RESEARCH REPORT SERIES no. 76-2014

HOOTON PARK AERODROME, CHESTER AND CHESTER WEST
AN ASSESSMENT OF THE GENERAL SERVICE SHEDS AND ASSOCIATED BUILDINGS

Clare Howard

ASSESSMENT

ENGLISH HERITAGE

Research Report Series 76-2014

HOOTON PARK AERODROME, CHESTER WEST AND CHESTER

AN ASSESSMENT OF THE GENERAL SERVICE SHEDS AND ASSOCIATED BUILDINGS

Clare Howard

NGR: SJ 3731 7878

ISSN 2046-9799 (Print)
ISSN 2046-9802 (Online)

The Research Report Series incorporates reports by the expert teams within the Investigation & Analysis Division of the Heritage Protection Department of English Heritage, alongside contributions from other parts of the organisation. It replaces the former Centre for Archaeology Reports Series, the Archaeological Investigation Report Series, the Architectural Investigation Report Series, and the Research Department Report Series.

Many of the Research Reports are of an interim nature and serve to make available the results of specialist investigations in advance of full publication. They are not usually subject to external refereeing, and their conclusions may sometimes have to be modified in the light of information not available at the time of the investigation. Where no final project report is available, readers must consult the author before citing these reports in any publication. Opinions expressed in Research Reports are those of the author(s) and are not necessarily those of English Heritage.

Requests for further hard copies, after the initial print run, can be made by emailing:
Res.reports@english-heritage.org.uk
or by writing to:
English Heritage, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth PO4 9LD
Please note that a charge will be made to cover printing and postage.

SUMMARY

The General Service (GS) sheds, or hangars, and associated technical buildings at Hooton Park, situated on the northern outskirts of Ellesmere Port and close to the south-western bank of the River Mersey, represent one of the most well-preserved groups of First-World-War buildings in the country. The sheds were originally intended to form an Aircraft Acceptance Park (AAP) for the assembly of aircraft sent from America to the nearby port of Liverpool, but this use was superseded by a requirement to train new pilots for the First World War. Double GS sheds were constructed for each of three flying units at Hooton, accompanied by technical buildings including two Motor Transport (MT) sheds, workshops and huts. In the 1920s and 1930s the site became a major centre for civil and commercial aviation with the establishment of the Liverpool and District Aero Club; this was soon followed by Liverpool's first commercial airport. It also became a centre for pioneering aviation engineers and manufacturers during the 1930s and this role continued until the closure of the airfield in 1957. The sheds and technical buildings continued to be used, albeit with some modifications, from 1961 onwards when the site was acquired by Vauxhall Motors.

The General Service sheds, sometimes known as Belfast hangars in reference to their roof construction, are the only surviving complete group of hangars of their type. Each shed comprises two rectangular halls forming a double hangar and is constructed of red brick with a double-span, bow-string roof of distinctive Belfast-truss type. The examples at Hooton also have large full-width multi-leaved sliding aircraft doors which originally slid into tall supporting side gantries of brick when opened. Although some of these doors and associated gantries have been removed and brick walls with smaller central entrances have been built in their place, the buildings have otherwise only been minimally altered and retain many of their original fixtures and fittings lending them exceptional significance when compared to other similar groupings.

CONTRIBUTORS

The investigation and survey of the building was undertaken by Allan Adams, Clare Howard and Simon Taylor. Some of the photographs for the report and all of the archive photographs were taken by Alun Bull who was assisted by Simon Taylor while other report photography was by Allan Adams, Clare Howard, Simon Taylor and Dave MacLeod. Archival and historical research was undertaken by Clare Howard, Allan Adams and Amy Louise Smith. The text was prepared by Clare Howard and the original illustrations were drawn by Allan Adams and Philip Sinton. Grace Penrose prepared the report for publication.

ACKNOWLEDGEMENTS

The authors would like to thank the owners, the Hooton Park Trust - Graham Sparkes and David Beckett in particular - for allowing access and providing useful information on the history of Hooton Park. Thanks are also due to Colin Schroeder of the Aeroplane Collection, Christine Thomas of the Griffin Trust and the staff of Cheshire Archives, RAF Hendon Museum Archives and the National Archives, Kew for their assistance in locating and providing useful sources of information.

DATE OF SURVEY

The investigation and survey took place on 24th and 25th July 2014.

Cover image: One of the General Service sheds (Building 18) at Hooton Park Aerodrome (DP168379 © English Heritage, photograph: Alun Bull)

CONTACT DETAILS

English Heritage, 37 Tanner Row, York, YO1 6WP
Clare Howard: 01904 601888. clare.howard@english-heritage.org.uk

CONTENTS

ILLUSTRATIONS

INTRODUCTION

Hooton Park is situated to the north-east of the present M53 motorway on the northern outskirts of Ellesmere Port, approximately 7 miles south-east of Birkenhead and close to the Manchester Ship Canal and the River Mersey. The site is bounded to the south-west by Airfield Way (formerly South Road) and on the remaining three sides by land owned by General Motors (formerly Vauxhall) whose main factory complex is located to the south-east (Figure 1).

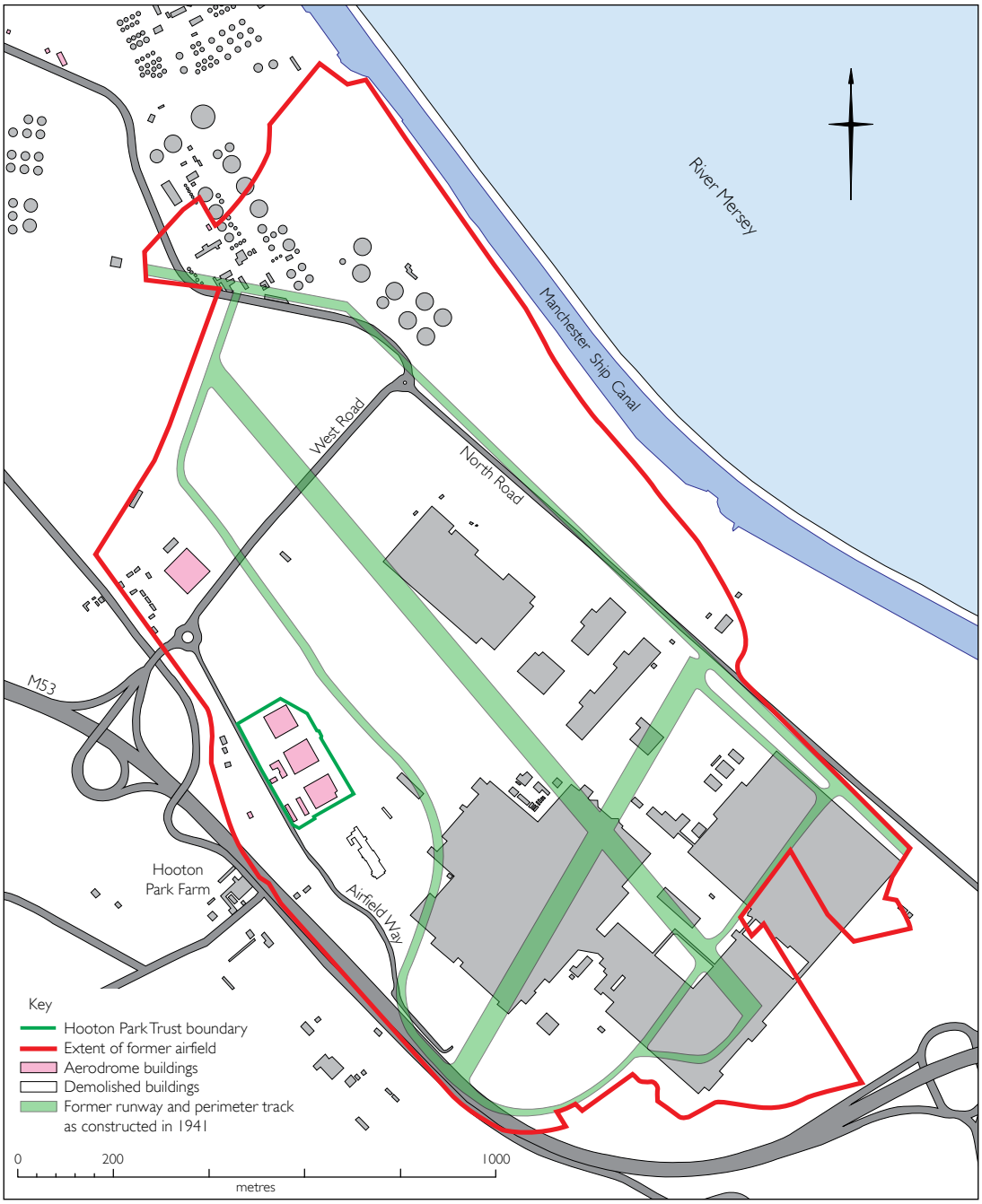

Figure 1: Location map showing the Hooton Park Trust boundary in relation to the former airfield at its fullest extent in 1945 (© English Heritage, drawn by Philip Sinton).

The site consists of three paired General Service (GS) sheds, commonly, if colloquially, known as Belfast hangars due to the use of Belfast trusses for the roofs (see below), and associated technical buildings. The Hooton Park Trust have numbered the buildings consecutively as Building 16 (northern GS shed), Building 17 (central GS shed) and Building 18 (southern GS shed) while the ancillary buildings are known as Building 27, 27B, 27C, 28 and 42; identifiers which were recently applied to the buildings based on a plan of the site dating from 1945.[1] This numbering system will also be used for the purposes of this report (see Figure 10). A glossary is also included at the end of the report to aid understanding of technical terminology used within the text.

The sheds are listed at Grade II* whilst some of the ancillary structures, namely Building 27 and the Motor Transport (MT) sheds, are listed at Grade II; they form one of the best preserved groups of First-World-War buildings in the country. Despite this, the condition of the GS sheds has deteriorated sharply in recent years, leading to their inclusion on the Heritage at Risk register in 2003. Since that time, the central shed (Building 17) has been partly restored and is in use as a storage facility for caravans and historic cars and buses, but the northern shed (Building 16) suffered a serious collapse in 2011 which has left the building a partial ruin. It is imperative that urgent works are undertaken to the roof of the southern shed (Building 18) before the building suffers any further deterioration of a similar nature. At the time of writing the present owners, the Hooton Park Trust, are preparing a Heritage Lottery Fund (HLF) application to help finance the restoration of Building 18. This report was commissioned by Charles Smith, Principal Heritage at Risk Surveyor, English Heritage North-West, and it is intended to provide a preliminary assessment of the fabric, setting and significance of the GS shed and its immediate environs in order to support the HLF bid and any future funding applications, as well as to inform the restoration of the building.

Archival research has been undertaken by the author in order to understand the historical development of the site. This has involved collating information derived from original and secondary material held by the Hooton Park Trust, the Griffin Trust, Cheshire Archives, RAF Hendon Museum Archives and the National Archives, Kew. Ordnance Survey (OS) mapping published between 1928 and 1957 omitted detail within the perimeter of aerodromes for security reasons.[2] The 1938 revised edition of the six-inch OS map (published in 1946), for example, depicts Hooton Park almost exactly as it was prior to its wartime conversion although the MT sheds and part of Building 18 are shown.[3] Fortunately, the 1918 RAF Quarterly Survey plan,[4] a plan accompanying a sales particular of 1922,[5] a plan produced as part of a consultants' report prepared in 1936 to assess the site's potential for further commercial, private and instructional flying use,[6] and military plans dating from 1945 held by the RAF Hendon Museum Archives[7] provide some clue to the early layouts of Hooton Park Aerodrome.

A level 2 historic building survey of the southern GS shed (Building 18) and associated buildings was undertaken as part of this assessment to enhance understanding of the site, the nature of its buildings and its evolution.[8] This involved a detailed investigation of the site and the production of record photography which will be deposited with the English Heritage Archive in Swindon. It was not possible to undertake a close interior inspection of Buildings 16 and 18 due to the presence of large quantities of damaged asbestos sheeting but it was possible to view the interior of Building 18 from its doorways.

HISTORICAL BACKGROUND

Early History

Prior to becoming an aerodrome during the First World War, Hooton Park was a large private estate incorporating a fine country house known as Hooton Hall and its associated parkland. The first house at Hooton was a timber-framed manor house built in the 15th century for the Stanley family of nearby Stanleigh and Stourton who had acquired the estate in the 12th century.[9] An engraving of the manor house by Heath after Chesborough shows that the house had a long central hall with a shorter cross wing at one end and a larger castellated stone wing and tower at the other.[10] However, the engraving was a copy of an earlier drawing and was first published in 1819, 41 years after the demolition of the house (in 1778), and so the depiction might not be entirely accurate.

Figure 2: Photograph of the mid-19th century Hooton Hall as remodelled in circa 1849, undated (© the Griffin Trust).

