

RAF CULMHEAD, CHURCHSTANTON, SOMERSET
Heritage Environment Programme

PROJECT REPORT

By Hazel Riley



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ABBREVIATIONS

AM Air Ministry
AOC(-in-C) Air Officer Commanding (-in-Chief)
AONB Area of Outstanding Natural Beauty
CSOS Composite Signals Organisation Station
EH English Heritage (now Historic England)
GCHQ Government Communications Headquarters
HE Historic England (formerly English Heritage)
HLF Heritage Lottery Fund
IWM Imperial War Museum
ORB Operations Record Book
OS Ordnance Survey
RAE Royal Aircraft Establishment
RSP Record Site Plan
SIGINT Signals Intelligence
SCC Somerset Heritage Centre
SRO Somerset Record Office, Somerset Heritage Centre
SWAHT South West Airfields Heritage Trust
USAAF United States of America Air Force
WAAF Women's Auxiliary Air Force
W/T Wireless Telegraphy

Frontispiece Spitfire Vb DUZ (AR614), piloted by 312 Squadron Leader Tomas Vybiral and stationed at RAF Culmhead October 1942 to June 1943 (Flying Heritage Collection)



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ABSTRACT

This study of the surviving structures and the history of the former RAF fighter station at Culmhead sets out the history of the airfield and its buildings; the significance of the airfield, regionally and nationally, and puts forward recommendations for the conservation, management and further recording work of these structures. The study has collated the source material relating to the men and women who served at the airfield during the Second World War, including an official photographic record of the Polish squadrons when stationed at the airfield in January 1942. One of the Spitfires which was based on the airfield with a Czech squadron is still flying and is based at an aviation museum in America. During the course of this work the importance of the site in the Cold War, when it was an outpost of GCHQ from the 1950s until 1999, has been highlighted for the first time.

ADMINISTRATIVE INFORMATION AND DESIGNATIONS

County: Somerset

District: Taunton Deane

Parish: Churchstanton

Historic England Designations: Scheduled Monuments

List entry number 1019845 air traffic control buildings

List entry number 1019846 pillboxes

List entry number 1020492 fighter pens and associated structures

Lies within the Blackdown Hills AONB

INTRODUCTION

Project background and methodology

This report presents the results of a project commissioned by Historic England, the Blackdown Hills Trust and the Blackdown Hills Area of Outstanding Natural Beauty to produce a Heritage Environment Programme for the former airfield at Culmhead. The project forms part of a S106 agreement arising from the construction and extension of solar arrays on the site, and is a component of a risk reduction strategy aimed towards achieving a stable condition trend for the designated heritage assets (Historic England 2015).

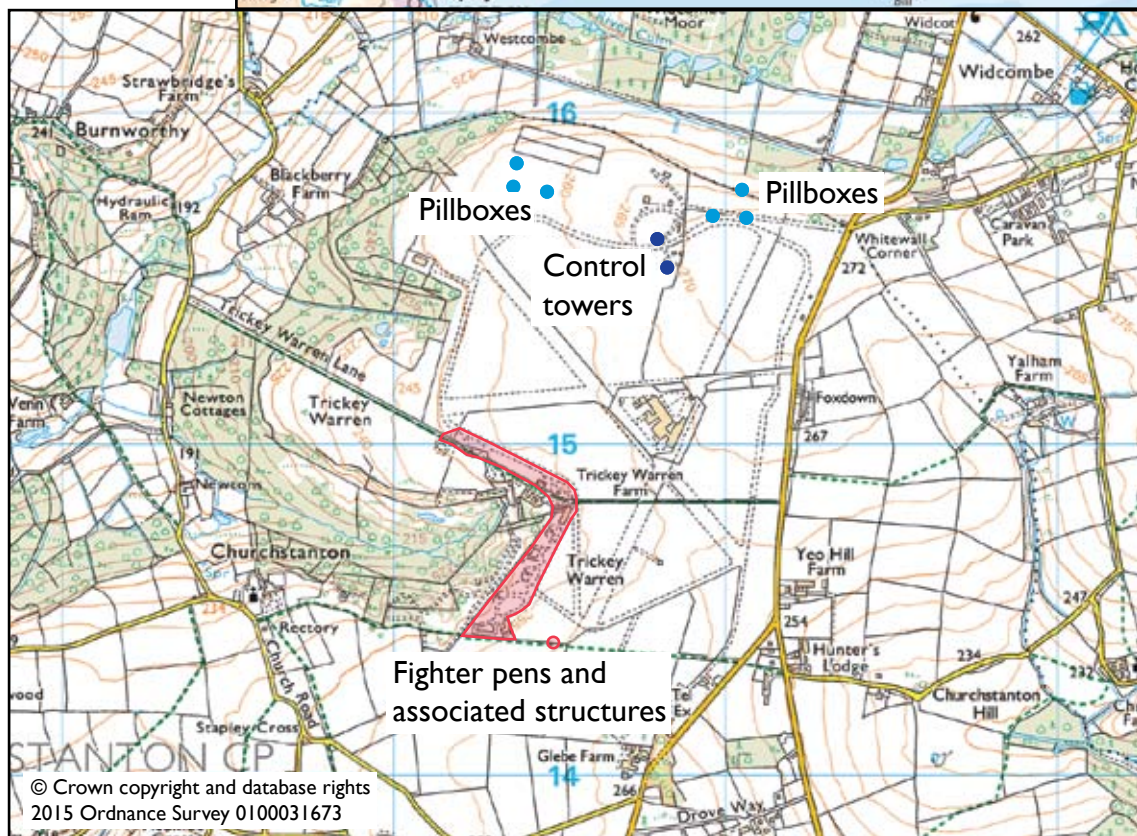
The project comprised: a desktop assessment and a condition survey and rapid assessment of all the surviving buildings and structures of the former airfield. The dispersed accommodation sites and airfield defences away from the airfield perimeter track were outside the scope of the project. The results of these assessments are used to inform and illustrate the account of the airfield below, which is presented to show how the surviving buildings and structures functioned as part of an RAF operational fighter station. The results have also informed the conservation, management and recording recommendations.

A Gazetteer of the sources considered, together with an indication of the scope of the material held, is set out in Appendix 1 of this report. The Condition Survey is included as Appendix 2 in this report. For reference, a timeline which lists the main events at RAF Culmhead from its requisition in 1940 until 2001, and notes on all of the squadrons who served at the station form Appendix 3 and Appendix 4.

Site location, topography and geology

RAF Culmhead lies on the NE edge of the Blackdown Hills, 10km south of Taunton and 1km to the NE of the hamlet of Churchstanton, within the Blackdown Hills AONB, centred at ST 209 150. It occupies the NW edge of a ridge top, at a height of 250-270m OD, with the land falling away steeply to the north and west (Fig 1). The bedrock is sandstone of the Upper Greensand Formation, with overlying gravels and clays (www.bgs.ac.uk).

Fig 1 Location maps



Names and numbering schemes

The former airfield at Culmhead was known as RAF Church Stanton from 1940 until its name was changed to RAF Culmhead on 22 December 1943. For clarity, the name RAF Culmhead is used throughout the report to refer to the former Second World War airfield, except when the name RAF Church Stanton is used in official reports, cited in published material and quoted from personal accounts. The AM site plan of RAF Culmhead numbers each building or structure (with the odd exception). These numbers are used throughout this report. Other recording schemes used at RAF Culmhead are cross referenced in the entries for the buildings and structures in the Condition Survey (Appendix 2). Figure 2 shows the airfield layout and the surviving buildings and structures, with their AM numbers, at RAF Culmhead in 2015. Several of the buildings and structures are designated as Scheduled Monuments (below); these are located on Figure 1. Figures 3 and 4 show the designated heritage assets in detail.

PREVIOUS RESEARCH AND SURVEY WORK AT RAF CULMHEAD

The study and recording of 20th-century military sites in Britain was given fresh impetus by the work of the Fortress Study Group and the Defence of Britain Project in the 1990s (English Heritage 2003a). The Blackdown Hills Airfield Survey, commissioned by The Blackdown Hills Project and the Environment and Planning Committee of East Devon District Council, was undertaken in 1995 in order to assess the extent and quality of survival of the buildings and structures at the Second World War airfields of Duneswell and Upottery in Devon (Francis 1995). Bill Horner took some invaluable photographs of defence unit buildings and the battle headquarters at RAF Culmhead in 1995, just before their demolition (Somerset HER 18549; 44550). A similar survey of the former RAF station at Culmhead in Somerset was commissioned by Somerset County Council, The Blackdown Hills Project and Taunton Deane Borough Council. The fieldwork was undertaken by Paul Francis of the Airfield Research Group in February 1997. This survey provided the database for all subsequent research and survey on the airfield. The survey report and archive of photographs have been an invaluable tool in this current project (Francis 1997; 2001; SRO A\AW1/196 *Records relating to a history and condition survey of RAF Culmhead*).

Studies by English Heritage on the significance of 20th century military sites, and in particular airfields and their associated structures and buildings, led to a reappraisal of the significance of such sites (Lake 2000; English Heritage 2003a;b; Francis *et al* 2013). In 2001 several of the structures and buildings at RAF Culmhead were designated Scheduled Monuments. These are the fighter pens and associated structures and buildings on the SW side of the airfield; two groups of pillboxes on the north side of the airfield and the two control towers (www.historicengland.org.uk The National Heritage List for England 1019845; 1019846; 1020492) (Figs 3 and 4). A condition survey of the Scheduled Monuments at RAF Culmhead was carried out by English Heritage in 2008 and reports on the Scheduled Monuments were undertaken in 2011 for the Blackdown Hills AONB and English Heritage (Russell 2008; Blackdown Hills AONB and English Heritage 2011a;b;c). Conservation work on individual structures by SCC is detailed in Appendix 2.

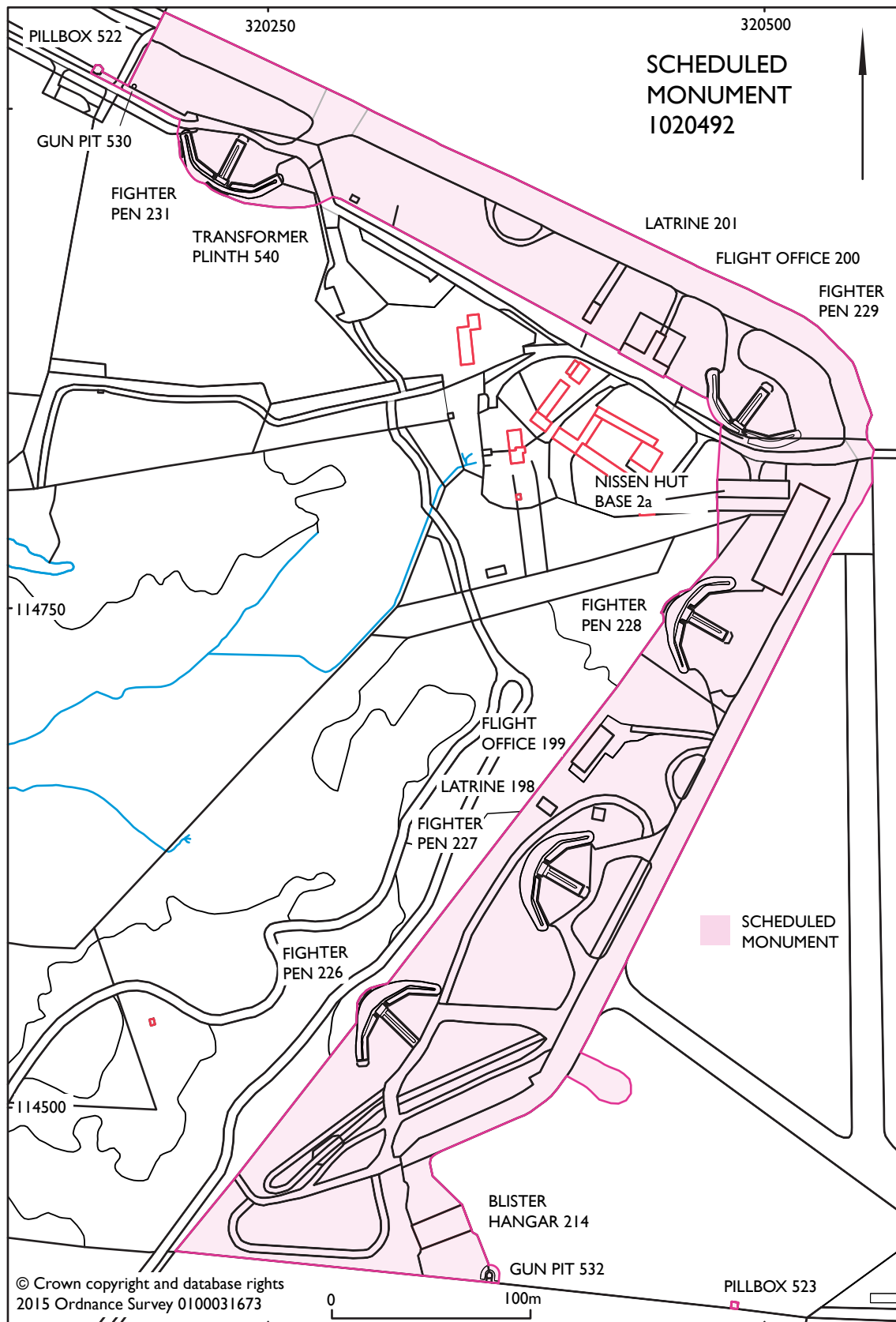


Fig 3 Scheduled Monument 1020492

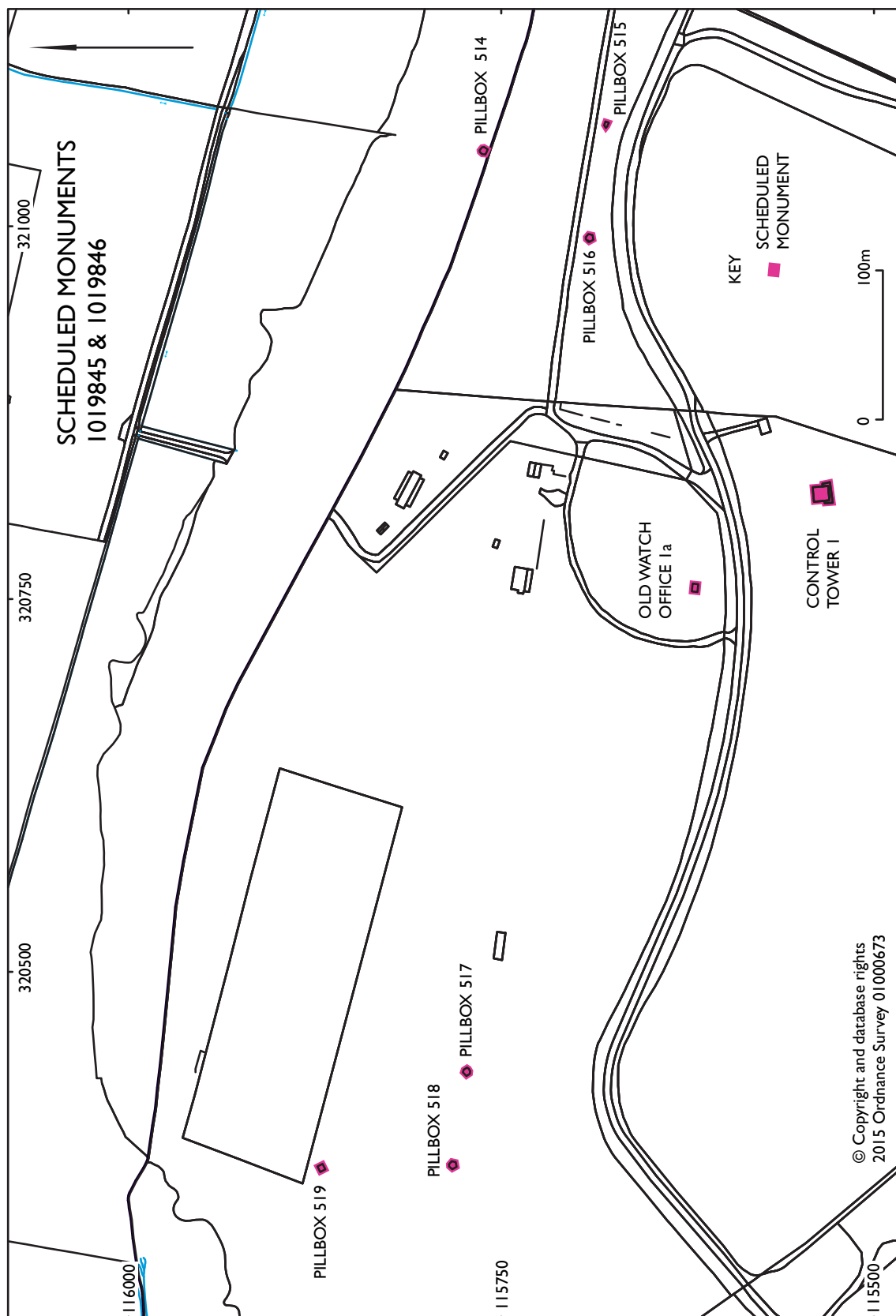


Fig 4 Scheduled Monuments 1019845 and 1019846

The work of the South West Airfields Heritage Trust (SWAHT) has done much to preserve and promote the heritage of the region's Second World War airfields. The SWAHT runs the Upottery Heritage Centre in a restored Nissen hut at the airfield site, with a display and archive centre, a meeting room and a group of friendly volunteers. There is also a centre at Dunkeswell which is currently being reorganised, and here is a large collection of material, including photographs taken by the USAAF at RAF Dunkeswell, and a specialist library (information from Claude Caple, SWAHT). The SWAHT hosts a comprehensive website, with pages on RAF Culmhead which include photographs and a history of the site (www.southwestairfields.co.uk).

The Defence of Britain Project recorded 12 pillboxes and the battle headquarters at RAF Culmhead (www.archaeologydataservice.ac.uk). The Atlantikwall study group's website has a page dedicated to RAF Culmhead, with a description and collection of photographs from 2000 to 2015 of the former airfield (www.atlantikwall.co.uk). Specialist study groups have listed the control towers and battle headquarters at RAF Culmhead (www.controltowers.co.uk; www.battlehq.hq.info). The history of airfields in Somerset and south west England has been researched in great detail by David Berryman. He has studied the Operation Record Books (ORBs) for the Squadrons who were stationed at RAF Culmhead throughout the Second World War and produced accounts of this time from the original source material. The history of RAF Culmhead outlined below is based on these accounts (Berryman 2006; 2009).

An archaeological desk-based assessment of part of the dispersed accommodation buildings for RAF Culmhead was undertaken in 2011. This considered the significance of the surviving WAAF accommodation buildings in a small area of land to the west of the Holman Clavel Inn (Etheridge 2001). The remains at RAF Culmhead were described in 'Along the Wild Edge' (Webster 2011).

A BRIEF HISTORY OF RAF CULMHEAD

The national context

During the 1920s, the expansion of the RAF changed as the government reacted to international events. However, Hitler's rise to power and the collapse, in 1934, of disarmament talks in Geneva caused the British Government to undertake a review of the country's defences, leading to a programme of large-scale rearmament. Training and maintenance bases were established behind a line of fighter stations, with an outward facing front line of bomber bases on the east coast of England from Yorkshire to East Anglia. Fighter Command took control of airfields and radar stations; anti-aircraft and searchlight batteries, together with civil defence sites, were all developed at this time.

The Fall of France in 1940 exposed Britain not only to the danger of invasion by sea but to air attack from German bases across the English Channel and as far north as Norway. In May and June 1940 large amounts of anti-invasion defences were constructed both on the coast and at strategic points inland to counter the expected German invasion. By early 1942 at least 20 000 pillboxes had been constructed, together with hundreds of miles of anti-tank defences. Some 20% of the area of Britain came under military control in the Second World War, most of it for training areas and airfield construction. Nearly 600 airfields, satellite landing grounds and decoy sites were

built between 1939 and 1945, sited according to strategic considerations such as the German occupation of NW France, support of the bomber offensive in eastern England and the advanced landing grounds in southern England which were built to support the Allied invasion of northern Europe (English Heritage 2003a, 5-8).

Airfield design: the RAF Expansion Period

The deteriorating political situation in NW Europe in the 1930s, in particular the development of Germany's air force, led the British Government to introduce a number of schemes for the expansion of the RAF between 1934 and 1939. This resulted in a large scale rebuilding programme, with existing stations being modernised as well as numerous new RAF aerodromes being constructed between 1934 and 1940. Public concerns about rearmament and the rate of development were addressed by collaboration between the Air Ministry, the Royal Fine Arts Commission and the Council for the Protection of Rural England, with improvement in the quality and design of stations from 1934 onwards. The stations constructed under the Expansion Period schemes, with carefully designed, standardised buildings, were often not completed until 1940-1941, the same time as the first phase of temporary airfields (Francis 1996).

Airfield design: temporary airfields

The first of the temporary airfields were non-dispersed, but subsequent phases of airfield construction were all based on dispersal, with the domestic accommodation arranged as small groups of buildings scattered into the surrounding countryside. The single storey brick and prefabricated buildings on the temporary airfields were very different to the pre-war designs. The rectangular, grass surfaced landing grounds favoured by the RAF before the Second World War were soon replaced by concrete and tarmac runways to varying specifications (Francis *et al* 2013, 1-2).

The scale of the construction of airfields in Britain in the late 1930s and during the Second World War is illustrated by some facts and figures. From the beginning of 1935 to the outbreak of war, around 100 new service airfields were established and 110 civil airfields were requisitioned. During the Second World War around 450 new frontline airfields were established in Britain. The rate of construction peaked in 1942, with 125 being commissioned, declining until its cessation in 1945 (Francis *et al* 2013, 3-4). These figures were put into perspective by an article on the construction of airfields in Britain, published in the *Aeroplane* in 1945, which described the UK as 'one vast aircraft carrier anchored off the NW coast of Europe,' and by a statement to Parliament which compared the total area of concrete laid in airfields between 1939-1945 – 160 million square yards – to a 9 000 mile long, 30 feet wide road from London to Peking (quoted in Francis *et al* 2013, 2,3).

Airfields in south west England

At the beginning of the Second World War the south west was involved in flying training, with large establishments in north Somerset and east Wiltshire, together with naval flying training bases in south Somerset and Cornwall. Mount Batten (Plymouth) was the only operational station in the region at this time. By June 1940, following the fall of France, the whole of the south west was within range of the Luftwaffe. Ten Group, Fighter Command, formed under Air Vice-Marshal Sir Quinton Brand on 13 July

1940, had its HQ at Rudloe Manor, Wiltshire, with sector stations as far west as St Eval in Cornwall, and forward stations on the Cornish and Devon coasts, such as Portreath, Predannack and Bolt Head (Berryman 2009, 21-22).

The construction of RAF Culmhead

It was against this background that a remote corner of the Blackdown Hills, known as Trickey Warren, was listed by the Air Ministry as an emergency landing ground. By July 1940, 520 acres of land at Trickey Warren were requisitioned from the Phillips family at Burnworthy Manor, less than a mile away to the NW of the airfield site. This was planned as a satellite airfield in 10 Group Fighter Command for the Fighter Sector centred at RAF Colerne (Wiltshire). The contract for the construction of three tarmac runways on Trickey Warren was awarded to L J Speight and Partners Ltd, and hardcore from Triscombe Quarry, on the west side of the Quantock Hills some 15 km to the NW of the airfield site was used (Francis 1997, 6-7).

Work on the airfield buildings started in the winter of 1940-1941, at this stage the plan was for a satellite airfield for the sector at RAF Colerne. Some of the first buildings were temporary brick structures, using bricks from the nearby Wellington brickworks, and included some specialist buildings such as the watch office (the first control tower) and decontamination facilities. In early 1941 the airfield on Trickey Warren became a satellite airfield for the Fighter Sector based at RAF Exeter, Devon, which was the principal fighter station in the area at this time. The station, known as RAF Church Stanton, was officially opened on 1 August 1941, under the command of Wing Commander J H Hill, the first station commander. It was not until December 1941, following inspections of the station and the airfield defences by Air Marshal Sir William Sholto Douglas that RAF Church Stanton was declared to be self accounting and no longer a satellite of Exeter (Francis 1997, 1-7; Berryman 2006, 50-52).

The Polish and Czech Pilots

The first official arrivals at RAF Church Stanton were the Hurricane IIBs of 302 and 316 Squadrons, both Polish squadrons, who arrived on 2 August 1941. There are, however, two stories about aircraft which landed on the strip before this. The first is official and is recorded in the Operations Record Book for 307 Squadron:

'9 June 1941 Instructions were issued by HQ No 10 Group that six Defiants were to be dispersed at Church Stanton for the night and arrangements were made to transport personnel and starter trollies. The aircraft left at 21.00 hours. Defiants N. 1671 and T. 3992, pilots Sgt. Bilau and Sgt. Jankowisk respectively were damaged on landing at Church Stanton owing to the landing 'T' being incorrectly laid out. Local stormy weather with a strong wind obtained and prevented the pilots from maintaining control of their machines, which were spun off the runway on to soft ground on the side. Both machines were damaged beyond the Unit's capacity to repair, but no blame can be attached to the pilots who landed in accordance with the ground signals.

