

**CPAT Report No 1194**

## **Twentieth-Century Military Airfield Hinterlands**

### **SCHEDULING ENHANCEMENT PROGRAMME**



Llywodraeth Cymru  
Welsh Government

**THE CLWYD-POWYS ARCHAEOLOGICAL TRUST**

**CPAT Report No 1194**

# **Twentieth-Century Military Airfield Hinterlands**

## **SCHEDULING ENHANCEMENT PROGRAMME**

**R Hankinson and J Spencer**

March 2013

Report for Cadw



**CPAT**

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Cover photo: Sealand Embankment pillbox (PRN 123657) (CPAT 3601-0012)

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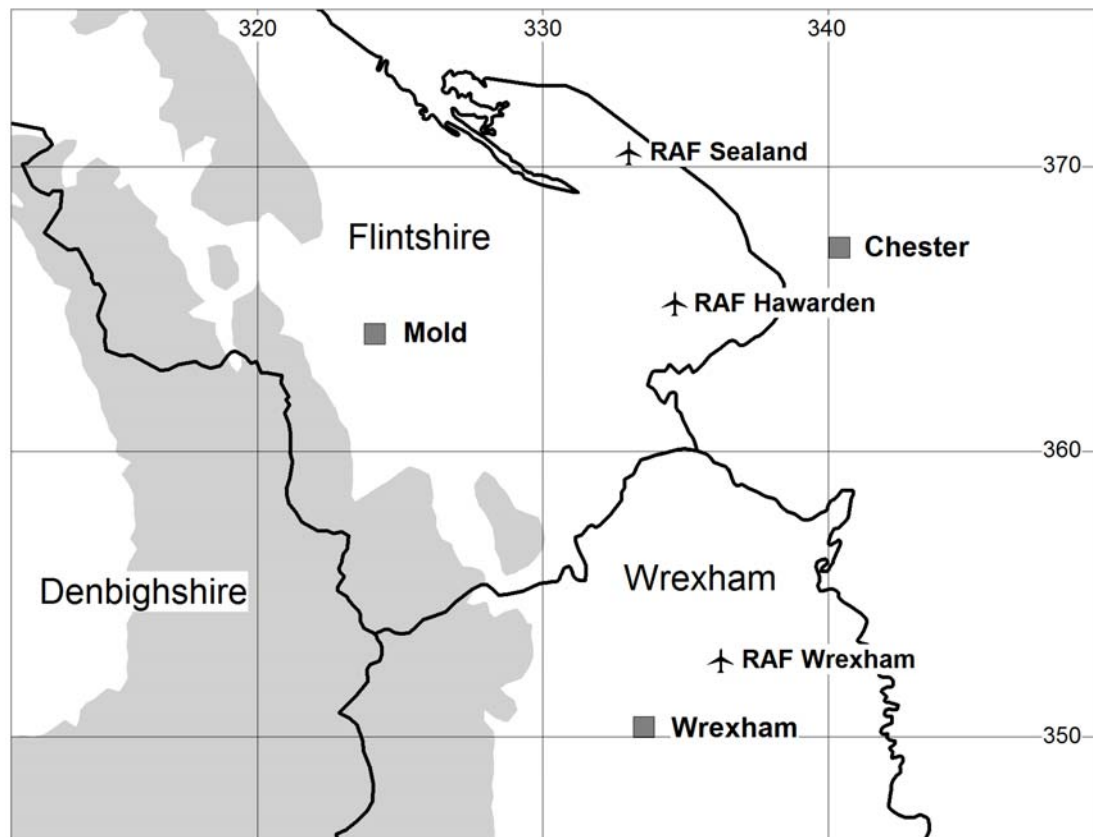
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## 1 INTRODUCTION

- 1.1 This report describes the results of a thematic study of military airfield hinterlands in east and north-east Wales carried out by CPAT and funded through grant-aid from Cadw as part of a pan-Wales project. The desk-top study of relevant sources was undertaken in February and March 2013, with field visits carried out in March 2013.



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Fig. 1: The location of the sites in this study.

## 2 BACKGROUND

- 2.1 This report on the hinterlands of twentieth-century military airfields in east and north-east Wales falls within a further phase of the scheduling enhancement programme undertaken by the four regional trusts in Wales since the mid-1990s. It also follows on from work carried out between 1995 and 2002 under the auspices of the Council for British Archaeology's Defence of Britain project, which identified more than twenty thousand sites of Second World War date. Partly as a result of this increasing interest, the Twentieth-Century Military Sites Working Group for Wales was set up in 2003. The group helps Cadw to identify the most important sites in Wales and works to make the public more aware of their significance. More recently, Cadw published their *Caring for Military Sites of the Twentieth Century* booklet (2009), where the need to conserve the surviving resource of these sites was highlighted. A necessary part of the conservation process is the recognition and recording of the existing remains to determine which sites, or elements thereof, are worthy of protection by statutory designation. This report is the second relating to military airfields in north-east and east Wales, the first one on the airfields themselves



(Spencer and Hankinson, 2012) and it is anticipated that it will be followed by future reports on other aspects of military activity in the study area.

- 2.2 Contrary to popular belief, Wales was not a quiet backwater during the conflicts of the twentieth century. Its position, distant from the Continent, made it ideal for the manufacturing, maintenance and storage of armaments, and also for military training and research and development, including weapons testing. Fighter stations defended the industrial towns and the docks which were targets for German bomber planes. In the Second World War, Wales was in the front line in the Battle of the Atlantic and the coast was defended against a possible German invasion from Ireland (Cadw 2009, 4).
- 2.3 Against this backdrop, the military aviation sites in Wales form an important group. They developed distinct functions and purposes, often forming parts of wider operational, training or storage networks. A few sites have early origins, having been established to protect the coast and shipping during the First World War. These functions were greatly expanded during the Second World War, the latter part of which saw some sites develop into transport hubs for transatlantic flights. The function and development of each site has added to its own unique character and has given weight to the view that they are important historical and archaeological monuments in their entirety, each comprising a plethora of functionally distinct elements that contribute to their status.
- 2.4 This project does not seek to rewrite the histories of each airfield, which are available elsewhere. Instead it seeks to understand the significance of each site and to discover which elements embody that significance, so that those which are of national and regional importance can be identified. This understanding of the significance of each site will be underpinned by legislative frameworks and the guidance enshrined in the 2011 Cadw document *Conservation Principles*. Where possible, this will also highlight priorities for future research and recording work.

### 3 PROJECT METHODOLOGY

- 3.1 The four Welsh Archaeological Trusts are working to agreed guidelines in order to deliver key information to Cadw. The project on twentieth-century military airfield hinterlands commenced with a desk-top assessment, utilising the Historic Environment Record (HER), the National Monument Record (NMR) and various documentary, cartographic and aerial photographic sources. This, the second stage of work on the military airfields, has focussed on areas beyond the immediate flying fields to include a range of features which might include the defences that protected the airfield in the event of possible air or ground attack, dispersed storage areas and structures used in communications. Individual features within these groups may fall within the boundary of the flying field, but have been included here to provide a complete picture of the organisation and function of the airfield hinterland.
- 3.2 The way in which this project has been approached mirrors that of previous scheduling enhancement projects undertaken by the Welsh Archaeological Trusts with grant-aid from Cadw. Each site is assessed using documentary sources prior to undertaking field visits in order to build an understanding of the site and to ascertain fieldwork priorities. A database is produced and accompanying new point- and polygon-based GIS data compiled as a result of the research. Recommendations for designation are submitted to Cadw in a separate report and information is fed back into the regional Historic Environment Records in order to contribute to our understanding of the turbulent nature of the twentieth century through surviving military structures and provide a basis for heritage management and development control.

## 4 SCOPE OF THE WORK

- 4.1 This report provides information on the environs of the military airfields of east and north-east Wales, that is Powys and the old county of Clwyd (now eastern Conwy, Denbighshire, Flintshire and Wrexham Maelor). In practice, all of the airfields lie within north-east Wales, specifically Flintshire and Wrexham Maelor, and there is none in Powys. At the suggestion of Jonathan Berry of Cadw, a study area with a radius of 5km from the airfield boundary as shown on the relevant Air Ministry Plans was employed for this project.
- 4.2 There are three relevant airfields in the study area: RAF Wrexham, RAF Hawarden and RAF Sealand. Each has its own distinctive character, largely owing to its location, previous history and subsequent use. These aspects were dealt with in detail in the previous report (Spencer and Hankinson 2012), and so will be only briefly considered in the text that follows.
- 4.3 Throughout this report any numbers in brackets, except where they relate to written references, refer to the Primary Record Numbers (PRNs) assigned to the site, and which feature in the Historic Environment Record. Numbers are assigned both to the airfield as a whole, and to individual elements in the hinterland of each site.

## 5 SOURCES OF DATA

### 5.1 *The Historic Environment Record (HER)*

The HER was the initial source of information for the project, but in this there was a wide variation in the quantity of data for each of the three airfields. RAF Wrexham is probably the site best represented in the HER, owing to the fact that the area has been subject to a number of archaeological assessments in the recent past, relating to its modern use as a sand and gravel quarry. There is also a comprehensive record of the airfield infrastructure gained from various sources by Pratt and Grant (1999, 2000 and 2002). The situation at Sealand and Hawarden is rather more patchy, depending largely on brief records from various parties interested in airfield studies.

### 5.2 *National Monument Record (NMR)*

The Royal Commission's records, accessed via Coflein, provide a useful overview of the background and history of the three airfields and some specific information has been recorded from this source. The paper files in the NMR were not examined.

### 5.3 *Military record maps*

The construction and alterations to an individual airfield were often accompanied by mapping, the work presumably having been carried out by specialist surveyors within the military establishment or associated civilian support agencies. The available records of this type vary widely for the three airfields, as Sealand has a comprehensive group of plans dating from its origins in the First World War up to 1990; Hawarden has a more limited range, with plans dated 1945 and 1954; and Wrexham is without any plans, these apparently having been destroyed at some point in the past (Mike Grant; pers. comm.). While these records are vital for understanding the layout and function of buildings within an airfield at a certain point in time, they do not provide comprehensive records of all the features we are interested in here. Airfield defences, in particular, are rarely shown and, indeed, may have been deliberately omitted.

### 5.4 *Ordnance Survey and estate maps*

The Ordnance Survey mapping has not been used as Ordnance Survey maps omit any detail of military airfields, and even their presence, for obvious reasons. That said, the modern

mapping occasionally provides clues regarding the location of individual structures, where this is no longer considered to be sensitive information. There is a single estate map relating to the sale of RAF Wrexham after the Second World War which has been used in the absence of contemporary military mapping.

#### 5.5 *Aerial photographs*

Various aerial photographic sources have been utilised to reveal previously unsuspected hinterland structures and to provide additional detail for those which are known. The most useful images were taken by the RAF in the 1940s and were provided as scans by Mr Derek Elliot and his team at the *Central Register of Air Photography for Wales*.

#### 5.6 *LiDAR*

The Environment Agency's LiDAR survey information was used, where available, as an additional means of finding sites remotely which might be of interest. A small number of potential pillboxes were revealed around RAF Sealand and these were then visited to see if the method had given positive results; the results were mixed, but overall it was felt that a considered use of the source was helpful in identifying potential sites and those which had been poorly located.

#### 5.7 *Written and Documentary Sources*

There are various written works that include information about the airfields and their environs, generally as part of wider-ranging synthetic studies of airfields in the region. David J. Smith's *Action Stations: Volume 3, Military Airfields of Wales and the North-West* of 1981 remains the best starting place for a study of this type, brought up to date and in places supplemented by Ivor Jones in his *Airfields and Landing Grounds of Wales: North* published in 2008. The three volumes of the *Wings Across the Border* series by Derrick Pratt and Mike Grant, subtitled *A History of Aviation in North Wales and the Northern Marches* and published between 1998 and 2005, provide important detail gathered from primary sources studied at the National Archives, and set the airfields in their regional context. More general publications which have proven to be of considerable value to this project are *20<sup>th</sup> Century Defences in Britain. An Introductory Guide* (the Handbook of the Defence of Britain Project) of 1995 edited by Bernard Lowry, *Airfield Defences* by Paul Francis *et al* of 2010 and *Fields of Deception. Britain's Bombing Decoys of World War II* by Colin Dobinson published in 2000.