The manor house was replaced by a house designed by Samuel Wyatt and commissioned by the then owner, Sir William Stanley.[11] An engraving first published in 1823 shows that the new house was three storeys high and had a seven-bay frontage and a six-bay side elevation.[12] The ground floor was rusticated and the central three bays of the main façade projected forward as a frontispiece topped by a central triangular pediment.[13] The Hooton Park estate continued to pass along the Stanley family line until 1849 when Sir William Stanley Massey sold it to Richard Christopher Naylor, a Liverpool banker. Naylor commissioned James Kellaway Colling of London to make alterations to the hall which included the addition of flanking wings, a chapel, sculpture gallery and a 100-foot tower (Figure 2).[14] Naylor was also responsible for the construction of a stud

farm and church in neighbouring Childer Thornton and, being a keen horseman and horse-breeder, constructed a racecourse and polo ground to the north-east of the hall.[15] Following the construction of the Manchester Ship Canal in 1894, which cut off direct access between the Hooton estate and the River Mersey (where Naylor moored his yacht), the family moved to their estate at Kelmarsh Hall, Northamptonshire.[16] Naylor maintained ownership of Hooton, however, since the racecourse and polo ground had become a popular and profitable venue and continued to be so until the outbreak of the First World War. The racecourse was overlain by the early airfield but the polo ground remained in use until the Second World War.

The First World War

Shortly after war was declared on 4th August 1914, Hooton Park was requisitioned by the government for army training purposes. Hooton Hall was used as a headquarters, hospital and officers' mess for the 18th Battalion of the King's Liverpool Rifles, although the majority of the men who initially trained at Hooton were accommodated in tents in the grounds.[17] The three double General Service (GS) sheds (sometimes known as Belfast hangars) and a single Aeroplane Repair Section (ARS) shed were built in 1917 by the contractors Holland, Hannen and Cubitts Limited on the site of the former racecourse paddock to designs by the Royal Engineers.[18] The characteristic wooden-lattice 'Belfast' roof trusses of the sheds were, however, constructed by D Anderson and Company of Belfast; a roofing company first established in 1877 who had been erecting such trusses over shipyards since the early 1900s.[19] The sheds were originally intended to form part of an Aircraft Acceptance Park (AAP) where aircraft sent from America were to be assembled and accommodated but instead, a Royal Flying Corps training station - known after June 1918 as the No. 4 Training Depot Station (TDS)[20] - was established at Hooton on 19th September 1917, replacing one at Tern Hill, Shropshire.[21] The station was intended to be used to train Canadian and American pilots for the Royal Flying Corps following America's entry into the war in April 1917. Three training squadrons, equipped with 36 Sopwith Dolphins and 36 Avro 504s, were stationed at No. 4 TDS, each unit accommodated in one of the three GS sheds.[22] The 1918 RAF Quarterly Survey report gives a total of 839 personnel at the station.[23]

The TDS was one of 63 established during the course of the war. It encompassed a total of 200 acres, 70 of which were covered by station buildings while the former racecourse was used as an airfield.[24] Like all TDSs, the site was split into two areas: the regimental buildings which included the officers' mess, women's room and hostel, and the technical buildings.[25] The technical side was separated into sections for aircraft, ground instruction, motor vehicles and services and included a wide range of support buildings, including the aircraft sheds.[26] The officers' mess was accommodated in Hooton Hall while the women's rest room and hostel were built in another part of the station. Unfortunately, none of these domestic buildings survive at Hooton today.[27]

An aerial photograph taken on 18th May 1918, showing the southern part of the aerodrome with aeroplanes on the airfield, suggests that the station was in use by this date (Figure 3). Hooton Hall is also shown to the south-east, as are the racecourse grandstands to the east and Hooton Park Farm to the south-west. The photograph

also shows some of the technical buildings, including two of the GS sheds (Buildings 17 and 18), ARS shed, MT sheds and huts. It shows the GS sheds as they were originally constructed – each with twin halls, four corner gantries and narrow linear annexes projecting from the centres of the north-east and south-west sides. According to the photograph, the ARS shed had only a single hall, four corner gantries, a single annexe on its north-east side, two further annexes used as plane stores to its south-west side and, like the GS sheds, most likely had a bow-string roof of Belfast trusses.

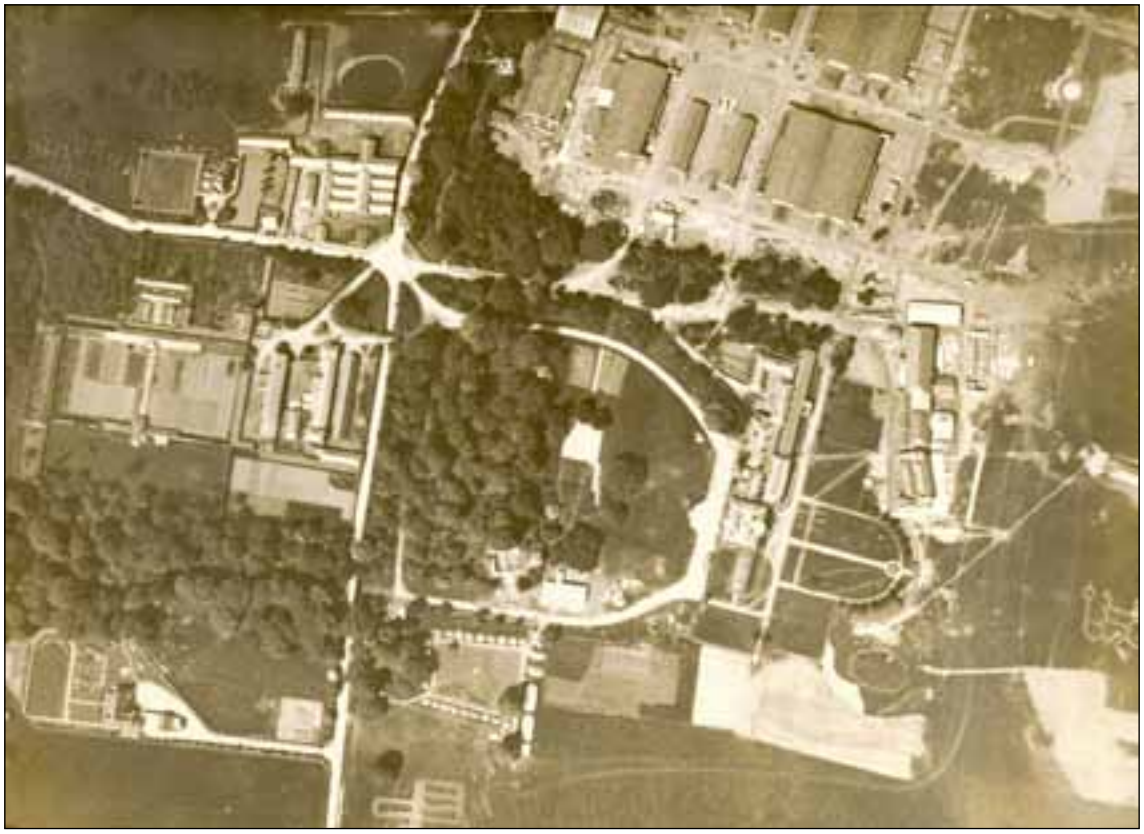

Figure 3: Aerial photograph of Hooton Park, No. 4 Training Depot Station on 18th May 1918 (© Hooton Park Trust). The top of the photograph is north-west.

The Quarterly Report of the Stations issued by the RAF in September 1918 provides a detailed description of the TDS at Hooton Park and lists a wide range of technical and regimental buildings including '6 aeroplane sheds (each 170' x 80')'.[28] The report states that the sheds, technical buildings, regimental buildings, water supply and drainage were all complete but the women's accommodation, roads and lighting were yet to be finished with an expected completion date of 1st September 1918.[29] The accompanying plan of the station shows the three double GS sheds (or aeroplane sheds as they are referred to in the description), the ARS shed to the south-west of Building 18, the MT sheds, four large huts (including Building 27), Building 42 and five smaller huts. Hooton Hall and the grandstands are depicted and are accompanied by further buildings while the reception station and women's hostel are shown to the south of the Hall (Figure 4).

Figure 4: 1918 plan of Hooton Park accompanying the RAF Quarterly Survey report, AIR 1/452/15/312/26Volume1 (© Crown copyright images reproduced courtesy of The National Archives, United Kingdom).

When the decision was made to separate the Royal Flying Corps (RFC) from the Army and the Royal Navy Air Service (RNAS) from the Navy and merge them to form a new independent aviation service (the RAF, founded on 1st April 1918), the aerodrome at Hooton became part of the 37th Wing which controlled both Hooton Park and Shotwick, located over the Welsh border approximately 7 miles to the south. In November 1918 Hooton Hall became the Wing Headquarters.[30]

The Inter-War Period

Following the armistice in 1918 the TDS was disbanded. The site subsequently fell vacant; the 37 aircraft formerly stationed at Hooton were moved to RAF Shotwick (later known as Sealand) and part of the aerodrome reverted to farmland.[31] Three years later, on 7th March 1922, the Hooton Park estate, which included the hall and the aerodrome buildings, was advertised for sale by auction. The associated sales particulars include a long list of buildings including the three double GS sheds (referred to as 'hangars') with annexes, numerous huts and the MT sheds. The accompanying plan of the site is similar to the 1918 site plan; it shows the three GS sheds and ARS shed, Buildings 27 and 42 as well as a number of other ancillary buildings to the north (including three buildings of roughly the same length as Building 27) and six further smaller buildings to the west of them. To the west of the ARS shed stood a further larger hut. Some additional small buildings not shown on the 1918 plan appear to have been added by 1922 including additional huts in the north-west corner of the site and a U-shaped building to the south-west of Hooton Hall (Figure 5). Hooton Hall had been seriously damaged during its military occupation and, following the auction, its owners considered the cost of repairs prohibitive; it was consequently demolished in 1925.[32] It is not clear whether the site was successfully sold at auction and if so, who bought the aerodrome in 1922, but by 1927 the site was owned by Mr George H Dawson, a local businessman and aviation enthusiast who leased the buildings to numerous small businesses for light industrial use.[33] Dawson was also responsible for the construction of some detached houses to the north-west and south-west of the aerodrome buildings during this time.[34]

Hooton Park played an important role in the development of civil aviation during the 1920s and 1930s. In January 1928 a group of aero enthusiasts, subsidised by the Air Ministry, formed the Liverpool and District Aero Club and set about reconditioning and occupying two adjoining GS sheds (Building 16).[35] The club grew to become the largest active flying club outside of London and a national centre for light aircraft. They also hosted the famous King's Cup national air races and various other derbies and were even visited by the Prince of Wales in 1929 when he landed his own aircraft there on his way to the Boy Scouts' World Jamboree at Arrowe Park, 2 miles from Hooton.[36] Such events attracted many celebrated aviators of the time including Amy Johnson and Sir Alan Cobham and his Flying Circus.[37]

Dawson had ambitious plans for Hooton and intended to develop the site as a major airport serving Liverpool and north-west England and, in 1930, the aerodrome became the official airport for Liverpool. Unfortunately, this status was short-lived and Hooton was replaced three years later by a new airport at Speke which was closer and more convenient for the centre of the city.[38] This set-back was compounded by the relocation of the Liverpool and District Aero Club to Speke in the same year, although they later returned to also use Hooton as their base.[39] The Comper Aircraft Company, set up by Flight Lieutenant Nicholas Comper to manufacture Swift light aircraft, was also established at the aerodrome in 1930 and was later joined by Pobjoy Airmotors Ltd from 1931 until 1933. Both companies occupied the southern GS shed (Building 18)[40] and Pobjoy's radial engines were later used to power the Swifts.[41] This enterprise at Hooton was also short-lived, however, and Comper moved to Heston aerodrome in Middlesex in 1933, while Pobjoy went into partnership with Short Brothers in Kent in the following