10 June 1941 Four Defiants dispersed at Church Stanton returned to Exeter in the afternoon.'

(307 Sqn Summary of Events The National Archives AIR 27_1675/13.PDF)

The second is the story told by David Berryman:

'The first aircraft to land at the new airfield did so when it was unfinished, arriving early one morning. Its pilot approached Mr Long, a roller driver, who was just getting up steam, but neither could understand one another, and when the pilot sprinted back to his aircraft and took off. Long realised that it was probably a German bomber that had landed in error.'
(Berryman 2009, 98)

Nos. 302 and 316 Squadrons were declared operational on 1 September 1941; 302 Squadron left Church Stanton on 5 September 1941. One man was sad to leave: Wladyslaw Mordasiewicz, one of the ground crew for the squadron, wrote in his diary that 'Church Stanton was comfortable, nicely located and we slept in barracks' (www.polishsquadronsremembered.com). No 316 Squadron flew its Hurricanes on convoy patrols. In early November 1941 SpitfireVBs replaced the Hurricanes and 316 Squadron took part in Channel sweeps and bomber escorts until 12 December when it moved to RAF Northolt, London.

Another Polish squadron, 306 Squadron, replaced them, flying sweeps over the Channel and fighter patrols over Bristol and Exeter. RAF Church Stanton was used for a series of official photographs, documenting the Polish pilots in Britain in 1942. These show the pilots and their aircraft, together with glimpses of buildings on the airfield. The flight offices are seen in photographs of the Polish pilots drawing cartoons and having English lessons (Figs 5 and 6). These images also capture model aircraft, suspended from the roof of the flight office, which were used to help pilots recognise different types of aircraft. Flying Officer Witold Krupa has an aircraft silhouette on his Mae West life jacket, and the names 'Mollie' and 'Sheila' (Fig 7). The Polish Squadrons often had dogs for mascots: the 306 Squadron mascot is pictured attending a squadron briefing (Fig 8).

Fig 5 Polish officers of 306 Squadron drawing cartoons (of the official photographer?) in a flight office, RAF Church Stanton 1942 (© IWM CH4799)





Fig 6 Polish pilots of 306 Squadron having English lessons in a flight office, RAF Church Stanton 1942 (© IWM CH 4790)



Fig 7 Sergeant Witold Krupa of 306 Squadron wearing his 'Mae West' life jacket, RAF Church Stanton 1942 (© IWM CH4795)

As well as the Polish fighter pilots, RAF Church Stanton was home to the O2 Detachment of RAE Farnborough, Hampshire, who arrived on 13 February 1942. The trials they carried out from RAF Church Stanton included testing barrage balloon-cutting devices fitted onto aircraft which were then flown into the cables of barrage balloons, tethered at RAE Pawlett, an outstation of RAE Farnborough on the Somerset Levels.

The last of the Polish pilots to be stationed at RAF Church Stanton left in May 1942, they were replaced for a short time by 154 Squadron, then on the 7 June 1942 the Czech pilots of 313 Squadron flew in from RAF Fairlop, Essex, with Spitfire VBs. A second Czech Spitfire squadron, 312 Squadron, arrived on 9 October 1942 from RAF Harrowbeer, Devon. These two squadrons became known as the Czech Wing and they flew offensive sweeps along the French coast, over Brittany and Normandy, and escorted bombers. The Czech Wing also carried out Air Defence Patrols along the South Devon and Dorset coast. One of these Spitfires is still flying. This is Squadron 312's Spitfire VB DU-Z (AR614), piloted by Squadron Leader Tomas Vybiral, and it is owned by the Flying Heritage Collection in Everett, Washington State (Frontispiece).

The Spitfire VBs of 66 and 504 Squadrons replaced the Czech Wing at RAF Church Stanton in June 1943, continuing with convoy patrols, sweeps, Circuses and Ramrods (raids by bombers accompanied by fighter escorts). In mid-August these squadrons were replaced by 131 and 165 Squadrons from RAF Redhill, Surrey, and RAF Kenley, London, equipped with the latest Spitfire Mark IX. Dr Leggatt, who was a Medical Orderly with 234 Squadron, recalls being flown down to Culmhead for a brief stay in 1943. He remembers the pub at the crossroads (Holman Clavel Inn), sick-quarters in the village and the officer's mess at the old police college (conversation with Dr Leggatt, December 2015).



*Fig 8 No. 306
Squadron mascot
attending a
briefing, RAF
Church Stanton
1942 (© IWM
CH4789)*

RAF Culmhead

The station was renamed RAF Culmhead on 22 December 1943, to avoid confusion with similarly named stations, particularly RAF Church Fenton in Yorkshire. On 31 December the Culmhead Wing covered the withdrawal of a large force of USAAF B-17 and B-24 bombers in the Bordeaux area; flew more escort missions and Ramrods in the early months of 1944, then moved to RAF Colerne in 1944. No. 610 Squadron replaced them, transferring their Griffon-engined Spitfires from RAF Exeter on 7 April. On 10 April 1944 284 and 587 Squadrons flew in from RAF Westonzoyland, Somerset. These were target-facility and anti-aircraft co-operation units, equipped with Oxford, Defiant, Hurricane, Masters and Martinet aircraft. 287 Squadron transferred to RAF Colerne on 20 May 1944, but 587 Squadron stayed on until October 1944. No. 610 Squadron moved to RAF Harrowbeer at the end of May 1944 and during the summer of 1944 RAF Culmhead was the base for 587 Squadron, 616 Squadron with Spitfire VIIIs and the Spitfire IXs of 126 and 131 Squadrons. 587 Squadron complained that 'Office accommodation seems somewhat limited' (ORB 587 Squadron March 1944 The National archives AIR 27_2055_2.PDF).

The Spitfire squadrons worked on intensive operations leading up to, and following D-Day in June 1944. On D-Day the Culmhead Wing attacked goods trains and vehicle convoys to stop German reinforcements moving forwards. After D-Day, 587 Squadron organised a dance and cricket match which were duly reported in the ORB for July 1944:

10th July 1944 A Squadron Dance and Cabaret was held in the Station Gymnasium, Culmhead, it was a most successful social event, enjoyed by all personnel. Lt Col Drummond and Major Sherlocke from 76 S/L Regt, Pitminster, attended the dance, as did also the Station Commander, Wing Commander Campbell Orde.

30th July 1944 A cricket match was played by a Squadron team versus 206 LAA Regiment. The Squadron suffered a heavy defeat at the hands of the Gunners being beaten by 106 runs for 5 wickets, against the Squadron's total of 87 all out. Top scorer for the Squadron was Cpl Brelsford with 32 runs. S/Ldr I H Edwards made 2 runs and F/Lt Welch 17.

(ORB 587 Squadron July 1944 The National Archives AIR 27_2055_3.PDF)

The Gloster Meteor

On the 12 July 1944 two Gloster Meteor Mk I fighters – the first British jet fighters – arrived at RAF Culmhead from the RAE factory at Farnborough for testing by 616 Squadron. The arrival of the Meteors was recorded as laconically as the rest of the entries:

'12 July 1944 28 aircraft from 131 and 616 Squadrons were briefed for an escort show to Lancasters bombing. Show was from Ford. All aircraft returned to Ford after uneventful day. During afternoon the two 'Meteor' aircraft arrived from Farnborough (EE/213/G and EE/214/G). Security measures were taken and aircraft were guarded – this arrival caused much interest.'

(ORB 616 Squadron July 1944 The National Archives AIR 27_2127_13.PDF)

This event is recorded in an interview with a young Sergeant Pilot who arrived at RAF Culmhead on his first operational posting on the evening of 11 July 1944. Geoffrey Amor was born in 1922 and joined the RAF as a fitter when he was 16. He trained as a pilot in No 4 British Flying Training School in Phoenix, Arizona and qualified as a Sergeant Pilot before undertaking more training from February 1943 in Great Britain. In July 1944 he was posted from his base in Scotland to RAF Culmhead to join No 616 Squadron. He remembered arriving at his quarters – a Nissen hut in the woods – where there were a few Sergeant Pilots, the rest were probably in the pub. The next day at 2pm the Squadron Commander called all the airmen in to sign papers – the Official Secrets Act – and the Squadron was screened off and told they were converting to the Gloster Meteor. The pilots had never heard of this aircraft before – the first jet engine plane to fly fighter operations in the world. Geoffrey Amor operated from RAF Culmhead for a while, flying a Spitfire VII on low level operations across the channel to the Loire Valley. Then in early July 616 Squadron moved to RAF Manston, Kent, with the first two Meteors which were flown from RAF Culmhead. When 616 Squadron moved from RAF Culmhead to RAF Manston the squadron was divided into 2 flights: Meteors and Spitfires, initially as a more junior pilot he flew Spitfires then flew his first Meteor on 20 July 1944. In January 1945 RAF Colerne became the first jet squadron base as 616 and the Meteors transferred there. He had no idea why 616 Squadron were chosen to be the first jet squadron, perhaps because they were flying high altitude Mark VII Spitfires which became obsolete (Notes from IWM Interview with Geoffrey Amor Catalogue number 15228 14 March 1995).

The jet fighters only stayed at Culmhead for a week before 616 Squadron flew them, and their Spitfires, to RAF Manston in Kent. 131 Squadron flew their Spitfires from Culmhead until the end of August 1944, including one 690 mile round trip escorting Lancaster bombers to attack the U-boat pens on the SW coast of France at La Rochelle; 126 Squadron had left for RAF Harrowbeer at the end of June. On 10 August 790 Squadron of the Fleet Air Arm arrived at Culmhead and stayed for six weeks; 587 Squadron returned to RAF Westonzoyland on 1 October 1944.

Glider School Training Schools

On 9 December 1944 the airfield administration at Culmhead was transferred to 23 Group Flying Training Command, it became a satellite of their training base at RAF Stoke Orchard, Gloucestershire, and No 3 Glider Training School moved to RAF Culmhead from RAF Zeals, Wiltshire. A large detachment of Miles Master tugs and Hotspur gliders flew into Culmhead on 13 December. The Training School moved to RAF Exeter in January 1945 with Culmhead becoming the base for the Gliders Instructors School, training staff pilots to man the Glider Training Schools, equipped with Albemarle, Horsa and Hotspur gliders, towed by Miles Master tugs.

The closure of the RAF Station at Culmhead

In August 1945 RAF Culmhead was used as a detached storage site by RAF 67 Maintenance Unit, based a few miles away at Marshalsea's Garage in Taunton; in August 1946 RAF Culmhead closed.

FISH, CSOS Culmhead and the Cold War

Ivy Farm in Knockholt, near Sevenoaks, Kent, was home of a Government Communications Wireless Station during WWII. It was an out-station of Bletchley Park and acted as the Radio Intercept Station for high level, German, non-morse radio traffic, codenamed 'FISH.' The station at Ivy Farm remained operational until 1952-53 when FISH interception was moved to CSOS Culmhead (www.sussexhistoryforum.co.uk). Little is published in detail about the early decades of the Cold War. The Army, Navy and the RAF kept a large, inter-service intercept formation in place, using personnel who were doing National Service, so much so that GCHQ worried about how to hide the scale of the operation. Although the SIGINT programme was coordinated by GCHQ, it was actually provided by a complex alliance of GCHQ and the three armed services. Even the Treasury struggled to track SIGINT spending, hidden under misleading headings and cover organisations (Aldrich 2010, 117-118).

This explains the apparent discrepancies in the OS map coverage of the area in the 1950s and 1960s. The site was not mapped when the OS 1" map was published in 1960, although both Dunkeswell and Upottery airfields are mapped as 'Airfield (Disused)' in some detail, with buildings, dispersal areas and runways shown but only a few fields and farm tracks are shown at Culmhead (www.nls.ac.uk 1960 maps Exeter 176 and Taunton and Lyme Regis 177). The large scale 1:2500 map for the area, published in 1963, shows the southern half of the airfield in considerable detail. All the six fighter pens with the associated buildings have been surveyed in detail, two of those on the east side still survive, as does the south dispersal area. The sites of four blister hangars are clear, so is the surviving hangar. A total of 37 masts are shown. The northern half of the airfield, including the control tower and other buildings in the northern technical area are not mapped at all and the mapping is taken from the pre-war coverage (www.old-maps.co.uk OS plan 1963 1:2500). This suggests that CSOS were using some of the buildings in the northern technical area and that even the OS were not allowed to map the area in the 1950s and 1960s. By about 1970 the block of buildings at the intersection of the runways is shown on OS mapping and named as 'Radio Station' and the whole airfield, including the northern technical area, is mapped for the first time (www.old-maps.co.uk OS plan 1969-1991 1:10 000).

Fig 9 (left) Rhombic masts CSOS Culmhead c 1960 (SWAHT & Upottery Heritage Centre)

Fig 10 (right) The building and circular enclosure at CSOS Culmhead in 2000 (© Getmapping plc)



An important collection of photographs of the airfield site was taken in the late 1950s or early 1960s which show the Second World War airfield buildings and fighter pens in this Cold War landscape of rhombic masts. The photographs are now on display at the Upottery Heritage Centre (Fig 9).

CSOS Culmhead was a significant part of the Cold War intelligence network. GCHQ employed over 7000 people in 1984 and had six listening stations in Britain: Bude; Culmhead; Irton Moor; Cheadle; Hawklaw, and Brora. The listening station at Culmhead picked up short-wave high frequency transmissions from all over the world, but mainly from the three GCHQ stations at Washington, Hong Kong and Ascension Island. Culmhead was designed to receive long range signals using a number of large aerials arranged in the shape of a rhombus and called rhombics. They were directional and could listen only to transmissions coming from a known direction. The short wave transmissions received at Culmhead were passed on to GCHQ, where the messages were decoded into the form in which they were sent by the foreign power, and then decoded to find their original meaning (Connor 1984).

The headquarters of GCHQ moved from Bletchley Park to Eastcote in 1945, then to Cheltenham in the 1950s. The Central Training School for the organisation stayed on at Bletchley Park until 1987, when it moved to CSOS Culmhead. The fall of the Iron Curtain in the early 1990s resulted in the reduction of the UK's interception work. The missions of the GCHQ stations at Cheadle and Culmhead were transferred to GCHQ Scarborough in 1995 and 1998 respectively and CSOS Culmhead closed (www.gchq.gov.uk/history). A small building at the centre of a circular enclosure, is clear on air photographs of 2001, and was still standing in 2009 (www.flickr.com/photos/owenhurrell/albums/). Its function is unknown and the site is now part of the Solar Array (Fig 10). By 2001 the rhombic aerial masts at Culmhead had been dismantled (Air photographs, viewed at Blackdown Hills AONB). Blackdown House, the main office block of the former GCHQ site, was occupied by DEFRA as their headquarters for the co-ordination of Foot and Mouth Disease in south west England in 2001. Culmhead Business Park opened in that year using the former GCHQ office buildings (www.peterhall.biz/culmhead.html) (Fig 11).

The large area around the runways and buildings of the airfield site continued to be used for agriculture during and after the war and during the secretive decades of the Cold War. Many of the larger airfield buildings were adapted for agricultural use, mainly for storage and livestock housing.



Fig 11 (below left) The old CSOS buildings are now part of a business park; the security fence is a legacy of the Cold War years (Hazel Riley)

THE AIRFIELD

Trickey Warren

The pre-airfield landscape is clearly shown on the OS 1st edition 6-inch map of 1889 (Fig 12). The land, named Trickey Warren, is divided into several large fields by long, straight hedges and accessed by a wide, straight lane, Trickey Warren Lane, indicative of late enclosure of former common land.

The development of the airfield

It is not possible to map the development of the airfield in a meaningful way. The first buildings were the specialist buildings of temporary brick such as the old watch office. An air photograph of 25 June 1942 suggests that construction work was underway on all of the dispersal areas and the northern technical area judging by the amount of tracks around the site (Fig 13).

As the history outlined above shows, by 1943 RAF Culmhead was a busy fighter station and as such was equipped with three tarmac runways, a perimeter track, ten blister hangars and a large T2 hangar, dispersal areas with two sets of defended fighter pens for the operational aircraft. There were comprehensive airfield defences, a machine gun range and test butt, a practice bombing range and a suite of specialised buildings concerned with the operation of the airfield, repair and maintenance of aircraft and vehicles, storage, and the safety and training of airmen. The airfield defence units had accommodation on the perimeter of the airfield, close to the defence positions, the RAF personnel were accommodated in several groups of buildings dispersed to the north of the airfield.

The Airfield Record Site Plan, held in the RAF Museum, Hendon, is a record of the airfield in 1944 (Air Ministry Record Site Plan 4997/45). It records the airfield in great detail, showing the position, function and construction type of each building. Each component of the airfield has a number and an extract from the plan is reproduced in Figure 14. The fully developed airfield is also shown on a remarkable run of air photographs at 1:7000 and 1:3500 scales taken by the USAAF in July and August 1943 (Figs 15,16,39,42,47).

When Paul Francis undertook his condition survey of the airfield, he was able to record 82 extant structures and buildings from a total of c 190 recorded on the AM RSP (Francis 1997, Appendix 1). The sheer number of standing buildings in the northern technical area can now only be appreciated on the USAAF large scale air photographs (Figure 17); the same scene today is very different (Fig 18). Many of the airfield buildings were demolished in the period between that survey and the early years of the 21st century, as the buildings proved unsuitable for modern agricultural use and others became increasingly unsafe or ruinous. This survey has recorded 33 extant buildings and structures, and the sites of 16 buildings (rubble, earthworks or concrete bases) (Fig 2).

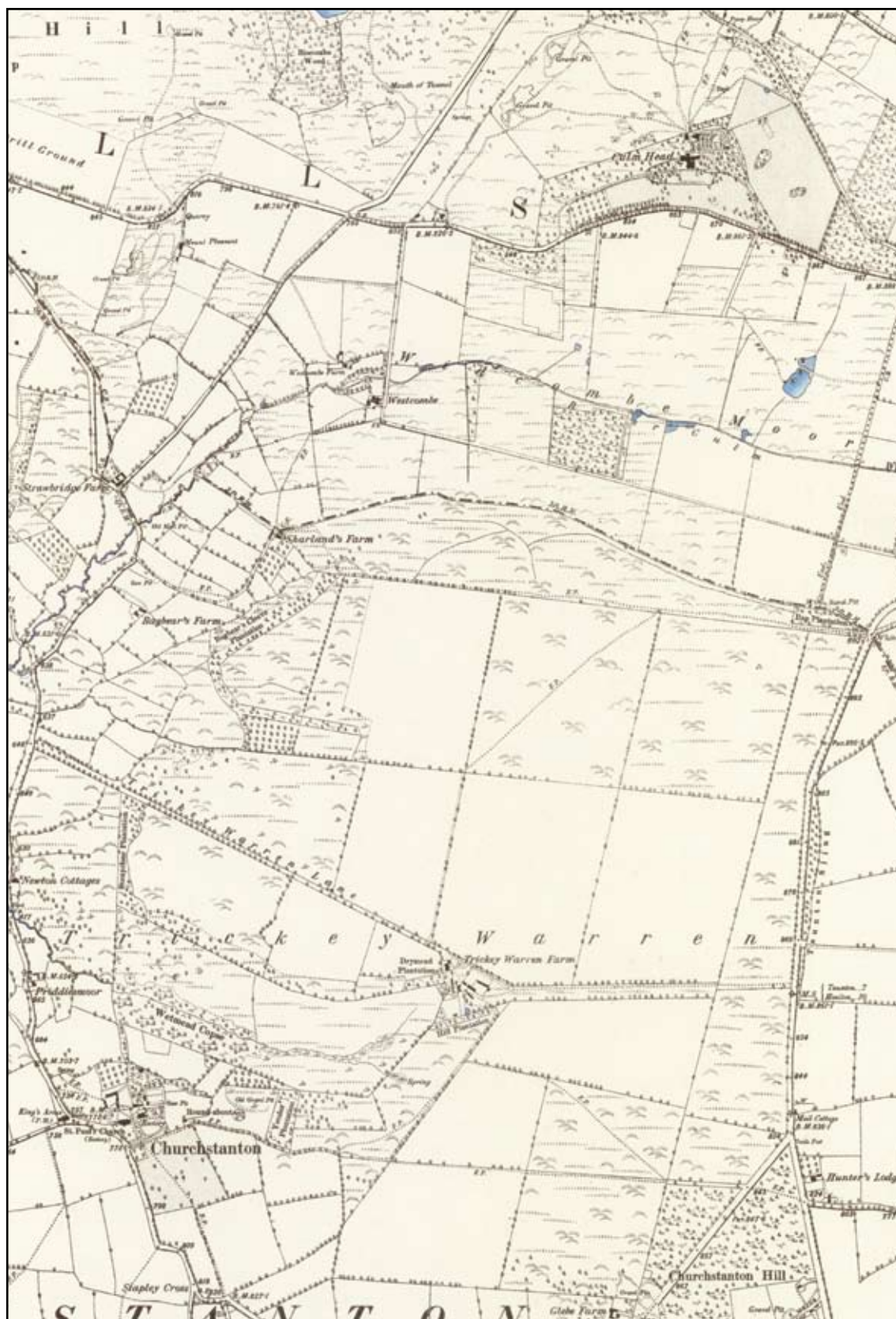


Fig 12 Trickey Warren before the airfield: OS 1st edition map 1889 Devonshire 37.SW (nls.uk)

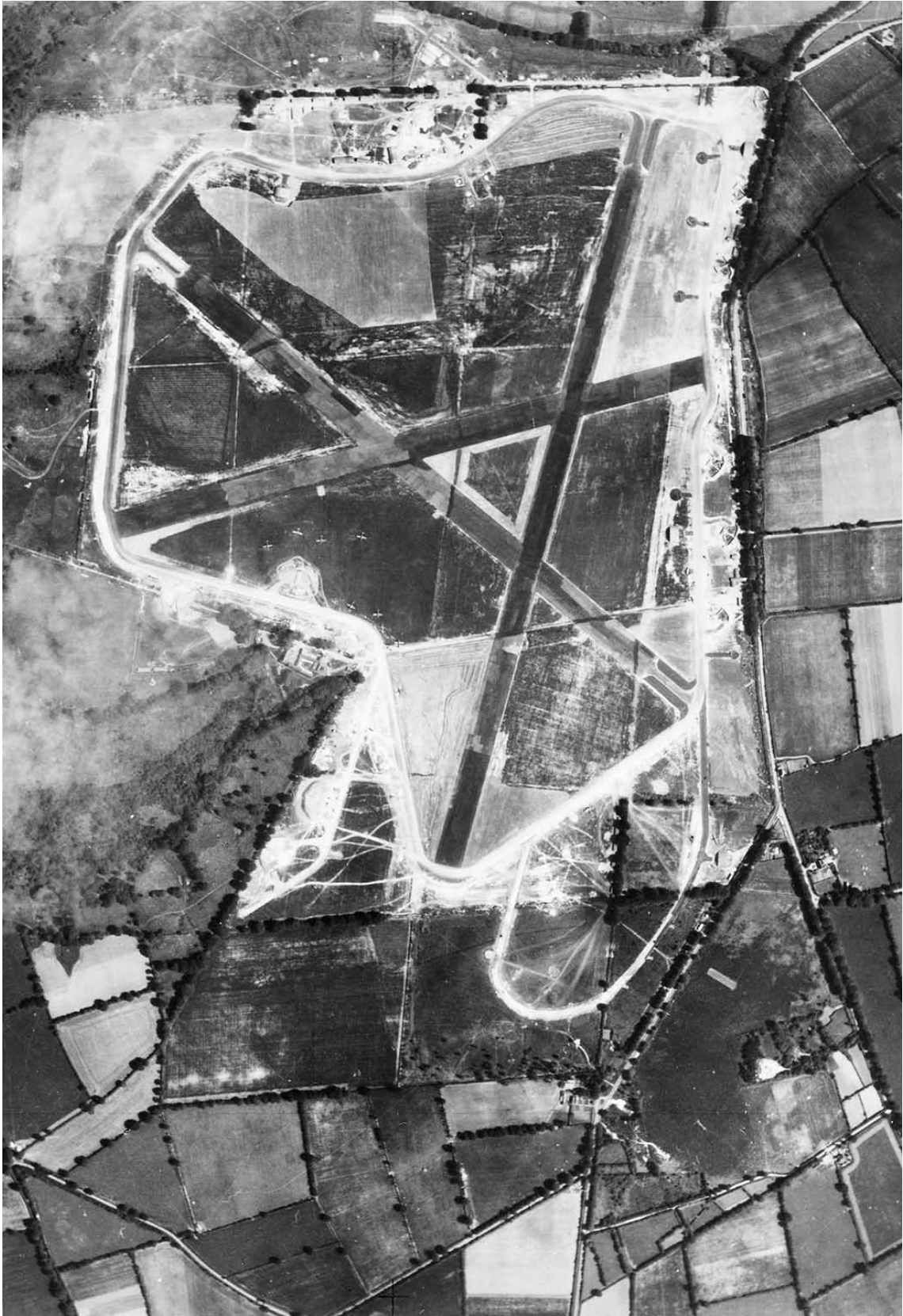


Fig 13 Air photograph showing RAF Culmhead on 25 June 1942 (RAF FNO/16 V 6015) (Historic England RAF Photography)