5.8 Each site had previously been the subject of an historical study by a local expert or experts. Aldon P. Ferguson wrote *A History of Royal Air Force Sealand* in 1978; David J. Smith produced *Hawarden: A Welsh Airfield 1939-1979* a year later; and the history of RAF Wrexham was dealt with comprehensively in two articles by Derrick Pratt and Mike Grant published in the *Tarmac Papers* in 1999 and 2000. These have been useful in identifying features in the airfield hinterlands.

5.9 The internet has provided some useful information to complement that from the written and documentary sources. The website of the Pillbox Study Group has been particularly useful, as has that by Mike Tucknott and Iain Taylor which focusses in detail on Battle Headquarters.

5.10 Lastly, several unpublished grey literature reports produced by CPAT in response to proposals for the expansion of Borrás Quarry – which occupies the site of RAF Wrexham – were also consulted (see under *The Historic Environment Record (HER)* above).

## 6 THE AIRFIELD HINTERLANDS

### a) General

- 6.1 It can be assumed that a range of features of varying types originally occupied the hinterlands of the airfields in this study. Numerous pillboxes and other defensive positions can be anticipated, decoy sites, accommodation and domestic sites, aircraft dispersal sites, aircraft landing and navigational aids and radio communication facilities all once surrounded by miles of barbed wire entanglements. The work of Derek Pratt and Mike Grant at RAF Wrexham has been particularly useful in helping to recognise the range of associated features likely to have existed in the hinterlands of the other airfields in this study.
- 6.2 Frustratingly, the Air Ministry plans rarely show the positions of the airfield defences so it is left to searches of other documentary sources and reading the landscape when in the field to try to locate them. It is possible that each airfield originally had a ring of pillboxes for 'outer defence' facing outwards to protect the airfield and an 'inner' group or groups facing inwards to defend against its capture by an enemy landing on the airfield itself (Thompson in Francis 2010, 1-12). Some of the defensive positions are likely to have been arranged into clusters to form 'defended localities', each comprising a range of mutually supportive features. Pillboxes are likely to have formed only part of the airfield defences, being supported by smaller, prefabricated types, defensive trenches, open gun pits and loop-holed walls in adapted airfield structures. The 'Seagull' trench (a flattened W-plan trench with a flat concrete roof supported on pillars) and the 'Pickett-Hamilton Fort' (a small, sunken, circular concrete pillbox which normally lay flush with the ground surface, but which during threat of attack could be raised to permit fire across the airfield) were designs unique to airfields. Additionally there may have been local defence posts (for example Spigot mortar emplacements) manned by the Home Guard in the airfield hinterland (Francis 2010, 13-22).
- 6.3 Each airfield would have required a hub from which to coordinate its defence in the event of an attack. The Battle Headquarters was usually a massive construction of brick and concrete which would have comprised a group of underground rooms with a low observation position just above ground level. It was normally sited close to the perimeter near the end of one of the runways, or where the best all-round view across the airfield could be obtained (Thompson in Francis 2010, 1-12).
- 6.4 Often (but not always) located away from the airfield itself for reasons of safety from bombing, each airfield possessed groups of buildings providing for the accommodation needs and health and wellbeing of the station personnel. Each had an allocation of air raid shelters and possibly a defensive position of some sort, particularly if they were near the airfield boundary. There were separate accommodation and communal sites for airmen, NCOs and officers. Members of the Women's Auxiliary Air Force (WAAF) were given sites separate from the male personnel.
- 6.5 Leading off perimeter tracks encircling flying fields, numerous hard-standings for the outdoor storage and maintenance of aircraft can usually be found. In addition to these, some airfields were provided with aircraft dispersals. Built on the same principle as the dispersed accommodation sites, these allowed aircraft to be worked on and stored away from the busy and vulnerable airfield. They may sometimes have just been flat fields, but many were provided with concrete tracks, hard-standings for the aircraft, hangars for protection from the elements and presumably some sort of sentry post at the access point.
- 6.6 Each airfield would have had a main radio station to enable it to keep in contact with aircraft, backed-up by an emergency radio station. These would have comprised one or



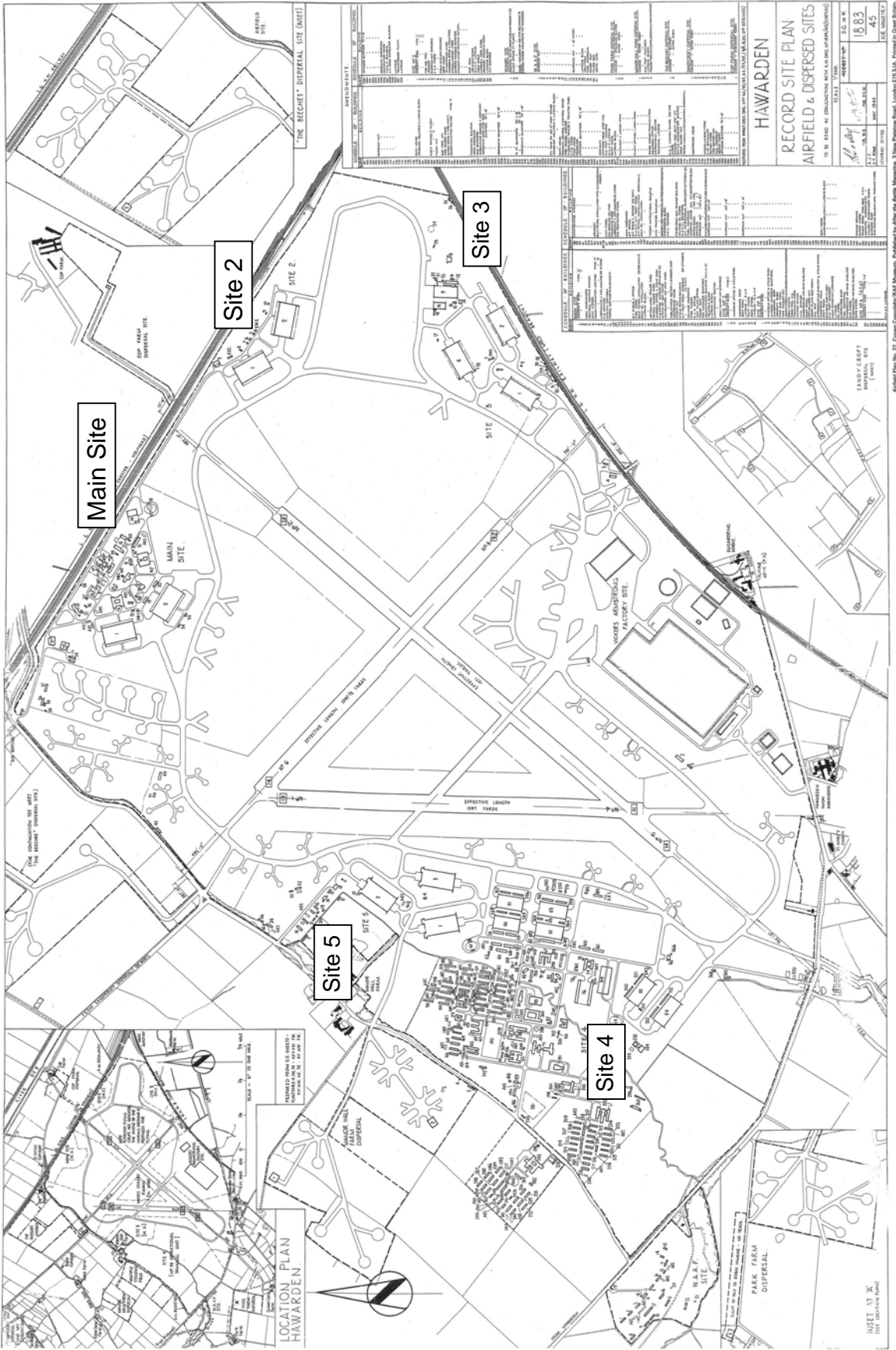
more masts on concrete bases carrying aerials, and associated staff accommodation and backup power supply buildings.

- 6.7 Navigational aids would have had an important role to play in guiding aircrew to safety, and buildings housing direction-finding equipment can be expected to have stood close to the airfields. In addition, three searchlights positioned around the airfield, called SANDRA lights, could be directed upwards to form a cone indicating the position of the airfield; providing a visual aid to pilots. In the event of low cloud the SANDRA lights were strong enough to produce a glow that could be seen from above the clouds (Mike Hayes, 2005, online). If these sites were similar to defensive anti-aircraft searchlights, circular earthworks can be expected around the searchlight positions which would have been accompanied by huts for crews and generators and anti-aircraft gun emplacements (Lowry, 1995, 62-3).
- 6.8 When necessary, ground staff at airfields could employ gooseneck flares positioned at intervals along the edges of runways to assist and guide the pilots of aircraft landing at night. Then in 1940 the Drem Lighting System was developed at the RAF station of that name in East Lothian, Scotland. A rather more sophisticated landing light system, it consisted of electric lights placed on poles in the airfield hinterland and arranged in such a way as to guide pilots safely to a runway. A little later came the Mk II version.
- 6.9 Locations near airfields identified as having the potential for use as landing zones by enemy gliders or troop transporters were obstructed for protection. Ditches were dug across fields and the spoil formed into mounds to 'catch' enemy aircraft, wooden poles were erected and scrap cars and farm machinery were towed to strategic spots and dumped to serve the same purpose.
- 6.10 In October 1939 the decision was taken to commence the construction of decoy sites designed to simulate airfields and deceive the enemy into bombing unpopulated countryside rather than their intended targets. Satellite airfields had daytime decoys called 'K' sites consisting of tents and dummy aircraft. Both satellite and permanent airfields had night decoys, 'Q' sites, consisting of electrical lighting to simulate airfield lighting systems. A third type, the 'QF' site was initially used to protect airfields by providing mock fires to draw enemy bombers to what it was hoped they would assume was the target, already burning after an earlier successful attack (Lowry, 1995, 63-4).

**b) RAF Hawarden**

*Surviving hinterland structures*

- 6.11 RAF Hawarden was apparently provided with its fair share of pillboxes and other defences, 10 being recognised from desk-based study (see gazetteer in Appendix 1). These have not stood the test of time well, there being very few traces of them surviving. They have clearly succumbed to the expansion of the *Airbus* factory, industrial estates, roads and shopping and housing developments in this densely populated corner of Wales. The only example successfully located (121158) is an intriguing site initially considered a possible Battle Headquarters but on further consideration resolving itself into a defensive site comprising a Type 23 pillbox (which has both an enclosed section with 3 loopholes and an open section for a light anti-aircraft machine gun) with to the north, a polygonal brick and concrete gun pit for a heavier anti-aircraft gun. This probably makes it unique in the region. One further record (85559) is of a modern (1980s?) *Yarnold Sangar*, a sectional concrete pipe defence post of which several were distributed around military and other perceived target sites, probably in response to an increased threat of terrorist activity. The condition of the recorded sites, where known, is denoted on Fig. 3, below.



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Fig. 2: RAF Hawarden (plan of 1945).

- 6.12 Tucknott and Taylor note on their *WWII Airfield Battle Headquarters* website that RAF Hawarden once possessed an example (121221) now destroyed, its position is confirmed by the 1945 Air Ministry plan. Its location just off the perimeter track at the south-west end of the main runway has precluded a site visit.