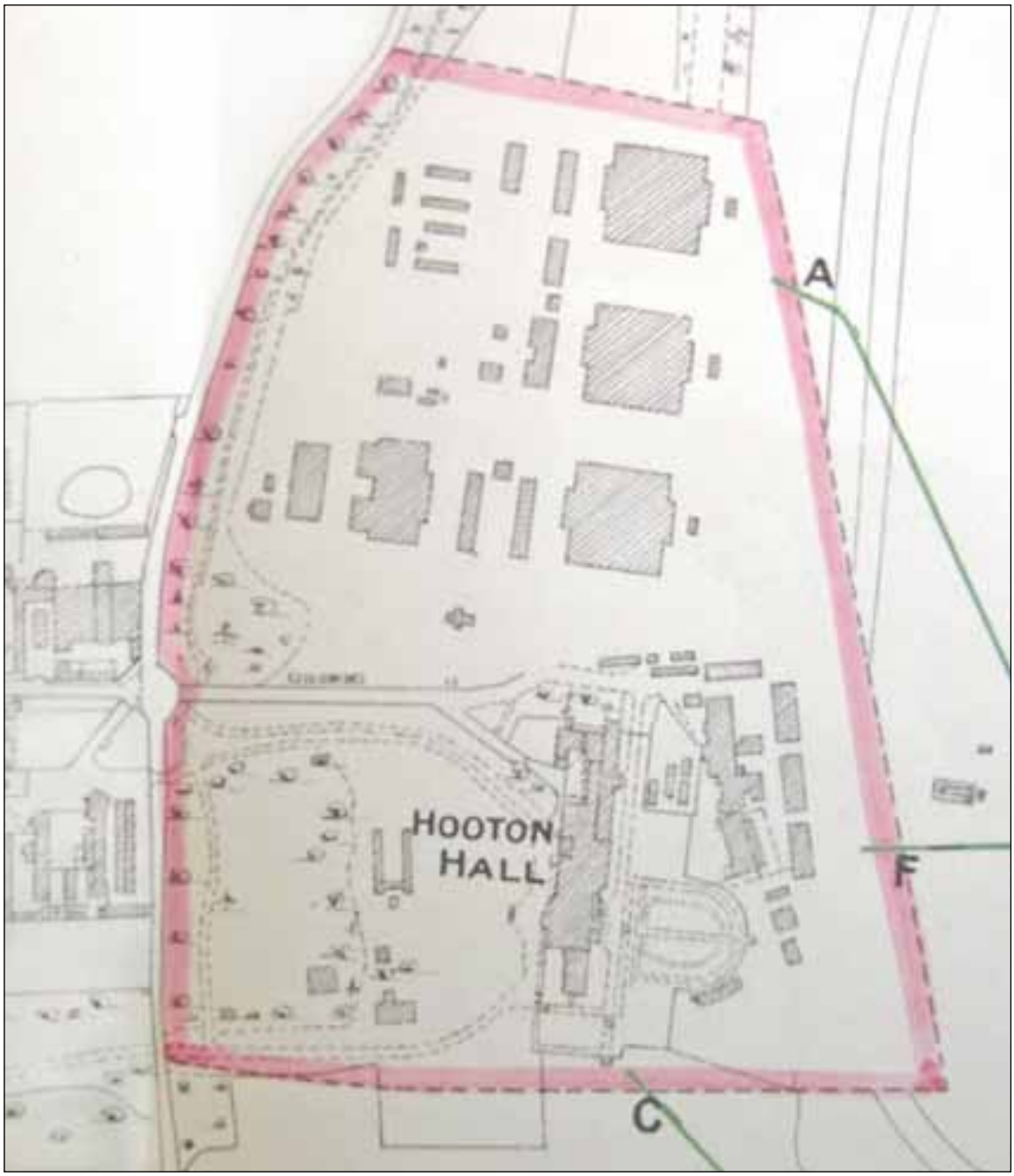

Figure 5: 1922 plan of Hooton Aerodrome accompanying sales particulars, SC/4/27, held by Cheshire Archives and Local Studies Service. Reproduced with the permission of Cheshire Shared Services and the owner/depositor who reserves copyright.

year.[42] Notwithstanding these events, Hooton aerodrome continued to operate and was used by private owners and small airlines throughout the remainder of the 1930s. By the middle of the decade Martin Hearn, an ex-pilot and ground engineer who was most famous as the wingwalker and aerial-trapeze artist in Alan Cobham's Flying Circus, had established his business constructing and repairing RAF aircraft at Hooton Park, initially occupying the central GS shed (Building 17).[43]

An oblique aerial photograph of the aerodrome taken in the 1930s shows the full complement of aerodrome buildings in use at that time including the three GS sheds, the ARS shed with its attached plane stores, the two MT sheds, a group of huts and workshop buildings to the west of Buildings 16 and 17 (including Buildings 27 and 42) and a further building to the west of the ARS shed (Figure 6). The western side of the aerodrome, closest to Airfield Way (formerly South Road), is concealed by trees while to the east, taxi-ways stretch out to the flying field where there are some smaller huts, perhaps used as flight or watch offices. There is little evidence in the photograph of industrial and engineering activity at this time with the exception of the word 'Pobjoy' which is written on the roof of Building 42 suggesting, perhaps, that the photograph was taken whilst Pobjoy still used the premises or shortly after the company had moved out.

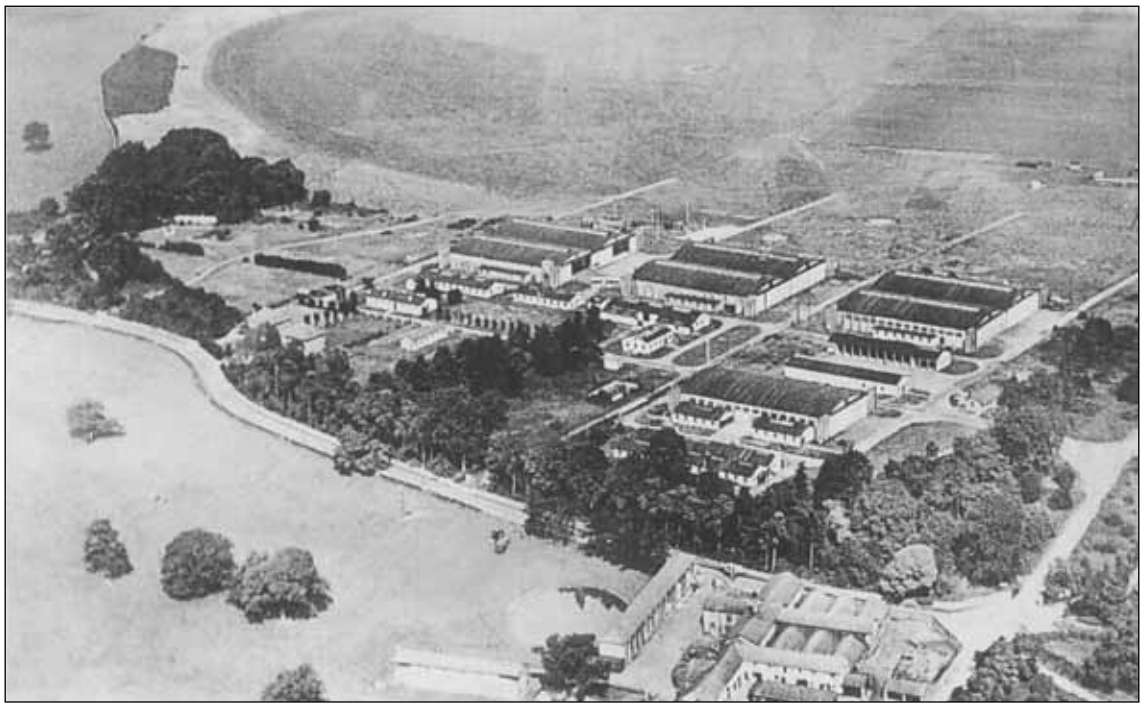

Figure 6: Aerial photograph of Hooton Park from the south taken in the 1930s (© Hooton Park Trust).

Following this period of dedicated civil use, the RAF returned to Hooton on 10th February 1936 when the 610 (County of Chester) Squadron, a light bomber unit of the Auxiliary Air Force equipped with Avro Tutors and Hawker Harts[44] (and later Hawker Hinds[45]), was formed there.[46] The squadron used the northern GS shed (Building 16) to store their planes and later went on to serve (reformed as a fighter unit) in the Battle of France, covering the evacuation from Dunkirk, and the Battle of Britain.[47] In the same year Nigel Norman, civil engineer and RAF officer, and Graham Dawbarn, architect, were commissioned by Cheshire County Council to prepare a report on the use of the existing aerodrome and to assess the possibility of using the aerodrome for further commercial, private and instructional flying.[48] The report confirmed that the aerodrome was still being used by the Liverpool and District Aero Club (despite their move to Speke in 1933), the Hooton Hall Development Company and other industrial concerns as well as a unit of the Royal Auxiliary Air Force (610 Squadron). It also lists a number

of buildings including a club house of wooden construction, several office buildings, the three double aircraft GS sheds (described as being in a poor condition but capable of being reconditioned), single-storeyed buildings 'located behind the hangars' and two grandstands. The accompanying plan shows that since 1922, some of the aerodrome buildings had been removed including those surrounding the grandstand (marked as number 4 on Figure 7) and the huts within the north-west corner of the site (Figure 7). The latter were replaced by three large detached houses constructed by Dawson in the late 1920s, which were extant at the time of writing (August 2014). The former grandstand, the ARS shed, a detached building to the west of the ARS shed and three huts to the north-west of Building 27 are all shown on the plan but are no longer discernible on the site today.

Figure 7: 1936 plan of Hooton Aerodrome included with the Consultants' Report, CCH5/7997/2 held by Cheshire Archives and Local Studies Service. Reproduced with the permission of Cheshire Shared Services and the depositor who reserves copyright.

The Second World War

On 1st January 1939, 610 Squadron was re-mustered to form a fighter unit and their Hawker Hinds and later Fairey Battles were replaced by Hawker Hurricanes which were themselves later replaced by Supermarine Spitfires.[49] When war was declared on 3rd September 1939, the squadron was moved to RAF Wittering and only re-formed at Hooton after the war.[50] In their absence, the No. 7 Aircraft Assembly Unit (AAU) under the Ministry of Supply for the RAF, formerly Martin Hearn Ltd, initially occupied buildings at Hooton Aerodrome.[51] During the course of the war, the company assembled over 9000 aircraft sent from America at Hooton and also assembled and tested the first Sikorsky Hoverfly helicopters in Britain.[52] They used factory space within Building 17 and the north-eastern corner of the site was later developed with additional hangars for the company.[53] The new group included three Bellman hangars, two Robins and three Blister hangars, all of which have since been demolished to make way for the Vauxhall car factory.[54]

On 9th October 1939, the RAF requisitioned the aerodrome for direct military use; the existing buildings were refurbished and new accommodation was constructed.[55] Some of the buildings, however, remained occupied by civilian industries including a meat-canning operation.[56] The buildings constructed in 1939, of which none survive today (with the exception of the air-raid shelters which were probably constructed at this time), included a watch office, squadron offices and headquarters, a fire-tender shelter, an Air Ministry Laboratory (AML) Bomber Teacher, Link Trainer and Turret Trainer.[57] The former grandstand was initially used as a store for civil aircraft not in use during the war[58] but it and its contents were destroyed by a disastrous fire on 8th July 1940.[59] The aerodrome was used as a base for aircraft involved in convoy protection, anti-submarine and general surveillance duties by Coastal Command over the north-west and Welsh coast. As such, Hooton Park played a key role in the Battle of the Atlantic, its aircraft helping to keep open the crucial shipping lanes to Liverpool.[60]

Hooton Park was home to several RAF units during the course of the war. It was occupied by 206 (General Reconnaissance) Squadron in October 1939, later joined by 502 (General Reconnaissance) Squadron; both were equipped with Avro Ansons and stayed until July the following year.[61] Shortly afterwards, in December 1939, 3 and 4 Coastal Patrol Flight (CPF) were formed at Hooton Park and were equipped with Tiger Moths and Hornet Moths until they were disbanded in May the following year.[62] 13 Squadron re-formed at Hooton following service in France on 25th May 1940 with 11 Lysanders and a Gladiator; they performed patrols over the north-west coast to identify and deter submarines, although the squadron was moved to Speke shortly afterwards.[63]

In 1941, the airfield at Hooton was revamped and extended and two intersecting runways, capable of receiving larger aircraft, were created.[64] A new temporary operations room, located a short distance from the northern GS shed (Building 16), was also in use by 29th June 1941.[65] Later in the same year a new single runway and perimeter track were added to the site.[66] A Ministry of Aircraft Production B1 type hangar was also built at the aerodrome, *circa* 1942, located north of the existing buildings. The hangar was fitted with a servicing platform and fire station and when 610 Squadron returned after the war, this was where they stored their aircraft.[67]

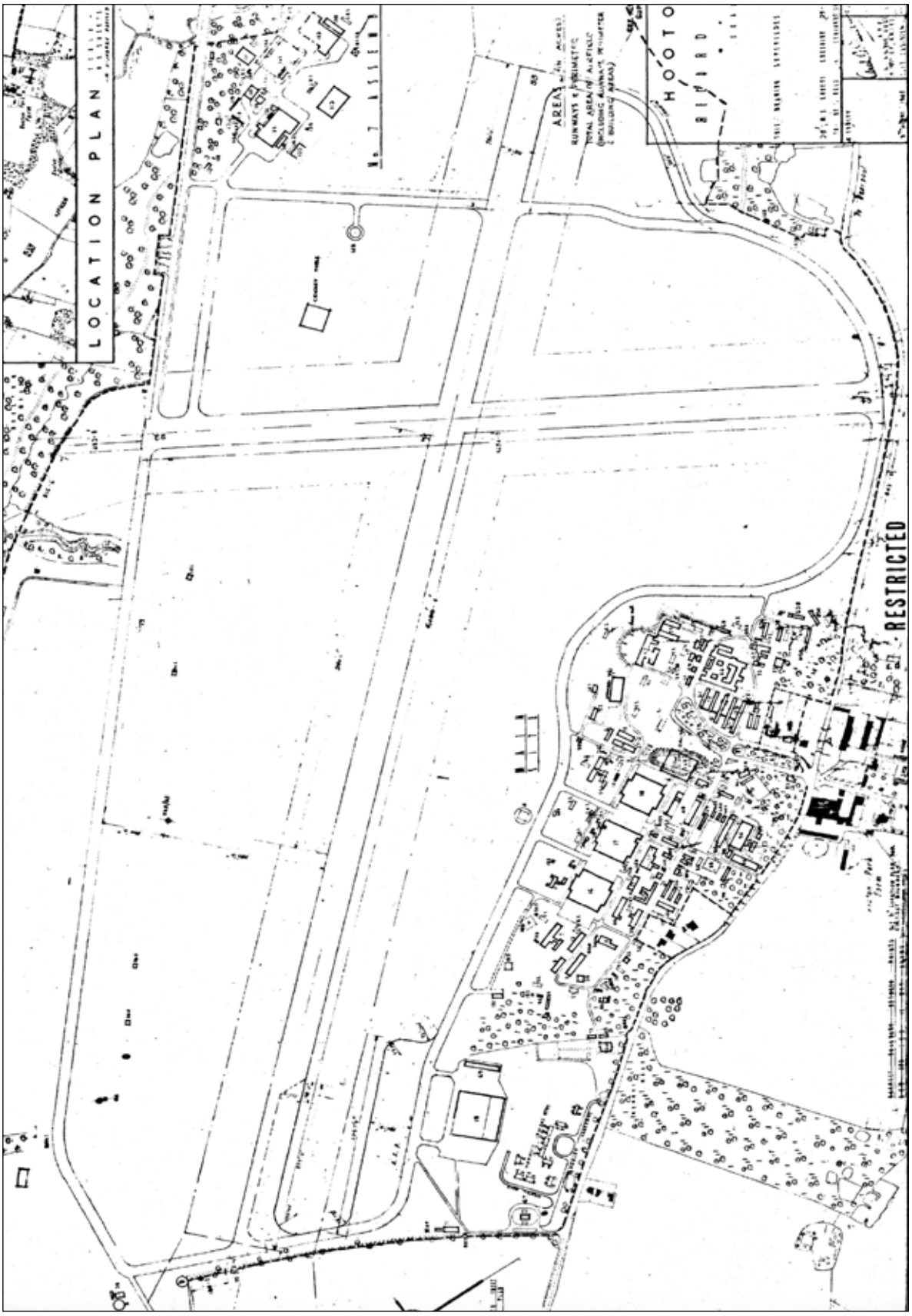

Figure 8: 1945 record site plan of Hooton Aerodrome, 6A/54/45 (W/436/45). (© RAF Museum, Hendon).