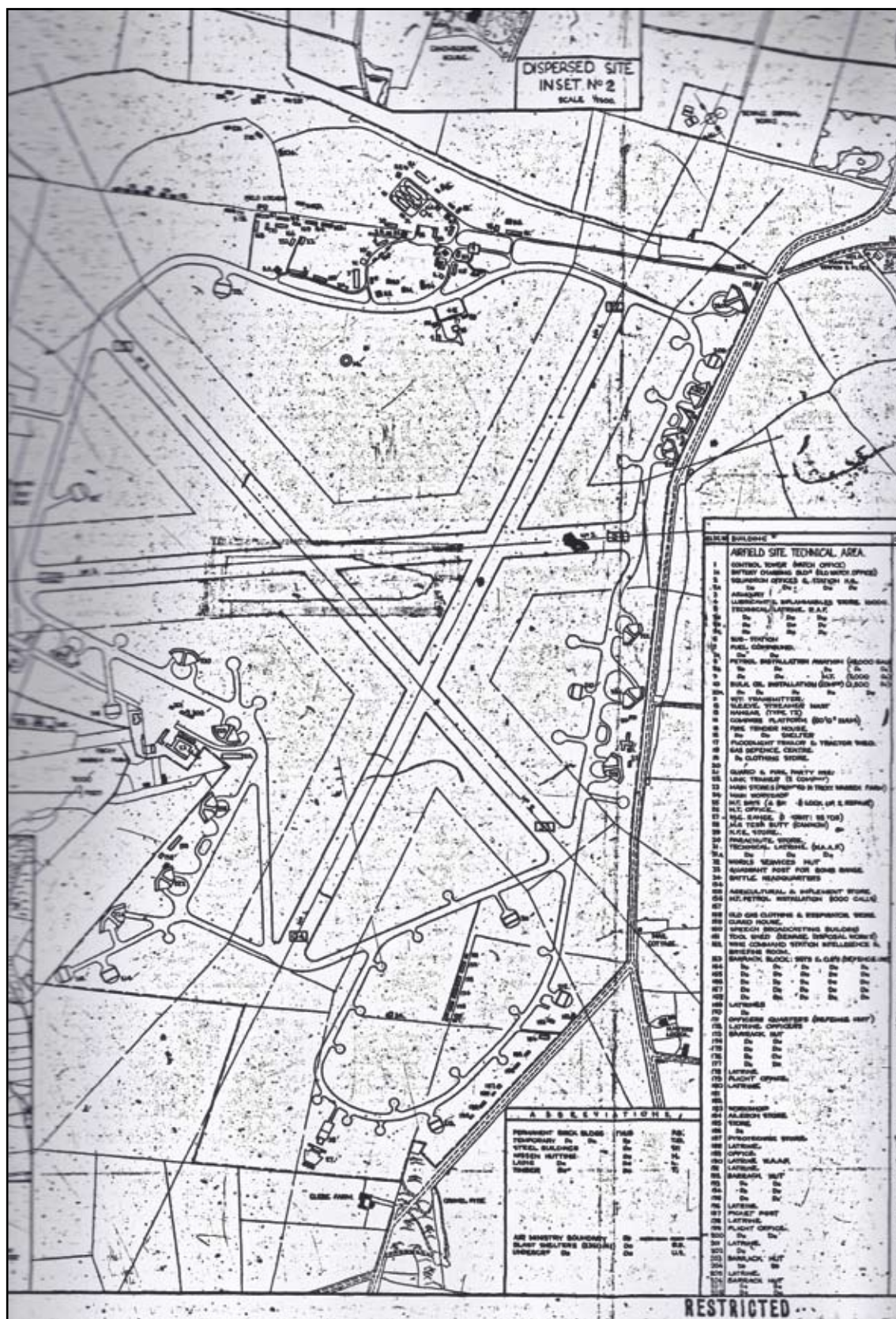


Fig 14 Extract from the Air Ministry Record Site Plan (RAF Museum RSP 4997/45)



Fig 15 RAF Culmhead on 9 August 1943 (US 7PH GP LOC14 6040) (Historic England USAAF Photography)

Fig 16 Part of the northern technical area in 1943. The old watch office is centre right (US 7PH GP LOC14 5041) (Historic England USAAF Photography)



Fig 17 The old watch office in the northern technical area in 2015 (Hazel Riley)



The buildings in the northern technical area

The control towers

One of the first buildings to be erected on the airfield, in the winter of 1940 to 1941, was a control tower, at that time called the watch office [1A]. This is a single storey building of temporary brick construction, with a blast wall protected entrance leading to a gas proof door. It stands to the north of the northern perimeter track of the airfield. This gave access to a single room – the watch office - with three windows facing the runway on the south side and a single window on the west and east sides (Fig 18). A pyrotechnic cupboard in one corner still has a gas proof steel door (Fig 19). The cupboard was used to store flares which were fired from Very pistols, providing a simple signalling system. The watch office was the air traffic control building for RAF Culmhead until 1943, when it was replaced by a two-storey control tower. The building became known as the old watch office and had a new function: a battery charging room. A bench below the windows dates from this time and still has the following lettering on its side: NOT CHARGED and DISTILLED WATER.

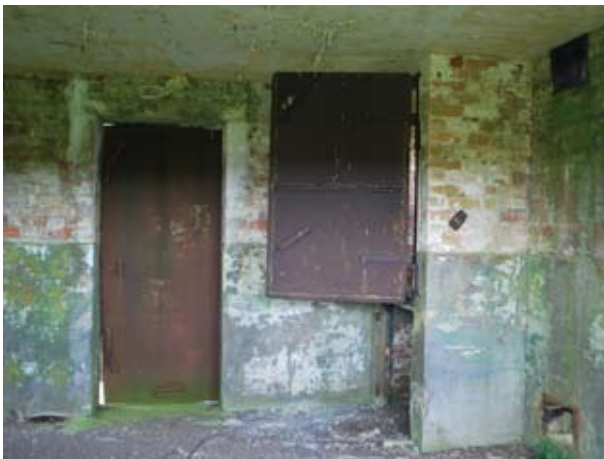


Fig 19 (above left) The pyrotechnics cupboard in the old watch office (Hazel Riley)



Fig 18 (left) The south side of the old watch office (Hazel Riley)

The control tower [1] stands some 100m to the SE of the old watch office, within the perimeter track (Front cover). It is a two-storey building of temporary brick, with permanent brick on the south wall and originally rendered on all sides. The size of the window frames of this control tower show that it was built to a design issued in March 1943 (Francis 1997, 28). The roof and floor of the upper storey are built of hollow concrete beams (Seigwart type).

The size of the building compared to the old watch office reflects the increasing need to regulate local air traffic control at RAF stations. The rooms on the ground floor housed the meteorological office, latrines, the duty pilot's rest room, the switch room and the watch office. The upper floor housed the signals office, the controller's rest room and the control room (Figs 20 and 21). A concrete balcony, accessed by a door in the west wall, runs around the control room and also gave access to the roof by a metal ladder (Fig 22).



*Fig 20 (above)
The watch office
in the control
tower (Hazel
Riley)*



*Fig 21 (above
right) The control
room (Hazel
Riley)*



*Fig 22 The
control tower
balcony (Hazel
Riley)*

The floodlight tractor and trailer shed and the night-flying equipment store

There was no permanent electric lighting for the airfield at RAF Culmhead, instead a portable lighting system was used. A portable floodlight on a three-wheeled trolley, was plugged into electrical sockets on the side of the runway, or a self-powered Chance light on a four-wheeled trailer was moved to the side of the runway (Fig 23). Other night-flying equipment, such as glim lamps (portable electric runway lights), Paraffin flares for use in emergency conditions, and an illuminated landing tee were also used (Francis 1997, 29). The equipment was kept in two buildings between the control tower and the old watch office. The night-flying equipment store [29] stands 60m to the NE of the control tower (Fig 24). It is a large, temporary brick building, divided into three bays with the remains of heavy wooden doors and the concrete hurters which protected the building from traffic damage (Fig 25). The floodlight tractor and trailer shed stood to the west of the store; it was demolished after 1997 (Fig 26). The nearby airfield at Upottery had a searchlight detachment operating on the edge of the airfield for searchlight homing so that aircraft returning at night could find their way back to Culmhead or Upottery airfields by using the light beam as a signal (Francis 1995, 93).



Fig 23 (far left)
A Chance light
on the runway
in Belgium with
Gloster jet of
616 Squadron
(© IWM C5658)
Fig 24 (top left)
The night-flying
equipment store
(Hazel Riley)
Fig 25 (left)
Detail of door
(Hazel Riley)
Fig 26 (top right)
Floodlight trailer
& trailer shed
in 1997 (Paul
Francis for SCC)

The parachute store

The parachute store [30] lies c 120m to the north of the old watch office. It is a large building of temporary brick rendered internally and externally, with external piers forming five bays each 10 feet long. A later lean-to was built onto the northern side for livestock housing. A lobby provides access to the main room on the west wall. The roof is a symmetrical two stage pitched roof, with window lights, now in a poor condition. These features reflect the specialised nature of this building. Parachutes became standard equipment for aircrew from 1927. They were inspected every month to ensure they were fit for service: one of the main problems was condensation and the parachutes had to be dried properly to prevent shrinkage. The building had to provide a dry atmosphere with constant ventilation and a temperature of 55-65° F. The lobby helped to keep the building free of dust and to maintain an even temperature. The main drying room had to be high enough for the parachutes to be suspended from their tops without touching the floor, and large, smooth-topped tables were needed for inspecting and packing the dried parachutes. The parachutes were winched up and down with a pulley system on the ceiling near the centre of the room. The work was usually carried



out by WAAFs. (Fig 27) (Francis 1996, 32-34). The parachute store at RAF Culmhead is built to one of the earlier AM designs and is probably one of the earliest buildings on the site (Fig 28). Although the interior has suffered damage due to later modification and the collapse of the roof, the wooden rafters and five wooden windows in the upper roof, metal window frames and electrical switch box can still be seen (Fig 29).



Fig 27 (left) Wrens packing parachutes, Fleet Air Arm, Lee-on-Solent (© IWM A19289)

Fig 28 (top) Parachute store with lobby & 2 stage roof (Hazel Riley)

Fig 29 (below) Interior of parachute store with later ventilation flue (Hazel Riley)



The gas clothing stores, gas chamber, and gas defence centre

Attack by chemical weapons was considered to be a real threat to military bases and the airfields were equipped with buildings and equipment to withstand it. RAF Culmhead had two store rooms for specialist clothing such as gas capes, rubber boots, gloves and respirators, so that it was ready for use in the event of an attack on the airfield with gas weapons (Fig 30). The original gas clothing store was 60m to the NE of the old watch office; it was demolished between 1997 and 2001 (Fig 31). The other gas clothing store [19] lies 200m to the north of the old watch office (Fig 32). It is a large temporary brick building with a roof of corrugated asbestos sheets. A large lobby allows access to the main room on the NW wall; later lean-tos have been built on the SW and NE wall and a large opening in the SE end is also a later feature as the building has been used for livestock accommodation. Despite these later modifications, there are several original features in this building including the wooden doors into the main room and metal window frames (Fig 33). A latrine block for the WAAFs who worked in the store lies 25m to the NW of the building. The gas chamber [20] is a smaller, temporary brick building, 30m to the SE of the gas clothing store (Fig 32). The building was for training airmen and station personnel in the correct use of their respirators in a gas contaminated environment. The layout reflects this specialised use: the small building is divided into rooms for an air-lock entry into the gas chamber; the chamber itself and a store for the gas generating machine. A concrete hut base lies 30m to the SE of the gas chamber (Fig 34). This is the base for the one of the gas defence centre buildings [18], used for gas training and awareness instruction (www.rougham.org).

The 313 Squadron records contain a notice about a Station Gas Exercise which was carried out when the squadron was stationed at RAF Culmhead:

A full scale Gas Exercise will be held on the Station on Tuesday 26th January 1943, between 14.00 hours and 17.00 hours. During these hours it will be assumed that Chemical Warfare has started and full anti-Gas precautions will be undertaken by all personnel.



At 14.00 hours a 'Tannoy' Announcement will be made stating that the Station is under full Anti-Gas conditions. All personnel when proceeding into the station will wear: 1 Respirator slung 2 Anti-Gas capes around shoulders 3 Cap covers on heads 4 Eye shields in position

A further 'Tannoy' Announcement will be given, stating 'GAS ALERT.' Personnel not included in the exercise will then wear: 1 Respirator in Gas position 2 Anti-Gas capes buttoned up 3 Cap cover adjusted

Personnel of No 313 Squadron Decontamination Squad will wear alternative equipment viz: 1 Trousers anti-gas, light 2 Jackets, anti-gas, light (over trousers) 3 Respirators 4 Cap covers 5 Anti gas ointment on hands

A 'Tannoy' announcement will be given stating Gas All Clear, but full anti-gas precautions will be maintained until 17.00 hours, ie personnel in open will wear equipment as originally stated in para 2.

It is essential that apart from the period of the 'gas alert' eye shields must be worn by all personnel when proceeding into the open, since the substitute used to simulate mustard gas has an intensely irritating effect upon the eyes.

Flight Commanders are required to ensure that all personnel are made aware of these instructions and by order of the Station Commander personnel detailed for the Special Duty Squad (ie in the case of our squadron the Decontamination Squad) are released for the duty detailed for him on the day of the exercise

(313 Squadron Appendices June 1941-January 1945 The National Archives AIR 27/1696/2.PDF)

Fig 30 (opp far left) Airman wearing gas clothing during gas practice (IWM C1154)

Fig 31 (below) Old gas clothing store in 1997 (Paul Francis for SCC)

Fig 32 (right) Gas clothing store and gas chamber (Hazel Riley)

Fig 33 (opp left) Door in gas clothing store (Hazel Riley)

Fig 34 (below right) Base of gas defence centre, gas chamber and gas clothing store in background. Mound to left is on site of station's main workshop (Hazel Riley)



The motor transport shed

The motor transport section was an important part of an RAF station, responsible for the garaging, repair and maintenance of all the vehicles. The section was based at the motor transport yard: a vehicle shed opposite a large Nissen hut, housing stores, offices, rest rooms and latrine, with a large concrete yard in between (Francis 1996, 36). At RAF Culmhead the vehicle or motor transport shed [25] survives. It stands 180m to the NE of the old watch office and is a large temporary brick building with four bays, the most common Second World War design. There is a vehicle inspection pit in the northern bay and vehicle inspection ramps on the south side of the shed (Fig 35) (Francis 1996, 32-39).

W/T transmitter building

A large, rectangular concrete plinth to the east of the vehicle sheds (Fig 36) is the base for a building identified on the RSP as the W/T transmitter building [11] and demolished by 1997. Long range wireless telegraphy was used for communicating over a long distance, for example from the station to the aircraft, and each airfield had its own W/T station to keep contact with their own aircraft. They were usually sited some distance away from the airfield. The transmitter building housed radio transmitters and was surrounded by aeries. This site at RAF Culmhead is an unusual position for such a building, in the technical area and close to the control tower, rather than dispersed away from the main airfield.



Fig 35 (left) The motor transport shed and inspection ramps. Latrine block for the parachute store on the left (Hazel Riley)

Fig 36 (below) The base of the W/T transmitter building, as recorded on the AM RSP (Hazel Riley)

Fig 37 (below left) Eastern airfield perimeter track (Hazel Riley)



Other structures

Several grass covered mounds mark the sites of demolished and infilled blast shelters, provided for the personnel working on the technical site; a large mound lies on the site of the main workshops for the station and probably represents substantial amounts of demolition material and rubble (Fig 34).

The runways and perimeter track

There are three tarmac runways and a perimeter track encompassing the airfield. Some of the runways are used for farm access between fields; the perimeter track is used by farm vehicles and service vehicles for the solar arrays. Part of the access track to the SW dispersal area is part of the off-road vehicle test area (Fig 37).

Fighter pens, associated structures, aircraft hangars and dispersal areas

By the middle of 1943, RAF Culmhead had two sets of dispersed aircraft fighter pens, each with two sets of flight office accommodation buildings, 10 blister hangars, one TS2 hangar and a dispersal area off the south side of the airfield with 15 small hard standings for aircraft. Several larger hard standings were also placed around the inner perimeter track (Fig 15).

The fighter pens

Bomb blast was thought to be the biggest threat to aircraft dispersed out on the airfield and for this reason specialised structures – fighter pens - were built on fighter stations to protect the aircraft and the air crew. Twelve fighter pens were built at RAF Culmhead, they were probably completed by October 1942. An aerial photograph taken in June 1942 which shows heavy wear on the access tracks to the fighter pens and dispersal areas suggesting that they were under construction or recently completed, and a photograph, believed to be of one of 312 Squadron's Spitfires in a fighter pen at RAF Culmhead c June 1943 shows pristine, grass-covered traverses, dwarf brick walls and tarmac apron (Fig 38).

Fig 38 Spitfire DU-7 in fighter pen, probably at RAF Church Stanton, c June 1943 (Flying Heritage Collection)



There were two groups of fighter pens at the airfield, each group arranged in two sets of six fighter pens, and each group of six had its own flight office accommodation buildings and at least one blister hangar. All the fighter pens were built to a particular specification: Type B, a larger size, designed to house two aircraft of a size similar to that of the Bristol Blenheim. Aerial photographs and maps show that the two groups of fighter pens at RAF Culmhead were similar in size and layout, but different in construction and defence provision. The two groups of pens laid out along the eastern perimeter airfield track were demolished some time after 1963 and before the 1997 survey took place, so there is little information about them (www.old-maps.co.uk OS plan 1963 1:2500). However, they are clearly visible on the USAAF air photographs, and it is suggested that they were built of sandbag walls, with a brick air raid shelter constructed in the front of the central arm, and that two of the pens had a defended wall at the front of their shelters (Figs 14 and 39) (Francis 1997, 8). The only surviving building is a latrine block from the NE dispersal area (Fig 40).

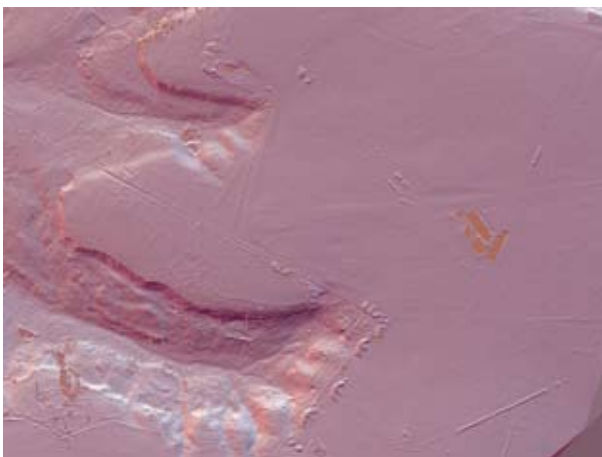
The dispersal areas and five of the fighter pens on the SW side of the airfield are, however, extremely well preserved and their defence provisions make them an outstanding survival, both regionally and nationally. Lidar data shows how the fighter pens are sited so as to make use of the defensive properties of the hillside, hence the need for the construction of a separate access track for the southern three pens, which are sited on the edge of the hill, rather than on the edge of the airfield perimeter track (Fig 41).



Figs 39 (left) The fighter pens and dispersal areas on the eastern perimeter track (US/7PH/GP/LOC14 5041) (Historic England USAAF Photography)

Fig 40 (below) The latrine block for the NE dispersal area and fighter pens (Hazel Riley)

Fig 41 (below left) Lidar data showing the siting of the SW dispersal area and fighter pens on the edge of the valley to the west (© Forest Research)



The SW dispersal area contains three fighter pens [226,227,228], arranged off a track which can be accessed from two points along the SW airfield perimeter track (Fig 42). Each fighter pen is constructed from earthwork banks – traverses – revetted by low brick walls, forming two protected pens for two aircraft on tarmac hard standing. At the back of each pen is a pre-cast Stanton type air raid shelter for 25 personnel which can be accessed from both pens (Fig 43).

Each of the pens has a different arrangement of brick defended walls, with gun loopholes. Two pens have defended walls which look out across the country to the west, two have defended walls on the end of the central traverse which look out across the airfield, the other has a defended wall facing the nearby blister hangars (Fig 44).

The flight accommodation buildings – an office [199] and latrines [198] – lie between fighter pens 227 and 228 and a large concrete base, the base for a 24 feet long Nissen hut housing one of the two station squadron offices lies between fighter pens 228 and



Fig 42 (left) The fighter pens and blister hangars in the SW dispersal area (US 7PH GP LOC 14 5036) (Historic England USAAF Photography)
 Fig 43 (above) Access to Stanton air raid shelter at back of fighter pen 227 (Hazel Riley)
 Fig 44 (above right) Defended wall, fighter pen 227 (Hazel Riley)



229, at the top of Trickey Warren Lane (Figs 45 and 46). The Nissen hut structure [2A] was dismantled, with SM consent, in 2004 (Graham 2004) and the second squadron office, in the northern technical area, was demolished before the 1997 survey took place.

The western dispersal area is accessed by short tracks from the western airfield perimeter track. One of the fighter pens, now demolished, was constructed on the airfield side of the perimeter track. The 1943 air photograph clearly shows it had a defended wall facing across the airfield (Fig 47). The two which survive lie on the edge of Trickey Warren Lane. Fighter pen 229 has a defended wall built into the rear exit of its air raid shelter and a defended wall at the end of its central traverse, facing the airfield. Fighter pen 231 has three defended walls: to the SW, west and NE (Figs 48 and 49).

The T-shaped flight office [200] and latrine block [201] stand to the west of fighter pen 229 (Fig 50), and a small brick building to the east of fighter pen 231 is a transformer



Fig 45 (top left)
Flight office for
SW fighter pens
(Hazel Riley)
Fig 46 (above)
The squadron
office in 2004
(Graham 2004,
pl 3)
Fig 47 (left) The
west dispersal
area: 3 fighter
pens, flight &
squadron offices,
fuel installation
(US/7/PH/GPI
LOC 14 5040)
(HE USAAF
Photography)

plinth which housed a step-up transformer, fed from the intake sub-station, to maintain a constant voltage. One of the airfield's two aviation fuel installations was located on the edge of Trickey Warren Lane, west of fighter pen 231. This held four 12 000 gallon tanks and a pump house, with hard standing and access for petrol tankers. The site has been cleared but the circular access track still remains and it can be clearly seen on the 1943 air photographs (Fig 47).

Hangars

RAF Culmhead had a total of 11 hangars by 1943: 10 blister hangars and one T2 hangar. Three of the defended dispersal areas had a single blister hangar, with the exception of the SW dispersal area which was provided with two blister hangars. The southern dispersal area had three blister hangars and a further two were sited off the north and west perimeter track. The large T2 hangar was off the east airfield perimeter track and has been replaced by a barn. Nine of the Blister hangars had been removed or demolished by the time of the 1997 survey. The one remaining hangar is one of the pair provided at the SW defended dispersal area.



*Fig 48 (above)
Defended wall
over the air raid
shelter, fighter
pen 229 (Hazel
Riley)*

*Fig 49 (above
right) Defended
wall on south
side fighter pen
231 (Hazel Riley)*

*Fig 50 (right)
Flight office for
the western
dispersal area
(Hazel Riley)*



Contemporary footage of the large T2 hangar and a nearby Blister hangar as it appeared when taking off from the airfield can be seen in the film *The Flemish Farm*, partly shot at RAF Church Stanton in 1942 (Two Cities Films Ltd).

Blister hangars are small arched-type dispersal sheds for the dispersal and maintenance of aircraft with small wing-spans (Fig 51). The one remaining hangar [214] at RAF Culmhead is a Miskins 'over type', made of welded steel rib sections bolted together to form the arches. The arches were joined by steel ties and steel or timber purlins roofed with corrugated iron sheeting. This formed a building with a span of 65 feet, a length of 45 feet and a height of 19 feet 10 inches. The ends were covered with quick release canvas curtains (Francis 1996, 106-107). The hangar at RAF Culmhead has been used for storage and has been repaired and the ends filled in with timber and metal sheets, but it retains a large amount of original steelwork and corrugated roof sheets; the survival of what was intended to be a temporary structure is notable (Figs 52 and 53).



Fig 51 (left)
Spitfire in
blister hangar,
RAF Fairlop
1942 (© IWM
TR514)

Fig 52 (above
left) Blister
hangar RAF
Culmhead
2015 (Hazel
Riley)

Fig 53 (top)
Detail of
steelwork on
NW end of
hangar (Hazel
Riley)

The airfield defences

The battle headquarters was at the heart of the defence provision of RAF Culmhead. This building was a blast proof, secure base for the defence officer and his staff to co-ordinate the airfield defences in the event of an enemy invasion or attack. The battle headquarters at RAF Culmhead was in the southern dispersal area. It was an underground bunker, distinguished by the distinctively curved, strengthened concrete roof of the observation room. The bunker at RAF Culmhead was demolished and infilled in November 1996 (information from Claude Caple, SWAHT) but it is recorded by two photographs from c 1960 and 1995. The earlier photograph also shows one of the two nearby pillboxes which have been demolished (Fig 54) (display at Upottery Heritage Centre; www.battlehq.info). The airfield was defended by four groups of pillboxes and several brick-lined gunpits, to the NE, NW, west, south and east of the airfield, sited to defend the runway approaches. The fighter pens, particularly those in the west and SW dispersal areas, were heavily defended. Attack from the west was considered a particular threat and the defended walls looked across the head of the valley below the fighter pens and Trickey Warren Farm. The eastern approach was defended by a gunpit in a field to the east of the Taunton-Churchinford Road. The site of a gunpost on the northern technical area was located during the 1997 survey (Francis 1997, 8-9).