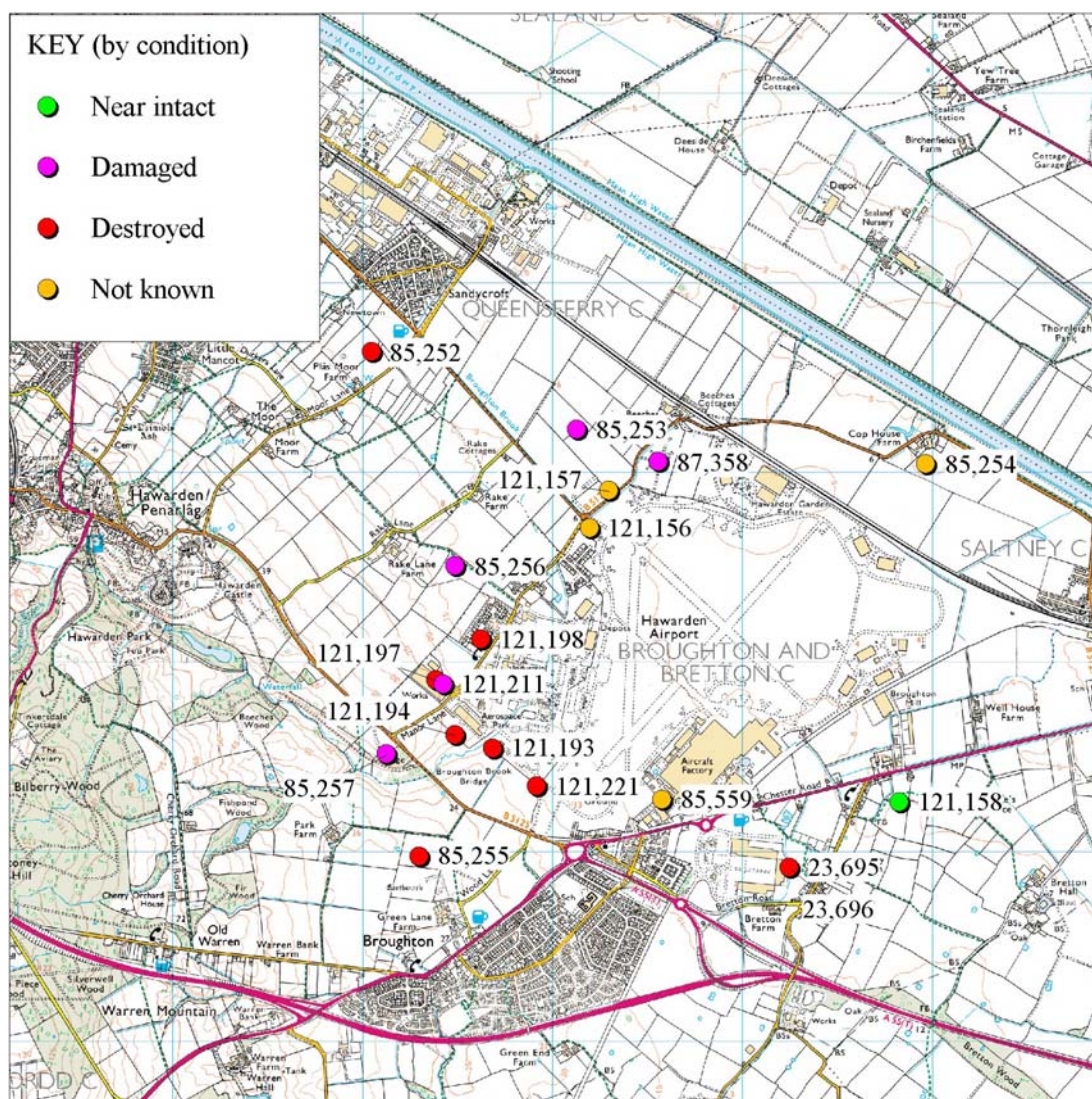


Fig. 3 Hinterland structures and buildings at RAF Hawarden, mapped by condition

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- 6.13 The elements which define RAF Hawarden are its aircraft dispersals. One (87358) comprising two slightly different groups each comprising several circular, concrete hard-standings connected by concrete tracks lay off the perimeter track between the Main Site and Site 5 and parts of this survive as patches of 'old' concrete visible amongst the grass in this area. Four other dispersals were scattered across the countryside around the western side of the airfield with one to the north-east. Only earthworks of a likely agricultural nature are now visible at the Sandycroft dispersal site (85252) which once boasted 12 hangars linked by tracks; earthworks of some sort at The Beeches dispersal site (85253), which had 15 frying pan-shaped hard-standings and 2 hangars, are visible on LiDAR but not from the nearest point of access on the ground; and of the Cop Farm dispersal site (85254), the built elements of which consisted only of a single track and hangar, nothing is visible. There are also no visible traces of the dispersal site at Park Farm (85255) which was similar to that at



The Beeches though slightly smaller while still having two hangars. Perhaps the most interesting of the dispersal sites is that at Manor Hall Farm which originally had groups of both frying pan-shaped and Y-shaped hard-standings, each with a hangar of its own. Tracks and three or four circular hard-standings are visible as raised areas in one of the fields at this site and the track through the three fields here is a survival from the time of use by the RAF. Also identified was a large level platform beside which stood two concrete blocks, the base for one of the hangars.

- 6.14 Only part of one building survives on the Officers' domestic site (121197), part of Site 4 (85261) originally consisting of 34 buildings and structures separated from the rest of Site 4 by Manor Lane. The north-east section of the Officers' Mess (121211) survives as part of an industrial unit and while what is left of it appears in good condition, it has unsurprisingly had its doors and windows replaced with modern uPVC stock. There is also the potential for air raid shelters to survive beneath or between the large modern industrial units which now occupy the site.



Fig. 4: RAF Hawarden, pillbox and AA position (PRN 121158).  
Photo CPAT 3601-0035

- 6.15 There is one reference to a glider trap within the study area around RAF Hawarden, a 16m-wide trench at Bretton (23695) being interpreted as such during an archaeological evaluation by Engineering Archaeological Services in 1997. However, despite a site visit during the course of this project it has not been possible to confirm this interpretation.
- 6.16 A public footpath running across it allowed an assessment of the WAAF site (85257). Concrete building bases with brick revetments survive on levelled platforms on the sloping site. Sections of several concrete paths running across the slope are linked by sets of two-three concrete steps. Two *Stanton* shelters were recognised in the approximate centre of the site, one of which is in use as a shed or store, and to the south-west stands a near intact sewage works! In the bank of a stream forming the southern boundary of the WAAF site a surviving screw picket was spotted. Its original use had probably been used to stake out

barbed wire on the site boundary, but they were also used to secure aircraft when on the ground, so was probably a common item of equipment at RAF Hawarden.

- 6.17 RAF Hawarden is known to have had a Mk II Drem airfield lighting system (RAF 1945) but as the site is still in use for flying it would appear that this has been replaced by a newer lighting system.



Fig. 5: RAF Hawarden, WAAF site (PRN 85257) air raid shelter.  
Photo CPAT 3601-0029

c) **RAF Sealand**

*Surviving hinterland structures*

- 6.18 The desk-based study of the hinterland of RAF Sealand returned a good haul of 18 records of pillboxes, however, on closer investigation of these, only nine related to the defence of the airfield. Six belong not to Sealand but to an anti-invasion 'stop-line' consisting in part of 14 pillboxes (including 34252, 34256-9 and 121200) located along the west bank of the River Dee. Another turned out upon inspection to be a large circular concrete tank rather than a pillbox. Two further records (121203 and 121205) are of more recent *Yarnold Sangars*, several of which were scattered over the South and East Camps of RAF Sealand. A possible Type 23 located in a field boundary on private land (123655) jutting out into the southern flying field was seen from a distance, but its identity and condition could not be confirmed. There is an interesting pillbox (123657) built into the railway embankment which overlooks the southern flying field. Similar in appearance to the observation rooms of the Battle Headquarters (see below), it could have been built to a local design at the same time, perhaps between the wars. Another possibility is that it may be a secondary observation post to support the Battle HQ rather than a pillbox, although a dual purpose is more likely. The pillboxes built to defend East Camp have fared rather better as a group; a unique example constructed in woodland (121201) appears to be a Type 24 but altered to



allow room for an adjacent tree, presumably helping to hide it from being spotted, particularly from above. The next in the 'circuit' (121202), also presumed to be a Type 24, is now also 'unique', having had the north-western half completely destroyed. This does, however, give a clear view of the interiors of the walls and embrasures. Just beyond the easternmost extent of East Camp is what appears to be a Type 22 pillbox (121275) beside a drainage ditch, possibly also intended as part of the defences. Unfortunately this was not spotted before the field visit to the area, but GIS and modern aerial photography suggest it survives more or less intact. Tucked into a corner on the verge between the A550 and the A548 with a high level roundabout above it is a probable Type 22, minus its entrance porch. Completing what is left of the 'circuit' is a third Type 24 pillbox (37869), set into a flood defence bank, it has an L-shaped entrance passage on the south-east and south-west sides and survives in good condition. There are records of two other pillboxes, but both appear to have succumbed to demolition or burial during landscaping. There is a unique structure on the west side of South Camp which is generally accepted to be RAF Sealand's Battle Headquarters (123543). It doesn't conform to any official designs and interpretation is further complicated by one of its two observation rooms having collapsed. It originally comprised four rooms linked by narrow corridors and its nature may be accountable for by the early foundation date of the airfield and its use of a flood embankment for additional protection. The condition of the recorded sites, where known, is denoted on Fig. 8, below.



Fig. 6: RAF Sealand, collapsed Battle Headquarters observation room (PRN 123543).  
Photo CPAT 3601-0005

- 6.19 An interesting feature of RAF Sealand is a facility to allow the movement of aircraft across the railway between North and South Camps (121196). Sections of tarmac are still present to the north and south of the cycle path which occupies the line of the former railway. There is also evidence of crossing barriers which were set on paired rails, aligned east/west on either side of the former railway for about 70m. The rails end at three (of an original four) concrete blocks which would have acted as buffers for each barrier.

- 6.20 The dispersed Married Quarters were all found to be still in use as homes. They comprise two terraces for airmen (121209 and 121210) and three large blocks of quarters for officers (121208) built before 1927 at Mancot Royal to the south of the airfield. By the time the 1930 plan of RAF Sealand was drawn up a further group of Married Officers' Quarters were required and "Cotton House" (121278) in the centre of Hawarden village was either built or 'adopted'. Another two groups of Married Officers' Quarters appear on the 1959 plan, as does a new sewage works, but neither of these sites have been located.

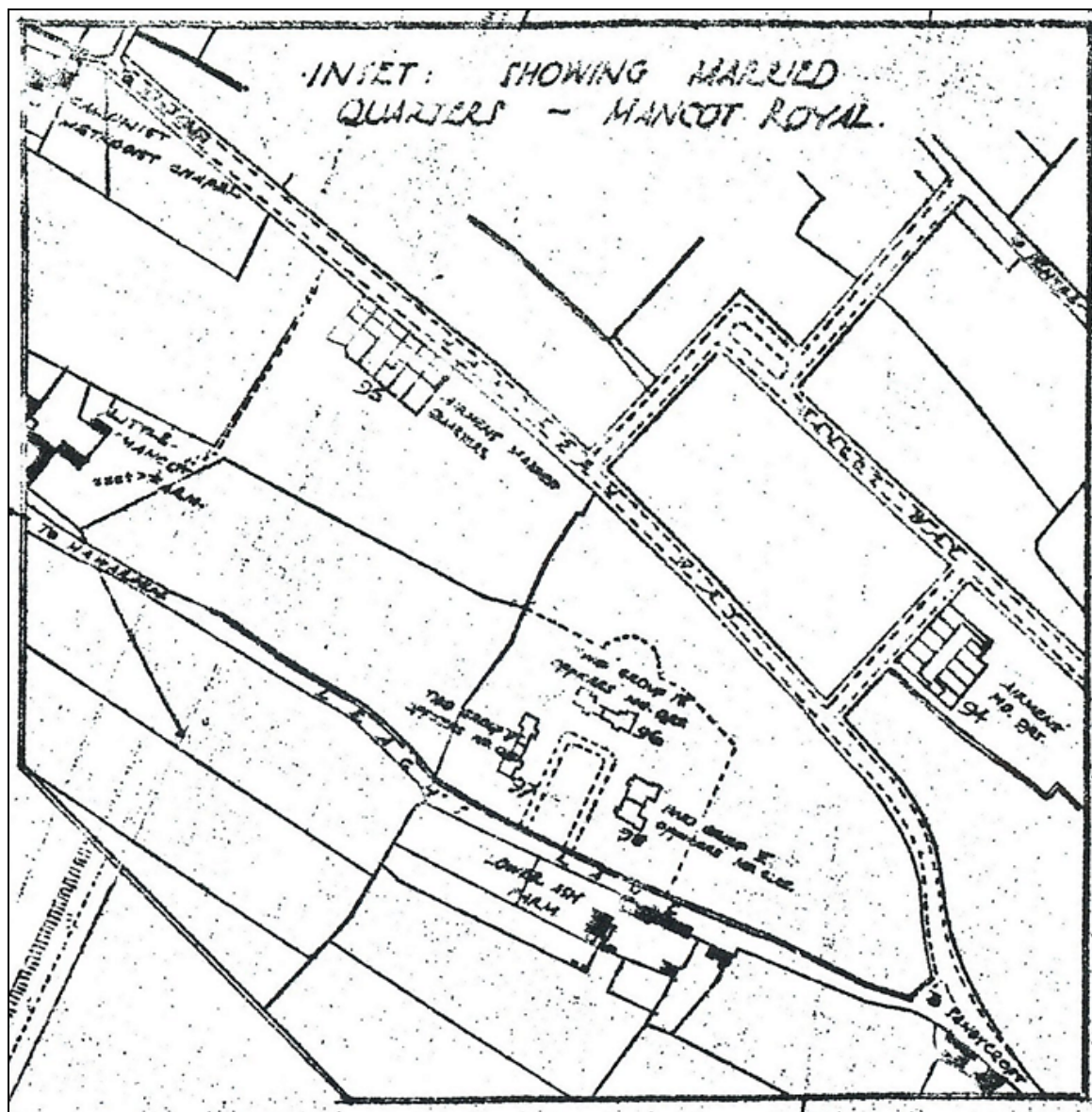


Fig. 7: RAF Sealand, inset from Air Ministry plan of 1927 showing Married Quarters (PRNs 121208-121210).