Technical Training Command took over the station in 1942 to operate the 11 Radio School and 3 General Reconnaissance School to train air crew in the use of airborne radar equipment: this was the only school of its kind in the country.[68] The school flew from the aerodrome and occupied the GS sheds until it was disbanded in 1944 and Hooton came under the control of Maintenance Command, as recorded in a survey of the aerodrome undertaken in the same year.[69] The survey lists four hangars at Hooton Park which presumably included the three GS sheds on the site today and the B1 hangar to the north-west.[70]

A site plan of Hooton Park dated 1945 shows the aerodrome at its fullest extent with the core of the aerodrome buildings, including the three GS sheds, located to the south of the airfield and runway (Figure 8).[71] To the eastern corner of the airfield was No. 7 Assembly Unit whilst in the opposite, western, corner was the B1 hangar with 'married quarters' to the south-west of it.

The Post-War Period

The 610 Squadron re-formed at Hooton in June 1946 with Supermarine Spitfire XIVs and subsequently flew Spitfire 22s and Meteor 4 Jets (Figure 9).[72] The need for aircraft repair and assembly work at Hooton slackened off following the war, requiring Martin Hearn Ltd to seek alternative streams of work. This included repairing buses and manufacturing armoured cars and Slingsby gliders. In 1947 Martin Hearn left the company and it was renamed Aero-Engineering and Marine (Merseyside).[73] Two years later, 610 Squadron was joined by 663 Squadron (Air Observation Post unit); they were equipped with Tiger Moths and Auster 5s which were later replaced with de Havilland Chipmunks and Auster 6s and 7s.[74] In 1951, 611 (West Lancashire) Squadron was relocated from Woodvale (near Formby) to Hooton and the three units continued to be stationed at Hooton until March 1957 when the Royal Auxiliary Air Force was disbanded; the aerodrome was subsequently closed.[75] Despite the abandonment of the site, the perimeter track and runway still remained in 1959 and the majority of the GS sheds survived largely as designed in 1917, all three GS sheds retaining all four door gantries.[76]

Hooton Park was acquired by Vauxhall Motors in August 1961 and the following year construction of a large factory commenced at the north-eastern corner of the aerodrome, on the site of the hangars formerly used by Martin Hearn Ltd.[77] By the end of 1963 the factory was fully operational.[78] The old GS sheds were also reconditioned by Vauxhall and were used as part of their manufacturing operation: Building 16 for the paint and oil service department; Building 17 as a service department, kit store and car delivery station and Building 18 was used as a service station.[79] The site was also used for the Cheshire Show, an annual agricultural show, until 1977 and Shell Research used the runways for testing cars at high speed.

Figure 9: 610 Squadron, photographed in 1957 (D6483.7.16 © B. J. Prince and the Griffin Trust).

The Hooton Park Trust

Hooton Aerodrome was the venue for the 1986 'Wheels' show which was organised by a group of employees at the nearby Vauxhall factory. This group, who later formed the Griffin[80] Trust, approached the local authority and the Royal Commission on the Historical Monuments of England (RCHME) regarding listing the GS sheds. The buildings were subsequently listed at Grade II in 1988 by the Department of the Environment (DoE). Two years later, the Trust negotiated a lease with Vauxhall Motors for use of the GS sheds. Following a thematic study by English Heritage of military aviation sites in 1998 (published in 2003), the buildings were upgraded to II* largely because of the rarity of buildings with Belfast-truss roofs. Building 27 and the MT sheds were also listed at Grade II following publication of the study in 2003.

In 2000, the Hooton Park Trust (HPT) was established as a separate not-for-profit organisation to take on the ownership and management of the remaining area of the historic aerodrome, with the aim of conserving the buildings, specifically the GS sheds, for future use, while the Griffin Trust concentrated on the restoration of historic vehicles and organising exhibitions and events elsewhere. By this time, the roof on the northern GS shed (Building 16) had become dilapidated and was in a poor state of repair. Gradual failure of the roof trusses began in 2003 but during the winter of 2011, following a period of particularly heavy snowfall, one span of the roof of Building 16 collapsed completely. This was a serious concern for the Hooton Park Trust and has further encouraged them

to seek funding for the restoration of the southern GS shed (Building 18). Today the Griffin Trust and the Aeroplane Collection are accommodated at the former aerodrome and provide invaluable assistance to the HPT in the management and conservation of the site.

DESCRIPTION

The area currently owned by the Hooton Park Trust and the subject of this report is only a fraction of the area of the former Hooton Park Aerodrome, the majority of which is still occupied by General Motors (GM), previously Vauxhall Motors, as it has been since 1961.

The Hooton Park Trust (HPT) site is located to the north-east of an access road leading to the GM factory, known as Airfield Way, and is bounded to the north-west, north-east and south-east by land owned by GM who use most of it for car storage, the main factory complex being located further to the south-east and north-east. The site is enclosed by a post and wire fence on all sides, erected by GM following the transfer of the land to the HPT. The layout of buildings does not follow contemporary convention due to the retention of Hooton Hall in 1917 (when the aerodrome was first established) which was utilised as a headquarters and officers' mess. Like other TDSs, however, the aerodrome was originally separated into a domestic side and a technical side with GS sheds facing a grass airfield.[81] The main buildings described in the text are labelled on Figure 10. Only part of the technical area of the station survives; it incorporates three GS sheds (Buildings 16-18) and some ancillary buildings, including two huts (Buildings 27 and 42), two Motor Transport (MT) Sheds and three Second-World-War air-raid shelters.

The General Service sheds

A standard TDS had three flying units, each accommodated in one of three GS sheds, all supported by a single ARS shed. The three double GS sheds at Hooton are situated in a row beside a main north-west to south-east access road and are aligned north-west to south-east; their main doors facing onto the former taxi-ways which ultimately led north-east towards the former airfield (now GM car park). The GS sheds were built as a group in 1917 along with an ARS shed which, prior to demolition in the 1930s, was situated to the south-west of Buildings 17 and 18.

The form of each GS shed is typical of a twin-hangar arrangement of this type and of this date, although there have been later alterations (Figure 11). The north-east and south-west walls of each shed are constructed of red brick laid in English Garden Wall bond and have raking buttresses forming 16 bays, of which the central 14 contain rectangular windows. The outermost bays at each end are blind for greater strength and have additional cross-bracing against the wind.[82] The north-west and south-east elevations of each shed were originally composed of two sets of six-leaved horizontal sliding hangar doors (one set of doors per hall) constructed of diagonally-set timber boarding (later covered with asbestos sheeting) which ran on steel rails set in concrete (Figure 12). At the corners of the buildings (with the exception of those removed from Building 18) are red brick support gantries composed of six slender brick piers supporting two pairs of shallow segmental arches arranged one in front of the other to create an area into which the doors were retracted when fully open (Figure 13). Steel buffers at the gantry ends stopped the doors and protected the structure. The sheds are covered by double-span bow-string roofs and the segmental gables above the sliding doors are formed of vertical timber-stud panels with a single central louvre which would have helped to maintain the

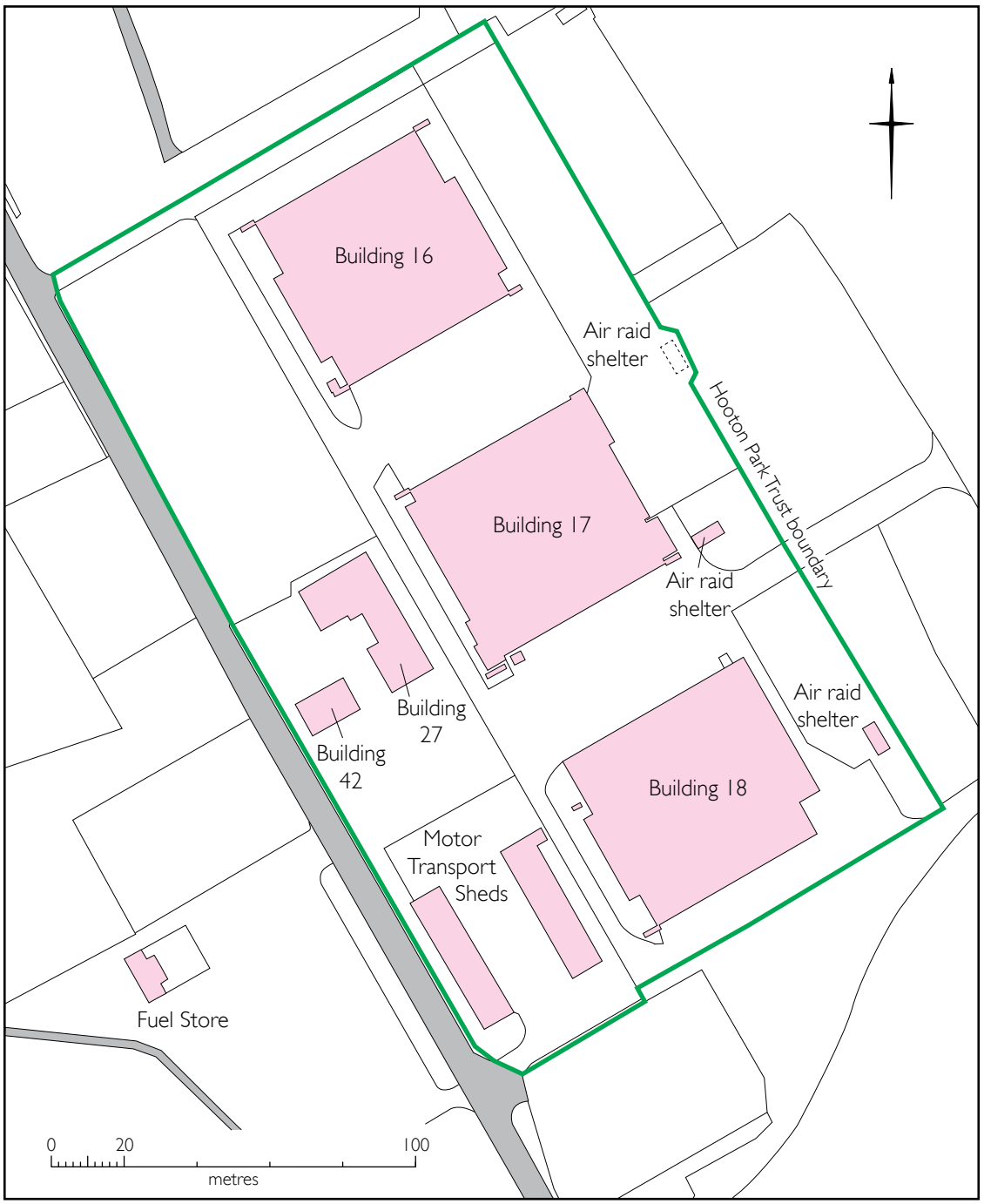

Figure 10: Block plan of the aerodrome and buildings which survive within the Hooton Park Trust boundary (© English Heritage, drawn by Philip Sinton).

air flow within the buildings, particularly when they were heated. The roofs are covered with asbestos cement sheeting and bitumen felt with the exception of the western hall of the northern GS shed (Building 16) which has largely collapsed and the central GS shed (Building 17) where this has been replaced with a metal roof covering. Between the two roof spans is a valley gutter which drains rainwater to downpipes in the centre of the north-west and south-east elevations. Additional natural light is provided internally by strips of roof lights at the apex of each span.