There are ten standing or ruinous pillboxes on the airfield site. The pillboxes are built to an extremely unusual seven-sided plan, with rifle loopholes on most side walls and



Fig 54 (right) Battle HQ c 1960 (SWAHT and Upottery Heritage Centre)

Fig 55 (below right) Seven sided pillbox north of airfield (Hazel Riley)

Fig 56 (below) Heavy machine gun loophole, metal shutter, firing shelf & anti-ricochet wall (Hazel Riley)



one or two large openings for a heavy machine gun, located on different walls on each pillbox in a group of three, enhancing the effectiveness of the position. Steel shutters, firing shelves and anti-ricochet walls survive in several pillboxes (Figs 55 and 56). The gunpits [530,531] for the west and south defensive positions are built into hedge banks. The gunpit 530 by fighter pen 231 is in the best condition, it is a keyhole shaped, brick-lined pit with the gun mount in the circular section still in position: a Motley stalk anti-aircraft machine gun mount, and a small store for an ammunition box built into brick lining by the gun mount (Fig 57).

The Somerset Light Infantry were responsible for the defence of many of the airfields in the county in the Second World War, and in March 1942 D Company took over the airfield defences at RAF Culmhead, assisted by the RAF Police and parties of armed airmen. A ground defence exercise was carried out on 20th April 1942, when commandoes attacked the airfield, destroying or damaging several aircraft, two fuel bowisers and a tender (Berryman 2006, 53). In early October 1942, 2861 Squadron RAF moved from Llanbedr in SWales to take over the station's defences from the Somerset Light Infantry who moved to Yeovil. The accommodation for the defence units was on the edge of the airfield. There were barrack blocks sited along the hedges between the two groups of pillboxes on the northern side of the airfield, either side of the hedge between the T2 hangar and the SW group of pillboxes, and in the southern dispersal area. Several of the Laing and Nissen hut bases are still extant (Fig 58).



Machine gun test butt, range and practice bombing range

On the south of the southern dispersal area was a machine gun range and a machine gun test butt. The test butt was for testing and synchronising aircraft guns, behind was a 25 yard rifle and machine gun range for firing practice. The armourers' hut and paper target

Fig 57 (below left) Gunpit 532 (Hazel Riley)

Fig 58 (left) Base for Laing hut (Hazel Riley)

Fig 59 (below) Trickey Warren Lane & pillbox/quadrant post for practice bombing range (Hazel Riley)



store are still part of the farm yard. at Glebe Farm. Trickey Warren Lane was the centre line for a practice bombing range to the west of the airfield; pillbox 522 functioned as a quadrant post for the bombing range (Fig 59).

STATEMENT OF SIGNIFICANCE

There are three Second World War airfields within 12km of each other on the Blackdown Hills: RAF Culmhead, RAF Dunkeswell and RAF Upottery. A fourth, RAF Exeter, lay some 30 km to SW of these sites. Much attention has, rightly, been paid to the sites at Dunkeswell and Upottery (www.southwestairfields.co.uk; www.dunkeswellwarstories.com; Jarrett and Stevens 2010). Construction of the airfield at Dunkeswell began in the summer of 1942; it was officially opened in June 1943, and handed over to the USAAF in August of that year. It was not until the spring of 1943 that construction of the airfield at Upottery began; opened on 17th February 1944, it was handed over to the USAAF on 22 February 1944 (Francis 1995, 10-11).

RAF Culmhead, however, had been an operational RAF fighter station since the summer of 1941, when the first Polish Squadrons arrived from RAF Exeter. It was opened as a fighter station in its own right – RAF Church Stanton - on 1 August 1941 and continued as a very busy fighter station for the next three years. As well as the Hurricane and Spitfires of the fighter wings, RAF Culmhead was also the base for a detachment from RAE Farnborough, with links to research carried out at the University Exeter. The RAE pilots carried out vital (and dangerous) experiments, concerned with the development of barrage balloon cable cutting devices, which were rendered ineffective by this work. Perhaps because of this association with RAE Farnborough, together with its remote location on the edge of the Blackdown Hills, RAF Culmhead was the first fighter station to take delivery of the first Allied jet fighter – the Gloster Meteor. We have the memories of a Sergeant Pilot, Geoffrey Amor (1922-2014), who was a junior member of 616 Squadron at RAF Culmhead when this took place, in his own words (IWM Interview with Geoffrey Amor Catalogue number 15228).

In the 1950s CSOS Culmhead became a very secret place, so much so that the Ordnance Survey was apparently prohibited from mapping part of it. Personnel engaged in some of the most advanced surveillance of the time were stationed here, presumably in the old RAF buildings, and a myth grew up about underground tunnels. We know there were as many as nine large blast shelters (large enough to house up to 50 people) around the northern technical area: perhaps the SIGINT staff were using this area as their base until the new buildings were constructed in the centre of the airfield c 1970.

There is a considerable amount of original material which relates to the history of RAF Culmhead during the Second World War. The ORBs for all the RAF fighter Squadrons, including the Polish and Czech Squadrons, stationed at the airfield are available from the National Archives, allowing particular events – both operational and social – to be related to the buildings and structures which survive(ed) here. The station was also used for some official (propaganda?) photographs of 306 Squadron, one of the Polish Squadrons stationed at RAF Church Stanton in the early years of the war. One of the actual Spitfires flown by Squadron Leader Vybiral of 312 Squadron from RAF Church

Stanton is preserved at the Flying Heritage Collection Everett, Washington State, USA. The memories of several pilots who were stationed at RAF Culmhead have been recorded by the Imperial War Museum. Madge Russ, who worked as a WAAF driver, was stationed at RAF Culmhead. She can remember driving the vehicles and setting out the portable runway lighting, and driving pilots to and from aircraft on the airfield (information from Madge Russ; bbc.co.uk/history/ww2peopleswar/storire/29; Yeadon 2006, 95-97)

The record of the airfield by contemporary air photographs is exceptional: as well as shots of the whole airfield taken by RAF sortie flights in 1942, 1946 and 1948, the USAAF flew the area in 1943 and 1944, providing a record of the airfield at scales 1:7000 and 1:3500. The larger scale photographs show the buildings and structures very clearly, graphically illustrating the sheer amount of activity on the airfield in August 1943, and showing vehicles on the perimeter track, the runway numbers and planes in the fighter pens, in the dispersal areas and on the airfield (Appendix I Historic England).

As well as this official material, there are some precious archives of personal diaries and photographs from the ground crew and pilots of the Squadrons based here, including the account of Wladyslaw Mordasiewicz, a member of 302 Squadron's ground crew. His diary alternates between affectionate memories of drinking with the locals who befriended him at various stations, and fear for the fate of his wife and children back in occupied Poland (www.polishsquadronsremembered.com). The photograph album of the Czech Squadron Leader Karel Mrazek provides an insight into the daily life of the pilots (www.flickr.com/photos/royalairforcemuseum/albums/).

RAF Church Stanton was filmed in 1942. The station was used to provide the action sequences for a remarkable morale-boosting tale of the rescue of the regimental flag



Fig 60 No. 306 Squadron pilots at RAF Church Stanton 1942 (© IWM CH4792)

of the Belgian air force from occupied territory. In the film, *The Flemish Farm*, the T2 hangar and a blister hangar are seen as an aircraft takes off (Two Cities Films Ltd).

The most important surviving structures on the airfield have been recognised as nationally important heritage assets and designated by Historic England. The significance of the two control towers at RAF Culmhead is recognised in the Schedule List as follows:

The Old Watch Office at Trickey Warren survives as a standing building in good condition with its window fittings surviving and some of its internal features, including a pyrotechnic cupboard, still intact. Of the 37 known examples of this type of building built in World War II this is one of only eight which survive in their original form without wartime extensions; it is one of even fewer not to have had significant internal modification. The control tower of 1943 at Trickey Warren, which survives as a standing building, was of a standard design built at 164 airfields across the country. However, only about one third of these are extant and the survival, in this case, of both the Old Watch Office and its replacement control tower is unusual. These buildings retain design features which illustrate the measures taken in World War II to provide the South West and Wales firstly with an operational air defence against German aircraft raiding across the Channel from northern France, and then with an active support for Allied bombing raids across the Channel. They also provide an obvious focus for the associated World War II remains which survive at the former airfield.

(www.historicengland.org.uk The National Heritage List for England 1019845)

The airfield defences at RAF Culmhead are very well preserved, comprising four groups of three pillboxes with gunpits, and two sets of defended aircraft pens. The six



Fig 61 F/Lts
Czerwinski &
Skalski with 306
Squadron crest
and Supermarine
Spitfire, RAF
Church Stanton
1942 (© IWM
CH4713)

pillboxes on the northern side of the airfield are scheduled and recognised as nationally important for the following reasons:

Five of the six pillboxes providing the defensive ground cover for the north eastern and north western sector of the airfield at Trickey Warren (former RAF Culmhead) survive exceptionally well as standing structures in very good condition, with original fittings such as steel shutters and firing shelves on the machine-gun loops still intact, while their strategically planned triangular formation is still apparent from the six surviving examples. They also represent the only two surviving groups of pillboxes at the site which survive with all three of their constituent pillboxes apparent and, in the case of the north eastern group, with all three standing to their full height. The design of the pillboxes is unusual with the examples at Trickey Warren perhaps representing the only major survival of this design in the country. The pillboxes were constructed at a time when the fear of a German invasion during the early years of World War II was considered a very real possibility and the monument provides a visible reminder of the measures taken on English soil to counter this threat.

www.historicengland.org.uk The National Heritage List for England
1019846)

The five fighter pens and associated structures are scheduled and recognised as nationally important for the following reasons:

The remains of the south western sector of the former airfield of RAF Culmhead at Trickey Warren Farm survive exceptionally well with five of the six fighter pens originally constructed in this sector surviving in a near complete state along with many of their support buildings and sections of the perimeter runways. Fighter pens are now rare survivals in England, and with their associated structures they illustrate well some of the measures taken to protect fighter planes during World War II by means of dispersed and well-defended pens. The site also provides tangible information about a period of history when England was under severe threat and suffering from deprivation as a result of the land war in Europe and the effects of German attacks upon seaborne convoys.

www.historicengland.org.uk The National Heritage List for England
1020492)

A study commissioned by English Heritage assessed the relative significance of all the airfields in England used during the Second World War (Francis *et al* 2013). Each site is given a numerical rating, weighted in favour of buildings and structures as opposed to the runways and dispersals. The value depends on factors such as: how much of the original site remains; the percentage of original main hangars which survive; the state of repair of the buildings; the presence of a significant structure; the historical significance of the site, and the presence of artwork. For England, the maximum score using these criteria is 7/10. Airfields in Wales and Scotland usually retain far more of their original fabric due to the lack of development in the more remote areas of these countries. RAF Culmhead ranks 4/10 in this study, making it joint second with Yeovilton for significance in Somerset. Top score is 5 for Henstridge, a naval station. Dunkeswell and

Upottery, both in Devon, score 6 and 4 respectively using these criteria (Francis *et al* 2013, 30-37 and Excel database).

Some of the structural remains at RAF Culmhead are, therefore, of national significance and have been protected by scheduling. When the whole airfield is considered as a heritage asset, it has been ranked as one of the most significant sites both in its county, and within the south west (defined here as Somerset, Devon and Cornwall) (Table 1).

Table 1 Ranking scores for Second World War airfields in the south west (based on data from Francis *et al* 2013)

AIRFIELD	COUNTY	RANKING
Bolt Head	Devon	1
Charlton Horethorne	Somerset	1
Charmy Down	Somerset	3
Cleave	Cornwall	1
Culmhead	Somerset	4
Davidstow Moor	Cornwall	4
Dunkeswell	Devon	6
Falmouth	Cornwall	0
Harrowbeer	Devon	2
Henstridge	Somerset	5
Lulsgate Bottom	Somerset	3
Merryfield	Somerset	3
North Stoke	Somerset	0
Perranporth	Cornwall	5
Portreath	Cornwall	4
St Mawgan	Cornwall	6
St Merryn	Cornwall	4
Trebelzue	Cornwall	2
Treligga	Cornwall	1
Upottery	Devon	4
Winkleigh	Devon	3
Yeovilton	Somerset	4

CONSERVATION AND MANAGEMENT

There are many approaches to the conservation of large, complex, historic landscapes such as the remains of former airfields (English Heritage 2000a and b). The majority of the structures and buildings built on airfields during the Second World War were

designed to be temporary, using materials such as brick, corrugated steel or iron sheets, and asbestos roofing. At RAF Culmhead the integrity of the northern technical area has been seriously compromised by the removal of the majority of the buildings and structures as they became ruinous and unsafe in a working agricultural landscape. However, the buildings which do remain still provide a powerful insight into the country's response to the German advance and invasion threat.

The Scheduled Monuments at RAF Culmhead have been recorded as at risk on Historic England's *Heritage at Risk Register*, principally due to lack of vegetation management around the structures and buildings. This problem is being addressed under the aegis of this Heritage Environment Programme, and a programme of long term vegetation control and management has been initiated for the Scheduled Monuments (Riley 2015) (Appendix 5).

A helpful position statement has been provided by Historic England as regards the conservation or restoration of the designated heritage assets at RAF Culmhead:

Given the likely prohibitive costs of restoration or conservation of the majority of the structures at the site, the decision has been taken to reduce the risk to the Scheduled Monuments both through preservation by record and through managing the sites as they 'monumentalise' within the landscape setting. This strategy does not preclude future works at the site should any party come forward with suitably resourced and considered plans for restoration and reuse of any of the structures in the future.
(Historic England 2015, 3)

Preservation by record

This report has assessed the material concerning the history and archaeology of the former airfield at RAF Culmhead (Gazetteer of Source Material). Our current knowledge of the site is extensive, although a few suggestions to address some gaps are set out below. The site has been the subject of three condition surveys (Francis 1997; Russell 2008; this report) and the Somerset HER has updated many individual site records. The main concern relates to the fighter pens and their defences. All of the structures were recorded as part of the 1997 survey but, given the significance of the structures and their designation as Scheduled Monuments, that record is now inadequate.

The fighter pens

The 1997 survey report mentions 'trench systems known to have been constructed close to the fighter pens such as that found behind number 226' (Francis 1997, 9). Due to the vegetation constraints at the time of the current survey it was not possible to adequately assess the survival and condition of these structures. The only measured survey of the actual remains of the fighter pens remains the Ordnance Survey mapping at 1:2500 scale.

Recommendation

The fighter pens and their defences should be the subject of a comprehensive

photographic survey. The photographs will be clearly related to the current Ordnance Survey 1:2500 map of the area (Mastermap)

At least one of the fighter pens should be the subject of a detailed metric survey, showing the earthwork traverses, position of the blast shelter, defended walls and any associated earthwork trench systems. Representative profiles should be surveyed across the earthwork traverses.

If, following the vegetation control work, further significant earthwork trench systems are found, further metric survey may be required.

Blister hangar

The blister hangar is the only surviving hangar on the airfield. Much of the original structure remains.

Recommendation

The exterior and interior of the blister hangar should be the subject of a comprehensive photographic survey. The photographs will be clearly related to the current Ordnance Survey map of the area (Mastermap).

Flight offices

The flight offices are a direct link back to the airmen at the station. Despite modifications for livestock housing, many original features remain.

Recommendation

The exterior and interior of the flight offices should be the subject of a comprehensive photographic survey. The photographs will be clearly related to the current Ordnance Survey 1:2500 map of the area (Mastermap).

The pillboxes

Seven of the pillboxes are standing buildings of an unusual seven sided plan, possibly the only surviving examples in the country. Many internal features survive and the arrangement of the rifle and machine gun loops is clear. There has been no metric survey or comprehensive photographic record of these sites.

Recommendation

The pillboxes should be the subject of a comprehensive photographic survey. The photographs will be clearly related to the current Ordnance Survey 1:2500 map of the area (Mastermap) with any unmapped structures located. Consideration to the fields of fire should be given.

At least one of the pillboxes should be the subject of a large scale metric survey, showing the internal and external arrangements.

The parachute store

The parachute store is now in a poor state, following the collapse of part of the roof. The structure of the roof, including the original wooden rafters and wooden windows on the north elevation, remain.

Recommendation

The exterior and interior of the parachute store should be the subject of a comprehensive photographic survey. The photographs will be clearly related to the current Ordnance Survey 1:2500 map of the area (Mastermap).

Conservation, management and adaptation

Measures should be put in place to prevent livestock (particularly cattle) getting into the parachute store, motor transport shed, gas chamber, gas clothing store and the two latrine blocks in the northern technical area.

Rubbish should be removed from the ground floor of the control tower. Access to the ground floor should be prevented by blocking the door and ground floor windows to prevent further dumping of rubbish or vandalism to the structure. There is a swallow's nest in one of the ground floor latrines; swallows, swifts and barn owls have been sighted around the building. The provision of an interior barn owl box should be considered, subject to Scheduled Monument Consent.

Rubbish should be removed from the interior of the pillboxes. Several pillboxes have, elsewhere, been adapted to provide bat roosts, for example at Garston Long on the Kennett and Avon Canal and Creech St Michael on the Bridgwater and Taunton Canal. One of the pillboxes at RAF Culmhead could be considered for adaption to encourage bat roosts. This would involve blocking the doorway to prevent disturbance to the bats. The most suitable would be pillbox which is situated in a hedge, away from any footpaths. This work would be subject to Scheduled Monument Consent.

Rubbish in the air raid shelters behind the fighter pens should be removed. Access to these structures could be stopped to prevent further dumping of rubbish. They also provide suitable sites for bat roosts but any modifications require Scheduled Monument Consent. The dumps of rubble in the bays of fighter pens 226 and 228 should be removed.

The areas around the fighter pens and associated buildings, which are not subject to vegetation control and management, provide a habitat for many insects and nesting birds and the deteriorating tarmac of the perimeter track is being colonised by *Sedum* sp. The buildings in this area – flight offices or latrine blocks – could provide sites for exterior nesting boxes, subject to Scheduled Monument Consent.

ACCESS AND INTERPRETATION

A separate project to facilitate public access and interpretation of the site, under the S106 provision, the Education and Access Plan, explores these issues in detail (Historic England 2015, 2). This section sets out the current state of access and on-site interpretation, together with the arrangements at other Second World War airfields in the area, and suggests engaging with the Heritage Open Day programme as a first step. The whole of the former airfield is privately owned, with a variety of interests including agricultural tenants, the solar arrays and a vehicle testing track. A public right of way, Trickey Warren Lane, runs across the southern part of the airfield. There are views from this path across to the control towers and to both the SW and south dispersal

areas. The lane passes fighter pen 231, a gunpit [530] and a pillbox [522]. A second public right of way, part of the Blackdown Hills Valleyheads Way (www.blackdownhills.org.uk) runs to the south of the airfield, passing through the southern dispersal area, and close to a pillbox [523] and the blister hangar [214]. There are interpretation panels about RAF Culmhead on both of these paths.

The Upottery Heritage Centre, in a Nissen hut restored with the help of SWAHT volunteers and a grant from East Devon District Council, is manned by volunteers and provides tours of Upottery airfield (privately owned) by arrangement with the owner. At Dunkeswell, one of the former flight offices houses some of the collections of the SWAHT and a new centre is being developed on the airfield. The SWAHT are interested in the future of the heritage assets at RAF Culmhead (information from Brian Lane-Smith).

Heritage Open Days, four days in September when a range of buildings and other sites are opened to the public, could provide a platform for opening more of airfield remains for people to visit and appreciate, perhaps in conjunction with the Dunkeswell and Upottery airfields as other options are being developed by the Education and Access plan (www.heritageopendays.org.uk).

Restoration and presentation

As noted above, Historic England would consider suitably resourced and considered plans for restoration and reuse of any of the designated structures. There is a considerable interest in the Second World War and its legacy. The connection between the families of the Americans who served at Dunkeswell and Upottery has been firmly established by the work of the SWAHT and others. RAF Culmhead was the home for many Polish and Czech men, whose families are also interested in researching their histories. Exeter holds a '307 Squadron Day' on 13 November and the 307 Squadron Project promotes research into that squadron as well as British-Polish co-operation (www.polishheritage.co.uk).

Two case studies are cited here as examples of good practice on the complex restoration and presentation of former airfield buildings. The Langham Dome is a dome trainer at RAF Langham, Norfolk, which was in a poor condition due to the decay of its ferro-concrete fabric. The North Norfolk Historic Buildings Trust and The Friends of Langham Dome worked together to restore the dome, used for training air crew in the Second World War. Grants and match funding were obtained from HE, HLF and a partnership of local organisations. The dome is now open as an educational and memorial centre (www.langhamdome.org.uk). The Rougham Tower Association has been working on the restoration of the control tower and the radar building at Rougham airfield in Norfolk since 1996. The site is a living history museum. The Rougham Restoration Schedule sets out the work involved in the restoration of the control tower over 10 years. Funds have been obtained from the Lottery Grant funding stream 'Awards for All' (www.rougham.org.uk).

Gaps in the story

There is potential for further research on the following topics in connection with RAF Culmhead:

The defence units stationed at RAF Culmhead

The RAE Farnborough detachment and experimental work with RAE detachments at RAF Exeter, Exeter University and Pawlett

CSOS Culmhead, particularly in 1950s and 1960s

The location of the W/T transmitter building, which appears to be unusual as such buildings were usually sited away from the main airfield

ACKNOWLEDGEMENTS

I would like to thank the owners of the former airfield, and their tenants, for their co-operation in allowing access to the buildings and structures. The South West Airfields Heritage Trust have provided an invaluable resource for the study of the former airfields of the area and have a wealth of experience in the restoration and presentation of this important part of our heritage. In particular I would like to thank Claude Caple, Brian-Lane Smith and volunteers at the Upottery Heritage Centre who gave their time and shared their considerable knowledge of all three of the Blackdown Hills airfields with me. Robin Cloke and William Peters also gave their time to work as volunteers, researching online and local sources of material for the project. The Blackdown Hills Trust and the Blackdown Hills AONB facilitated the project; in particular Linda Bennett who organised meetings and provided access to research material.

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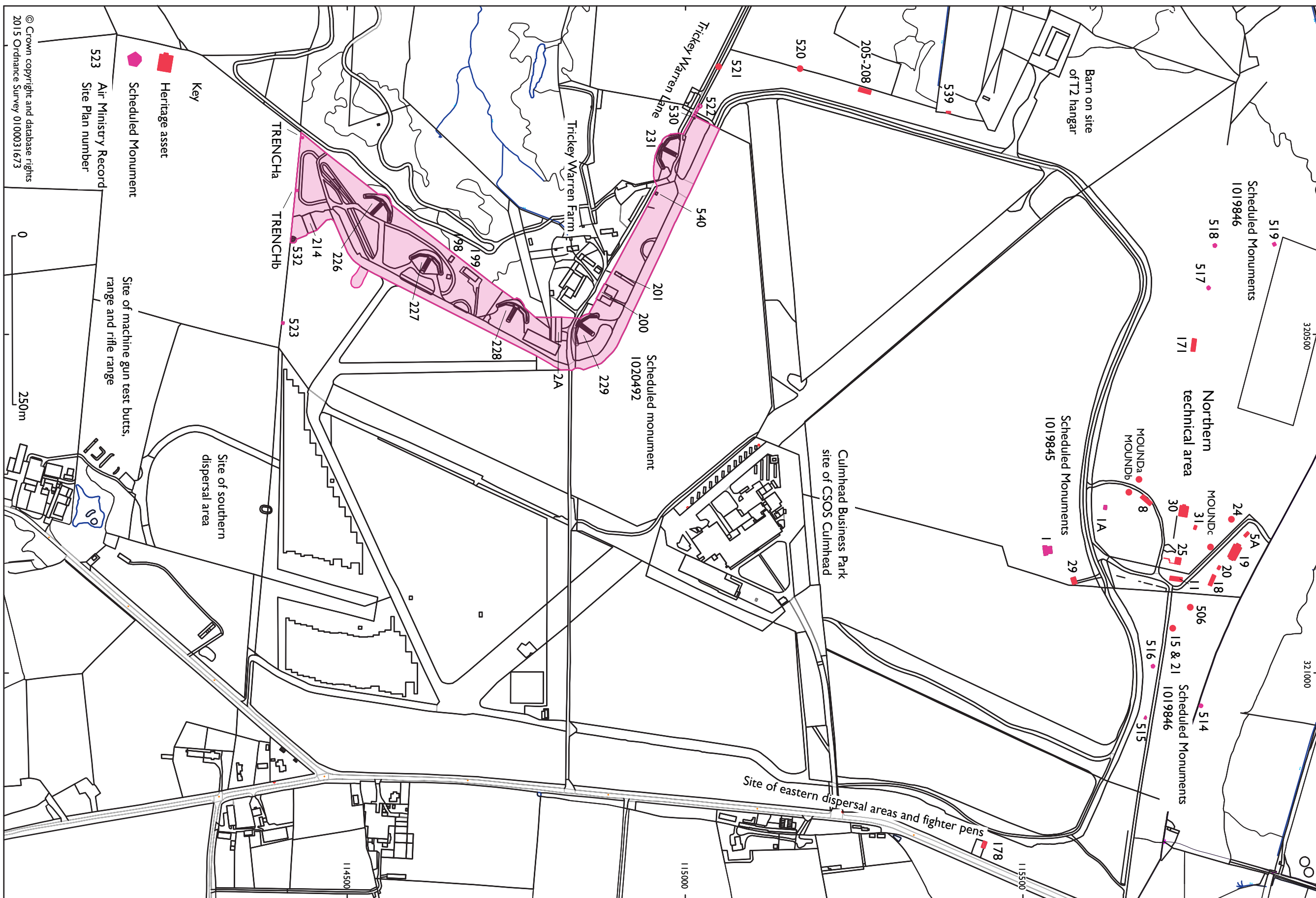


Fig 2 The buildings and structures at RAF Culmhead in 2015

APPENDIX I: GAZETTEER OF SOURCE MATERIAL

AIRFIELD RESEARCH GROUP

A new website is currently under construction but links via the Airfield Information Exchange and their archived website to a collection of photographs by Owen Hurrell in a flickr album called RAF Culm Head www.flickr.com/photos/owenhurrell/albums contains:

08 November 2009 185 photographs

Dispersed sites NE of airfield: 44 photographs

Airfield

Pillbox 1 (515) 9 photographs

Pillbox 2 (516) 4 photographs

MT workshop

Stove base

Gas chamber

Gas clothing store: 5 photographs

Latrine block: 3 photographs

Remains of the main workshop (mound of demolition rubble)

Latrine block N of parachute store 31 Technical Latrine WAAF: 7 photographs including internal fittings

MT shed

Parachute store: 3 photographs

MT shed: 2 photographs

Old Watch Office: 8 photographs – includes internal detail and 2 photographs of the bench which have written: NOT CHARGED and DISTILLED WATER

Night-flying equipment store: 2 photographs

Control tower: 23 photographs including interior views and balcony railing on ground by east side of building

Laing hut base (Defence Unit barrack block)

NW pillboxes: 6 photographs

Gunpit remains: 2 photographs

? gunpit south of T2 hanger

Perimeter track on west side of airfield

Transformer plinth 539

Defence unit barrack blocks and latrines south of T2 hanger (205-208) 6 photographs

Pillbox remains 520 or 521

Pillbox 522 3 photographs

Gunpit 530: 2 photographs

Defended wall on west side fighter pen 231: 3 photographs

Fighter pen 231 (probably)

Site of blister hangar 216

Transformer plinth 540

Latrine block 201

Flight offices 200: 9 photographs, including interior

Fighter pen 229: 2 photographs

Flight office 199: 4 photographs

Latrine block 198: 5 photographs

Fighter pens SW: 6 photographs
Blister hangar: 2 photographs
Pillbox 523
Gunpit 532
GCHQ building: the one in circle on 2010 APs and on OS maps
Latrine block 178

AMERICAN AIR MUSEUM IN BRITAIN www.americanairmuseum.com

The American Air Museum website records the stories of the men and women of the US Army Air Forces (USAAF) who served their country from the UK in the Second World War. It also records the memories of the British people who befriended them.