- 6.21 It has not been possible to determine what survives of the dispersed site for WAAF personnel at Wepre Hall (121195). Ivor Jones (2008) states it was a 'hutted domestic site' and goes on to say that by 1942 there were 774 airwomen at No.30 Maintenance Unit alone, so it must have been of a considerable size. Further investigation of this site may be worthwhile.



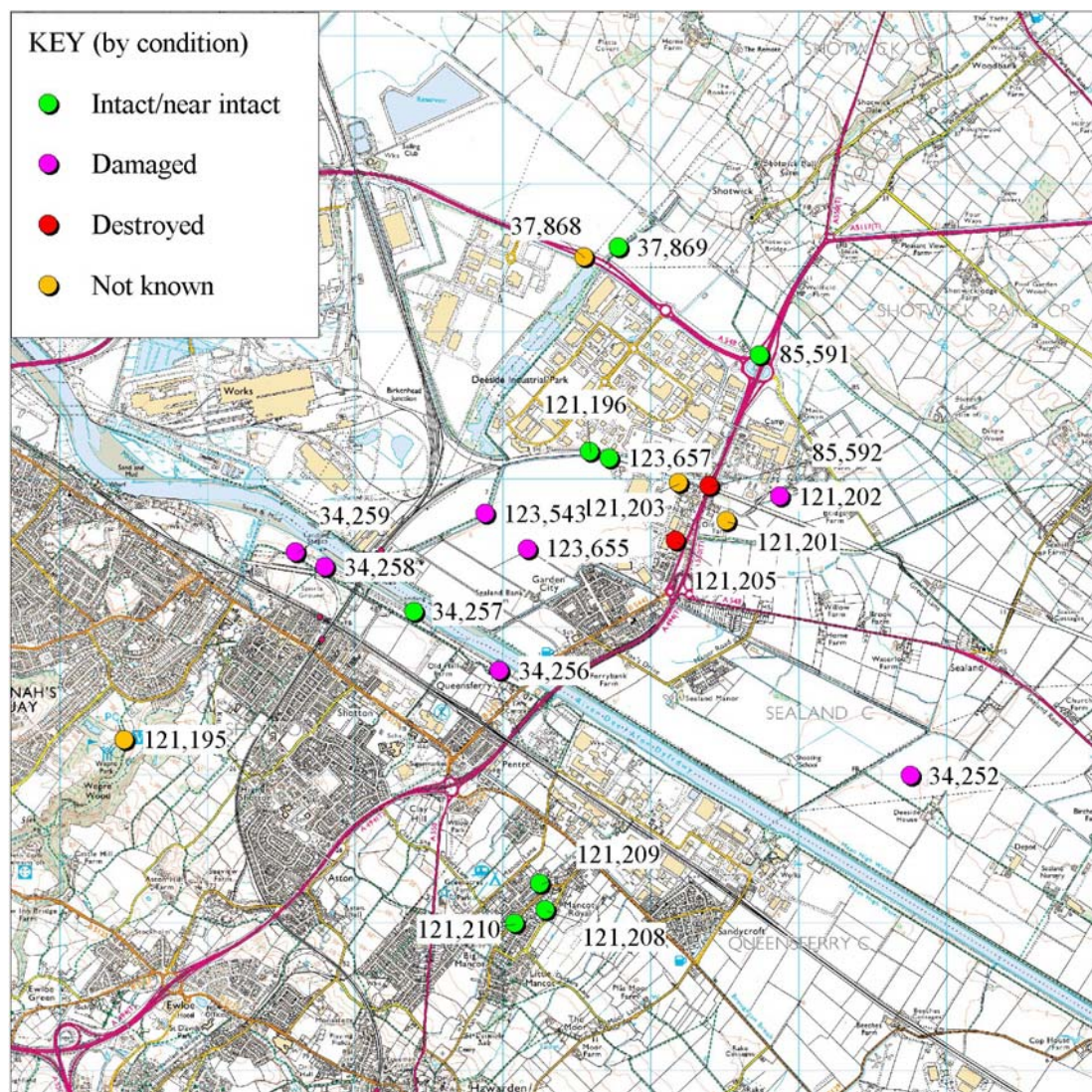
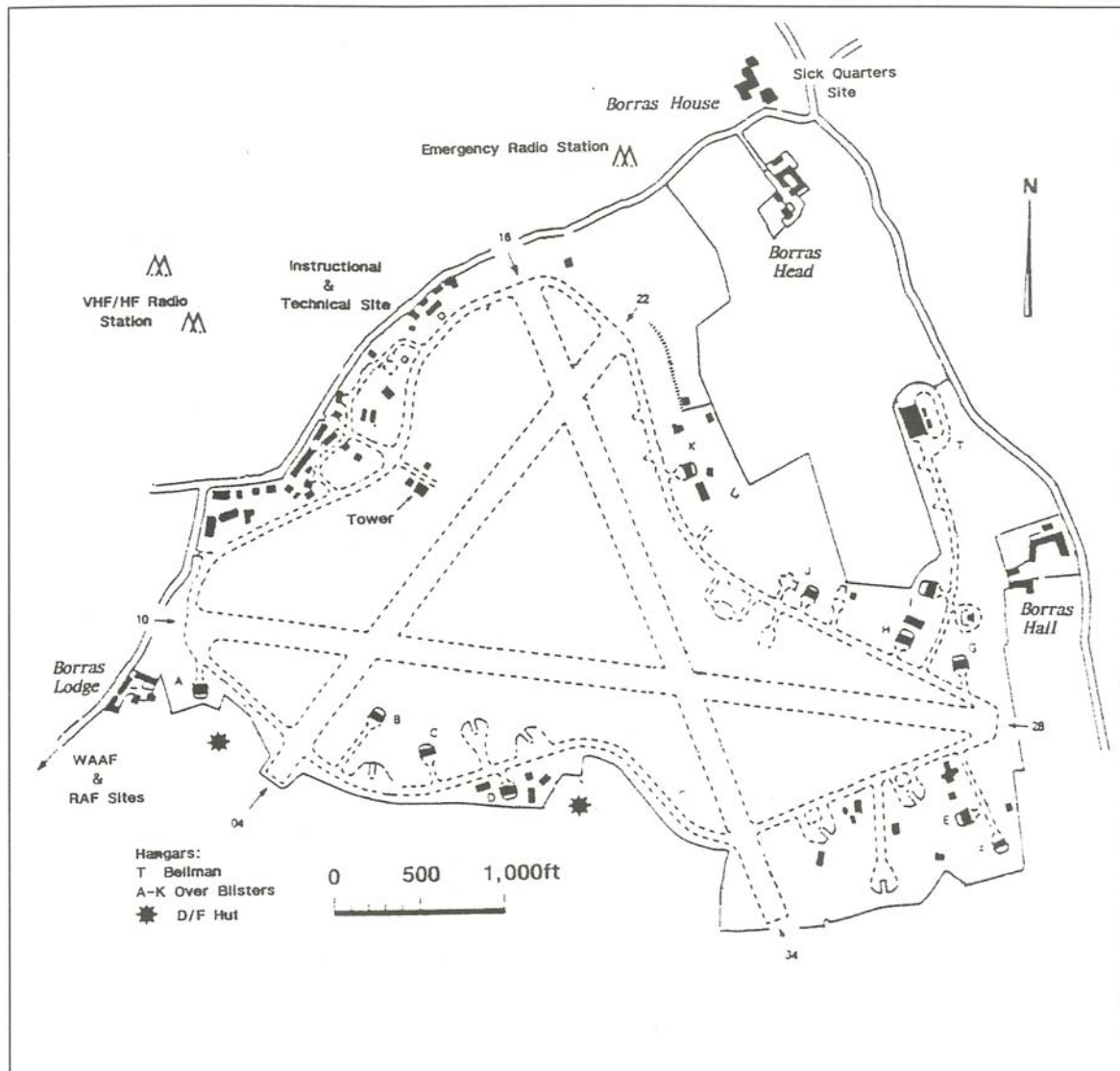


Fig. 8 Hinterland structures and buildings at RAF Sealand, mapped by condition  
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#### d) **RAF Wrexham**

##### *Surviving hinterland structures*

- 6.22 Wrexham is rather different from the other two airfields in that its hinterland has been thoroughly researched by Pratt and Grant in their articles in the *Tarmac Papers* (Pratt and Grant, 1999 and 2000). Much of the following is taken from their work, summarised on three plans in Pratt and Grant 1999 (pages 302, 303 and 306).



RAF WREXHAM

Fig. 9: RAF Wrexham (as built 1941)  
 Reproduced with the permission of Mike Grant

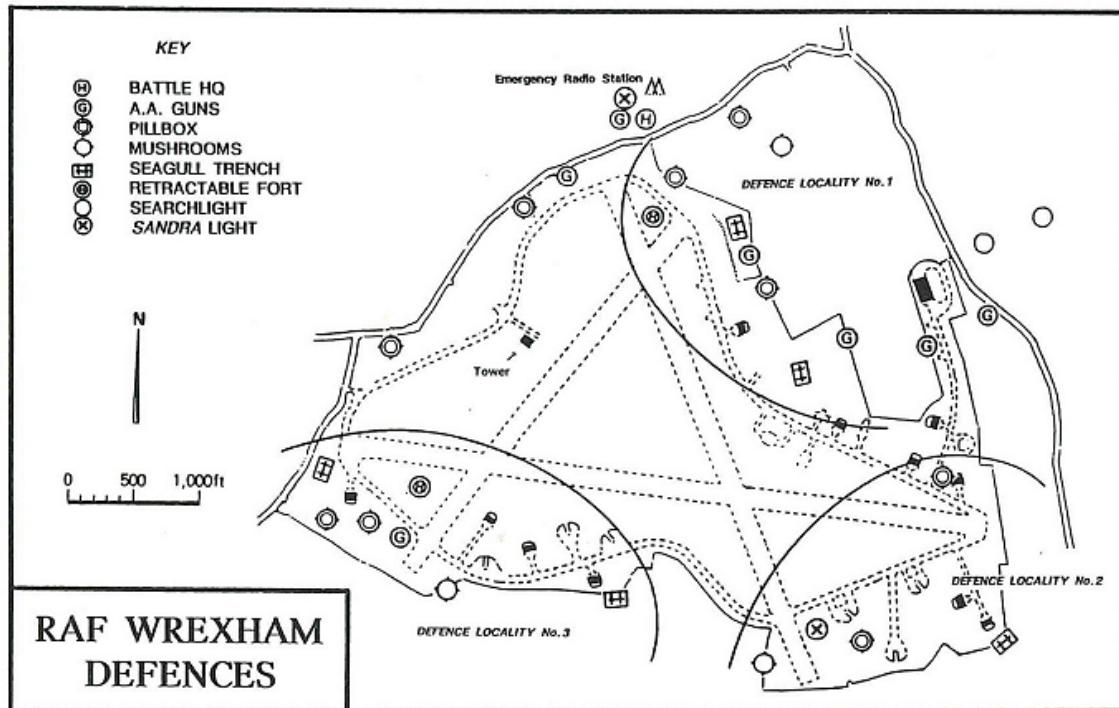


Fig. 10: RAF Wrexham defences (as built 1941)  
Reproduced with the permission of Mike Grant