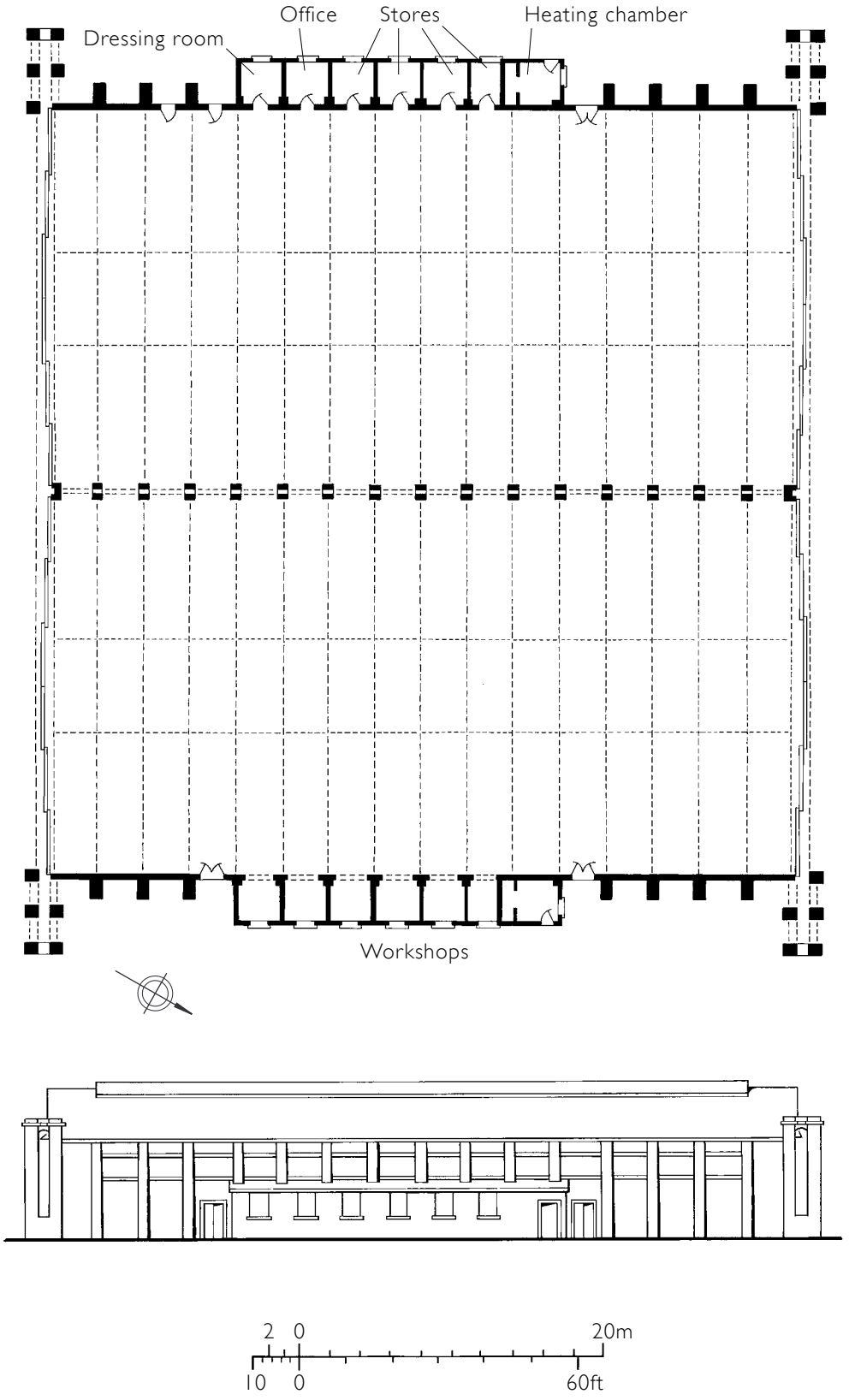

Figure 11: Plan of a double General Service shed, similar to those at Hooton Park (© English Heritage, drawn by Allan Adams).

Figure 12: Sliding doors at the south-east end of Building 18 (© English Heritage, photograph: Clare Howard).

Single-storeyed annexes, also constructed of red brick and with corrugated cement (asbestos) board roofs, were located along the north-east and south-west walls of each of the GS sheds to provide dressing rooms, offices, stores, workshops and boiler rooms (also known as heating chambers). The latter was important since the sheds would need to remain warm and dry to prevent the early planes, which were constructed of wood and canvas, from warping. The introduction of metal planes reduced the need for heating in the buildings and the boilers were often subsequently removed. The original 1917 annexes to the northern GS shed (Building 16) survive, as do those on the south-west sides of the central and southern GS sheds (Building 17 and 18) (Figure 14).

Internally, the GS sheds consist of two adjacent halls each of 16 bays in length with a width-span of 80 feet (28.38m) divided by a central brick arcade composed of 16 shallow segmental arches allowing pedestrian access between the two halls (Figure 15). The roofs are formed of 17 Belfast trusses which are composed of segmental laminated-timber principals and straight tie beams infilled by a lattice of wooden struts. Both the bow and the tie beam are composed of two parallel timber members sandwiching the lattice mesh and secured together at the ends by gusset boards which conceal the primary fixings (Figure 16). The trusses themselves rest on the supporting brick piers and are further reinforced by diagonal down-braces supported on stepped brick corbels projecting from the north-east and south-west walls of each shed and from the central arcade piers (Figure 17). Additional cross bracing is placed between the trusses for additional rigidity. Externally, the ends of the trusses extend beyond the brick walls and external brick piers and are fixed by horizontal timber battens which were originally covered by a wooden fascia to protect the truss ends from the elements (see Figure 17).

Figure 13: Door gantry on Building 18 (DP168364 © English Heritage, photograph: Alun Bull).

Figure 14: Building 18 from the south (DP168379 © English Heritage, photograph: Alun Bull).

Figure 15: Interior of Building 17 (© English Heritage, photograph: Clare Howard).

Figure 16: Belfast trusses in Building 17 (© English Heritage, photograph: Simon Taylor).

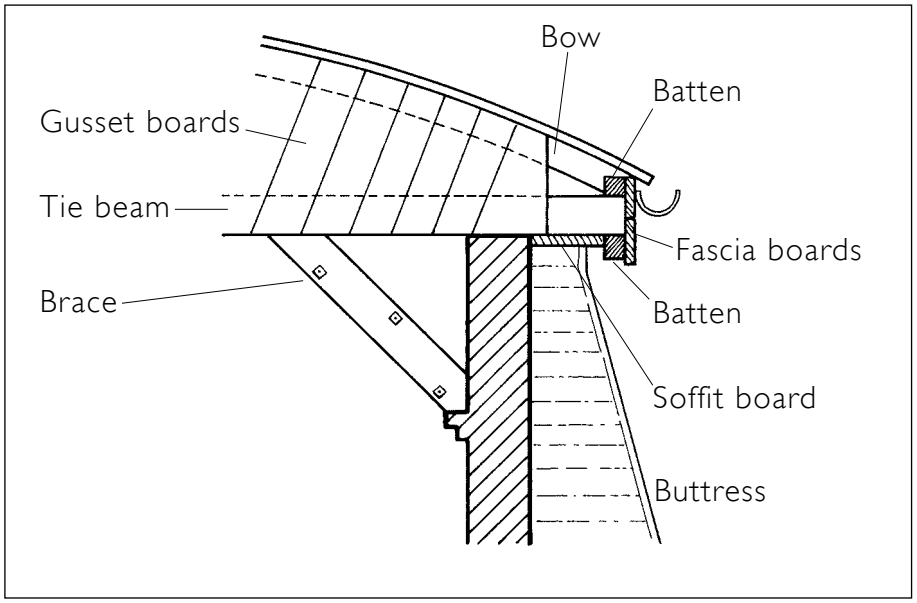

Figure 17: Cross section through the end of a Belfast truss (© English Heritage, drawn by Allan Adams).

Photographs taken of the GS sheds in 1923 show that at this time they had concrete floors, unlike some of the early sheds which had earth floors. The photograph of the interior of Building 18 shows eight pedestrian doors in one of the side walls, all leading into the side annexe; which side wall this was is unclear as the orientation of the photograph is not recorded (Figure 18). However, evidence for similar doorways is visible in the south-west wall of Building 17 suggesting that Buildings 16 and 18 may have been designed with the same arrangement (see Figure 11, Figure 19). It was not possible to undertake a close inspection of this area of Buildings 16 and 18 due to the presence of substantial amounts of broken asbestos. The 1923 photograph of the interior of Building 17, on the other hand, shows that the side wall was punctuated by wide, open, segmental arches which are a similar arrangement to the GS sheds at RAF Duxford but again, which side wall is being shown is unclear (Figure 20). There is no evidence of the wide segmental arches in the north-east wall of Building 17 at the time of writing (August 2014) although this is a result of the later modifications to create a corridor for offices to the north-east side of the building. However, the north-east wall of Building 18 retains the brick voussoirs of at least five segmental arches which have been wholly or partially blocked with brick (Figure 21). In summary, the north-east walls of the GS sheds appear to have had wide, open segmental arches - essentially an arcade - while the opposing south-west wall had a row of eight pedestrian doorways to access the annexe. The open arches would have provided easy access from the main hall for large pieces of machinery and, therefore, a practical arrangement for accommodating workshops or stores whilst the pedestrian doors led to more private and smaller rooms which were most likely used as dressing rooms, offices and stores.

Building 16

Building 16 was the least altered of all three GS sheds at the time of its partial collapse in 2011. It had retained its 27-pane metal upper level windows, all four brick gantries and a complete and working set of sliding doors at each end as well as its contemporary annexes to its side walls. It also differs from the other GS sheds in that the south brick gantry has been modified to accommodate what appears to be a small former look-out

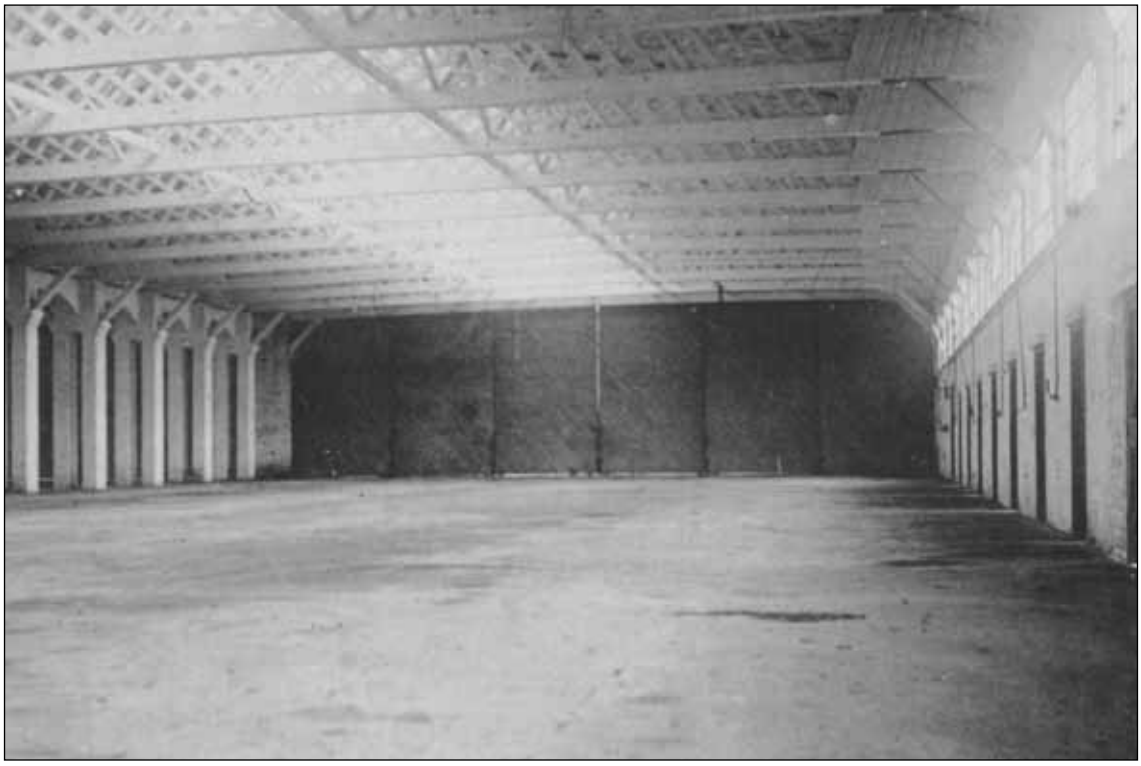

Figure 18: Interior of Building 18 photographed in 1923 (© Hooton Park Trust).

Figure 19: Interior of Building 17 showing the pedestrian doorways (© English Heritage, photograph: Clare Howard).

Figure 20: Interior of Building 17 photographed in 1923 (© Hooton Park Trust).

Figure 21: Interior of Building 18 showing the blocked arches (© English Heritage, photograph: Clare Howard).

and possible gun position[83] with access via a ladder through a hatch in the floor (Figure 22). The tower probably dates from the First World War since it is shown on the aerial photograph dated *circa* 1930 (*see* Figure 6), but has been heightened to accommodate what appears to be a tank perhaps for water associated with a sprinkler system. This was probably installed post-1961, although this cannot be verified without a full inspection of Building 16. The partial collapse of the building in 2011 and lack of funds to stabilise the remaining structure since that time have left it in a perilous state.

Figure 22: Tower above the gantry, Building 16 (© English Heritage, photograph: Simon Taylor).

Building 17

Building 17 (central GS shed) retains all four of its corner gantries but, like Building 18, only one set of its sliding doors remain. On the south-west side of the building, the 1917 annexe survives but has been extended at its western end to accommodate lavatories. The whole annexe, including its extension, is constructed of red brick which is rendered and painted and has a sloping roof of asbestos sheeting. Five ten-pane steel-framed windows survive at the south end of the annexe whilst the extension has smaller windows at the western end.