Culmead Military Site: Airfield

Short description and seven APs:

Aerial photograph of Churchstanton airfield, looking north, 26 June 1942. Photograph taken by No 8 Operational Training Unit, sortie number RAF/FNO/16 English Heritage (RAF Photography)

Aerial photograph of Churchstanton airfield, looking north east, 9 August 1943.

Photograph taken by 7th Photographic Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC14. English Heritage (USAAF Photography)

Aerial photograph of Churchstanton airfield, looking south west, 9 August 1943.

Photograph taken by 7th Photographic Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC14. English Heritage (USAAF Photography)

Aerial photograph of south end of Churchstanton airfield, looking south west, P-47 Thunderbolts are parked on the grass to the right, 9 August 1943. Photograph taken by 7th Photographic Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC14. English Heritage (USAAF Photography)

Aerial photograph of north end of Churchstanton airfield, looking south west, P-47 Thunderbolts are parked on the grass to the right, 9 August 1943. Photograph taken by 7th Photograph Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC14. English Heritage (USAAF Photography)

Aerial photograph of Churchstanton airfield, looking north east, 22 April 1944.

Photograph taken by 7th Photographic Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC314. English Heritage (USAAF Photography)

Aerial photograph of Churchstanton airfield, looking north east, 22 April 1944.

Photograph taken by 7th Photographic Reconnaissance Group USAAF, sortie number US/7PH/GP/LOC314. English Heritage (USAAF Photography)

ATLANTIKWALL www.atlantikwall.co.uk

Website has a page on RAF Culmhead as part of the section on 'Great Britain RAF Airfields of England and Wales Somerset'

There are photographs taken on the following dates

18 Jan 2000 perimeter track

18 Jan 2000 Elsan toilet enclosure

Feb 2015 Elsan bucket emptying platform on one of the dispersal sites

18 Jan 2000 Electrical cabinet

18 Jan 2000 Perimeter track

18 January 2000 Screw picket

18 January 2000 Northern technical area
 18 January 2000 Northern technical area pillboxes: 4 photographs
 27 December 2004 Pillbox in northern technical area
 08 November 2009 Gas clothing store: 4 photographs
 08 November 2009 Gas defence centre
 08 November 2009 Latrines 2 photographs
 08 November 2009 Mound in northern technical area, interpreted as site of the main workshop
 08 November 2009 Technical latrine by parachute Store: interpreted as latrines for the WAAFs who worked in parachute store
 08 November 2009 Technical latrine by parachute store: washstand inside
 26 May 2008 Sewage works: gates
 07 February 2015 Parachute store: 7 photographs including some of interior and information on how the building worked
 07 February 2015 MT shed: 7 photographs
 07 February 2015 Site of barrack blocks between the northern technical area and pillboxes
 07 February 2015 Old watch office: 8 photographs with information about internal fittings – armoured door, pyrotechnic store
 07 February 2015 Control tower: 6 photographs
 07 February 2015 Night flying equipment Store: 3 photographs with information about airfield lighting systems
 07 February 2015 Perimeter track
 07 February 2015 Site of 167 barrack block: Sergeants and other ranks – this was a Laing hut and was for the Defence Unit who were the Somerset Light Infantry in the early years of the airfield
 07 February 2015 Base for Laing hut: this is the large hut base between the northern technical area and the NW pillboxes
 07 February 2015 Tie down screw picket and stove base
 07 February 2015 NW pillboxes: 6 photographs
 07 February 2015 Gunpit
 07 February 2015 Motley stalk and concrete rubble
 07 February 2015 Site of T2 hangar
 07 February 2015 Perimeter track by the site of the T2 hangar
 07 February 2015 Transformer plinth 539
 07 February 2015 Defence unit accommodation remains 205-208 2 photographs
 07 February 2015 Pillbox 520
 07 February 2015 Airfield
 07 February 2015 Pillbox 522
 07 February 2015 Road to Petrol Installation Aviation 8a
 30 November 2014 Pillbox 522
 09 November 2009 Gunpit 530
 30 November 2014 Petrol Installation Aviation
 09 November 2009 & 7 February 2015 231 Fighter pen: 5 photographs
 20 September 2015 Very well maintained fighter pen at RAF Harrowbeer
 07 February 2015 Track to blister hangar 216
 07 February 2015 Site of blister hangar 216

07 February 2015 Site of blister hangar 216 showing threshold
 27 December 2004 Air raid shelter just to the east of the site of Blister hangar 216
 27 December 2004 Interior of air raid shelter
 07 February 2015 Interpretation board
 07 February 2015 Flight offices for the W set of fighter pens
 Annotated AP of W set of fighter pens
 30 November 2014 Latrine block for W set of fighter pens
 30 November 2014 Latrine block for W set of fighter pens
 09 November 2009 & 30 November 2014 Flight office for W set of fighter pens: 4 photographs
 30 November 2014 Site of fighter pen 230
 18 January 2000 and 30 November 2014 Fighter pen 229: 4 photographs
 18 January 2000 Squadron office 2a 24 ft Nissen hut
 09 November 2009 SW fighter pens
 09 November 2009 Fighter pen 228
 09 November 2009 Flight office 199: 7 photographs
 09 November 2009 Latrine block 198: 4 photographs. Graffiti 'conserve dope' 09 November 2009 Fighter pen 228
 09 November 2009 Perimeter track
 09 November 2009 and 26 May 2003 Fighter pen 226 (may be wrongly numbered on website: 12 photographs
 09 November 2009 Blister hangar 214: 3 photographs, including detail of the aluminium fittings of the curtain rails
 09 November 2009 Gunpit 532 SE of the blister hangar: 2 photographs
 09 November 2009 Pillbox 523: 5 photographs
 18 January 2000 SW fighter pens
 18 January 2000 Southern perimeter track extension
 18 January 2000 Aircraft machine gun test butts 28
 09 November 2009 Machine gun range 2 huts were the armourer hut and the paper target store
 09 November 2009 Detail of the armourer's hut and paper target store within the farm buildings at Glebe Farm
 09 November 2009 Perimeter track
 09 November 2009 GCHQ buildings
 09 November 2009 Latrine block 178 (NE fighter pens): 2 photographs

BATTLE HEADQUARTERS www.battlehq.info

Colour photograph of the battle headquarters (1995?). Demolished in 1996, no trace remaining (RAF Culmhead listed under Devon sites)

CONTROL TOWERS www.controltowers.co.uk

Photograph of the control tower by Paul Francis (1997?) which shows the aerial masts in the background

DEFENCE OF BRITAIN PROJECT www.archaeologydataservice.ac.uk

Search of whole database for records in Churchstanton Parish:

13 records: 12 pillboxes and the Battle HQ

DERELICT PLACES www.derelictplaces.co.uk

Photographs from April 2009

Pillboxes northern technical area: 2 photographs

MT vehicle inspection ramps

MT vehicle shed: 3 photographs

Gas clothing store and gas chamber

Parachute store: 3 photographs

Old watch office: 4 photographs

Control tower: 4 photographs

Night flying equipment store (wrongly captioned)

NW pillboxes: 3 photographs

Gun pit

T shaped flight office and latrine: 2 photographs

Stanton shelter, fighter pen 229: 3 photographs

Flight office and latrine: 5 photographs

Fighter pen 227

Defended wall, fighter pen 226: 3 photographs

Blister hangar

Control tower and night flying equipment store

Pillbox: 2 photographs

Control tower: 2 photographs

IMPERIAL WAR MUSEUM www.iwm.org.uk

A large amount of RAF Camera Gun Footage from Fighter Command. These are brief filmed records of aerial combat and air-to-ground attacks by RAF fighter pilots. Footage from the Culmhead Wing and Polish Squadrons at RAF Church Stanton. Pilots and crew not filmed.

IWM 29432 Interview with Frank Mares (2006). Frank Mares was a Czechoslovakian pilot who joined 313 Squadron in 1942

IWM Documents 7576 Private Papers of Wing Commander J Kucera

Photocopies of his Pilot's Flying Log Book (88pp, A3) recording his career as a Czech fighter pilot with the RAF from 1940-1946 and with the Czech Air Force, 1946-1948.

This includes the period when 313 Squadron was part of the Culmhead Wing at RAF Culmhead. It also includes 11 photographs and a brief summary of his life (1914-1981).

IWM Catalogue number I6626 IWM interview with A Buczek, Polish NCO with 306 Squadron, 1941-1945

IWM Documents I6750 Account written by Polish pilot of 306 Squadron of operation over France, c 1941-1942

CH 5247 Squadron Leader P M Brothers: photograph at RAF Redhill. 'He later commanded 602 Squadron and led the Tangmere, Millfield, Exeter and Culmhead Wings'

Geoffrey Amor: Imperial War Museum interview

Catalogue number I5228 14 March 1995 Notes relevant to RAF Culmhead:

REEL I Geoffrey Amor was born in 1922 and joined the RAF as a fitter when he was 16. He trained as a pilot in No 4 British Flying Training School in Phoenix, Arizona and qualified as a Sergeant pilot before undertaking more training from February 1943 in Great Britain. In June 1944 he was posted from his base in Scotland to RAF Culmhead to join No 616 Squadron. He remembers arriving at his quarters – a Nissen hut in

the woods – where there were a few Sergeant Pilots, the rest were probably in the pub. The next day at 2pm the Squadron Commander called all the airmen in to sign papers – the Official Secrets Act – and the Squadron was screened off and told they were converting to the Gloster Meteor. The pilots had never heard of this - the first jet engine plane to fly fighter operations in the world. Geoffrey operated from RAF Culmhead for a while, then in early July moved to RAF Manston with the first two Meteors which were flown from RAF Culmhead.

REEL 2 Geoffrey Amor flew Spitfire VII on low level operations across the channel to the Loire Valley from RAF Culmhead. When 616 Squadron moved from RAF Culmhead to RAF Manston the squadron was divided into 2 flights: Meteors and Spitfires, initially as a more junior pilot he flew Spitfires then flew his first Meteor on 20 July 1944.

In January 1945 RAF Colerne becomes the first jet squadron base as 616 and the Meteors transferred there. He has no idea why 616 Squadron were chosen to be the first jet squadron, perhaps because they were flying high altitude Mark VII Spitfires which became obsolete. He was very lucky as it was his first posting to a squadron as a newly qualified pilot in June 1944 at RAF Culmhead.

CH 4788 The Polish Air Force in Britain 1940-1947

Squadron Leader Antoni Wczelik, the CO of 306 Polish Fighter Squadron, briefing his pilots on the next operation. RAF Churchstanton, 26-28 January 1942. Left to right: Squadron Leader Antoni Wczelik, Flying Officer Adam Flisnik, Sergeant Witold Krupa, unknown, Sergeant Jan Smigielski, Flying Officer Bohdan Arct

CH 4789 The Polish Air Force in Britain 1940-1947

Squadron Leader Antoni Wczelik, the CO of 306 Polish Fighter Squadron, briefing his pilots on the next operation. RAF Churchstanton, 26-28 January 1942. Left to right: Squadron Leader Antoni Wczelik, Flying Officer Adam Flisnik, Sergeant Witold Krupa (with a dog), unknown, Sergeant Jan Smigielski, Flying Officer Bohdan Arct (in the background), unknown, Flight Lieutenant Tadeusz Czerwinski.

CH 4790 The Polish Air Force in Britain 1940-1947

Pilots of No 306 Polish Fighter Squadron being taught the English language between flights by a schoolmaster. RAF Churchstanton, 26-28 January 1942

CH 4791 The Polish Air Force in Britain 1940-1947

Airmen of 306 Squadron with the Polish national emblem in front of one of their Spitfires at RAF Church Stanton 26-28 January 1942

CH 4792 The Polish Air Force in Britain 1940-1947

Airmen of 306 Squadron in front of one of their Spitfires at RAF Churchstanton 26-28 January 1942. Three men in the middle are: Flight Lt T Czerwinski, CO of A flight, Squadron Ldr A Wczelik, CO of Squadron, and Flight Lt S Skalski CO of B Flight

CH 4793 The Polish Air Force in Britain 1940-1947

Flight Lt T Czerwinski and Flight Lt S Skalski, COs of A and B flights, with the Polish national emblem RAF Church Stanton 26-28 January 1942

CH 4794 The Polish Air Force in Britain 1940-1947

Portrait of Flight Lt S Skalski CO of B Flight 306 Squadron RAF Church Stanton 26-28 January 1942

CH 4795 The Polish Air Force in Britain 1940-1947

Sergeant Witold Krupa of 306 Squadron wearing his 'Mae West' life jacket with names 'Mollie' and 'Sheila' written on it. RAF Churchstanton 26-28 January 1942

CH 4796 Polish Air Force in Britain 1940-1947

Portrait of Squadron Ldr A Wczelik, CO of 306 Squadron, RAF Church Stanton 26-28 January 1942

CH 4797 Polish Air Force in Britain 1940-1947
Squadron Leader A Wczelik with his Flight Commanders at RAF Church Stanton 26-28 January 1942
CH 4798 The Polish Air Force in Britain 1940-1947
Armourers of 306 Squadron reloading Spitfire's 20mm cannon with ammunition at RAF Church Stanton 26-28 January 1942
CH 4799 Pilots of 306 Squadron looking at a caricature on blackboard in the crew room of RAF Church Stanton, 26-28 January 1942

NATIONAL ARCHIVES www.discovery.nationalarchives.gov.uk

AIR 27: Air Ministry and successors: Operations Record Books, Squadrons: A daily record of events in each squadron entered on Form 540, with appendices including some photographs (photos of various dates, not necessarily same as dates of ORBs)
Downloaded several of these looking at key dates in the history of the airfield:
Squadron 307 Appendices AIR 27/1677/1
Squadron 307 Summary of Events AIR 27/1675/13
Squadron 316 Appendices AIR 27/1696/3
Squadron 313 Appendices AIR 27/1696/2
Squadron 165 Appendices AIR 27/1088
Squadron 587 Summary of events AIR 27/2055/2
Squadron 587 Summary of events AIR 27/2055/3
Squadron 616 Records of events AIR 27/2127/14
Squadron 616 Records of events AIR 27/2127/13
Squadron 126 Appendices AIR 27/928
David Berryman has researched the ORBs for the Squadrons at RAF Culmhead and written a detailed account (Berryman 2006, 50-86).

POLISH SQUADRONS REMEMBERED www.polishsquadronsremembered.com

Pages for each of the Polish Squadrons with histories and photographs. Diary of Wladyslaw Mordasiewicz with photographs: he was a member of the ground crew for 302 Squadron.

RAF MUSEUM www.rafmuseum.org.uk
www.flickr.com/photos/royalairforcemuseum/albums

Mrazek Album: This album of 202 photographs was donated to the RAF Museum by Karel Mrazek, a Czechoslovak pilot who flew with the RAF during the Second World War. This album covers the period he served with No 46 Squadron September 1940-May 1941 (Mrazek was at RAF Culmhead with 313 Squadron June 1942-June 1943).
L88-079 Hurricane preparing for take off in a fighter pen, RAF Digby, January 1941.
Bowser is fuelling the aircraft, 2 airmen sitting on the wing
L88-098 Inside the Dispersal Hut 46 Squadron
L88-124 Mascot
L88-140 Inside the link trainer cabin RAF Digby February 1941
L88-156 Airmen in staff car on perimeter road, RAF Sherburn in Elmet March 1941
Charles Brown photographs
Online exhibitions of Czechoslovak and Polish Squadrons in the Royal Air Force which contain history and photographs

SOUTH WEST HERITAGE TRUST

Somerset Historic Environment Record: All relevant records are available online and indexed under the record for the airfield (HER 44340 www.webapp1.somerset.gov.uk/her)

Somerset Record Office: The archive photographs for the Francis 1997 survey are held under collection number SRO A\AWI/196 *Records relating to a history and condition survey of RAF Culmhead.*

SOUTH WEST AIRFIELDS HERITAGE TRUST www.southwestairfields.co.uk

History of the airfield with photographs and video. Two recent air photographs of the airfield. Photographs of airfield in c 1960 at Upottery Heritage Centre. The SWAHT also have collections of photographs relating to the history of RAF Culmhead.

HISTORIC ENGLAND AIR PHOTOGRAPHS: OBLIQUE COLLECTION

Photo ref	Film	Frame	Date	Grid ref
ST 2014 / 1	NMR 24722	/ 01	18 SEP 2007	ST 204146
ST 2014 / 2	NMR 24722	/ 02	18 SEP 2007	ST 203146
ST 2014 / 3	NMR 24722	/ 26	18 SEP 2007	ST 204148
ST 2014 / 4	NMR 24722	/ 27	18 SEP 2007	ST 204148
ST 2014 / 5	NMR 24722	/ 28	18 SEP 2007	ST 204148
ST 2014 / 6	NMR 24722	/ 29	18 SEP 2007	ST 204148
ST 2014 / 7	NMR 24722	/ 30	18 SEP 2007	ST 203149
ST 2014 / 8	NMR 24722	/ 31	18 SEP 2007	ST 204149
ST 2014 / 9	NMR 24722	/ 32	18 SEP 2007	ST 202149
ST 2014 / 10	NMR 24722	/ 33	18 SEP 2007	ST 204148
ST 2014 / 11	NMR 24722	/ 34	18 SEP 2007	ST 204148
ST 2014 / 12	NMR 24722	/ 35	18 SEP 2007	ST 204148
ST 2014 / 13	NMR 24722	/ 41	18 SEP 2007	ST 204146
ST 2014 / 14	NMR 24722	/ 42	18 SEP 2007	ST 204147
ST 2014 / 15	NMR 24722	/ 43	18 SEP 2007	ST 203144
ST 2014 / 16	NMR 24722	/ 44	18 SEP 2007	ST 202145
ST 2014 / 17	NMR 24722	/ 45	18 SEP 2007	ST 203144
ST 2014 / 18	NMR 24722	/ 46	18 SEP 2007	ST 203144
ST 2014 / 19	NMR 24722	/ 47	18 SEP 2007	ST 202144
ST 2014 / 20	NMR 24722	/ 48	18 SEP 2007	ST 203146
ST 2014 / 21	NMR 24722	/ 49	18 SEP 2007	ST 207148
ST 2015 / 1	NMR 24722	/ 03	18 SEP 2007	ST 204158
ST 2015 / 2	NMR 24722	/ 04	18 SEP 2007	ST 203158
ST 2015 / 3	NMR 24722	/ 05	18 SEP 2007	ST 203157
ST 2015 / 4	NMR 24722	/ 06	18 SEP 2007	ST 204158
ST 2015 / 5	NMR 24722	/ 07	18 SEP 2007	ST 208158
ST 2015 / 6	NMR 24722	/ 08	18 SEP 2007	ST 207157
ST 2015 / 7	NMR 24722	/ 09	18 SEP 2007	ST 207156
ST 2015 / 8	NMR 24722	/ 10	18 SEP 2007	ST 208157
ST 2015 / 9	NMR 24722	/ 11	18 SEP 2007	ST 208155
ST 2015 / 10	NMR 24722	/ 12	18 SEP 2007	ST 208155
ST 2015 / 11	NMR 24722	/ 13	18 SEP 2007	ST 207156
ST 2015 / 12	NMR 24722	/ 14	18 SEP 2007	ST 208157
ST 2015 / 13	NMR 24722	/ 16	18 SEP 2007	ST 208158
ST 2015 / 14	NMR 24722	/ 17	18 SEP 2007	ST 208157
ST 2015 / 15	NMR 24722	/ 19	18 SEP 2007	ST 207157

ST 2015 / 16	NMR 24722	/ 20	18 SEP 2007	ST 207157
ST 2015 / 17	NMR 24722	/ 21	18 SEP 2007	ST 204156
ST 2015 / 18	NMR 24722	/ 22	18 SEP 2007	ST 204153
ST 2015 / 19	NMR 24722	/ 23	18 SEP 2007	ST 201155
ST 2015 / 20	NMR 24722	/ 24	18 SEP 2007	ST 205157
ST 2015 / 21	NMR 24722	/ 25	18 SEP 2007	ST 204152
ST 2015 / 22	NMR 24722	/ 36	18 SEP 2007	ST 207150
ST 2015 / 23	NMR 24722	/ 37	18 SEP 2007	ST 207151
ST 2015 / 24	NMR 24722	/ 38	18 SEP 2007	ST 207151
ST 2015 / 25	NMR 24722	/ 39	18 SEP 2007	ST 207151
ST 2015 / 26	NMR 24722	/ 40	18 SEP 2007	ST 207151
ST 2115 / 1	NMR 24722	/ 15	18 SEP 2007	ST 210156
ST 2115 / 2	NMR 24722	/ 18	18 SEP 2007	ST 210156

HISTORIC ENGLAND AIR PHOTOGRAPHS:VERTICAL COLECTION

Sortie number	Library	Frame		Grid ref	Run	Date
RAF/CPE/UK/2491	785	3203	P	ST 199 158	5	11 MAR 1948
RAF/CPE/UK/2491	785	3204	P	ST 206 156	5	11 MAR 1948
RAF/CPE/UK/2491	785	3205	P	ST 214 154	5	11 MAR 1948
US/7PH/GP/LOC14	6782	6035	P	ST 210 154	42	09 AUG 1943
US/7PH/GP/LOC14	6782	6040	P	ST 207 152	43	09 AUG 1943
US/7PH/GP/LOC14	6782	5030	P	ST 209 153	31	09 AUG 1943
US/7PH/GP/LOC14	6782	5031	P	ST 206 159	31	09 AUG 1943
US/7PH/GP/LOC14	6782	5034	P	ST 213 155	32	09 AUG 1943
US/7PH/GP/LOC14	6782	5035	P	ST 207 152	32	09 AUG 1943
US/7PH/GP/LOC14	6782	5036	P	ST 201 148	32	09 AUG 1943
US/7PH/GP/LOC14	6782	5040	P	ST 206 147	33	09 AUG 1943
US/7PH/GP/LOC14	6782	5041	P	ST 211 153	33	09 AUG 1943
US/7PH/GP/LOC314	8195	5017	P	ST 219 152	12	22 APR 1944
US/7PH/GP/LOC314	8195	5018	P	ST 211 141	12	22 APR 1944
US/7PH/GP/LOC314	8195	5029	P	ST 202 149	14	22 APR 1944
OS/89275	13548	33	N	ST 214 156	1	14 JUN 1989
OS/89275	13548	34	N	ST 207 156	1	14 JUN 1989
OS/89275	13548	35	N	ST 197 154	1	14 JUN 1989
OS/89275	13548	43	N	ST 205 142	2	14 JUN 1989
OS/89276	13549	134	N	ST 202 156	4	14 JUN 1989
OS/89276	13549	135	N	ST 209 156	4	14 JUN 1989
OS/89276	13549	140	N	ST 207 145	5	14 JUN 1989
OS/89276	13549	141	N	ST 200 145	5	14 JUN 1989
OS/98446	22686	5802	N	ST 207 143	7	15 OCT 1998
OS/98446	22686	5828	N	ST 214 156	8	15 OCT 1998
OS/98446	22686	5829	N	ST 207 156	8	15 OCT 1998
OS/98446	22686	5830	N	ST 199 156	8	15 OCT 1998
OS/03160	24140	11	N	ST 198 155	1	24 SEP 2003
OS/03160	24140	12	N	ST 198 148	1	24 SEP 2003
ADA/605(Z)	26845	203	N	ST 208 149	3	22 OCT 1993
ADA/605(Z)	26845	204	N	ST 198 149	3	22 OCT 1993
ADA/626	26871	51	N	ST 207 151	1	28 JUN 1994
ADA/626	26871	52	N	ST 196 151	1	28 JUN 1994

APPENDIX 2: CONDITION SURVEY 2015

Methodology

The sites were visited on 8,9, 16 July 2015 and 20 October 2015. Fighter pen 231 was also visited on 25 March 2016 following vegetation clearance. The location of each site was obtained using a Yuma2 tablet PC with Trimble enhanced GPS, (1-2m accuracy; less if tree cover an issue). The photographs are on a CD included with this report.