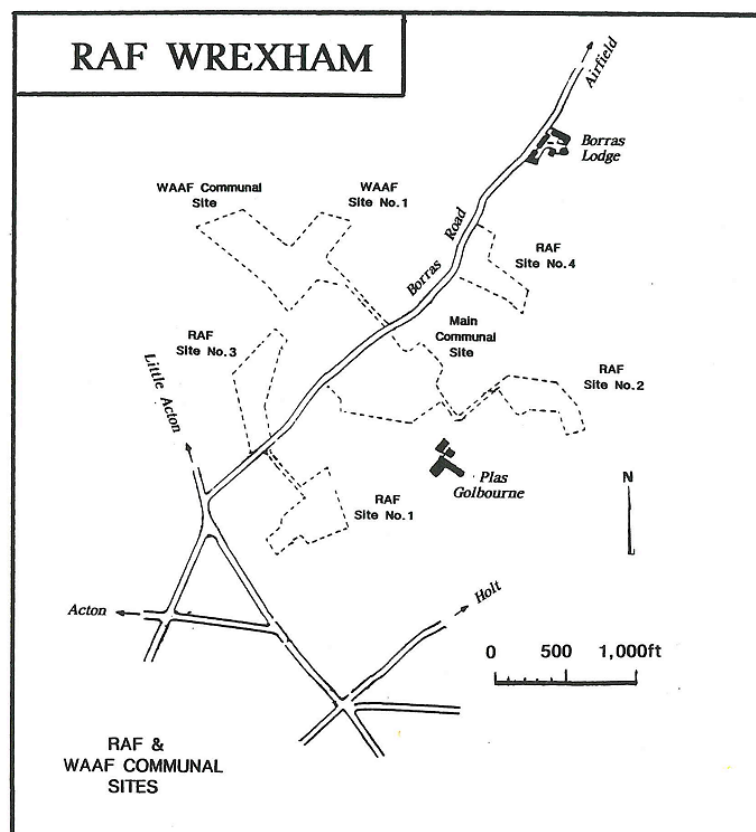


Fig. 11: RAF Wrexham communal sites (as built 1941)  
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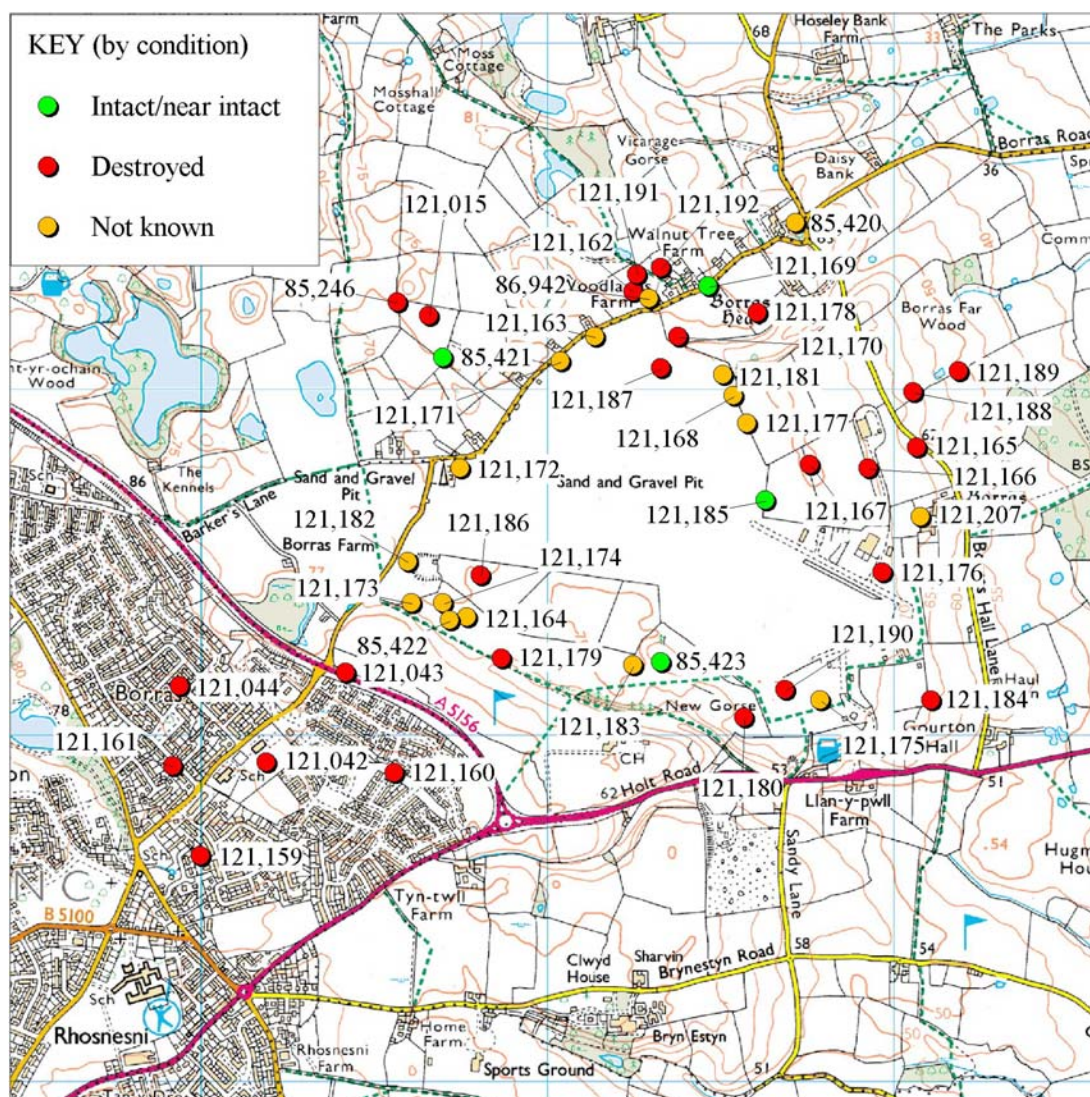


Fig. 12 Hinterland structures and buildings at RAF Wrexham, mapped by condition  
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 Licence number 100017916.

- 6.23 The accommodation and communal sites for airfield personnel (121042-44, 121159-61) were dispersed to the south-west of the airfield by between 0.5km and 1.2km. These included a group of four accommodation sites and an accompanying communal site for members of the RAF, and an accommodation and communal site for members of the WAAF. In recent times, the areas occupied by these dispersed structures have been subsumed within modern housing estates and no evidence of them remains.
- 6.24 On and adjacent to the airfield itself, there was a range of associated features and buildings, although post-war quarrying for sand and gravel has removed much of the airfield and has taken many of these features with it, such that only four are now considered to be intact or near intact. Nevertheless, there are signs of hope for some of the hinterland structures, which by their nature would have occupied the periphery of the airfield. As an example, a *Stanton* air raid shelter (121016) was discovered during the removal of a section of the quarry bund (a large surrounding earthwork bank) at NGR SJ 35909 52925 in 2007 (Hankinson 2008), and it is clear that the bund, which ranges up to 4m or 5m high in places, was created by dumping spoil from the central part of the airfield around its perimeter. There seems to have been no attempt to demolish features which were already on the line



taken by the bund, so it may be that it has inadvertently preserved a number of structures which previous writers have generally assumed were removed by quarrying activities. The condition of the recorded sites, where known, is denoted on Fig. 12, above and the possibility for some to survive been the bund is noted in the gazetteer of sites (Appendix 3).

- 6.25 The defences of RAF Wrexham were apparently organised into three ‘defended localities’, respectively sited on the north, south-west and south-east sides of the airfield, each of which comprised a group of pillboxes interlinked with other defensive features. The Battle Headquarters (86942) was positioned just to the north of Borrass Road and is believed to survive, although it has been buried. The other structures in the defensive localities include nine pillboxes, three ‘mushroom’ pillboxes, five ‘seagull trenches’, seven anti-aircraft gun emplacements, and two Pickett-Hamilton retractable forts. As far as is known, only a single pillbox and seagull trench survive, although others may be hidden beneath the quarry spoil mentioned above.



Fig. 13 RAF Wrexham seagull trench V (PRN 121185).  
Photo CPAT 3601-0040

- 6.26 There were other relevant structures in the environs of the airfield, particularly the radio stations which kept contact with the aircraft. The main VHF/HF radio station and mast were located to the north-west of Borrass Road, and although the mast (121015) has been lost, its associated staff accommodation and backup power supply buildings (85421) still survive as shells. The emergency radio station (121192) seems to have been entirely removed. Given that the airfield functioned as a night-fighter and training base at various times, the two direction-finding buildings (85422 and 85423) on the south side of the runways would have performed a vital function in guiding aircraft that were lost owing to poor weather conditions; it is thought that one survives on the golf course to the south of the airfield but it was not possible to examine it in detail. Two SANDRA light positions (121190 and 121191) were also used to guide in aircraft in distress but neither of these survive. No

confirmed traces of the MkII Drem lighting system known to have been installed at RAF Wrexham (RAF, 1945) have been found, although note paragraph 6.27, below.

- 6.27 The remaining sites recorded in the vicinity of the airfield include the station sick quarters (85420), which was at or in the grounds of Borrass House, and a fuel depot (121207) to the rear of Borrass Hall. An unverified report that the site of the airfield was used as a decoy (Q-site) prior to its construction has been disputed; electricity transmission cables are known to have been encountered in the area of a quarry extension to the north-west of the airfield which may offer some corroboration, although it is perhaps more likely that these were associated with the Drem lighting system.
- 6.28 What is known is that there was a 'Q' site night-time decoy for RAF Wrexham on Ruabon Mountain, some 10km to the west-south-west. While this is rather further away than would be expected, it may be explained by this site, operationally known as 'Minera', being used for multiple decoy functions, possibly starting life as a combined day ('K') and night ('Q') site for RAF Hawarden (Pratt and Grant 2005, 31). RAF Wrexham's 'Q' site probably became operational in 1941, but in its later use, presumably coinciding with RAF Wrexham's role as a night-fighter base, it apparently encapsulated the key features of a Drem airfield lighting system (Pratt and Grant 2005, 28). Although it has not been examined thoroughly, owing to the size of the area that was covered by the decoy features, what can be confirmed is that the control bunker (19699) survives relatively intact, though stripped of its internal detail and with some of its earth and rubble covering missing through erosion. It comprised two main rooms, one for lighting control and the other housing a power supply but now empty. There were two access passages protected by blast walls and an observation platform at a higher level with ladder access from one of the passages.
- 6.29 On the north-east side of the airfield was a battery of two searchlights (121188 and 121189) of which nothing now survives.



Fig. 14 RAF Wrexham decoy control bunker (PRN 19699). Photo CPAT 3601-0045

## 7 DISCUSSION/ANALYSIS

- 7.1 The Taylor Report on the Ground Defence of Aerodromes published in 1940 classified airfields based on their proximity to ports and the likelihood of their coming under intensive attack, and it laid down ideal numbers of defensive positions for three classes of airfield. Class I (the most vulnerable or strategically important) should have between 20 and 32 pillboxes, plus defence posts and gun pits. Class II airfields (those liable to intensive air and parachute attack) should have between 15 and 24 pillboxes, plus defence posts and gun pits. Class III (all others) should have a minimum of 10 pillboxes plus ‘gun posts’ (Francis, 2010, 51). Judging by this standard we can see from Table 1 below that either all three of the airfields in this study were only considered Class III sites, unlikely given their proximity to deep water ports, industrial centres and major cities, or that several pillboxes and very many defence posts and gun pits have been lost over the years since abandonment and of which no record exists. The radically higher percentage for RAF Sealand can be explained by the lack of information uncovered about defence posts other than pillboxes.

	Recorded defences (all types)	Recorded pillboxes	Surviving non-pillbox defences	Surviving pillboxes	Approx. percentage of recorded defences (all types) surviving
RAF Hawarden	10	6	2	1	30%
RAF Sealand	9	9	0	7	78%
RAF Wrexham	26	9	1	1	7.75%

Table 1: Defences at study sites.

- 7.2 Thanks to the work of Derek Pratt and Mike Grant at RAF Wrexham we have a benchmark against which to measure the types of structures that might be expected to have once stood within the hinterlands of the other two airfields and whether they survive today. The details in table 2 below, while necessarily an approximation, are interesting and the process is felt to be a worthwhile exercise.