There are several annexes on the north-east side of the GS shed, added at different times (Figure 23). The earliest is the original 1917 annexe in the centre of the elevation which is constructed in a similar way to the south-west annexe with rendered brick walls but with a sloping corrugated metal roof. There is a single-storeyed extension to the east, shown on the 1945 plan,[84] and a two-storey brick extension to the north which was probably added in the 1950s or 1960s as additional offices, workshops and stores. These spaces are now used by the Griffin Trust as offices and meeting rooms. A brick-built generator house and associated oil tank to the south corner of the building were most likely added in the 1940s to generate power for the engineering machinery when the GS sheds were used by Martin Hearn. A small extension in this location is certainly depicted on the 1945 plan.[85]

Figure 23: Annexes, north-east elevation of Building 17 (© English Heritage, photograph: Clare Howard).

Internally, there are scars in the floor to suggest that the main halls were subdivided into some smaller offices, particularly in the western corner of the building; however, these partitions would not have been part of the 1917 design. Four of the arches within the central arcade have been removed and replaced by rolled steel joists (RSJs), presumably to provide a larger opening between the two halves of the shed in order to facilitate the free movement of large vehicles or equipment (Figure 24). Again, these changes most likely took place during the 1960s or 1970s and were executed by Vauxhall. A brick partition wall has been added along the north-east wall to create a corridor for the offices located in the annexes beyond; this is likely to be contemporary with the later 1950s or 1960s annexe. The corridor conceals any evidence for the former segmental arches shown on the 1923 photograph (see Figure 20). In the opposite wall, evidence

for the row of pedestrian doorways providing access to the south-west annexe is visible in the form of blocked doorways and projecting square brick headers. Some of these doorways have been retained to allow access to the annexe.

In 2012, the asbestos roof sheets of Building 17 were replaced with metal ones; some restoration work has also been undertaken on the north-east annexes to accommodate the Griffin Trust offices. However, restoration of the building remains ongoing.

Figure 24: Central arcade showing where the arches have been removed and replaced by an RSJ, Building 17 (© English Heritage, photograph: Simon Taylor).

Building 18

Building 18 (southern GS shed) has been the most modified of all three GS sheds but its layout is largely unaltered. It comprises two open halls divided by the central arcade (partly boarded over on one side) with a double-span Belfast-truss roof over all. The annexe on the south-west side is probably contemporary with the rest of the shed and retains a single original ten-pane steel-framed Crittall window at its west end whilst the other windows have been replaced by wider windows with aluminium frames, probably in the 1950s or 1960s. The annexe is built of brick, which has been rendered and painted, with a sloping roof which abuts the south-west elevation and the sloping buttresses along the main elevation (Figure 25). A small brick extension at the west end of the annexe, probably added in the 1940s or 1950s, accommodates water closets and trough urinals (Figure 26). The single-storeyed annexe set against the north-west elevation was probably added in the 1950s or 1960s as workshops, offices and lavatories and at its north end housed the generator for the whole site. It is constructed of red brick with a shallow sloping roof which is covered with concrete-slab sheets and felt covering. It has aluminium-framed windows similar to those found on the south-west annexe.

Figure 25: Annexe and sanitary addition, Building 18 (© English Heritage, photograph: Clare Howard).

Figure 26: Urinals within the sanitary addition, Building 18 (© English Heritage, photograph: Allan Adams).

All of the brick door gantries have been removed from Building 18 except for that at the southern corner which retains its steel door guides and the accompanying timber sliding doors, although they have been concreted into the ground on this (south-east) side of the building. A later vehicle door and pedestrian doors have, however, been inserted into the former sliding doors at this end. These insertions were presumably made by Vauxhall following their acquisition of the site in 1961 and were described in the list description prepared in 1988. The sliding-timber doors on the north-west elevation were replaced, probably in the 1980s, by a continuous red brick wall (in existence when the list description was written in 1988) with two large vehicle doorways providing access to and from each half of the shed. The northern doorway has a sliding door over it whilst the southern doorway does not have a door and is open, although there may have been a door to the internal face of the wall which has since been removed. There are also three contemporary pedestrian doorways in this elevation. The ends of the 1917 brick walls can be seen in the centre of the north-west elevation and at either end of it, with clear construction breaks between the original work and the later brick infill (Figure 27).

Figure 27: Building 18 from the north (© English Heritage, photograph: Clare Howard).

The upper windows in the north-east and south-west elevations have been blocked and rendered over externally and the windows are described as bricked in the 1988 list description. Internally, the two main halls retain their layout although there have been some minor, later additions including some post-1961 partitioning and the addition of electrical services and machinery. The open arches in the north-east wall have been blocked with brickwork and smaller pedestrian doors have been inserted; this probably took place after 1961 when the GS sheds were no longer used to accommodate aircraft. Some of the windows in the south-west elevation have also been blocked or have been modified (in the annexe) to accommodate replacement frames.

Ancillary buildings

The remaining extant buildings to the south-west and north-east of the GS sheds were not investigated in depth as part of the present assessment but a rapid survey of these buildings was undertaken in order to appreciate the context and setting of the GS sheds. The four buildings, comprising Buildings 27 and 42 and the two MT sheds, are contemporary with the GS sheds themselves and were built in 1917 or shortly afterwards. All of the buildings were certainly completed and in use on 1st August 1918[86] and they served as technical buildings complemented by the domestic buildings formerly located to the south, including and surrounding Hooton Hall. There were at least three further huts similar to Building 27 situated to the north of Hooton Hall and some smaller huts to the north-west of it as indicated by the 1918 and 1922 plans. Those to the north-west had been removed by 1928 and were replaced by detached houses. It is unclear when the remainder of the huts were removed: they appear on the 1945 site plan[87] yet had been removed by the time of publication of the 1:1,250 1969 Ordnance Survey map.[88] The schedule accompanying the 1945 plan lists two of the huts as the station headquarters and ATC headquarters (formerly the educational building) respectively. The ARS shed was removed in the 1930s having probably housed Martin Hearn's business until new hangars were built for it further to the north-east. The 1945 plan of Hooton Park Aerodrome (see Figure 8) depicts 153 buildings which are numbered and described in an accompanying schedule, most of which were technical. The domestic buildings were still located to the south-east of the GS sheds, on the site of Hooton Hall, although some married quarters were located to the north-west.

Building 27

Building 27 is situated approximately 15m to the south-west of Building 17. It is rectangular in plan and is twelve bays long by three bays wide with two annexes to the rear. It is constructed of red brick which has been rendered and painted (Figure 28). The roof is pitched and consists of eleven composite trusses with iron tension rods; it has been restored by the Hooton Park Trust and is covered with felt laid on timber boards. Three skylights in the pitch of the roof are interspersed with four ridge ventilators. The building has tall, ten-pane, steel-framed windows throughout which are original. Just off centre in the north-east and south-west elevations of the main block are large opposing timber-plank doors which allowed vehicles to be driven into the building and through to a yard to the south-west. Pedestrian access is via doorways in the north-west and south-east elevations, although the latter is a post-1930 insertion, as indicated from the *circa* 1930 aerial photograph (see Figure 6). The building has one large rectangular room (Building 27) and three smaller separate annexes to the rear (south-west) as well as two smaller stores in the south corner. The main room is largely an undivided space, as it would have been when built in 1917-18, with three smaller rooms (a store, office and porch) at the north-west end. Later subdivisions have created a kitchen against the north-east wall and the room at the north corner has been further subdivided into smaller offices. There are two smaller annexes with lean-to roofs to the rear (Buildings 27A, 27B and 27C) and an extension to the northern annexe which has a pitched roof (Building 28). It is unclear when the latter was added but it is not shown on the aerial photograph taken in the 1930s (see Figure 6) although it had been built by the time the 1945 plan was drawn (see Figure 8).[89] The extension is similarly constructed of rendered

red brick but with a roof of steel Fink or trussed-rafter trusses and with a covering of corrugated cement sheets (some replacements). Building 27 is listed in the 1945 schedule as 'centralised workshops' (formerly fabric shop) and the smaller annexes may have had specific uses such as a carpenter's workshop or machine shop. The building is similar in form to the former fabric store at the RFC airfield at Dover.

Figure 28: Building 27 from the south-east (© English Heritage, photograph: Clare Howard).

Building 42

Building 42 appears in the 1918 aerial photograph and on the 1918 Quarterly Survey plan (*see* Figures 3 and 4) and is presumably contemporary with Building 27 and the GS sheds. It stands approximately 10m to the south-west of Building 27 but, unlike Building 27, Building 42 is not a listed building. Building 42 is also constructed of red brick which has been rendered and painted and the walls are strengthened by external brick buttresses which are interspersed with ten-pane metal-framed windows with tiled sills (Figure 29). It has a pitched roof of wooden-lattice trusses which were presumably constructed at the same time as the GS sheds and by the same company (Figure 30). These trusses, however, differ from the larger ones in the GS sheds in that they have a traditional, straight-pitched rather than segmental profile. They consist of two straight laminated-timber principal rafters and two laminated-timber tie beams joined by a timber lattice. The ends of the principal rafters and tie beam are covered by timber gusset boarding which conceals the fixings. The trusses extend over the external walls, are supported internally by stone corbels and are covered externally by a timber fascia. Internally, the building is divided into a large room and a smaller room, at its north-east end, by a brick

wall. The main room is reached directly from the outside via a large timber sliding vehicle door in the south-east elevation, whilst the smaller store room is reached through a smaller door. The aerial photograph taken in the 1930s (see Figure 6), shows that the latter was formerly a window of the same type as the rest while the vehicle doorway is original but may have been modified to accommodate the sliding door. Unpainted areas of the ceiling and scars in the floor suggest that there was previously a partition to the south corner of the roof which rose to the rafters and there is a former stove base (a stone block) of unknown date at the south-west end of the room. The lack of a louvre in the roof suggests that a stove was not originally provided or that the roof might have been modified, removing evidence of a louvre in the process. The aerial photograph of the 1930s shows the word 'Pobjoy' painted on the roof, indicating that it was used by the engineering company during their time at Hooton between 1931 and 1933.[90] The number relating to this building on the 1945 plan is partially illegible but is most likely '42' which is identified in the accompanying schedule as an acetylene welder's shop.

Figure 29: Building 42 from the south-east (© English Heritage, photograph: Clare Howard).

Figure 30: Wooden lattice roof trusses in Building 42 (© English Heritage, photograph: Clare Howard).

Motor Transport sheds

The two parallel Motor Transport (MT) sheds stand approximately 14m to the south-west of Building 18 and were probably built at the same time as the GS sheds as part of the complex's first phase; they certainly appear in the 1918 aerial photograph and on the 1918 Quarterly Survey plan (see Figures 3 and 4). The 1918 survey records 42 vehicles stationed at Hooton including touring cars, tenders, motorcycles, sidecars and trailers; most of these vehicles were stored and maintained within the MT sheds.[91] The two sheds stand parallel to each other with a yard between them (Figure 31). Each brick building is rectangular in plan, thirteen bays long by three bays wide with a pitched roof covered with sheet metal. The latter was introduced by the Hooton Park Trust in *circa* 2000 to replace the former timber-board covering.[92] The roofs trusses are of composite timber, with iron tie rods and timber raking side struts, and are set on brick piers. Originally the buildings were open fronted with perhaps double doors across two or three of the end service bays (as was typical in First-World-War MT sheds)[93] but the large vehicle openings have been covered over with either corrugated metal or boarding, have been blocked with concrete blocks or have had metal roller-shutter doors inserted. At the south end of the eastern-most shed, one of the openings at the south end has a set of timber-plank doors but this has been modified. There are ten-pane, metal-framed windows in the south-west elevation of each shed and the north-east elevation of the eastern shed. The eastern shed has a small outshot at its north corner which aerial-photographic evidence indicates was added between 1918 and 1928. The outshot has a single-pitched roof and is reached from an office which is partitioned from the main bay by brick walls in the north corner.

Figure 31: Motor Transport sheds from the north (© English Heritage, photograph: Clare Howard).

Second-World-War air-raid shelters and other later structures

During the Second World War three air-raid shelters were built to the north-east of the GS sheds, partially sunk into the ground. The northern-most of these survives as a buried feature only. The central shelter was heavily overgrown and inaccessible at the time of survey – only a fragment of the former entrance is currently visible – but the southern-most one has been cleared of vegetation, its fabric consolidated, and is now accessible by steps. The central and southern-most shelters are of red brick with flat reinforced-concrete roofs which would originally have been covered with earth. All three shelters are shown on the 1945 plan (see Figure 8) and are annotated 'ES' for Emergency Shelter.

Part of the aerodrome's perimeter track, a section of runway and an area of hard standing (an Aircraft Servicing Platform as indicated by the 1945 plan) survive beyond Hooton Park Trust's boundaries (Figure 32). To the north of the GS sheds, beyond West Road, is a B1 type hangar (see Figure 1), constructed during the Second World War, which later accommodated 610 Squadron. The building is currently in private commercial use but is visible from West Road; it is clad in corrugated-metal sheets and has a pitched roof also covered with corrugated metal. Not far from the original GS sheds, and to the south-west of the MT sheds, is a single-storey brick building which is a Second World War fuel store (see Figure 10). The building is currently owned by General Motors.