Name: OLD WATCH OFFICE 1A NGR: 320760 115616

Francis 1997: 32 Somerset HER: 44725 Date of visit: 16 July 2015

Description: The original control tower built in early 1941 is a single storey temporary brick building. It was replaced by a watch office for all commands in 1943 when it became a battery charging room building. Original features survive *in situ*: gas proof doors, a pyrotechnics cupboard, the battery charging bench with lettering: NOT CHARGED and DISTILLED WATER.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle, and mown for forage.

Management issues: an elder sapling growing inside the building which needs removing before damage is caused. There is also potential for damage by livestock to the brick blast wall which protects the metal gas proof door.

Condition: Good to fair. The brickwork and pointing is deteriorating as a result of weathering.

Photographs: 1Aa West elevation

1Ab South elevation

1Ac South elevation: detail of deteriorating brickwork and pointing

1Ad South and east elevations

1Ae East elevation: detail of deteriorating brickwork and pointing

1Af Blast wall protecting door on north wall

1Ag Interior: gas proof steel door and pyrotechnics cupboard with gas proof steel door

1Ah Interior: battery charging table

Name: CONTROL TOWER 1 NGR: ST 320824 115539

Francis 1997: 35 Somerset HER: 44726 Date of visit: 16 July 2015

Description: The control tower was built in 1943, and is a good example of the later type of design of a watch office for all commands. It is a large, square, two storey building, of temporary brick faced with render. A concrete balcony faces the runway, accessed from the control room, and the roof is accessed by a steel ladder. Some original features survive: the metal window frames; some of the paintwork on a cupboard door and ground floor walls and the metal stair giving access to the roof.

Current management: The control tower stands in a grassed area between two large arable areas which is mown for forage. A large wooden boat lies on the west side of the building; its masts are stored in the watch office.

Management issues: Vegetation around the base of the building needs removing; scrub is beginning to colonise the concrete balcony in front of the control room and a large sapling on the west side of the building should be removed. Rubbish has been dumped inside the ground floor rooms.

Condition: The main issue is water ingress due to the failure of the concrete beams of the roof and ground floor ceiling, caused by the later insertion of ventilation cowls. The

render has gone from most of the south and west walls and about 50% of the render on the east wall remains, leaving much of the brickwork vulnerable to weathering. On the north wall about 90% of the render is in place, but broken guttering is causing the render to crack in several places. The building is in a fair condition, but the failure of the concrete roof will cause further deterioration in the medium term.

Photographs: 1a South elevation

1b West elevation

1c East elevation

1d North elevation

1e Detail north elevation showing failing render above windows

1f Interior ground floor: watch room

1g Interior ground floor: cupboard with painted door

1h Interior ground floor: painted cement dado in latrines

1i Interior first floor: deterioration of roof in signal's office

1j Interior first floor: insertion of ventilation cowls in roof causing deterioration in control room

Name: NIGHT-FLYING EQUIPMENT STORE 29 NGR: 320862 115568

Francis 1997: 38 Somerset HER: 44815 Date of visit: 16 July 2015

Description: the night-flying equipment store is a large rectangular building of temporary brick with an asbestos sheet roof supported by metal trusses. It has an open north elevation, divided into three. The building was used to store equipment for runway lighting. Original features include the metal windows on the west and south elevation (the latter are in good condition as they are covered with steel sheets on the exterior); the remains of wooden doors and door fittings, and concrete hursters.

Current management: The night-flying equipment store stands in a grassed area between two large arable areas which is mown for forage. It is occasionally used as an agricultural store.

Condition: The failure of the steel roof trusses has caused the asbestos roof sheets to slump into the middle. Although the roof is still watertight, this has caused the south wall to bow outwards.

Photographs: 29a The north elevation

29b The west elevation and failing south elevation

29c Original wooden door

29d Interior with failing steel roof trusses

Name: PARACHUTE STORE 30 NGR: 320753 115733

Francis 1997: 46 Somerset HER: 44854 Date of visit: 16 July 2015

Description: The parachute store is a 5-bay rectangular building of temporary brick with external and internal render. Access is by a lobby on the west elevation. The northern elevation has a later lean to for livestock housing. Its specialised function – drying, packing and storing parachutes – is reflected in the roof arrangements. Enough height was needed to suspend the parachutes without them touching the floor so the roof was built in stages. The lower part of the roof and vertical sides were supported on steel trusses; above this an upper roof, of bituminous felt and boarding, was supported on timber rafters. The interior of the building has been modified for livestock with ventilation flues, brick pens and cabling for a poultry feeding system.

Although the upper roof has failed, parts of the original upper roof structure survive on the north side, including the wooden rafters and 5-bay window lights. The metal window frames on the ground floor are still in place and a switch box is fixed to the east wall.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Livestock use the northern lean to for shelter; they can access the main store which is a hazardous environment.

Condition: This building has significantly deteriorated since 1997. The building is in a poor condition due to failure of the upper roof, caused by collapsed ventilation flues.

Photographs: 30a North elevation

30b North and west elevation with lobby

30c East and north elevations with lean to addition

30d Interior: the collapsed ventilation flue, livestock pens and cables are all later modifications

Name: TECHNICAL LATRINE (WAAF) 31 NGR: 320784 115754

Francis 1997: 45 Somerset HER: 44853 Date of visit: 16 July 2015

Description and condition: A temporary brick building with external render and asbestos sheet roof: the latrine block for WAAFs working in the nearby parachute store and other technical buildings. Original features include the metal window frames with opening top lights.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Condition: Good

Photographs: 31 West and south elevations

Name: GAS CLOTHING STORE 19 NGR: 32080 115807

Francis 1997: 48 Somerset HER: 44826 Date of visit: 16 July 2015

Description: A 5-bay temporary brick building with external render and an asbestos sheet roof supported by steel roof trusses. Access is at the west end of the building, by a door on the north side, into a lobby, then through substantial sliding wooden doors. The building was used to store specialist equipment and clothing in case of attack by chemical weapons. Original features include wooden doors and metal window frames. Gaps in the base of the north and south walls are probably from modifications for poultry housing. There are later lean to additions on the north and south elevations; a large entrance on the east elevation is a later modification.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Cattle can access the interior of the building which is full of deep mud.

Condition: The building is in good condition, apart from the west end where the north section of the lobby roof has been removed. Later ventilation cowls in the roof are still in place.

Photographs: 19a The west and south elevations

19b The east elevations with later lean to additions

19c The interior with later ventilation cowls

I9d Wooden sliding door

I9e Wooden sliding door

Name: TECHNICAL LATRINE (WAAF) 5A

NGR: 320792 115831 Francis 1997: 43 Somerset HER: 44824

Date of visit: 16 July 2015

Description: A temporary brick building with external render: the latrine block for WAAs working in the nearby gas clothing store and other technical buildings. Original features include the metal window frames with opening top lights.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: A water trough by the south wall has caused a large area of mud to develop. Elder saplings are growing against the exterior north wall and inside the structure.

Condition: Fair - although the roof has been removed and render is beginning to fail on all walls.

Photographs: 5Aa West and south walls

5Ab North wall

Name: GAS CHAMBER 20 NGR: 320850 115788

Francis 1997: 49 Somerset HER: 44825 Date of visit: 16 July 2015

Description: A 2 bay temporary brick building with external and some internal render and an asbestos sheet roof. Two doors on east elevation, one door and single small opening for window light on west elevation. Used for training airmen in correct use of respirators in a gas contaminated environment. Original features include wooden door frame.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Livestock can walk through the building.

Condition: Moderate - although the roof has been removed and render is beginning to fail.

Photographs: 20a East and south elevations

20b West and north elevations

Name: GAS DEFENCE CENTRE 18 NGR: 320856 115767

Francis 1997: Not given Somerset HER: Not in record Date of visit: 16 July 2015

Description: A rectangular concrete plinth is the base for the gas defence centre, used for gas training and awareness instruction.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Scrub on edges of base

Condition: only the base of the building remains

Photographs: 18 Base from the east with gas chamber and gas clothing store in background

Name: W/T TRANSMITTER 11 NGR 320863 115725

Francis 1997: Not given Somerset HER: Not in record Date of visit: 16 July 2015

Description: A rectangular concrete plinth is the base for a building identified on the RSP as the W/T Transmitter. Long range wireless telegraphy was used for communicating over a long distance, for example from the station to the aircraft, and each airfield had its own W/T station to keep contact with their own aircraft. They were usually sited some distance away from the airfield. The transmitter building housed radio transmitters and was surrounded by aerials. This is an unusual position for such a building.

Current management: The building stands in an area of hard standing and tracks used by agricultural vehicles.

Management issues: Large saplings on edges of the base.

Condition: Only the base of the building remains

Photographs: 11 Base from the NE

Name: MOTOR TRANSPORT SHED 25 NGR: 320831 115724

Francis 1997: 47 Somerset HER: 44724 Date of visit: 16 July 2015

Description: A temporary brick building with two open bays and two with doors for the maintenance and storage of vehicles. Brick vehicle inspection ramps lie to the south. Original features include a vehicle inspection pit in the northern bay, wooden door frames, metal window frames and concrete hurters.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Two of the bays are gated to exclude livestock; the rest can be accessed by livestock.

Condition: The building is in poor condition, only the northern bay is roofed and much of the south end has been removed.

Photographs: 25a The west elevation and concrete hurters

25b The vehicle inspection ramps

Name: AVIATION PETROL INSTALLATION (SITE OF) 8 NGR: 320745 115680

Francis 1997: 34 Somerset HER: 44823 Date of visit: 8 July 2015

Description: A concrete base on the edge of a concrete access track, north of the old watch office. This is part of one of the two aviation petrol installations on the airfield.

Current management: The building stands in a field which is regularly grazed by livestock, including cattle.

Management issues: Used as hard standing for agricultural machinery

Condition: Only the base of the building remains

Photographs: 8 Concrete base from the SW

Name: MAIN WORKSHOP (site of) 24

NGR: 320775 115807 Francis 1997: Not given Somerset HER: Not in record

Date of visit: 8 July 2015

Description: A large rubble mound on the site of the main workshop, probably demolition material from several buildings which once stood in this part of the northern technical area.

Current management: The mound stands in a field which is regularly grazed by livestock, including cattle.

Condition: Remains of unidentified structures

Photographs: 24 South side of mound

Name: MOUNDa NGR: 302716 | 15670

Francis 1997: Not given Somerset HER: Not in record Date of visit: 8 July 2015

Description: Large, grass covered mound to the west of the old watch office probably represents the remains of buildings such as the armoury [3], and the lubricant and inflammables store [4].

Current management: The mound stands in a field which is regularly grazed by livestock, including cattle, and mown for forage.

Condition: Remains of unidentified structures

Photographs: Mounda SW side of mound

Name: MOUNDb NGR: 320733 | 15665

Francis 1997: Not given Somerset HER: Not in record Date of visit: 8 July 2015

Description: Grass covered mound to the west of the old watch office probably represents the remains of buildings such as a blast shelter [505], technical latrine [5], and the speech broadcasting building [160].

Current management: The mound stands in a field which is regularly grazed by livestock, including cattle.

Condition: Remains of unidentified structures

Photographs: Moundb South side of mound

Name: MOUNdc NGR: 320816 | 15776

Francis 1997: Not given Somerset HER: Not in record Date of visit: 16 July 2015

Description: Grass covered mound to the SW of the gas clothing store may represent the remains a water tank [511].

Current management: The mound stands in a field which is regularly grazed by livestock, including cattle.

Condition: Remains of unidentified structures

Photographs: Moundc South side of mound

Name: BLAST SHELTER (SITE OF) 506 NGR: 320905 | 15746

Francis 1997: 21 Somerset HER: Not in record Date of visit: 8 July 2015

Description: A grass covered mound probably represents the remains of a blast shelter, demolished after 1997

Current management: The mound stands in an area which is regularly grazed and mown for forage; at the time of the visit part of it was used as a festival car park.

Condition: Remains of unidentified structures

Photographs: 506 West side of mound

Name: FIRE TENDER HOUSE 15 GUARD & FIRE PARTY HOUSE 21 NGR: 320936 | 15720

Francis 1997: Not given Somerset HER: Not in record Date of visit: 8 July 2015

Description: A grass covered mound probably represents the remains of the fire tender house [15] and guard and fire party house [21], demolished before 1997.

Current management: The mound stands in an area which is regularly grazed and mown for forage; at the time of the visit part of it was used as a festival car park.

Condition: Remains of unidentified structures

Photographs: 21 South side of mound

Name: LATRINE BLOCK 178 NGR: 321250 115440

Francis 1997: 7 Somerset HER: 44835 Date of visit: 20 October 2015

Description: A temporary brick building with rendered, external walls and a replacement corrugated iron roof. The east elevation has seven windows with opening top lights, one of the two doors on the south side has been bricked up. The west elevation has a later entrance and the door in the south side has been bricked up. Original features include the metal window frames. This was the latrine block for the personnel working in the flight office of the NE fighter pens and is the only remaining building on the eastern perimeter of the airfield.

Current management: The building stands on the edge of the site, between the solar arrays and the Churchinford to Taunton road, an area which may be occasionally grazed or mown.

Condition: The building is in a fair condition with much of the render intact and a sound roof.

Photographs: 178 South side of building

Name: FIGHTER PEN 226 NGR: 320325 114530

Francis 1997 54: Somerset HER: 44717 Date of visit: 9 July 2015

Description: An aircraft fighter pen, type B, to house two twin-engined aircraft, constructed of a crescent shaped earthwork bank, revetted by dwarf brick walls, with a central bank (or traverse) forming two aircraft bays. There is a Stanton air raid shelter with access from the rear of both pens. A defended wall, built of brick lies to the NW, facing the open countryside to the NW. Francis reported earthworks in front of the wall but vegetation at the time of the survey obscured this area (1997, 33-34). A second defended wall lies at the end of the southern traverse, facing the blister hangars.

Current management: The fighter pen lies in an area used for testing off-road vehicles.

Management issues: Dumps of rubble on the tarmac apron of the fighter pen. A large amount of scrub encroachment.

Condition: The structure is in a poor condition due to the amount of scrub encroachment.

Photographs: 226a The SW bay of the fighter pen

226b The SE bay of the fighter pen

Name: FIGHTER PEN 227 NGR: 320411 114604

Francis 1997: 55 Somerset HER: 44718 Date of visit: 9 July 2015

Description: An aircraft fighter pen, type B, to house two twin-engined aircraft, constructed of a crescent shaped earthwork bank, revetted by dwarf brick walls, with a central bank (or traverse) forming two aircraft bays. There is a Stanton air raid shelter with access from the rear of both pens. A defended wall lies at the end of the central traverse facing the airfield.

Current management: The fighter pen lies in an area used for testing off-road vehicles and the traverses are generally kept clear of scrubby vegetation.

Management issues: Temporary structures and fencing material on the tarmac apron of the SW bay. Some scrub and sapling encroachment.

Condition: The pens are generally kept clear of vegetation and are in good condition.

Photographs: 227a SW bay of the fighter pen

227b Access to the air raid shelter from the SW bay of the fighter pen
227c The defended wall at the end of the central traverse and the NE aircraft bay
227d Access to the air raid shelter from the NE bay of the fighter pen

Name: FIGHTER PEN 228 NGR: 320483 I I 4737

Francis 1997: 56 Somerset HER: 44727 Date of visit: 9 July 2015

Description: An aircraft fighter pen, type B, to house two twin-engined aircraft, constructed of a crescent shaped earthwork bank, revetted by dwarf brick walls, with a central bank (or traverse) forming two aircraft bays. There is a Stanton air raid shelter with access from the rear of both pens. A defended wall, built of brick lies to the NW, facing the open countryside to the NW. A second defended wall lies at the end of the central traverse facing the airfield.

Current management: The fighter pen lies in an area used for testing off-road vehicles.

Management issues: Dumps of rubble on the tarmac apron of the fighter pen. A large amount of scrub encroachment.

Condition: The structure is in a poor condition due to the amount of scrub encroachment.

Photographs: 228a The SW aircraft bay

228b The defended wall at the end of the central wall

228b The NE aircraft bay

Name: FLIGHT OFFICE 199 NGR: 320407 I I 4670

Francis 1997: 59 Somerset HER: 44720 Date of visit: 9 July 2015

Description: A temporary brick building with external render and asbestos sheet roof on steel trusses. Doorways at the NE and SW ends and windows along the SE elevation. A brick partition wall divides the interior into two large rooms, these were separate offices for the flight officers and flight clerks. Two ventilation cowls have been inserted through the roof and brick livestock pens now occupy most of the interior.

Original features include metal window frames and a louvered ventilation panel above the SW door.

Current management: The fighter pen lies in an area used for testing off-road vehicles.

Management issues: Overhanging trees and scrub encroachment

Condition: the building is in fair condition: the ventilation cowls have caused the failure of the roof at the NE end and the render is beginning to fail; the building is in a fair condition .

Photographs: 199a The SW and SE elevations

199b Livestock pens inside the flight offices

Name: LATRINE BLOCK 198 NGR: 320407 I I 4670

Francis 1997: 8 Somerset HER: 44808 Date of visit: 9 July 2015

Description and condition: A temporary brick building with external render and asbestos sheet roof supported on steel roof trusses. This was the latrine block for the personnel working in the adjacent flight office. An entrance porch lies on the on the SW end and there are two opposing doorways on the NE and SW elevations. Ventilation cowls have been inserted through the roof and troughs for livestock built into interior.

Current management: The building lies in an area used for testing off-road vehicles.

Management issues: Overhanging trees and scrub encroachment

Condition: The building is in good condition

Photographs:

198a The SE and NE elevations

198b The interior

Name: NISSEN HUT (not on AM RSP) NGR: 32040 314640

Francis 1997: 65 Somerset HER: 44719 Date of visit: 9 July 2015

Description: A concrete base between the flight office and latrine block is not shown on the AM RSP. In 1997 the brick wall ends were still *in situ* and steel Nissen hut ribs lay on the floor; it may have been a pyrotechnics or small arms ammunition store (Francis 1997, 35).

Current management: The hut base lies in an area used for testing off-road vehicles.

Management issues: Overhanging trees and scrub encroachment

Condition: Only the base of the building remains

Photographs: HER44719 The base is covered with grass cuttings

Name: SQUADRON AND STATION OFFICES 2A NGR: 320845 114832

Francis 1997: 61 Somerset HER: 44841 & 16912 Date of visit: 9 July 2015

Description and condition: A rectangular concrete base for a 30 ft span Nissen hut. The building is identified on the AM RSP as one of the two squadron and station offices at RAF Culmhead, built of temporary brick, leading to some debate about its function (Francis 1997, 35). APs from 1943 clearly show a large Nissen hut with access from Trickey Warren Lane and there seems no reason to suppose that this was not one of two squadron offices shown on the AM RSP. The building was dismantled in 2004 with Scheduled Monument consent.

Current management: The hut base lies in an area used for testing off-road vehicles.

Management issues: Scrub encroachment

Condition: Only the base of the building remains

Photographs: 2A The hut base from the west

Name: FIGHTER PEN 229 NGR: 320502 114865

Francis 1997: 57 Somerset HER: 44728 Date of visit: 9 July 2015

Description and condition: An aircraft fighter pen, type B, to house two twin-engined aircraft, constructed of a crescent shaped earthwork bank, revetted by dwarf brick walls, with a central bank (or traverse) forming two aircraft bays. There is a Stanton air raid shelter with access from the rear of both pens. A defended wall is built into the top of the air raid shelter, facing the top of Trickey Warren Lane with open country beyond. A second defended wall lies at the end of the central traverse facing the airfield.

Current management: The fighter pen is between the airfield perimeter track and Trickey Warren Lane, in an area of unmanaged grassland.

Management issues: Overhanging trees and scrub encroachment

Condition: The structure is in a poor condition due to the amount of scrub encroachment.

Photographs: 229a Scrub encroachment on the aircraft bays

229b The defended wall at the end of the central traverse

229c Access to the Stanton air raid shelter with defended wall above

Name: FIGHTER PEN 231 NGR: 320204 114990

Francis 1997: 58 Somerset HER: 44723 Date of visit: 9 July 2015 and 25 April 2016

Description: An aircraft fighter pen, type B, to house two twin-engined aircraft, constructed of a crescent shaped earthwork bank, revetted by dwarf brick walls, with a central bank (or traverse) forming two aircraft bays. There is a Stanton air raid shelter with access from the rear of both pens and from the southern defended wall. A defended wall lies to the rear of the pen facing open countryside to the SW. Another defended wall lies on the west side of the fighter pen, facing one of the two aviation fuel installations at the station. The third defended wall lies at the end of the central traverse, facing the airfield.

Following vegetation clearance in 2016, the defended walls could be recorded. The defended wall on the south side of the fighter pen is built of brick in three lengths to fit the curve of the earthwork traverse. The walls are 1.8m high and are capped with concrete. The back wall is 33 cm thick, the defended wall is 58cm thick. The western and middle sections are each 4.9m long; the eastern section is 4m long. There are seven loopholes in the defended wall, each with a concrete firing shelf. All are in good condition except one which has been damaged by the recent clearance work. There are entrances at the west and east ends, the eastern entrance also gives access to the fighter pen blast shelter.

The defended wall on the west side of the fighter pen is 9.1m N/S and 2m E/W. The back wall is 5.9m long and 33 cm thick, the defended wall is 58cm thick. The structure is 1.8m high and the walls are capped with concrete. There are six loopholes which all have concrete firing shelves in place.

The defended wall on the end of the central traverse has been partially demolished. The south wall stands up to 1.7m high and is 33cm thick; the defended wall is 58cm thick and stands up to 1m high. It is angled, built in five sections, with entrances to the west and east and six or seven loopholes. Only one of the firing shelves remains in place.

Current management: The fighter pen is between the airfield perimeter track and Trickey Warren Lane, in an area of unmanaged grassland.

Management issues: Overhanging trees and scrub encroachment; a barbed wire fence prevents access to the site.

Condition: The structure is in a poor condition due to the amount of scrub encroachment.

Photographs: 231a Vegetation encroachment on the fighter pen aircraft bay

231b Defended wall at the end of the central traverse

231c Defended wall on the west side of the fighter pen

231d Defended wall on south side of the fighter pen

231e Firing shelves inside southern defended wall

231f Defended wall on west side of fighter pen

231g Firing shelf and loophole on north side of western defended wall

231h Defended wall on end of central traverse

231i Detail of intact firing shelf, defended wall at end of central traverse

Name: FLIGHT OFFICE 200 NGR: 320450 | 14888

Francis 1997: 60 Somerset HER: 44721 Date of visit: 16 July 2015

Description: A T-shaped temporary brick building with external render and asbestos sheet roof. This was the flight office for the west group of fighter pens. The NE elevation was the only accessible part of the building. The doorway has been bricked up but metal window frames and wooden ventilation frame survive. The interior was not accessed due to the vegetation around the building, but photographs taken in 2009 show that, although it livestock pens have been built inside, original features such as a painted, sliding wooden door and metal window frames survive.

Current management: The building lies between the airfield perimeter track and Trickey Warren Lane, in an area of unmanaged grassland.

Management issues: Overhanging trees and scrub encroachment

Condition: The building appears to be in a poor condition due to the amount of scrub encroachment.

Photographs: 200a NE elevation

200b NW end of building

Name: LATRINE BLOCK 201 NGR: 320416 | 14905

Francis 1997: 9 Somerset HER: 44840 Date of visit: 9 July 2015

Description: A temporary brick building with external render and asbestos sheet roof supported on steel roof trusses. This was the latrine block for the personnel working in the adjacent flight office. Access to interior was not possible but original features include some of the metal window frames.

Current management: The building lies between the airfield perimeter track and Trickey Warren Lane, in an area of unmanaged grassland. The building is used for storage and vegetation around it is managed.

Management issues: Overhanging branches from hedge behind

Condition: Good

Photographs: 201a NE and SE elevations

201b NE elevation

Name: TRANSFORMER PLINTH 540 NGR: 320297 | 14953

Francis 1997: 5 Somerset HER: 44839 Date of visit: 9 July 2015

Description: A small brick enclosure with 9 inch thick walls. This housed a transformer and switchbox and was one of several transformers around the airfield, fed from the main sub-station in the northern technical area, which maintained a constant voltage. Access to the interior was not possible due to the vegetation.