Features	RAF Wrexham		RAF Hawarden		RAF Sealand	
	Built	Survive	Built	Survive	Built	Survive
Pillboxes	Y	Y	Y	Y	Y	Y
AA gun sites	Y	N	Y	Y	?	N
Prefabricated pillboxes	Y	N	?	N	?	N
Seagull trenches	Y	Y	?	N	?	N
Battle HQ	Y	Y	Y	N?	Y	Y
Anti-glider ditch	?	N	Y	Y?	?	N
Remote aircraft dispersals	N	N	Y	Y?	N	N
Searchlights	Y	N	?	N	?	N
SANDRA lights	Y	N	?	N	?	N
D/F (Direction Finding) huts	Y	Y?	?	N	?	N
Airfield lighting system	Y	N	Y	N	?	?
VHF/HF radio station	Y	Y	?	N	?	?
Emergency radio station	Y	N	?	?	?	?
Dispersed domestic sites	Y	N	N	N	Y	Y
Dispersed communal sites	Y	N	Y	Y	N	N
Dispersed WAAF site	Y	N	Y	Y	Y	?
Airfield decoy	Y	Y	Y	N/A	Y	N/A
Approx. total percentage of types of hinterland feature surviving	35.3%		35.3%		17.6%	

Table 2: Types of hinterland feature built at the study sites and whether surviving.

- 7.3 Pillboxes appear seldom to have been built in an identical fashion to the published designs, being altered to suit the local situation and materials, the best example of this being the Type 24 to the south-east of RAF Sealand which was built around a tree (121201). It would be good to have the opportunity to investigate more thoroughly the railway embankment bisecting the former South and North Camps in the hope of finding a structure similar to the one already found (123657) but facing across North Camp. The 'extended' Type 23 pillbox (121158), the only structure built to defend RAF Hawarden known to survive, is fascinating and with the landowner's permission would make a great subject for a research project.
- 7.4 The bombing decoy control bunker on Ruabon Mountain would appear to be a rare survival from a 'Q' site night-time airfield decoy for RAF Wrexham. The bunker survives in remarkably good condition and the ground to the north and north-west may be worth investigating further for traces of the lighting system. The situation may be complicated if, as suggested by Pratt and Grant, a number of decoys serving slightly different purposes were constructed on Ruabon and Esclusham Mountains in the early years of the war. That said, any surviving traces are likely to be very slight. With the decoy sites for Hawarden and Sealand being located just over the border in England, this would appear to be the only readily identifiable element of an airfield decoy in existence in east and north-east Wales.
- 7.5 Identifying the Battle Headquarters at each site has been tricky. That at Hawarden (121221) is reported as destroyed, no detail of its appearance has been found and it has not been possible to visit its location to check for remains. The RAF Wrexham Battle HQ (86942), though briefly recorded by Mike Grant and apparently more or less intact a few years ago has since disappeared beneath landscaping, though hopefully this has cocooned rather than destroyed it. This leaves a unique structure which is generally accepted to be RAF Sealand's Battle Headquarters (123543). It does not conform to any official designs, which may be accounted for by the earlier foundation of the airfield and, while it would have had excellent views over the south flying field and outwards to the railway junctions to the north-west, North Camp is largely invisible behind the railway embankment which separates it from South Camp. It is possible that there was once a structure serving a similar purpose overlooking North Camp, but if so no reference to it or physical trace has been found. Alternatively, there may have been a position fulfilling the role located in a North Camp building.
- 7.6 The amount of destruction at and in the hinterland of the former RAF Hawarden is considerable but perhaps is to be expected given its continued use for aviation and the demand in the area for land for housing, industrial and business use. It is not surprising that the aircraft dispersals have mostly reverted to agriculture. The situation at Wrexham is similar, the site being on the outskirts of a major town and the land beneath the airfield and its immediate hinterland being made up of valuable sands and gravels.
- 7.7 Also interesting is the contrast between RAF Wrexham and the other two airfields in terms of the layout of defences. Being of a later construction, those at Wrexham illustrate the change of policy in 1941 from one of all-round defence to one based on 'defended localities' at key points on the airfield (Francis 2010, 27). Sadly so little survives, or is visible, at Wrexham that without the work of Pratt and Grant it would be impossible to establish this fact from what remains in the field.



## 8 ACKNOWLEDGEMENTS

The writers would like to thank the following for their assistance during the course of this project: Mike Grant, Colin Barber, David J Smith, the staff of Tarmac Ltd., and Derek Elliot and his staff at the Central Register of Air Photography for Wales.

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## APPENDIX 1

### RAF Hawarden hinterland

23695                      *Bretton earthwork*    *SJ3525063910*

Hollow, slightly sinuous earthwork running north-west/south-east, on roughly the same alignment as ridge and furrow 23694 (Bretton Road survey 1993). Thought to be a glider trap, consisting of a trench approximately 104m long, 16m wide and up to 0.7m deep. A hollow in the south-western edge of the feature probably represents damage caused by access to the field and to the north-west it merges with the modern hedge line (Brooks, I P and Price, J, 1997).

This is now a ditch/drain on the boundary of 'Broughton Shopping Park'. (CPAT 14/3/2013)

23696                      *Bretton, Broughton Park, pillbox*    *SJ3525063910*

Evaluation and geophysical survey on area with suspected Roman road identified only ridge and furrow, WWII pillbox and glider trap earthwork. 2nd WW pillbox surveyed by EAS in 1997. The surviving concrete blockhouse would appear to have been part of a larger structure, possibly a gun emplacement, and to have been partly defended by soil banks around the structure. The pillbox has since been moved by the developer (Brooks, I P, 1997, 122). Pillbox c3m x 3m externally built of brick (Bretton Road survey 1993).

The site was not identified, so perhaps either confused with another site or no longer extant. (CPAT 14/3/2013)

85252                      *RAF Hawarden, Sandycroft dispersal site*    *SJ33056663*

Fields requisitioned in October 1940 for use as an aircraft dispersal site by RAF Hawarden. Twelve 'Robin' hangars were erected on the site (Smith, D J, 1979). Air Ministry dwg 1883/45 of May 1945 shows 12 Super Robin hangars.

No concrete bases are visible; some low earthworks perhaps related to agricultural ridged cultivation. (CPAT 14/3/2013)

85253                      *RAF Hawarden, "The Beeches" dispersal site*    *SJ34136622*

Fields requisitioned in October 1940 for use as an aircraft dispersal site by RAF Hawarden (Smith, D J, 1979). Air Ministry dwg 1883/45 of May 1945 shows a Blister and a Super Robin hangar.

LiDAR shows some earthwork survival, but not visible from nearest point of access. (CPAT 14/3/2013)

85254                      *RAF Hawarden, Cop Farm dispersal site*    *SJ35976604*

Small area of land requisitioned in October 1940 for use as an aircraft dispersal site by RAF Hawarden (Smith, D J, 1979). Air Ministry dwg 1883/45 of May 1945 shows one Robin hangar.

Not possible to determine if there are any earthworks surviving from nearest point of access, LiDAR suggests not. (CPAT 14/3/2013)

85255                      *RAF Hawarden, Park Farm dispersal site*                      *SJ33306397*

Land requisitioned in October 1940 for use as an aircraft dispersal site by RAF Hawarden (Smith, D J, 1979). Air Ministry dwg 1883/45 of May 1945 shows a blister hangar at the entrance off the Hawarden-Chester road and two Super Robin hangars.

No visible traces survive. (CPAT 14/3/2013)

85256                      *RAF Hawarden, Manor Hall Farm dispersal site*                      *SJ33496550*

Fields requisitioned in October 1940 for use as an aircraft dispersal site by RAF Hawarden (Smith, D J, 1979). Air Ministry dwg 1883/45 of May 1945 shows two Super Robin hangars. Bar and rod matting recovered from the site and taken to the museum at Sleaford, Shropshire (Mike Grant, pers. comm, 2012).

Traces of tracks and three or four circular dispersal pads are visible as raised areas in the field centred at the given NGR. They appear to lead from a track on the field boundary. In the adjoining field to the west there is a rectangular grass-covered platform at SJ3338765592, measuring about 23m by 25m. This has a raised track leading to it and probably denotes the location of a hangar. Two concrete blocks on the surface at the north-east end. (CPAT 14/3/2013)

85257                      *RAF Hawarden, WAAF site*                      *SJ33136451*

Accommodation site for WAAF (Women's Auxiliary Air Force) personnel at RAF Hawarden (Smith, D J, 1979).

The former WAAF site lies in woodland, some recently planted. There are concrete paths with steps between the buildings, some of which can still be seen as concrete bases edged with brick – at least four are still visible of those depicted on Air Ministry plan 1883-45. An intact 'Stanton' shelter with brick entrance lies at SJ3299464598 and there is a second at SJ3302664581, which has some post-war alterations to its entrance to allow for use as a shed/store. Part of the contemporary sewage treatment works survives to the south-east, where there is a brick tank and a circular brick filter bed at SJ3308064484. The Air Ministry plan suggests that there were a total of about 17 accommodation buildings and 4 air raid shelters; it is not known how many are still identifiable. Overall area 250m north-west/south-east by 200m north-east/south-west. (CPAT 14/3/2013)

85559                      *Broughton Aircraft Factory, pillbox*                      *SJ34586427*

What appears to be a small circular pillbox in the garden area at the front of Broughton aircraft factory office block (PRN 85551) (Barfield, N, 2001, 95).

Possibly a modern 'Yarnold Sangar' type (Spencer, J, 2012).

Possibly the "Pillbox, hexagonal, no specification. Record derived from Defence of Britain Project (Record Number 11358)", recorded under nprn 270522 at SJ346642.

87358                      *Hawarden Airfield, dispersal system*                      *SJ34566605*

Series of dispersal platforms connected via a concrete road. Constructed from concrete slabs. Although the surface was fissured, the dispersal system had not decayed beyond recognition. Desk-based assessment and field survey carried out on site during construction of access road, which cut through the system in some places, in 2003 by Gifford and Partners. (Gifford and Partners, 2003b)



Despite having at least two modern roads laid across it, elements of the hard-standings for the dispersal area are still evident. (CPAT 14/3/2013)

121156      *Pillbox I, Hawarden*

SJ342657

Pillbox, very overgrown, commands approaches to airfield. Wet ditch adjacent to the site also forms part of the defences. Wide embrasure has been filled in. Record derived from Defence of Britain Project (Record Number 3340) (Record from Coflein, accessed 07/03/2013)

Not seen, but the area has been subject to a significant amount of landscaping. (CPAT 14/3/2013)

121157      *Pillbox (Type FW3-23), Hawarden*

SJ343659

Type 23 pillbox, with LAAMG pit extension. [See UORN 11359, SJ 358643 for similar site but different description]. Record derived from Defence of Britain Project (Record Number 3339) (Record from Coflein, accessed 07/03/2013)

Not seen, but the area has been subject to a significant amount of landscaping. (CPAT 14/3/2013)

121158      *RAF Hawarden, pillbox and AA position*

SJ3583064255

Pillbox that appears to be a type 26 with a concrete hexagonal HAA pit attached to one side. [A similar site has been described as a type 23 - see UORN 3339, SJ 343659]. Record derived from Defence of Britain Project (Record Number 11359) (Record from Coflein, accessed 07/03/2013).

