on a systematic review of important potential targets. This revealed that out of 2,550 sites assessed 750 urgently required day and night - time concealment. Therefore, there was plenty of work for the artists and camoufleurs based in Leamington Spa.

Not all deceptions fooled the enemy. Indeed, it could never have been the case. German documents released after the war show that they were not in the least taken in by the Sound City Leamington Hastings factory, and were fully aware of the Automotive Products factory in Leamington Spa, which was bombed on at least two occasions despite its camouflage! The last vestiges of wartime camouflage designed to protect this factory were still visible on some external walls more than fifty years after its application. However, a number of important sites in Warwickshire and a vital one in Oxfordshire were successfully protected from severe damage by clever decoys, deceptions and concealments. Additionally, the navy's ships and those of the merchant marine engaged in the unremitting war at sea were undoubtedly greatly assisted in their operations by the work of the camouflage unit based in the Art Gallery at Leamington Spa.

References:

1) *Fields of Deception: Britain's Bombing Decoys of World War II,* Colin Dobinson, published for English Heritage by Methuen, London, 2000

2) County Record Office Wartime Incident Reports Ref: CR1499 Box 1

3) *The Secret War*, Brian Johnson, published by the BBC, 1978
Chapter 1. "Battle of the Beams". This chapter gives a very detailed account of the operation of the *Knickebein* and *X & Y-Gerat* navigational systems and the electronic countermeasures adopted to frustrate them.

4) *Concealment & Deception: The Art of the Camoufleurs of Leamington Spa 1939-1945,* Catalogue published to accompany the exhibition at Leamington Spa Art Gallery and Museum, 22 July-16 October 2016, Edited by Jeff Watkin.

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