Current management: The building lies between the airfield perimeter track and Trickey Warren Lane, in an area of unmanaged grassland.

Management issues: Scrub encroachment and overhanging branches

Condition: Poor due to the scrub encroachment

Photographs: 540 The SW and SE walls

Name: BLISTER HANGAR 214 NGR: 320331 | 14445

Francis 1997: 63 Somerset HER: 12999 Date of visit: 9 July 2015

Description: A blister hangar is a small dispersal shed for the storage and maintenance of small aircraft. This hangar is a Miskins Over type, built of welded steel rib sections,

bolted together to form an arch supporting a covering of corrugated iron sheets. The ends are blocked with metal sheets and access to the interior was not possible. Much of the original structure does appear to be in place and a visit in 2009 noted aluminium fittings for the canvas curtains which originally covered the ends of the hangar (www.atlantikwall.co.uk).

Current management: The hangar is used as a store

Management issues: Vegetation encroachment is beginning to be a problem around the hangar and the hardstanding in front.

Condition: Moderate, although the interior was not inspected

Photographs: 214a The hangar from the SW

214b The NW elevation with the aircraft hardstanding in front

214c NW side showing some of the original steel framework, later repairs and cladding

Name: PILLBOX 514 NGR: 321051 115762

Francis 1997: not given Somerset HER: 44562 Date of visit: 16 July 2015

Description: A seven sided brick pillbox built into the north side of a hedge on the north side of the airfield. The entrance is on the south side and the two gun loopholes either side of the door have been blocked. On the west and east sides of the pillbox door are heavy machine gun loopholes; the remaining four sides each contain gun loopholes. Original features include the iron shutters for the heavy machine gun loopholes, one fastened in the open position to a hook in the ceiling.

This pillbox, like 522, has been recently repaired. Brickwork has been repointed and a turf cap sits on bituminous sheets over the roof to prevent water ingress.

Current management: The pillbox is in a field which is used for pasture and mown for forage; at the time of the visit a festival was taking place.

Management issues: Overhanging branches and scrub encroachment on the turf capped roof.

Condition: Good

Photographs: 514a South side with doorway and blocked gun loopholes. Recent repair work to roof and repointing

514b Heavy machine gun loophole with open iron shutter

Name: PILLBOX 515 NGR: 3201067 115683

Francis 1997: 11 Somerset HER: 44561 Date of visit: 8 July 2016

Description: A seven sided brick pillbox with doorway and two gun loopholes on west side. Large loophole for heavy machine gun on south side, facing the airfield; gun loopholes in each of the five other walls. Original features include the anti-ricochet wall, iron shutters with retaining hook in ceiling for the heavy machine gun loop and the firing shelf behind.

Current management: The pillbox stands in an area which is regularly grazed and mown for forage; at the time of the visit part of it was used as a festival car park.

Management issues: Vegetation around base of the structure and scrub/saplings on roof.

Condition: Good to moderate – brickwork and pointing deteriorating due to weathering.

Photographs: 515a The east and north sides of the pillbox with gun loopholes

515b The west and south sides of the pillbox

515c The heavy machine gun loophole on the south side

515d The iron shutter, firing shelf and part of the anti-ricochet wall

Name: PILLBOX 516 NGR: 320990 115691

Francis 1997: 12 Somerset HER: 44560 Date of visit: 8 July 2015

Description: A seven sided brick pillbox with doorway and two gun loopholes on west side. Large loophole for heavy machine gun on south side, facing the airfield; gun loopholes in each of the five other walls. Original features include the anti-ricochet wall and iron shutters of the heavy machine gun loop.

Current management: The pillbox stands in an area which is regularly grazed and mown for forage; at the time of the visit part of it was used as a festival car park.

Management issues: Vegetation around base of the structure and scrub on roof.

Condition: Good to moderate – brickwork and pointing deteriorating due to weathering.

Photographs: 516a The west and south sides of the pillbox

516b The heavy machine gun loophole

Name: PILLBOX 517 NGR: 320435 115771

Francis 1997: 13 Somerset HER: 44558 Date of visit: 8 July 2015

Description: A seven sided brick pillbox with doorway and two gun loopholes on the east side, and a large loophole for heavy machine gun on south side, facing the airfield; gun loopholes in each of the five other walls. Surviving features include the firing shelf for the heavy machine gun loophole with iron shutter and retaining hook in ceiling.

There is no anti-ricochet wall, but a low internal wall has been built across the interior in the post-war period.

Current management: The pillbox stands in an area which is regularly grazed and mown for forage.

Management issues: Vegetation around base of the structure and scrub/saplings on roof.

Condition: Good to moderate: brickwork and pointing deteriorating due to weathering.

Photographs: 517a Pillbox 517 with 518 to the west

517b The firing shelf for the heavy machine gun with loophole and iron shutter

517c The heavy machine gun loophole

Name: PILLBOX 518 NGR: 320372 115780

Francis 1997: 14 Somerset HER: 44557 Date of visit: 8 July 2015

Description: A seven sided brick pillbox with doorway and two gun loopholes on the east side, and a large loophole for heavy machine gun on south side, facing the airfield; gun loopholes in each of the five other walls. There is no anti-ricochet wall.

Current management: The pillbox stands in an area which is regularly grazed and mown for forage.

Management issues: Vegetation around base of the structure and scrub/saplings on roof.

Condition: Good to moderate – brickwork and pointing deteriorating due to weathering.

Photographs: 518a East and south sides of the pillbox with several ash saplings on roof

518b The heavy machine gun loophole

Name: PILLBOX 519 NGR: 320372 115871

Francis 1997: 15 Somerset HER: 44559 Date of visit: 8 July 2015

Description: The remains of a seven sided brick pillbox, with a door to the east and heavy machine loop to the north. The remains of what could be an anti-ricochet wall can be seen.

Current management: The pillbox stands in an area which is regularly grazed and mown for forage.

Management issues: Vegetation around base of the structure and scrub/saplings on roof.

Condition: A ruinous structure

Photographs: 519 The site from the east

Name: PILLBOX 520 NGR: 320110 115170

Francis 1997: Not given Somerset HER: 44555

Date of visit: 10 October 2015

Description and condition: Access not possible due to fencing and tree surgery in progress. Somerset HER records a pillbox roof buried in the hedge.

Photographs: Somerset HER 44555

Name: PILLBOX 521 NGR: 320106 115047

Francis 1997: Not given Somerset HER: 44554 Date of visit: 20 October 2015

Description: Two large concrete slabs on the hedge bank, covered with ivy, are probably the roof of pillbox [521].

Current management: The concrete slabs lie in the hedge on the NE side of Trickey Warren Lane, to the SW of the airfield perimeter track.

Condition: A ruinous structure

Photographs: 521 The concrete slabs from Trickey Warren Lane

Name: PILLBOX 522 (& 33) NGR: 320163 115017

Francis 1997: 16 Somerset HER: 44349 Date of visit: 9 July 2015

Description: A seven sided brick pillbox with doorway and two gun loopholes on the SE side, and a large loophole for heavy machine gun on the NE side, facing the airfield; gun loopholes in each of the five other walls. The iron shutter with two horizontal iron bars survive in the heavy machine gun loophole. This pillbox is named on the RSP as a quadrant post for the bombing range centred along Trickey Warren Lane.

This pillbox was repaired in 2010, when repointing and replacement of brickwork damaged by water ingress was carried out. In 2013 further repairs were undertaken: the works aimed to protect the roof with a detachable 'hat' to prevent water entering the roof join and to shed water clear of the structure as the greatest damage was caused by frost action on saturated brickwork. The roof of the pillbox was covered with overlapping sheets of corrugated bitumen, weighted down and masked by a 12" turf cap, contained by a ring of sand bags (information in Somerset HER 44349).

Current management: The pillbox lies in the hedge on the NE side of Trickey Warren Lane, to the SW of the airfield perimeter track.

Management issues: Overhanging branches, vegetation around base and scrub/saplings on turf cap.

Condition: Good

Photographs: 522a The SE and SW sides of the pillbox

522b Trickey Warren Lane and the pillbox

Name: PILLBOX 523 NGR: 320487 114403

Francis 1997: 17 Somerset HER: 44533 Date of visit: 16 July 2015

Description: A seven sided brick pillbox built into a hedge south of the airfield. The entrance is on the east side and there are two gun loopholes either side of the door. On the north and south sides of the pillbox are heavy machine gun loopholes; the remaining four sides each contain gun loopholes. Original features include firing shelf for the heavy machine gun loopholes and across-shaped blast wall which supports the roof.

Current management: On the edge of an arable field

Management issues: Overhanging branches and scrub/sapling encroachment; the edge of arable cultivation is less than 1m away

Condition: Good

Photographs: 523a The edge of arable cultivation is less than 1m from the pillbox

523b The heavy machine gun loophole

Name: GUNPIT 530 NGR: 320187 115007

Francis 1997: 52 Somerset HER: 35932 Date of visit: 9 July 2015

Description: A keyhole-shaped brick lined gunpit, built into a hedge on the NE side of Trickey Warren Lane. Original features include a Motley stalk AA gun mounting on a concrete block and alcoves for ammunition boxes.

Current management: The gunpit lies in the hedge on the NE side of Trickey Warren Lane, to the SW of the airfield perimeter track.

Management issues: Some vegetation encroachment

Condition: Good

Photographs: 530a The gunpit from the SE

530b Detail of the Motley stalk

530c Bird's nest in the ammunition box alcove

Name: GUNPIT 532 NGR: 320360 114410

Francis 1997: Somerset HER: 12998 Date of visit: 16 July 2015

Description and condition: No access due to vegetation. Photograph taken in 2009 shows that vegetation was beginning to encroach across most of the brick lined gunpit.

Photograph: www.flickr.com/photos/owenhurrell/albums

Name: OFFICERS' QUARTERS (DEFENCE UNIT) 171 NGR: 320515 115750

Francis 1997: Not given Somerset HER: Not in record Date of visit: 8 July 2015

Description: A concrete plinth is the base for a Laing hut which was the officers' quarters for the defence unit stationed at RAF Culmhead.

Current management: The hut base lies on the edge of a former hedge in an area which is regularly grazed and mown for forage.

Management issues: None

Condition: Only the base of the building remains

Photographs: 171 Concrete base from the east

Name: TRANSFORMER PLINTH 539 NGR: 320173 115386

Francis 1997: 4 Somerset HER: 35931 Date of visit: 20 October 2015

Description and condition: Access not possible due to fencing and tree surgery in progress. The brick enclosure was extant in February 2015 and appeared in good

condition (www.atlantikwall.co.uk).
Photographs: www.atlantikwall.co.uk

Name: ACCOMMODATION BUILDINGS FOR DEFENCE UNIT 205-208 NGR:
320140 115270

Francis 1997: Not given Somerset HER: 44556

Description and condition: Access not possible due to fencing and tree surgery in progress. At least one base for a Nissen hut was extant in February 2015 (www.atlantikwall.co.uk).

Photographs: www.atlantikwall.co.uk

Name: SLIT TRENCHa NGR: 320216 114428

Somerset HER: 35929

Date of visit: 9 July 2015

Description: Small earthwork mound, 3x2x1m high on the north side of hedge, probably the remains of a slit trench.

Current management: On edge of a field boundary

Condition: Good

Photographs: TRENCHa

Name: SLIT TRENCHb NGR: 320280 114420

Somerset HER: 35930

Date of visit: 9 July 2015

Description and condition: Not found due to dense vegetation at time of visit.

Somerset HER records an earthwork by the field boundary and a photograph taken in November 1999 shows the mound in good condition.

Photographs: Somerset HER 35930

APPENDIX 3: RAF CHURCH STANTON AND RAF CULMHEAD TIMELINE

Early 1940: Area of land around Trickey Warren Farm listed by the Air Ministry as an emergency landing ground

c July 1940: 520 acres of land requisitioned at Trickey Warren from the owners, the Phillips family at Burnworthy Manor, less than a mile to the NW of the airfield site. This was for a satellite airfield in 10 Group, a forward airfield for the Fighter Sector centred at RAF Colerne (Wiltshire)

12 August – 15 September 1940: Battle of Britain

November 1940: Contract for the construction of 3 tarmac runways on Trickey Warren awarded to L J Speight and Partners Ltd, hardcore from Triscombe Quarry used

Winter 1940/1941: First phase of the airfield buildings, including the fighter

Early 1941: Trickey Warren is reallocated to become a satellite airfield for the Fighter Sector based at RAF Exeter, the principal fighter station in the area

9 June 1941: Half of the aircraft from 307 and 504 Squadrons (Defiants and Hurricanes) at Exeter are dispersed to RAF Church Stanton, following damage to RAF Exeter

01 August 1941: The airfield is officially opened as RAF Church Stanton, an operational fighter station, rather than a satellite airfield

Early August 1941: Hurricanes of 316 Squadron flown in by their Polish pilots become the first operational fighters at RAF Church Stanton, 302 Squadron – Polish pilots flying Hurricanes – join 316 Squadron at RAF Church Stanton

04 August 1941: Hurricanes Z2585 and Z2702 conduct the first operation from RAF Church Stanton: a convoy patrol of 1.5 hours

05 September 1941: 302 Squadron redeployed to RAF Warmwell (Dorset)

November 1941: 316 Squadron converts from Hurricanes to Spitfire VB

12 December 1941: 316 Squadron redeployed to RAF Northolt (Middlesex)

12 December 1941: 306 Squadron become the third Polish unit to be based at RAF Church Stanton

15 February 1942: 02 Detachment of RAE, Farnborough, (Hampshire) move from Exeter to RAF Church Stanton, working on balloon cable cutting experiments

03 May 1942: 306 Squadron leave RAF Church Stanton for RAF Kirton-in-Lindsey (Lincolnshire)

May 1942: Construction of Dunkeswell airfield begins

07 May 1942: 154 Squadron (Spitfires) arrive at RAF Church Stanton from RAF Duxford (Cambridgeshire)

07 June 1942: 154 Squadron (Spitfires) leave RAF Church Stanton for RAF Hornchurch (Essex)

08 June 1942: 313 Squadron, a Czech squadron, flying Spitfire Vbs, arrive at RAF Church Stanton from RAF Fairlop (Essex)

28 June 1942: 313 Squadron depart for RAF Warmwell

11 July 1942: 313 Squadron arrive back at RAF Church Stanton from RAF Warmwell

26-29 September 1942: 313 Squadron detached to Portreath for Operation Crucible with USAAF. Replaced by 12 Group Spitfires from RAF Kingscliffe (Northamptonshire)

10 October 1942: 312 Squadron arrives at RAF Church Stanton from RAF Harrowbeer (Devon)

20 February 1943: 312 Squadron leaves RAF Church Stanton for RAF Warmwell

6 March 1943: 312 Squadron arrives back at RAF Church Stanton from RAF Warmwell

Spring 1943: Construction of Upottery airfield begins

24 June 1943: 312 Squadron leave RAF Churchstanton for RAF Skeabrae (Orkney)

234 Squadron arrive at RAF Churchstanton from RAF Skeabrae for a short time

28 June 1943: 313 Squadron leaves RAF Churchstanton for RAF Peterhead (Aberdeenshire), 66 Squadron arrive at RAF Churchstanton from RAF Sumburgh (Shetland)

28 June 1943: RAF Dunkeswell officially opens

30 June 1943: 504 Squadron arrive at RAF Churchstanton from RAF Ibsley (Hampshire)

9 July 1943: 234 Squadron depart RAF Churchstanton for RAF Honiley (Warwickshire)

August 1943: 66 and 504 Squadrons depart for RAF Redhill (Surrey) to prepare for Operation Starkey

19 August 1943: 12 USAAF P47 Thunderbolt fighter planes fly into RAF Churchstanton

Mid September 1943: 131 Squadron arrive at RAF Church Stanton from RAF Redhill (Surrey), 165 Squadron arrive at RAF Church Stanton from RAF Kenley (Surrey)

22 December 1943: RAF Churchstanton is officially re-named as RAF Culmhead

10 February 1944: The Culmhead wing – 131 and 165 Squadrons – leave RAF Culmhead for RAF Colerne

17 February 1944: RAF Upottery officially opens

10 March 1944: 165 Squadron return to RAF Culmhead for one day to support the US landing exercises in the South Hams

12 March 1944: The RAE unit returns to Farnborough

18 March 1944: A C-47 Dakota lands at the airfield, carrying General Dwight Eisenhower, Supreme Allied Commander, European Theatre of Operations, who was on an informal visit to a nearby general

07 April 1944: 610 Squadron arrive at RAF Culmhead from RAF Exeter, with the latest Spitfire XIV

10 April 1944: 286 Squadron arrive at RAF Culmhead from RAF Westonzoyland (Somerset), 587 Squadron arrive at RAF Culmhead from RAF Westonzoyland and stay until the closure of the station

20 April 1944: 24 Fighter Wing – 887 and 894 Squadrons of the Fleet Air Arm – arrive at RAF Culmhead from Northern Ireland

9 May 1944: Air Vice Marshal Sir Roderick Hill, AOC-in-C ADGB and Air Vice Marshal Charles Steele, AOC 10 Group visit RAF Culmhead

15 May 1944: 24 Fighter Wing leave RAF Culmhead for Northern Ireland, having flown around 400 sorties over Occupied France while based at RAF Culmhead

16 May 1944: 610 Squadron leave RAF Culmhead for RAF Bolt Head and RAF Harrowbeer (Devon), 616 Squadron arrive at RAF Culmhead from RAF Fairwood Common (South Wales)

20 May 1944: 286 Squadron moves from RAF Culmhead to RAF Colerne

24 May 1944: 610 Squadron leave RAF Culmhead for RAF Harrowbeer, 131 Squadron arrive at RAF Culmhead from RAF Harrowbeer, 126 Squadron arrive at RAF Culmhead from RAF Sawbridgworth (Essex)

05 June 1944: All station personnel are confined to base and orders given to paint black and white identification stripes around the rear fuselage and wings of the Spitfires

06 June 1944: D-Day

02 July 1944: 126 Squadron leave RAF Culmhead for RAF Harrowbeer

12 July 1944: Two Gloster Meteor Mk I fighters – the first British jet fighters - arrive

from Farnborough at RAF Culmhead for tests by 616 Squadron

21 July 1944: 616 Squadron leave RAF Culmhead for RAF Manston (Kent)

10 August 1944: 790 Squadron Fleet Air Arm arrive at RAF Culmhead from Charlton Horethorne (RNAS) (Somerset)

27 August 1944: 131 Squadron leave RAF Culmhead for RAF Friston (Sussex)

22 September 1944: 587 Squadron leave RAF Culmhead for RAF Westonzoyland

26 September 1944: 790 Squadron leave RAF Culmhead for Charlton Horethorne

09 December 1944: The airfield administration at RAF Culmhead is transferred to No 23 Group, Flying Training Command and 3 Glider Training School moves to RAF Culmhead from RAF Zeals (Wiltshire)

13 December 1944: A large detachment of Miles Master tugs and Hotspur gliders fly into RAF Culmhead

End of January 1945: 3 Glider Training School moves from RAF Culmhead to RAF Exeter, RAF Culmhead becomes the base for the Glider Instructors School, training staff pilots to man the Glider Training Schools, equipped with Albemarle, Horsa and Hotspur gliders towed by Miles Master tugs

08 May 1945: V-E Day

End of July 1945: The Glider Instructors School moves from RAF Culmhead to RAF Wellesborne Mountford (Warwickshire)

15 August 1945: V-J Day (UK)

August 1945: RAF Culmhead is used as a storage site by RAF 67 Maintenance Unit, based at Marhalsea's Garage, Wellington Road, Taunton

August 1946: RAF Culmhead is closed

1952/1953: Government Communications Wireless Station moves from Ivy Farm, Knockolt (Kent) to Culmhead which becomes CSOS Culmhead (Composite Signals Organisation Station), and the Radio-Intercept Station for FISH: non-morse radio traffic

By 1984: Culmhead is one of six GCHQ listening stations in Britain. It picks up short-wave high frequency transmissions from across the world, but mainly from the three GCHQ stations at Washington, Hong Kong and Ascension Island. Some 35 large aerials – rhombics - are erected across the airfield site.

1987: The Central Training School for GCHQ moves from Bletchley Park to CSOS Culmhead

1998-1999: The missions at CSOS Culmhead are transferred to GCHQ Scarborough and CSOS Culmhead closes

By 2001: Rhombic aerial masts at Culmhead dismantled

Early 2001: Blackdown House, the main office block of the former GCHQ site, is occupied by DEFRA as their SW Headquarters for the co-ordination of Foot and Mouth Disease in SW England

2001: Culmhead Business Park opens using the GCHQ buildings

APPENDIX 4: RAF AND RNAAS SQUADRONS SERVING AT RAF CHURCH STANTON AND RAF CULMHEAD

307 SQUADRON: JUNE 1941 FOLLOWING DAMAGE TO BASE AT RAF EXETER

No 307 'Lwowski' Squadron was a Polish manned night fighter, originally a defensive unit, then flying as night intruder missions from May 1943 until January 1945 when the Squadron became a bomber support unit

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Boulton Paul Defiant I

Richard, J 2011 No 307 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/307_wwII.html

504 SQUADRON: JUNE 1941 FOLLOWING DAMAGE TO BASE AT RAF EXETER

No 504 'City of Nottingham' Squadron was formed as a Special Reserve bomber squadron in 1928 and spent the Second World War serving as a fighter squadron, ending the war as one of the first Meteor jet squadrons.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Hawker Hurricane I

Richard, J 2011 No 504 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/504_wwII.html

316 SQUADRON: AUGUST-DECEMBER 1941

No 316 'Warszawski' Squadron was a Polish fighter squadron, flying offensive sweeps, then moving to escort duties in 1944. The squadron was formed in 1941 as a fighter squadron, used to provide defensive cover for the south west.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Hawker Hurricane IIA and IIB; Supermarine Spitfire VB and VC

Richard, J 2011 No 316 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/316_wwII.html

302 SQUADRON: AUGUST-SEPTEMBER 1941

No 302 'Poznanski' Squadron was Polish manned fighter squadron that fought in the later stages of the Battle of Britain, then became a fighter-bomber squadron in 1944

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Hawker Hurricane IIB; Supermarine Spitfire VB and VC

Richard, J 2011 No 302 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/302_wwII.html

306 SQUADRON: DECEMBER 1941-MAY 1942

No 306 'Torunski' Squadron was a Polish manned fighter squadron, taking part in the offensive sweeps over France, then joining the Second Tactical Air Force. In 1944 306 Squadron were involved in anti-flying bomb campaigns

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VB

Richard, J 2011 No 306 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/306_wwII.html

154 SQUADRON: MAY-JUNE 1942

No 154 Squadron was a fighter squadron that served in the UK in 1942 then moved to the Mediterranean providing bomber escorts

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VA and VB

Richard, J 2010 No 154 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/154_wwII.html

313 SQUADRON: JUNE 1942-JUNE 1943

No 313 Squadron was the third Czechoslovakian fighter squadron to be formed in the RAF. It was formed in 1941 as a Spitfire equipped fighter squadron

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VB and VC

Richard, J 2011 No 313 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/313_wwII.html

312 SQUADRON: OCTOBER 1942-FEBRUARY 1943

MARCH-JUNE 1943

No 312 Squadron was a Czechoslovak manned fighter squadron, formed during the Battle of Britain then flying fighter-bomber and bomber escort missions

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Hawker Hurricane IIB; Supermarine Spitfire VB and VC

Richard, J 2011 No 312 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/312_wwII.html

234 SQUADRON: JUNE-JULY 1943

No 234 Squadron was a fighter squadron which served in the UK throughout the Second World War

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VB and VC

Richard, J 2011 No 234 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/234_wwII.html

66 SQUADRON: JUNE-AUGUST 1943

No 66 squadron was a fighter squadron equipped with Spitfires in 1938. It took part in the Battle of Britain, flew coastal patrols and bomber escort duties in the South West and advanced east across Europe after D-Day.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VA, VB and VC

Richard, J 2009 No 66 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/66_wwII.html

504 SQUADRON: JUNE-AUGUST 1943

No 504 'County of Nottingham' Squadron was formed in 1928 as a Special Reserve Bomber squadron and served in the Second World War as a fighter squadron

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VB and VC

Richard, J 2011 No 504 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/504_wwII.html

131 SQUADRON: SEPTEMBER 1943-FEBRUARY 1944 & MAY 1944-AUGUST 1944
No 131 Squadron was formed as a Spitfire fighter squadron in 1941, carrying out defensive and offensive duties. In March 1944 the squadron converted to the high altitude Spitfire VII which it used for bomber escorts. The squadron moved to the Far East in 1945.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire IX; Supermarine Spitfire VII

Richard, J 2010 No 131 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/131_wwII.html

165 SQUADRON: MARCH-APRIL 1944

No 165 'Ceylon' Squadron was a fighter squadron formed in 1942, carrying out defensive and offensive sweeps, together with bomber escorts and convoy patrols. At the end of the war in Europe the squadron moved to Norway to form part of that country's air defences.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire IX

Richard, J 2011 No 165 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/165_wwII.html

286 SQUADRON: APRIL-MAY 1944

No 286 Squadron operated several different aircraft in detachments at airfields across the South West. These were used for gunlaying training and target towing.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Boulton Paul Defiant I and II; Oxford I and II; Hawker Hurricane IIC and IV; Martinet I

Richard, J 2011 No 286 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/286_wwII.html

587 SQUADRON: APRIL-OCTOBER 1944

No 587 Squadron were an anti-aircraft co-operation unit serving in the south west of England and South Wales from late 1943 until the end of the war. The squadron was used to help anti-aircraft batteries calibrate their guns and radar equipment, towing targets and providing aircraft to fly known courses and speeds.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Hawker Henley III; Miles Martinet I; Oxford I and II; Hawker Hurricane IIC and IV

Richard, J 2012 No 587 (RAF): Second World War http://www.historyofwar.org/air/units/RAF/587_wwII.html

887 AND 894 SQUADRON (24 FIGHTER WING OF FLEET AIR ARM): APRIL 1944

887 and 894 Squadron served in Salerno 1943, Norway 1944, English Channel 1944 and the Far East in 1945

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Seafire III

www.fleetairarmoa.org/fleet-air-arm-squadrons

610 SQUADRON APRIL-MAY 1994

No 610 (County of Chester) Squadron was a fighter squadron that took part in the Battle of Britain, before taking part in fighter sweeps, shipping reconnaissance duties and anti flying bomb campaigns

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire Vb and Vc

Richard, J 2012 No 610 (RAF): Second World War http://www.historyofwar.org/air/units/RAF/610_wwII.html

616 SQUADRON: MAY-JULY 1944

No 616 (South Yorkshire) Squadron was a fighter squadron that became the first operational squadron in the world to use a jet aircraft when it was equipped with the Gloster Meteor in July 1944.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire VII; Gloster Meteor I

Richard, J 2012 No 616 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/616_wwII.html

126 SQUADRON: MAY-JULY 1944

No 126 Squadron was a fighter squadron that took part in the defence of Malta in 1941 and 1942; the invasion of Italy in 1943 and the D-Day invasions in 1944.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Supermarine Spitfire IX

Richard, J 2010 No 126 Squadron (RAF): Second World War http://www.historyofwar.org/air/units/RAF/126_wwII.html

790 SQUADRON: AUGUST/SEPTEMBER 1944

No 790 Squadron was a Fighter Direction Training Unit of the Fleet Air Arm

AIRCRAFT WHEN BASED AT RAF CULMHEAD

(?) Supermarine Seafire

www.fleetairarmoa.org/fleet-air-arm-squadrons

3 GLIDING TRAINING SCHOOL: DECEMBER 1944-JULY 1945

No 3 Glider Training School was set up in May 1942 at RAF Stoke Orchard, Gloucestershire, training pilots for the Glider Pilot Regiment.