A Type 23 pillbox with an additional polygonal brick and concrete structure attached to the north. The partially buried pillbox lies to the south and is rectangular in plan comprising two parts, a roofed section with small embrasures in its south, east and west walls (with a rectilinear channel in its roof implying it was surmounted by a temporary structure) and a formerly open annex for a light anti-aircraft machine-gun, now filled in. The attached polygonal brick and concrete structure is also filled in and covered with earth and rubble, but was presumably an open gun pit for a heavier weapon. Entrance to north defined by flanking concrete walls. The gun pit has two concrete slabs projecting from it which might be covers for ammunition storage lockers. (CPAT 14/3/2013)

121193      *RAF Hawarden, pillbox I*

SJ33696454

Pillbox set in a hedge and designed to provide flanking fire, visible on an image on p.136 of Jones' *Airfields and Landing Grounds of Wales: North*. Allegedly destroyed. No visible evidence from nearest point of access; it seems to have been removed. (CPAT 14/3/2013)

121194      *RAF Hawarden, pillbox II*

SJ33496461

Probable pillbox visible on RAF AP (CPE UK 1935 No 4014), taken on 17/1/1947. Seems to have still been there in 1959 as it was avoided by ?grass cutting on OS AP 59/064 No 54, taken on 14/6/1959. No visible evidence of the feature from the nearest point of access. (CPAT 14/3/2013)

121197      *RAF Hawarden, Officers domestic site*

SJ33396490

Officers' Mess and accommodation blocks, sited to the south of the Manor Hall Farm dispersal site. Largely removed to provide industrial works. All that survives is the north-east half of the Officers' Mess (PRN 121211), as depicted on Air Ministry plan 1883-45. (CPAT 14/3/2013)

121198      *RAF Hawarden, Manor Hall Farm dispersal gun post*      SJ3362765115  
Gun post (disused) depicted on Air Ministry dwg 1883/45 of May 1945. Its position places it within a modern housing estate, but no trace remains. (CPAT 14/3/2013)

121211      *RAF Hawarden Officers Mess*      SJ3342864878  
The north-east half of the Officers Mess survives as part of an industrial unit to the north-west of Manor Lane. It is of single storey and brick construction with cement render, together with an asbestos roof. Doors and windows are modern uPVC replacements. Brick buttresses and chimneys on gables. Added rainwater features. (CPAT 14/3/2013)

121221      *RAF Hawarden Battle Headquarters*      SJ33946435  
Reported location of the battle headquarters for Hawarden, recorded by Tucknott and Taylor (See <http://www.battlehq.info/>) Apparently destroyed, but there are some discrepancies in the description, which gives the NGR prefix 'SP', rather than 'SJ' and states that it was located to the south-east of the airfield; this is to the south-west.

The 1945 Air Ministry plan confirms this as the location of the Battle Headquarters.

121276      *RAF Hawarden, Site 3, machine gun post*      SJ3601865133  
Machine-gun post (disused) depicted on Air Ministry dwg 1883/45 of May 1945. Its position places it within the modern airfield boundary. (CPAT 28/3/2013)

121277      *RAF Hawarden, Site 4, machine gun post*      SJ3326464929  
Machine-gun post (disused) depicted on Air Ministry dwg 1883/45 of May 1945. Its position places it immediately adjacent to, or beneath a modern industrial building. (CPAT 28/3/2013)

121278      *Hawarden, "Cotton House"*      SJ3140365824  
Built as or taken over for use as Married Officers' Quarters before 1930. (Air Ministry Plan 1111/30). (CPAT 28/3/2013)

## APPENDIX 2

### RAF Sealand hinterland

34252                      *Sandycroft Pillbox*                      SJ3476067990  
Concrete pillbox situated on the edge of the coastal protection bank overlooking the Dee. Door at north-west corner and five gun slits.

34256                      *Queensferry Pillbox*                      SJ31986870  
Badly damaged concrete pillbox constructed on the river embankment. Main part of structure destroyed and roof displaced. Row of concrete posts/blocks c. 50 x 60cm and up to 80cm high along fence immediately to north-west. Possibly further structures in undergrowth to rear.

34257                      *Hawarden Bridge Pillbox I*                      SJ31406910  
Well-preserved concrete pillbox, one of a series along the south-west bank of the Dee located on side of river embankment.

34258                      *Hawarden Bridge Pillbox II*                      SJ30806940  
Well-preserved concrete pillbox, one of a series along the south-west bank of the Dee located on side of river embankment.

34259                      *Hawarden Bridge Pillbox III*                      SJ30606950  
Remains of a pillbox consisting of concrete wall section now displaced. Original location uncertain.

37868                      *Sealand, pillbox I*                      SJ3255171500  
Pillbox recorded during Dee Estuary Historic Landscape Survey (Jones, N W, 1998).

Not located, possibly destroyed or buried by road widening/landscaping. (CPAT 13/03/2013)

37869                      *RAF Sealand, pillbox II*                      SJ3278271567  
Pillbox recorded during Dee Estuary Historic Landscape Survey (Jones, N W, 1998).

Photographs provided by D J Smith, who noted that it was in excellent condition and sited next to a pylon.

Hexagonal brick and concrete pillbox. South-west elevation much longer than the others. Brick walls inset with concrete embrasures incorporating vertical angle-irons in the splay and having surviving weapon spigots; the embrasures have signs of fittings for internal shutters. Thickly cast concrete roof with impressions of timber shuttering. The L-shaped entrance passage on south-east and south-west is built of brick with a concrete slab roof. Most likely a variant of the Type 24 (thick-walled or 'shell-proof') pillbox. Built into a flood defence bank and surrounded by dumped soil. Averages about 7m across. (CPAT 13/03/2013)

85591                      *RAF Sealand, pillbox IV*                      SJ3374070833

Hexagonal pillbox (type FW3/24) of brick and concrete at Spital Dam roundabout, on A550(T), south of Shotwick. Constructed 1940/41. Type 24 pillbox, RAF variant (probably associated with RAF Sealand PRN 37875), in elevated position. Has elongated tunnel entrance and metal stepped embrasure. Road excavations (Feb 1995) revealed it to lie on a concrete base. Photo appears on Defence of Britain Database. This pillbox probably duplicated in the Defence of Britain Project Database (DoB IDs S0007249 & S0003338) and in the END (NPRNs 270444 & 270409) (Defence of Britain Database). The Type 24 is hexagonal with the rear wall longer than the others and containing the entrance with (usually) an embrasure to each side of it. The rear wall is approximately 12ft long (3.65m), the other walls being 6ft to 8ft (1.8m to 2.4m) in length. Walls are often up to 1ft (0.3m) thick, although many pillboxes of this type have walls up to 3ft (0.9m) in thickness (Lowry, B, 1995, pp82-3).

Hexagonal Type 22 (thick-walled or 'shell-proof') pillbox. Quite overgrown and south side partly buried. Entrance no longer visible, possibly buried or removed. Spigots for weapons and embrasure shutters still visible. Brick and concrete construction with reinforced concrete roof. About 7m across. (CPAT 13/03/2013)

85592                      *Sealand, pillbox III*                      SJ33406995

Brick and concrete pillbox constructed in 1940-41 as part of the defences for RAF Sealand (PRN 37875). Built on to railway bridge over the road (Defence of Britain Project Database, DoB ID S0011367).

The bridge has been replaced so the site is no longer extant. (CPAT 13/03/2013)

121195                      *RAF Sealand, Wepre Hall WAAF domestic site*                      SJ29446823

WAAF domestic site associated with RAF Sealand, mentioned on p.130 of Jones' *Airfields and Landing Grounds of Wales: North*. Exact location not determined.

121196                      *RAF Sealand aircraft crossing*                      SJ32597018

'Aircraft crossing' depicted on a plan of RAF Sealand as it was in 1942 on p.124 of Jones' *Airfields and Landing Grounds in Wales: North*. It is visible running across the railway to the west of the main part of the North Camp on RAF AP CPE UK 1935 No 3013, taken on 17/1/1947. It was evidently built when the South Camp runway was closed, to allow aircraft from the South Camp to use the North Camp runway.

Sections of tarmac are still present to the north and south of the cycle path which occupies the line of the former railway. There is also evidence of crossing barriers, which were set on paired rails 0.5m apart, aligned east/west and running to the north and south of the former railway for about 70m. The rails ended at three (of an original four) concrete blocks measuring c. 1m north/south by 0.5m east/west, which would have acted as buffers for each barrier. Concrete blocks sited at SJ3255370189, SJ3262870168, and SJ 3262970180. (CPAT 13/03/2013)

121201                      *RAF Sealand, East camp pillbox I*                      SJ3351669713

Reported location of pillbox, condition unknown. Photographs provided by D J Smith, showing a brick-built pillbox with a concrete roof. Distinctive as it has a cut-out for a tree. Seemingly intact from the images provided.

Located but not visited - on private property. GIS suggests it is a variant of the Type 24 pillbox. (CPAT 13/03/2013)



121202      *RAF Sealand, East camp pillbox II*      SJ3387769877

Probably a thick-walled Type 24 pillbox. Its long elevation and both adjoining walls have been entirely removed, leaving only the south half. The three embrasures in the south half have all been blocked up by brickwork on the outside, but the weapon spigots survive on the interior. The structure was built of concrete with a single thickness brick skin. Roof formed of two layers of reinforced concrete. Surviving structure measures about 7m east/west by 2.5m high. (CPAT 13/03/2013)

121203      *RAF Sealand pillbox I*      SJ33196997

Remains of Type 25 pillbox recorded during cultural heritage assessment by Cotswold Archaeology in 2011.

Incorrectly identified as a Type 25, the remains of a post-war 'Yarnold Sangar' concrete pipe pillbox were identified at this location. (CPAT 13/03/2013)

121205      *RAF Sealand pillbox II*      SJ33176958

Type 25 pillbox recorded during cultural heritage assessment by Cotswold Archaeology in 2011.

Incorrectly identified as a Type 25, a post-war 'Yarnold Sangar' concrete pipe pillbox is believed to have been sited at this location, although this has been destroyed. (CPAT 13/03/2013)

121208      *RAF Sealand, Mancot Royal officers married quarters*      SJ32296708

Officer married quarters depicted on inset on Air Ministry plan 2044/27 (1927). They comprised three blocks around a central green, and these are still seemingly intact - now known as Nos 1-32 Leaches Close.

Three blocks of two storeys, set around a green. Built of brick with pitched slate roofs and tall brick chimneys, they are divided into flats. Replacement uPVC windows, but the doors (wooden panelled with top third glazed with four panes) are probably original. Decorative octagonal windows on ground floor and blank brick and tile panel on front elevations. (CPAT 13/03/2013)

121209      *RAF Sealand, Mancot Royal airmen's married quarters I*      SJ32256726

Airmen's married quarters depicted on inset on Air Ministry plan 2044/27 (1927). They comprised a terrace of dwellings, seemingly still intact and now known as 35-43 Mancot Way.

Brick-built terrace of five houses with pitched slate roofs and brick chimneys. Doors and windows are modern uPVC replacements. Decorative blank panel of brick and tile below 1<sup>st</sup> floor window and above the two front doors (for Nos 37 and 41) at either end of the front elevation. Entrances to Nos 35 and 43 at opposite ends of the terrace. (CPAT 13/03/2013)

121210      *RAF Sealand, Mancot Royal airmen's married quarters II*      SJ32086699

Airmen's married quarters depicted on inset on Air Ministry plan 2044/27 (1927). They comprised a terraced row of dwellings, now known as Nos 41-51 Hawarden Way.

Two linked brick terraces, the link a single storey brick structure with a pitched roof. Pitched slate roofs, hipped at either end, with brick chimneys. Simple brick arches over doors and ground floor windows. Projecting brick string course between ground and first floor. Replacement uPVC windows. Small front gardens. (CPAT 13/03/2013)

121275                      *RAF Sealand, East Camp, pillbox III*                      SJ3433770027

Just beyond the easternmost extent of East Camp is what appears to be a Type 22 pillbox beside a drainage ditch, possibly also intended as part of the defences. GIS and modern aerial photography suggest it survives more or less intact (CPAT 28/03/2013).

123543                      *RAF Sealand, South Camp, Battle Headquarters*                      SJ3188169764

Battle HQ for RAF Sealand. An irregularly shaped brick and concrete structure built into the sea wall with 2 observation positions. An attempt to demolish the main observation room has been made, or it has collapsed since abandonment. (Tucknott, Mike & Taylor, Iain, 2009-12)

Photographs provided by D J Smith, who noted that the interior was large and dry, entrance overgrown.

Brick-built with reinforced concrete slab roof, built into the flood defence wall at an angle on the west side of the South Camp flying field. It has four rooms in total with narrow linking corridors. Entrance at east, small, low observation rooms at south and west. Small, square holes in two rooms denote chimneys as they were asbestos-lined. The smaller of the two main rooms (at the north-east) has two openings in its north-east wall, one above the other, one of which was probably an entrance and has flanking walls. South observation room damaged and has lost its concrete cover. The remains lie within an area about 15m in diameter. Small brick abutment on the nearby drainage channel to the east probably denotes a footbridge at this point. (CPAT 13/03/2013)

123655                      *RAF Sealand, pillbox V*                      SJ3216869523

Pillbox located on the eastern boundary of RAF South Shotwick, possibly a Type 23 (Cotswold Archaeology site visit, 2011).

Actually on the southern boundary of the RAF Sealand South Camp flying field. Only seen from a distance, partly obscured by trees, but there seems to be some surviving structure. (CPAT 13/03/2013)

123657                      *RAF Sealand, Sealand embankment, pillbox*                      SJ3272370138

Modified Type 23? pillbox built into embankment north of RAF South Shotwick. (Cotswold Archaeology site visit, 2011)

Photographs provided by D J Smith, who noted that it was largely filled with earth.