Figure 32: An aerial photograph of Hooton Park from the north-west (20941_020 © English Heritage, photograph: Dave MacLeod).

SIGNIFICANCE

The three General Service sheds at Hooton Park are a rare example of a complete group of hangars constructed in 1917. Together with their ancillary buildings they form one of the best-preserved complexes of First-World-War aviation structures in the country. Whilst all three GS sheds have been subject to modification it has been relatively minimal; the buildings largely retain their original internal layouts and many of the surviving fixtures and fittings serve as a constant reminder of the key role Hooton has played in the history of military, civil and commercial aviation and aircraft development.

Evidential

Two of the GS sheds at Hooton (Buildings 16 and 18) are in an advanced state of disrepair and the buildings have been subject to various minor modifications since they were constructed in 1917. However, the survival of the brick gantries accompanied by the sliding doors is particularly rare, given that failure of the door runners often led to their removal and replacement with brick walling; this has been undertaken to one side of both Buildings 17 and 18. The buildings themselves, however, retain much of their original layout and structural fabric including their side annexes, with the exception of the north-east annexe of Building 18, which has been replaced. These modifications are easily identifiable and reflect the complex development and history of the site from its first use during the First World War, its inter-war use as a civil aerodrome and for manufacture, its re-establishment as a military base during the Second World War, through to its conversion and incorporation into Vauxhall Motors' largest car factory in Britain.

The *Survey of Military Aviation Sites and Structures,* undertaken and revised by English Heritage between 2000 and 2003, identified only eight surviving groups of GS sheds (or hangars) out of a total of 301 sites which were occupied by the RAF in 1918.[94] Furthermore, of the 63 Training Depot Stations documented in November 1918, only two still retain their full complement of paired General Service sheds: Hooton Park and Duxford in Cambridgeshire.[95] However, those at Duxford are of slightly later design and whilst the sheds at both bases are structurally similar and share similar layouts, they also differ in key ways. The main hangar doors at Duxford, for example, have folding 'Esavian' doors, obviating the need for brick stabilising gantries, which the earlier type at Hooton, with multi-leaved sliding doors, required.

Four former TDS sites (out of the 63 recorded in 1918) retain GS sheds which are similar to the type and date of those at Hooton Park, although none of these examples retain their original complement of GS sheds. These sites are Hucknall (Nottinghamshire), Old Sarum (Wiltshire), Shotwick, later known as Sealand (Flintshire, Wales), and Leuchars (Fife, Scotland); their hangars have brick side walls strengthened by buttressing, multi-leaved sliding doors with brick-stabilising gantries, and Belfast-truss roofs with spans of 80 feet over each hall.[96] Two GS sheds and an ARS shed do survive at Old Sarum and are in use; one of the hangars houses a museum. The ARS shed at Old Sarum is the only known surviving example and so the loss of the ARS shed at Hooton is particularly unfortunate.[97] A group of four coupled GS sheds survive at Henlow, Bedfordshire, built

slightly later than Hooton's in 1918, but Henlow was the Eastern Command Repair Depot, not a Training Depot Station and is, therefore, different from Hooton in various respects. Only two of three coupled GS sheds survive at Hucknall and these are now in industrial use. Like Hooton, Hucknall's sheds have been modified; the brick gantries have been removed or altered and the opening ends, closed by sliding doors, have been walled up. Two of the three coupled GS sheds also survive at Sealand and are in a fairly good state of preservation, each shed retaining all four gantries, although their sliding doors have been removed and replaced by fixed metal sheeting.[98] At Leuchars, only two of the original three GS sheds survive, one in its original condition while the other has had internal brick partitions added.[99] The rarity of the design of the early GS sheds and the survival of a complete set, formerly part of a TDS, at Hooton lend the buildings a particular significance which is reflected in their Grade II* listed status.

Aesthetic/ Architectural

The GS sheds at Hooton were not designed with aesthetics in mind; the intention was to construct secure, semi-permanent, functional buildings for mass aircraft assembly, storage and repair. However, the massive, low-slung scale of the paired GS sheds and the graceful twin curves of their Belfast-truss roofs, framed by the gauntly elegant door gantries, lend the structures a very strong and pleasing architectural presence in the landscape.

The earliest GS sheds to be built in England (*circa* 1916) were essentially timber-framed structures, considered to be temporary, consisting of latticed wall panels between timber wall posts which in turn supported timber bow-string roof trusses. External cladding was of corrugated metal, wooden or cement sheeting. By 1917, true Belfast trusses were increasingly being used for the roofs; a strong but economical way to span the large uninterrupted floor spaces needed for aircraft storage, although timber-framed walling continued to be used for the majority of sheds built to this revised design. The GS sheds at Hooton, however, are examples of a second version of the 1917 design and are constructed of brick; their Belfast trusses are supported on the buttressed exterior wall tops and by paired brick piers in the centre of the sheds where the spans meet. Multi-leaved sliding doors, like those on the Hooton sheds, with associated timber or brick gantries were employed from 1916 onwards but by the latter half of 1917 had been superseded by 'Esavian' concertina-type, folding doors. The GS sheds at Hooton, therefore, are rare examples of the type built following the introduction of brick construction but before the adoption of the folding doors. Also, as previously noted, the majority of other GS sheds of this type which survive have had their brick gantries removed following the failure of the sliding doors but at Hooton, Building 18 retains one gantry whilst Buildings 16 and 17 retain all four gantries. The tall gantries, the sloping brick side-wall buttresses and the curved bow-string roofs are the most impressive aspects of the external design of the GS sheds, combining sharp, angular vertical lines with sweeping, curved horizontals to good effect.

Internally, the complex lattice-work of the timber Belfast trusses and their curving principals are the most architecturally striking feature. Use of the Belfast-truss roof was pioneered in the shipyards and industrial buildings of Northern Ireland from the 1860s onwards and the type was developed by McTear and Company Limited of Dublin in

response to the need to achieve large roof spans at low cost.[100] Its association with the buildings of Belfast in particular led to the general adoption of the term 'Belfast' for this particular type of bow-string truss. McTear and Company continued to trade until 1903 by which time a number of other companies were also manufacturing Belfast trusses and it was one of the most prolific of these, D Anderson and Company, which provided the Belfast trusses for the GS sheds at Hooton Park. Although Belfast trusses were extensively used for the roofs of large military and industrial buildings throughout Britain during the early 20th century, very few such roofs now remain and so the survival of three large double-span Belfast roofs at Hooton Park is particularly significant, in spite of the partial collapse of Building 16. Hooton Park still retains two complete double-span examples of Belfast-truss roofs in the context of a complete group of three GS sheds with many of the associated original ancillary buildings still standing nearby. The rows of distinctive latticed trusses diffuse the natural light from the linear apex-windows and, combined with the elegant central brick arcades, create unique interior spaces which are open, airy and bright.

Historical

Hooton Park as a place has a long, fascinating and well-documented history stretching back over a thousand years to the time of Domesday although physical evidence of its early history survives, if at all, only as buried remains. However, it is the history of Hooton Park as a military aerodrome and its key role in the development of civil and military aviation which make it of particular, national significance.

The national TDS scheme is generally thought to be one of the greatest programmes of military airfield construction of the 20th century in Britain.[101] Hooton Park Aerodrome is only one of a few surviving TDS sites dating from the First World War and is also, despite areas of serious conservation concern, one of the best-preserved groups of airfield buildings from that time. During the inter-war period, as described in the main section of this report, the aerodrome at Hooton served a number of purposes. Perhaps the most notable event was the establishment there of the Liverpool and District Aero Club (LDAC) in 1928. The LDAC was one of the very few aero clubs subsidised by the Air Ministry and it grew to become one of the most important centres for light aircraft in Britain during the late 1920s and early 1930s, attracting important and famous aviators of the time such as Amy Johnson, Alan Cobham and even the Prince of Wales (the future King Edward VIII). The site briefly served as the main airport for Liverpool and the north-west between 1930 and 1933, pre-dating nearby Speke (now Liverpool John Lennon Airport) and Ringway (now Manchester Airport) which were established in 1933 and 1937 respectively. In the same period, Hooton Park's GS sheds accommodated the Comper Aircraft Company and Pobjoy Airmotors who together manufactured the award-winning Comper Swift light aircraft. In 1932 a Comper Swift owned by the Prince of Wales won the King's Cup Race and the type continued to be successful into the 1950s. Comper and Pobjoy vacated Hooton Park in 1933 and in their stead Martin Hearn (most famous as the wingwalker in Alan Cobham's Flying Circus) established his business repairing and servicing RAF aircraft in Building 17. Martin Hearn's business grew to become the No. 7 Aircraft Assembly Unit during the Second World War, assembling over 9000 aircraft and even testing some of the first helicopters (Sikorsky Hoverfly) seen

in Britain. In 1936 the aerodrome received 610 (County of Chester) Squadron which, when war was declared in 1939, went on to play a major role in the defence of Britain. In 1940 the squadron provided cover for the evacuation of Dunkirk and shortly afterwards were at the forefront of the Battle of Britain in which they suffered heavy losses. The squadron was disbanded in 1945 but re-formed at Hooton in May 1946 where it continued to serve until the Royal Auxiliary Air Force (RAuxAF) was disbanded in 1957.

During the Second World War Hooton came under the control of the RAuxAF as part of Coastal Command, playing a key role in the Battle of the Atlantic and helping to keep the shipping lanes in the Irish Sea in use through reconnaissance in search of enemy submarines. In 1942 the 11 Radio School and 3 General Reconnaissance School were also established at Hooton to train radio operators in the use of airborne equipment and radar: it was the only one of its kind in the country.[102]

The establishment of the Vauxhall Factory at Hooton in the 1960s is also a significant part of the site's history. The Ellesmere Port factory, was once one of the company's largest in the country and is now GM's largest car factory in the UK. In 1964 the factory produced the first Vauxhall Viva and in the 1970s it manufactured the Chevette. The Astra, made there during the 1980s, is still the main model produced there today.[103]

Communal/ Social

Hooton Park is an important and resonant place for many people interested in and fascinated by military and civil aviation history and offers an opportunity to explore some of the buildings associated with the two world wars as well as the inter-war and post-war history and use of the site. Many of the visitors to Hooton have a personal connection with it, having lived or worked there themselves or having relatives or ancestors that were once involved with the aerodrome. Hooton Park is fortunate to have a group of volunteers dedicated to the restoration and use of the site and without their efforts, the remaining buildings would most likely have been lost. Careful and appropriate restoration of the southern GS shed (Building 18) will ensure that the significance of the site is maintained and that it is conserved for future generations to appreciate and enjoy.

NOTES

1 6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945.

2 Oliver 2005, 71.

3 Ordnance Survey 1:10,560, Cheshire, Sheet 23 SW, revised 1938, published 1946.

4 AIR 1/452/15/312/26Volume 1 – Plan of Hooton Park TDS, 1918.

5 SC/4/2/7 – Plan accompanying sales particulars, 1922.

6 CCH 5/7997/2 – Consultants' report, 1936.

7 MPC 77/1/677 H.42 – Plan and accompanying schedule of RAF Hooton Park, 1945.

8 English Heritage 2006.

9 Lewis 1848, 542-545.

10 De Figueiredo and Treuherz 1988, 244.

11 Emery 2000, 577.

12 0556_119 - Ellesmere Port Red Box Collection, English Heritage Archive; Neale 1823.

13 A copy of the1823 engraving of Hooton Hall is on display in the Hooton Park Trust's Museum.

14 Richardson 1993, 9.

15 Abraham 1994, 15-23.

16 Richardson 1993, 11.

17 Smith 1990, 99.

18 Abraham 1994, 15-23. Cubitt Ltd also built other military stations including the National Aircraft Factory No. 1 at Waddon.

19 English Heritage NRHE 1397965 accessed 24 June 2014; Francis 1996, 88.

20 Francis 1996, 12.

21 Smith 1990, 100; Abraham 1994, 16; Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014.

22 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS; Abraham 1994, 17.

23 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS.

24 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS; Abraham 1994, 15.

25 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS; Francis 1996, 12.

26 English Heritage 2003.

27 Abraham 1994, 15-23.

28 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS.

29 Ibid.

30 Delve 2007, 169.

31 Abraham 1994, 17.

32 Richardson 1993, 10.

33 Abraham 1994, 15.

34 Peake 1964, 3.

35 Abraham 1994, 15-23; Richardson 1993, 2; Pratt and Grant 2002, 123.

36 'Prince to fly to Jamboree' The Yorkshire Post, 19th July 1929, 14.

37 Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014. Sir Alan Cobham (1894 – 1973) was a pioneer in aviation. He served with the Royal Flying Corps in World War I and is most famous for his long-distance flying. Cobham was awarded the Order of the British Empire (KBE) and the Air Force Cross (AFC).

38 Smith 1990, 100; Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014.

39 CCH 5/7997/2 – Consultants' Report, 1936.

40 Abraham 1994, 15.

41 Smith 1990, 100.

42 Information collected by Hooton Park Trust and displayed in the museum at the site.

43 Richardson 1993, 30.

44 Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014.

45 Abraham 1994, 17.

46 Smith 1990, 100.

47 D6483.1.5 – Information in a letter from Gordon Hemmings, undated.

48 CCH 5/7997/2 – Consultants' report, 1936.

49 Hooton Park Trust website http://www.hootonparktrust.co.uk/history1.html Accessed 24 June 2014.

50 Jefford 1988, 99-100.

51 Delve 2007, 172; Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014. Martin Hearn previously built aeroplane wings for Alan Cobham's Flying Circus.