AIRCRAFT WHEN BASED AT RAF CULMHEAD

Albemarle, Horsa, Hotspur gliders and Miles Master tugs

The Glider Pilot Regiment 1942-1945 (www.myweb.tiscali.co.uk/marfleet/GPR/regiment.htm)

APPENDIX 5

MEASURES FOR VEGETATION CONTROL AT SCHEDULED MONUMENTS 1019845, 1019846, 1020492, RAF CULMHEAD, CHURCHSTANTON

By Hazel Riley



MEASURES FOR VEGETATION CONTROL AT
SCHEDULED MONUMENTS 1019845, 1019846,
1020492, RAF CULMHEAD, CHURCHSTANTON

By Hazel Riley

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Front cover The defended wall and tarmac apron, fighter pen 227 (Hazel Riley)

Figure 1 Site location

Figure 2 Map showing the vegetation clearance and control required on the fighter
pens and associated structures, Scheduled Monument 1020492

Figure 3 Map showing the vegetation clearance and control required on the air traffic
control buildings and the pillboxes, Scheduled Monuments 1019845 and 1019846

Figure 4 Example of good practice: vegetation control at structure **201** (Hazel Riley)

1 INTRODUCTION

1.1 This document, with accompanying maps, sets out the vegetation control measures required at three groups of Scheduled Monuments, in accordance with the Agreement under Section 106 of the Town and Country Planning Act 1990 relating to the development of land at Trickey Warren Churchstanton, Taunton, Somerset, 24 November 2014. The document was prepared following a site meeting with representatives from Historic England, Anesco and the Culmhead Solar Park Biodiversity Group on 12 August 2015.

1.2 The vegetation control will be undertaken by Anesco, or on their behalf by appointed contractors.

1.3 All clearance must be carried out to the standards required by Historic England and set out in Appendix I.

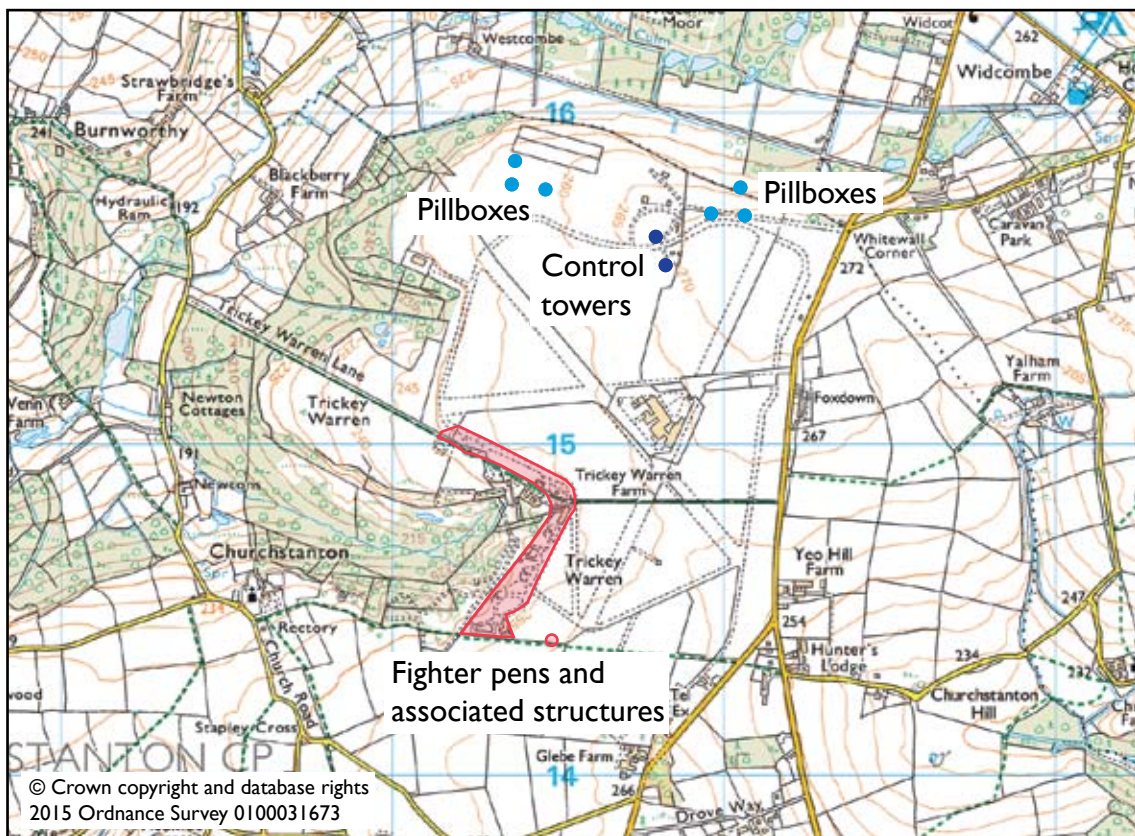
2 SCHEDULED MONUMENT CONSENT

2.1 Scheduled Monument Consent, which lasts for 5 years, will be required as a condition of the vegetation control and will be required to be renewed quinquennially, through the lifetime of the solar array, as part of the Section 106 agreement.

3 SITE LOCATION, DESIGNATION AND NUMBERING

3.1 The sites are three groups of Scheduled Monuments at RAF Culmhead, Churchstanton, Somerset, in the Blackdown Hills Area of Outstanding Natural Beauty

Fig 1 Location map



(AONB). Five fighter pens and associated structures lie at the SW edge of the airfield, centred at ST 2050 1481. Two aircraft control buildings lie at the northern end of the airfield, at ST 2082 1553; the groups of pillboxes lie to the NW and NE of these buildings, centred at ST 2036 1578 and ST 2106 1567 respectively (Fig 1).

3.2 County: Somerset District: Taunton Deane Parish: Churchstanton

Historic England Designations: Scheduled Monuments

List entry number 1019845 air traffic control buildings

List entry number 1019846 pillboxes

List entry number 1020492 fighter pens and associated structures

Landscape Designation: Blackdown Hills Area of Outstanding Natural Beauty

3.3 The numbering of the individual structures at RAF Culmhead is based on the wartime MOD drawings for the airfield and these are shown as emboldened numbers (eg **214**). For comparison with previous work, a table (Appendix 2) lists the structures in the three scheduled areas and gives these reference numbers and the corresponding Somerset Historic Environment Record (HER) numbers.

4 SCHEDULED MONUMENT 1020492 FIGHTER PENS AND ASSOCIATED STRUCTURES

4.1 This area contains five fighter pens, each with defended brick walls, earthwork traverses retained by dwarf brick walls, underground blast shelters for the flight crew and tarmac aprons and access ways for the aircraft. Several associated buildings and other structures survive and include the office and accommodation buildings for the flight crews, a blister hangar, pillboxes and gun pits (Fig 2).

4.2 Scrub

The clearance of scrub and vegetation, including overhanging large limbs and all immature trees, saplings, bramble and bracken is required around and on each structure, building and fighter pen as shown on Figure 2. Tree and sapling stumps to be treated as set out in Appendix 1. A strip 1-2m wide around the base of each structure, building and fighter pen is to be kept clear.

4.3 Trees

Larger trees which are growing upon the structure of the fighter pens will be removed if possible; these are mostly sycamore and elder, with some willow and birch. Tree and sapling stumps to be treated as set out in Appendix 1. However, where these trees are significant in size or difficult to remove these may be retained with reduction by crown lifting or other appropriate tree surgery. Other mature trees such as the mature beech in and around the hedge banks will be retained with some tree surgery.

4.4 The roofed structures

All of the accommodation buildings for the flight crews are set close to the hedge and overhanging limbs encroach on the roofs. The removal of these will be done without disturbance to the roofs because of the issue of potential asbestos. Ivy will not be removed from the buildings as this process is likely to cause damage to the structures.

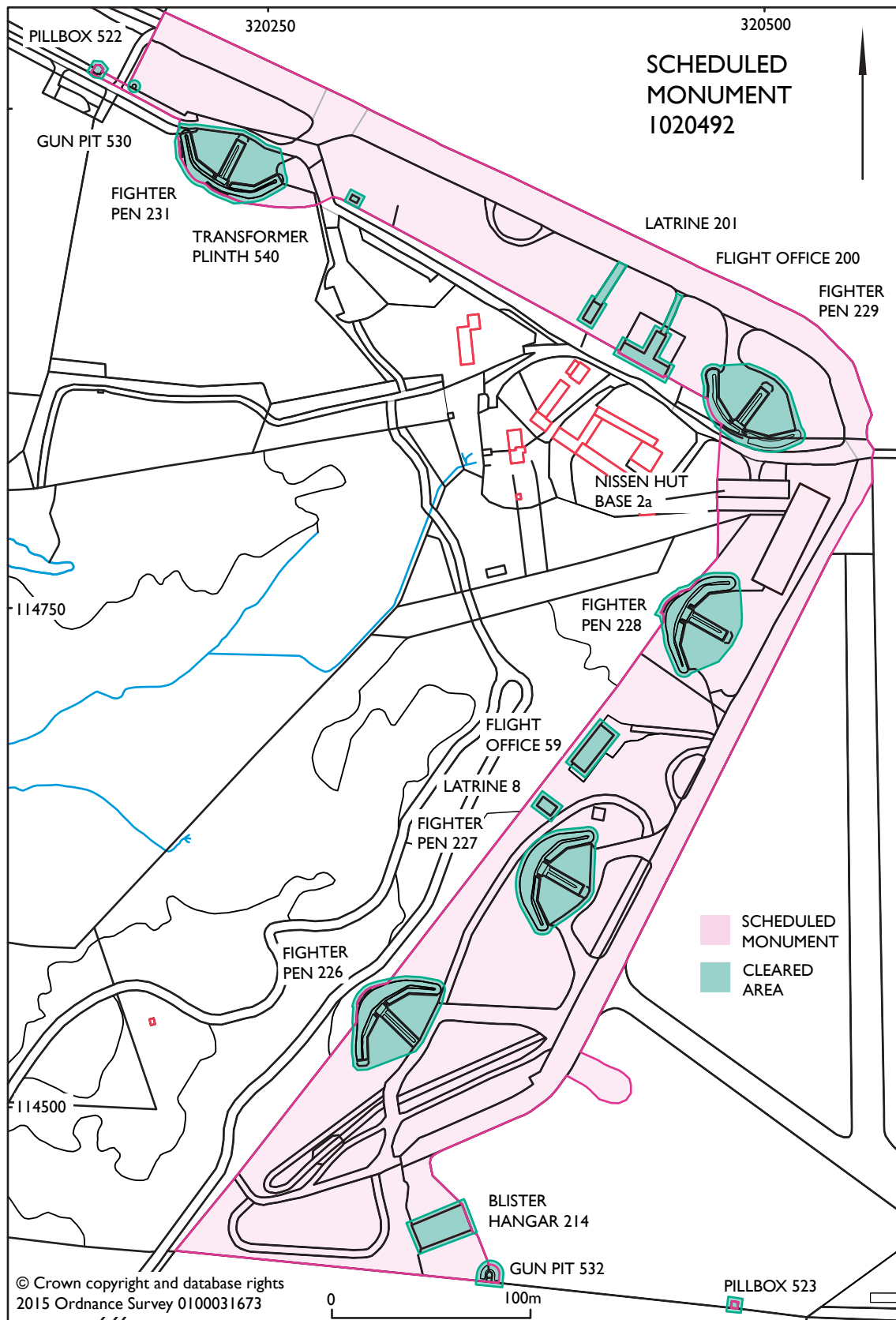


Fig 2 Map showing the vegetation clearance and control required on the fighter pens and associated structures, Scheduled Monument 1020492

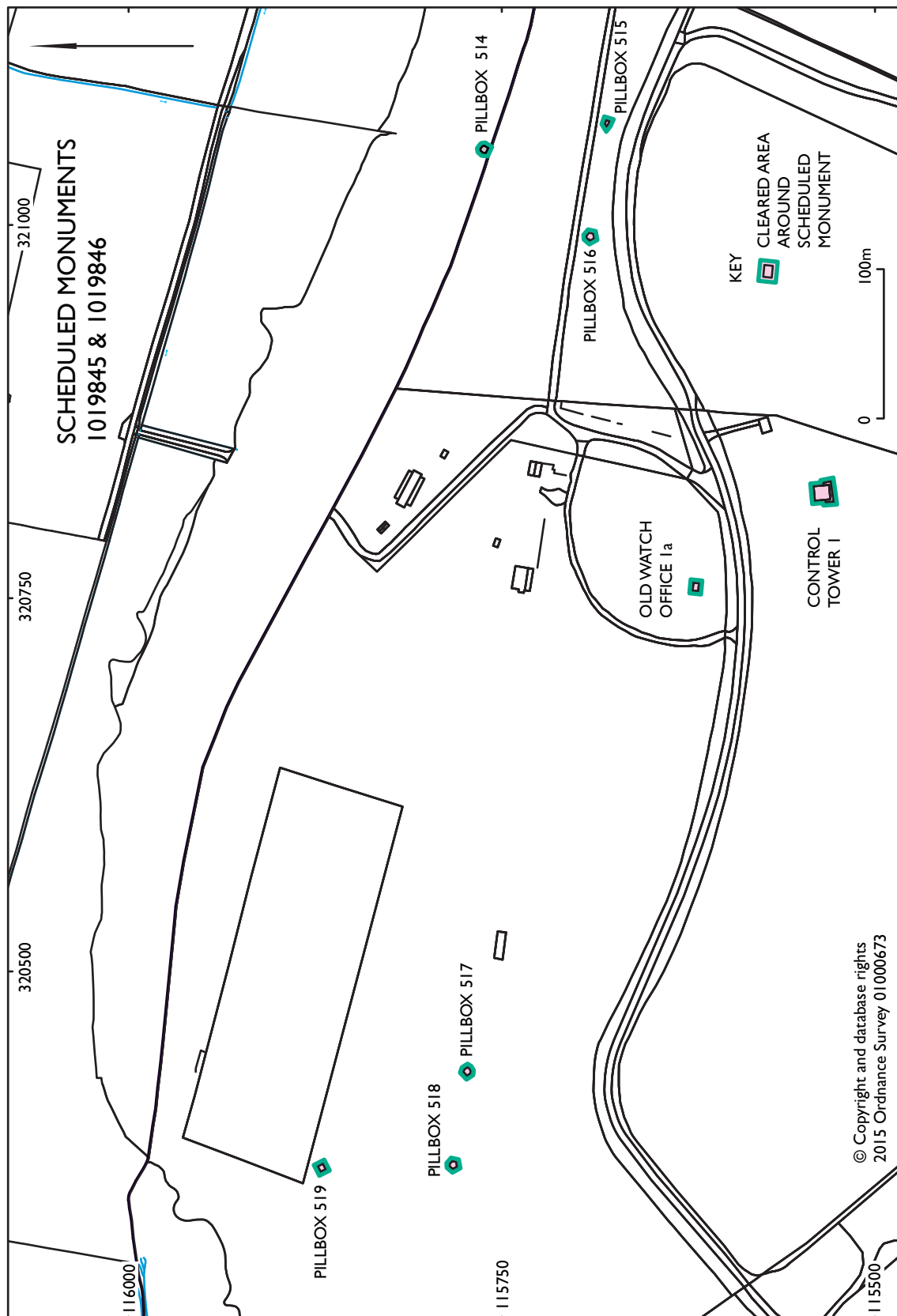


Fig 3 Map showing the vegetation clearance and control required on the air traffic control buildings and pillboxes, Scheduled Monuments 1019845 and 1019846

4.4 The fighter pens

The fighter pens, including the tarmac aprons (hard standing for the aircraft), defended brick walls and blast shelters, will be cleared of all scrub, bracken and most of the trees.

5 SCHEDULED MONUMENT 1019845 AIR TRAFFIC CONTROL BUILDINGS

5.1 The Old Watch Office 1a

The Old Watch Office stands in a field which is regularly grazed by livestock including cattle and mown for forage. The main vegetation issue is an elder sapling growing inside the building which needs removing before damage is caused. The base of the building to be kept clear of vegetation (Fig 3).

5.2 The aircraft control tower 1

The control tower stands in an area which is regularly mown for forage. A sapling needs removing from the external balcony and the base of the building to be kept clear of vegetation (Fig 3).

6 SCHEDULED MONUMENT 1019846 PILLBOXES

6.1 NW group of pillboxes 517, 518, 519

The structures stand in a field which is regularly grazed by livestock including cattle and mown for forage. Saplings to be removed and stumps treated from the roof of the structures and the base of the structures to be kept clear of vegetation (Fig 3).

6.2 NE group of pillboxes 514, 515, 516

Two of the structures stand in a field which is regularly grazed by livestock including cattle and mown for forage. One structure, 514, stands close to a mature hedge with overhanging limbs to be removed. Saplings to be removed and stumps treated from the roofs of the structures and the bases of the structures to be kept clear of vegetation (Fig 3).

7 TIMETABLE AND ENVIRONMENTAL CONSTRAINTS

7.1 Scrub clearance and tree felling/tree surgery will be limited to the period between 1 October and 1 March in any season but will seek to take place during the driest ground conditions within this window and will adhere to Historic England standard conditions (Appendix 1).

7.2 Bracken treatment

Control of bracken may be by chemical control. If available, Asulox would be the required herbicide and its application should be according to the manufacturer's guidelines, taking into account the specific seasonal conditions on site, for each application. At least two applications would be required in the first season, and a third application in the following season of treatment. Efficacy should be monitored.

Manual control of bracken should be by cutting or strimming not rolling or crushing, it should be cut three times in the first season and twice a year in the second and third seasons of treatment, with follow up annual cuts thereafter. All litter and arisings should be removed from site. Manual control of bracken is only effective if the cuts are

appropriately timed and each cut must be timetabled to take into account specific seasonal conditions on site. In Year 1, the first cut should occur between June to July at the point that the bracken fronds are at fully developed 'mitre' stage and about to unfurl, each subsequent cut must also take place as the re-grown fronds are at about to unfurl, this should be approximately 6 weeks after the first cut, and again six weeks later, dependent upon seasonal conditions, with the last cut usually occurring in late August. In Years 2 and 3 the first cut again will be between June and July at full mitre and the second cut 6 weeks later. Thence forward the bracken should be cut annually as it reaches full mitre for the term of the S106 agreement. Multiple seasonal cutting may be required to be continued beyond year 3 if the infestation proves stubborn and shows little sign of weakening.

7.3 Although there are no local or national natural designations, apart from AONB status, within the airfield site or the Scheduled Monuments, every effort will be made to work with the Culmhead Solar Park Biodiversity group to avoid unwarranted disturbance to the developing habitats. Large areas of scrub and other habitats such as the pioneer sedum colony on the original tarmac will be retained and, where possible, vegetation will be tolerated upon the open spaces within the Scheduled Monument. Vegetation control will only occur where it is required to reduce the risk to, or to provide access to, structures within the Scheduled Monument.

7.4 Instead of complete clearance of Scheduled Monument 102492, only the structures and a strip 1-2m wide around them will be cleared and maintained. The vegetation control will result in the clearance of c 1ha of the total area of c 6.2ha which the Scheduled Monument occupies. Unmanaged scrub on both grassed areas and wartime tarmac and concrete will be retained using this approach, leaving c 2.7ha of scrub out of a total of c 3.2ha which covers the northern part of the site at the time of this report (Fig 2).

7.5 The mature hedge which lies on the western edge of the fighter pens (Scheduled Monument 102492) will remain, with the removal of only a few overhanging limbs and branches.

7.6 Advice will be taken regarding developing any of the structures as roosts or habitat, but Scheduled Monument Consent would be required before any boxes are fixed to the structures, or other physical changes made.

7.7 Care should be taken by all vehicles to avoid disturbing the fragile sedum and pioneering species developing along the edges of the tarmac within the scheduled areas.

7.8 An example of good practice of vegetation control at RAF Culmhead is shown in Figure 4.

APPENDIX I HISTORIC ENGLAND STANDARD CONDITIONS FOR FOREST WORK AND CLEARANCE

1. All site personnel should be made aware of the Scheduled status, the monument's boundaries and their own responsibilities with regard to the monument.
2. All works should be undertaken only if weather and ground conditions are suitable, i.e. ground surface should be firm not waterlogged
3. Any scrub/ understory woody growth and saplings occurring within the woodland should be cleared whilst felling works are taking place.
4. Scrub should be cut off at ground level and the stumps treated against regrowth in-situ. Roots should NOT be grubbed out.
5. Where possible and particularly on earthworks and slopes trees should be hand felled.
6. Due notice of earthworks should be taken when felling larger trees and boughs and steps taken to ensure that earthworks are not damaged by falling timber.
7. Mechanically assisted removal (winching, hauling etc.) of timber should only be undertaken where such operations will not affect the surface of earthworks. Where it is undertaken brush mats should be used where possible and on breaks of slopes. Ground surfaces should not be broken, rutted or gouged.
8. Vehicles should not be taken onto or across earthworks where ground conditions are not suitable i.e. if wheels spin ground conditions are not suitable and works should cease.
9. Felled materials should be disposed of off-site, outside the Scheduled area where possible and should NOT be burnt on site without express permission of Historic England. If chipping these may be blown over the site after consultation with the Historic England.
10. Works that disturb the surface of the ground will require Scheduled Monument Consent, guidance and an application form are available on the Historic England Website.
11. Any new tracks must avoid the scheduled areas, to avoid compaction vehicles should not be driven over the monument off tracks. If unavoidable brush mats should be used.
12. No replanting should occur on the scheduled area without express agreement of Historic England. Where at all possible the area of the monument should be kept clear of any new plantings.

APPENDIX 2 STRUCTURE NAMES AND NUMBERS

MOD NO	SOMERSET HER NO	STRUCTURE	SM NO
522	44349	PILLBOX	I020492
530	35932	GUN PIT	I020492
231	44723	FIGHTER PEN	I020492
540	44839	TRANSFORMER PLINTH	I020492
201	44840	FLIGHT OFFICE LATRINE	I020492
200	44721	FLIGHT OFFICE	I020492
229	44728	FIGHTER PEN	I020492
2a	44841	NISSAN HUT BASE	I020492
228	44727	FIGHTER PEN	I020492
199	44720	FLIGHT OFFICE	I020492
198	44808	FLIGHT OFFICE LATRINE	I020492
227	47718	FIGHTER PEN	I020492
226	47717	FIGHTER PEN	I020492
214	12999	BLISTER HANGAR	I020492
532	12998	GUN PIT	I020492
523	44553	PILLBOX	I020492
1a	44725	CONTROL TOWER	I019845
1	44726	CONTROL TOWER	I019845
514	44562	PILLBOX	I019846
515	44561	PILLBOX	I019846
516	44560	PILLBOX	I019846
517	44558	PILLBOX	I019846
518	44557	PILLBOX	I019846
519	44559	PILLBOX	I019846



*Fig 4 Example of good practice: vegetation control at structure **201** (Hazel Riley)*