Small rectangular pillbox, measuring about 3.5m by 2.5m, set into railway embankment. Of brick construction with but concrete forming the slab roof, embrasure sill and lintel. Single long slit embrasure along the whole of the south-south-west side. Steel tripod weapon mounting in-situ inside. Entrance in east-south-east wall. It faces across the South Camp flying field, potentially the same date as the Battle Headquarters PRN 123543. (CPAT 13/03/2013)

### APPENDIX 3

#### RAF Wrexham hinterland

19699                      *RAF Wrexham decoy control room*                      SJ2606348449

Brick and concrete building consisting of short observation tower with handrails and ladder (iron) leading down to two roomed bunkers below and extending to the east. These lined with vaulted corrugated iron sheets supported by arched girders. Entrance from west. Roof and sides protected by earth/turf. Built during WWII. (Silvester, R J and Hankinson, R 1995).

There is a good description of the decoy control room in Pratt and Grant (2005, 27-32) although the plans are mirror images (i.e. should be flipped about their axis). The overall dimensions are 13m east-north-east/west-south-west by 9m wide and about 3.5m high. There are two entrances respectively on the north-north-west and west-south-west, both of which are protected by brick blast walls. The west-south-west leads to the main control room, which is formed of curved iron girders with corrugated iron cladding and with an observation platform above its west-south-west end accessed by an iron ladder from the brick entrance passage; an iron-clad door lies abandoned next to the blast wall. The north-north-west entrance leads to a brick passage between the other end of the control room and a generator room for the decoy lighting formed of reused concrete slabs from a 'Stanton shelter'. The whole, except the blast walls and observation platform, was covered by earth and rubble although subsequent erosion has revealed parts of the control room and almost the entire outer side of the generator room. (CPAT 19/3/2013)

85246                      *Borras, RAF Hawarden night decoy site*                      SJ35575325

A 'Q-site' said to have been on the land later developed as RAF Wrexham (PRN 44422). Lights on poles were laid out amongst the fields to simulate an airfield flare path (Smith, D, 1979).

Various electrical cables were revealed during work on the extension of Borras sand and gravel quarry to the north-west of Borras Lane. They criss-crossed the quarry extension area and it may be that at least some were power transmission cables for the decoy lights. However, Pratt and Grant (2005, 27-32) suggest that this may actually have been on the site later occupied by the RAF Wrexham decoy (see PRN 19699) around NGR SJ26064845.

85420                      *RAF Wrexham (Borras Airfield), Sick Quarters Site*                      SJ36725348

Sick Quarters Site for RAF Wrexham (Borras Airfield). Utilised the grounds of Borras House, or the house itself (PRN 85419) (Jones, N W, 2000).

No visible evidence of this former use. (CPAT 19/3/2013)

85421                      *RAF Wrexham (Borras Airfield), radio station*                      SJ35705309

VHF/HF radio station for RAF Wrexham (Borras Airfield), outside airfield perimeter (Jones, N W, 2000).

Two roofed, brick built huts, presently in agricultural use (Hankinson 1995, 5)

Both huts still intact. One was used as accommodation, the other to house a backup power supply. (CPAT 19/3/2013)

85422                      *RAF Wrexham (Borras Airfield), D/F hut I*                      SJ35725233  
D/F hut (Direction Finding) for RAF Wrexham (Borras Airfield), outside airfield perimeter (Jones, N W, 2000).

Not visible. (CPAT 19/3/2013)

85423                      *RAF Wrexham (Borras Airfield), D/F hut II*                      SJ36335221  
D/F hut (Direction Finding) for RAF Wrexham (Borras Airfield), outside airfield perimeter (Jones, N W, 2000).

The building could not be approached closely but it appears to survive intact in a coniferous copse within the golf course. Not possible to say whether the interior retains any original features. (CPAT 19/3/2013)

86942                      *Wrexham airfield, battle headquarters*                      SJ3629753260  
Site of battle headquarters 'mushroom'. Survives as a mound, probably covering the original structure (CPAT, 2012). The battle headquarters of RAF Wrexham. An underground concrete structure with stairs leading down into it and an escape hatch on the roof. Its purpose would have been to coordinate the defence of the airfield if it were attacked (Mike Grant, undated correspondence).

The site of the structure is only visible as a low mound in an area recently planted with saplings. Apparently only covered with soil when it became disused. (CPAT 19/3/2013)

121015                      *Wrexham airfield, radio aerial base*                      SJ35665321  
The remaining archaeological features in the locality are related to Borras Airfield, specifically the remains of a radio station, comprising an aerial and the associated buildings, which was used for morse, speech and direction finding, and was also capable of sending a homing signal (M. Grant, pers comm). The aerial had been long since removed, but its concrete base remained on the edge of the conveyor area at SJ 35665321. The aerial was linked to two brick buildings at SJ35705310, which provided staff accommodation and backup power. Removal of topsoil from around the aerial base allowed its method of construction to be recorded in more detail. The base had an irregularly octagonal shape, 6m in overall diameter, and sat on a foundation of three courses of brick, 0.25m in height, itself set on a concrete footing which projected 0.2m beyond the outer edge of the base. A concrete strip on the top of the base commenced at the north-west edge and ran along the north, north-east and east sides. In addition to the surviving structures, a length of cable which ran between the aerial and the service buildings was revealed during the machining; this was 2.5cm thick and was used as a permanent power circuit supply cable. It had a lead-armoured outer sheath with a copper core, and could carry both DC and AC current (M. Grant, pers comm; Hankinson, R, 2008). Marked as 'VHF/HF Radio Station' on a plan in the back of Pratt and Grant 2002.

The aerial mast is visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield (RH 7/3/2013).

121042                      *RAF Wrexham dispersed site I*                      SJ35195192  
Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield (CPAT, 2012). This is the 'Main Communal Site' on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002. No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).



*121043                      RAF Wrexham dispersed site II                      SJ35425218*

Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield (CPAT, 2012). This is RAF Site No 4 on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002.

No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).

*121044                      RAF Wrexham dispersed site III                      SJ34945214*

Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield. (CPAT, 2012). This is WAAF Site No 1/Communal Site on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002.

No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).

*121159                      RAF Wrexham dispersed site IV                      SJ35005165*

Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield. This is RAF Site No 1 on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002.

No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).

*121160                      RAF Wrexham dispersed site V                      SJ35565189*

Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield. This is RAF Site No 2 on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002.

No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).

*121161                      RAF Wrexham dispersed site VI                      SJ34925191*

Group of dispersed buildings for RAF Wrexham, visible on a 1942 AP (No 1 PRU NLA/53 No 1019) of the airfield. This is RAF Site No 3 on the plan of RAF and WAAF communal sites at the back of Pratt and Grant 2002.

No surviving remains, subsumed within a group of modern housing developments (CPAT 19/3/2013).

*121162                      RAF Wrexham, Anti aircraft gun emplacement I                      SJ36255328*

Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121163      *RAF Wrexham, Anti aircraft gun emplacement II*      SJ36145315  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121164      *RAF Wrexham, Anti aircraft gun emplacement III*      SJ35775234  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121165      *RAF Wrexham, Anti aircraft gun emplacement IV*      SJ37075283  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121166      *RAF Wrexham, Anti aircraft gun emplacement V*      SJ36935277  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121167      *RAF Wrexham, Anti aircraft gun emplacement VI*      SJ36765278  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, this area has been quarried away (CPAT 19/3/2013).

121168      *RAF Wrexham, Anti aircraft gun emplacement VII*      SJ36545298  
Anti-aircraft gun battery depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121169      *RAF Wrexham, Pillbox I*      SJ3646753296  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

Brick and concrete pillbox on road verge, projecting into the adjoining field. Embrasures on its north-west, north-east and south-west sides, probably also on the south-east but this was not visible from the road. Perhaps designed to look like a building. Measures c.8m north-east/south-west by 5m and about 2.5m high (CPAT 19/3/2013).

121170            *RAF Wrexham, Pillbox II*            *SJ36385315*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121171            *RAF Wrexham, Pillbox III*            *SJ36045308*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121172            *RAF Wrexham, Pillbox IV*            *SJ35755277*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121173            *RAF Wrexham, Pillbox V*            *SJ35615238*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121174            *RAF Wrexham, Pillbox VI*            *SJ35705238*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

121175            *RAF Wrexham, Pillbox VII*            *SJ36795210*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

121176            *RAF Wrexham, Pillbox VIII*            *SJ36975247*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121177            *RAF Wrexham, Pillbox IX*            *SJ36585290*  
Pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121178            *RAF Wrexham, Mushroom pillbox I*            *SJ36615322*  
'Mushroom' pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121179            *RAF Wrexham, Mushroom pillbox II*            *SJ35875222*  
'Mushroom' pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121180            *RAF Wrexham, Mushroom pillbox III*            *SJ36575205*  
'Mushroom' pillbox depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains at this site, which is on the golf course (CPAT 19/3/2013).

121181            *RAF Wrexham, Seagull trench I*            *SJ36515304*  
Seagull trench depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath the bund which surrounds the quarry (CPAT 19/3/2013).

121182            *RAF Wrexham, Seagull trench II*            *SJ35605250*  
Seagull trench depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains, possibly buried beneath a large spoil heap on the edge of the quarry (CPAT 19/3/2013).

121183            *RAF Wrexham, Seagull trench III*            *SJ36255220*  
Seagull trench depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains at this location (CPAT 19/3/2013).

121184            *RAF Wrexham, Seagull trench IV*            *SJ37115210*  
Seagull trench depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).



121185            *RAF Wrexham, Seagull trench V*            *SJ3663352677*  
Seagull trench depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

The 'seagull trench' is effectively intact and lies on the edge of the quarry a short distance to the north of the quarry office building. It is W-shaped, brick and concrete built, and sunken into the ground by about 1.5m. The roof is a reinforced concrete slab with a tarred felt cover. A number of weapon mountings are visible in the interior, all seemingly intact. The entrance seems to have been a sunken well with steps, centrally located on the east side. The site is overgrown but not directly threatened by quarrying activities at present. The only minor damage is a chip broken from the north-east corner of the roof (CPAT 19/3/2013).

121186            *RAF Wrexham, Pickett-Hamilton retractable fort I*            *SJ35815246*  
Pickett-Hamilton retractable fort depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*). The area has been quarried away.

121187            *RAF Wrexham, Pickett-Hamilton retractable fort II*            *SJ36335306*  
Pickett-Hamilton retractable fort depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*). The area has been quarried away.

121188            *RAF Wrexham, Searchlight battery I*            *SJ37065299*  
Searchlight position depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121189            *RAF Wrexham, Searchlight battery II*            *SJ37195305*  
Searchlight position depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121190            *RAF Wrexham, SANDRA light I*            *SJ36695213*  
SANDRA light (searchlights used as beacons for aircraft in distress) position depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

121191            *RAF Wrexham, SANDRA light II*            *SJ36265333*  
SANDRA light (searchlights used as beacons for aircraft in distress) position depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

*121192                      RAF Wrexham, Emergency radio station*

*SJ36335335*

Emergency radio station depicted on a plan on p.306 in Pratt, D and Grant, M, 1999. From Fighter Station to Gravel Pit. RAF Wrexham I (*Tarmac Papers*).

No visible remains (CPAT 19/3/2013).

*121207                      RAF Wrexham, fuel depot*

*SJ37085263*

'Underground fuel tanks, to the rear of Borrass Hall', mentioned by Pratt and Grant (2002, 168).

**APPENDIX 4**  
**Cadw draft project outputs document**

**Military airfields: Draft project outputs**

The military airfields project shall:

- Establish a common project method and methodology
- Create an airfield study of each airfield site to provide an explanation of the function and development of its constituent buildings and structures using existing primary and secondary sources
- Provide a narrative overview and statistical summary
- Develop a common methodology for assessing the condition and vulnerability of military airfields and their constituent buildings and structures
- Apply the agreed designation criteria and recommend examples of military airfield buildings and/or structures, or groups of buildings and/or structures where appropriate. The Trusts must act collectively in this aspect to ensure national coverage
- Enhance the Trusts' HER and GIS through the addition of military airfields' constituent buildings and structures so that the information can be used for DC work
- Share the project's data and results with Cadw, the RCAHMW and the MOD