52 Hooton Park Trust, unpublished text received August 2014 from Colin Schroeder, archivist; Richardson 1993, 30.

53 Abraham 1994, 15-23.

54 Smith 1990, 102.

55 Abraham 1994, 15-23.

56 Abraham 1994, 18.

57 Abraham 1994, 15-23.

58 All civil aviation ceased during the Second World War.

59 Abraham 1994, 15-23.

60 English Heritage 2003.

61 Abraham 1994, 18.

62 Delve 2007, 170.

63 Smith 1990, 101.

64 Smith 1990, 102.

65 Abraham 1994, 15-23.

66 Ibid.

67 Ibid.

68 English Heritage 2003.

69 English Heritage NHLE 1075377, accessed 24 June 2014; Delve 2007, 171.

70 Innes 1995, 24.

71 6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945.

72 Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014.

73 Richardson 1993, 30.

74 Hooton Park Trust 2014 'History' www.hootonparktrust.co.uk, accessed 24 June 2014.

75 Smith 1990, 102.

76 Thacker 2010, 12.

77 Smith 1990, 102.

78 Abraham 1994, 16.

79 Thacker 2010, 12.

80 A griffin forms part of Vauxhall Motors' emblem.

81 English Heritage 2003.

82 Francis 1996, 85.

83 Information from the Hooton park Trust.

84 6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945.

85 Ibid.

86 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS.

87 6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945.

88 Ordnance Survey 1:1,250 Cheshire, published 1969.

89 6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945.

90 No reference, Hooton Park Trust Archive – Aerial photograph from the south, circa 1930.

91 AIR 1/452/15/312/26Volume1 – Description of Hooton Park TDS.

92 Graham Sparkes pers. comm. 14 October 2014.

93 Francis 1996, 36.

94 English Heritage 2003.

95 Ibid.

96 Ibid.

97 Ibid.

98 Cadw Listed Buildings 24541 and 24540. Historic Wales 2014 historicwales.gov.uk, accessed 12 September 2014.

99 RCAHMS Canmore 202702, accessed 12 September 2014.

100 Gould 2001, 78.

101 English Heritage 2003.

102 Ibid.

103 Morrison and Minnis 2012, 38.

GLOSSARY

Aerodrome – a complex of buildings and areas dedicated to the operation of aircraft.

Air Ministry Laboratory (AML) Bombing Teacher – this was a building which provided simulated bombing training using projected images.

Aircraft Acceptance Park (AAP) – these parks were set up to receive aircraft in sections from elsewhere (often overseas) during the First World War. The aircraft would be assembled and flight tested at the AAPs.

Aircraft Assembly Unit (AAU) – these units were set up, often within aerodromes, to receive aircraft in sections from elsewhere (often overseas) during the Second World War. The aircraft would be assembled and flight tested at the units. Each unit was numbered and Assembly Unit No. 7 was formed in 1939 at Hooton Park.

Aircraft Repair Section (ARS) shed – a shed usually with a single hall and with smaller annexes to one side, often constructed with bow-string or Belfast-truss roofs. The building was used to store, maintain and repair aircraft.

Airfield – the area within which aircraft take-off and land. This term may be used interchangeably with flying field.

Avro 504 – a biplane fighter aircraft manufactured by the Avro Aircraft Company. It was introduced in 1913 and was the most popular type of aircraft used in the First World War being used as a trainer after 1915-16.

Avro Tutor – a biplane used by the RAF as a trainer. It was developed by A V Roe and Company (later Avro Aircraft Company).

B1 hangar – this type of hangar was generally built from 1942 onwards and has a pitched roof with sliding doors to each end. The B1 hangars were usually clad in asbestos or steel sheets.

Belfast truss – a specialist roof truss developed in the 1860s for use on industrial buildings, mostly in Belfast and used on aircraft hangars in Britain from 1917 until 1919. The term began as a colloquialism due to the type's association with buildings in Belfast. A Belfast truss has a wooden bow-string girder with diagonal, lattice, bracing to connect the girder and the straight cord or tie beam. The trusses used in aircraft hangars initially had spans of 24.4m (80 feet) but this was later increased to 30.5m (100 feet).

Bellman hangar – a type of hangar built extensively during the inter-war years and Second World War. The hangars have shallow-pitched roofs with wide spans, and large end-opening sliding doors.

Blister hangar – this hangar type of the Second World War was an arched structure composed of wooden or steel ribs which would be covered with asbestos sheets or wooden panels.

De Havilland Chipmunk – a two-seat, single-engine aircraft used primarily for training RAF pilots during the early 1950s. It was developed by de Havilland Aircraft of Canada Ltd.

Fairey Battle – a single-engine light bomber aircraft developed in the late 1930s by the Fairey Aviation Company.

Flight office – a building containing office accommodation for pilots, flight commander and flight sergeants.

General Service (GS) sheds – Large aircraft hangars built during the First World War.

Gloster Meteor – the first British jet fighter aircraft available for use during the Second World War. It was developed during the 1940s and its pioneering jet engines were designed by Sir Frank Whittle. The planes were manufactured by the Gloster Aircraft Company.

Hawker Hart – a two-seat biplane light bomber aircraft used by the RAF. It was designed by Sydney Camm in the 1920s and manufactured by Hawker Aircraft. Harts were popular during the inter-war period but were replaced by Hawker Hinds in the 1930s.

Hawker Hind – a biplane light day-bomber aircraft which was an improved version of the Hawker Hart. It was manufactured by Hawker Aircraft and was released in 1934 and was being used by the RAF by 1935.

Hawker Hurricane – a single-seat fighter aircraft designed by Sydney Camm and manufactured by Hawker Aircraft. The plane was released for use by the RAF in 1939 and was the main fighter aircraft used during the Battle of Britain and the Battle of France.

Link Trainer – a simulator named after its designer Albert Link; the original trainer of 1929 was designed to safely teach new pilots how to fly by their instruments alone.

Motor Transport (MT) sheds – these buildings were generally built in pairs with a yard area between the two and date from the First World War. The buildings are open-fronted with two or three service bays at one end. They were used for the storage, repair and maintenance of all station motor vehicles.

Robin hangar – A hangar with pitched roof and sliding doors at one end. The whole structure was usually clad in asbestos sheeting.

Sopwith Scout (also known as a Sopwith Pup) – a single-seat fighter biplane used by the Royal Flying Corps from 1916. It was built by the Sopwith Aviation Company.

Sopwith Dolphin – a biplane fighter aircraft introduced in February 1918 for use during the First World War. It was manufactured by the Sopwith Aviation Company.

Supermarine Spitfire – a single-seat aircraft developed in numerous configurations from the late 1930s and used throughout the Second World War, mainly as a fighter aircraft, but also for reconnaissance. The plane was designed by R J Mitchell, a British aeronautical engineer. It was the only British fighter to remain in production throughout the Second World War and was one of the most numerous and extensively used.

Taylorcraft Auster – an observation aircraft developed by Taylorcraft Aeroplanes Limited during the Second World War.

Tenders – a generic term used to describe a heavy-duty motorised vehicle generally used for specific purposes and/or carrying specialised equipment. These could be different sizes depending on their use.

Tiger Moth – a biplane manufactured by de Havilland used as a training aircraft by the RAF from 1932-52.

Training Depot Station (TDS) – a station set up during the First World War to train pilots, particularly those from overseas. The term was used from June 1918 onwards.

Turret Trainer – this was a building used for aircraft turret practice (observation and gunnery).

Watch office – an office from which the airfield activity, including aircraft take-offs and landings, and meteorological conditions could be monitored.

BIBLIOGRAPHY

Abraham, B 1994 'Hooton Park Aerodrome History'. *Airfield Review* **67**

Abraham, B 2004a 'Belfast truss hangars: the survivors'. *Airfield Review* **102**

Abraham, B (ed) 2004b 'Feedback: Belfast truss hangars April 2004'. *Airfield Review* **103**

Abraham, B 2004c 'Belfast truss hangars: Hooton Park, Cheshire'. *Airfield Review* **105**

Cullen, L (ed) 1988 'Airfield building types No. 11'. *Airfield Review* **9**

De Figueiredo, P and Treuherz, J 1988 *Cheshire Country Houses*. Surrey: Biddle

Delve, K 2007 *The Military Airfields of Britain: Wales and the West Midlands*. Marlborough: Crowood Press

Department for the Environment 1988 *List of Buildings of Special Architectural or Historic Interest: Borough of Wirral, Merseyside*

Emery, A 2000 *Greater Medieval Houses of England and Wales 1300-1500, Volume 2*. Cambridge: Cambridge University Press

Francis, P 1996 *British Military Airfield Architecture: From Airships to the Jet Age*. Sparkford: Patrick Stephens Ltd

Gould, M H 2001 'A Historical Perspective on the Belfast Truss Roof'. *Construction History* **17**

Halley, J J 1988 *The Squadrons of the Royal Air Force & Commonwealth 1918-1988*. Tonbridge: Air Britain

Hartwell, C, Hyde, M, Hubbard, E and Pevsner, N 2011 *The Buildings of England: Cheshire*. London: Yale University Press

Innes, G B 1995 *British Airfield Buildings of the Second World War, Aviation Pocket Guide*. South Dakota: Midland Publishing Limited

Innes, G B 2000 *British Airfield Buildings of the Second World War, Volume 2: The Expansion and Inter-War Periods, Aviation Pocket Guide*. South Dakota: Midland Publishing Limited

Jefford, C G 1988 *RAF Squadrons: A comprehensive record of the movement and equipment of all RAF squadrons and their antecedents since 1912*. Shrewsbury: Airlife Publishing

Lake, J 2003 'Thematic Study of Military Aviation Sites and Structures'. Unpublished report, English Heritage

Lewis, S 1848 *A Topographical Dictionary of England*. Institute of Historical Research

Marriott, L 1997 *British Military Airfields Then and Now*. Runnymede: Ian Allan Printing

Menuge, A 2006 *Understanding Historic Buildings: A guide to good recording practice.* Swindon: English Heritage

Morrison, K and Minnis, J 2012 *Carscapes: the Motor Car, Architecture and Landscape in England*. London: Yale University Press

Neale, J P 1823 *Views of the Seats of Noblemen and Gentlemen in England, Wales, Scotland, and Ireland*. London: Sherwood, Neely and Jones

Oliver, R 2005 *Ordnance Survey Maps: a concise guide for historians*. London: Charles Close Society

Ordnance Survey 1899 (revised 1897) *County Series 6-inch, second edition, Cheshire sheet XXIII.SW*. Southampton: Ordnance Survey

Ordnance Survey 1936 (revised 1909) *County Series 6-inch, third edition, Cheshire sheet XXIII.SW*. Southampton: Ordnance Survey

Ordnance Survey 1946 (revised 1938) *County Series 6-inch, fourth edition, Cheshire sheet XXIII.SW*. Southampton: Ordnance Survey

Ordnance Survey 1969 *1:1,250, edition of 1969*. Southampton: Ordnance Survey

Ordnance Survey 1973 *1:2,500, edition of 1973*. Southampton: Ordnance Survey

Ormerod, G 1819 *History of the County Palatine and City of Chester: Volume 2*. London: Lackington and company

Peake, J 1964 'Hooton Park, Ellesmere Port, Cheshire: Early History'. Unpublished report

Pratt, D and Grant, M 2002 *Wings Across the Border: A History of Aviation in North Wales and the Northern Marches, Volume 2*. Wrexham: Bridge Books

Richardson, P 1993 *Hooton Park: a Thousand Years of History*. Hooton: Hooton Airword

School of Military Engineering 1921 *Notes on Roofs for Permanent Buildings*. Chatham: School of Military Engineering

Smith, D J 1990 *Action Stations: 3 Military airfields of Wales and the North-West*. Wellingborough: Patrick Stephens Limited

Smith, R 2002 *British Built Aircraft Vol.1: Greater London*. Stroud: Tempus

Thacker, B 2010 *Vauxhalls come to 'The Port': the story of the development of Hooton Park, Cheshire into the Vauxhall Motors Ltd*. Catrine: Stenlake Publishing

West, K 2004 'Aircraft Hangars'. *Airfield Review* **59**

Willis, S and Hollis, B 1990 *Military Airfields in the British Isles 1939-45 (Omnibus Edition)*. Irthlingborough: Woolnough Bookbinding

Primary sources

Cheshire Archives, Chester (CA)

CCH 5/7997/2 – Hooton Park airport consultants' report on the use of Hooton Park for Wirral aerodrome, 1936

D6483.1.5 – Information from Gordon Hemmings, no date

D6483.7.16 – Photograph of Squadron 610, 1957

LBE 7440/1/22 – Correspondence relating to the development of Vauxhall Motors, 1959

LBE 7440/1/10 – Specification for construction of buildings for Vauxhall Motors Ltd at Hooton Park, 1960

SC/4/27 – Hooton Park Sales Catalogue, 1922

SF/HOOT/2 – A brief letter from Neville Doyle with reminiscences of Hooton airfield, 2011

English Heritage Archives

0556_119 – Illustration of Hooton Hall, Ellesmere Port. Red Box Collection, undated

Hooton Park Trust Archive (uncatalogued)

Oblique photograph of Hooton Aerodrome from south-east, 1928

Oblique photograph of Hooton Aerodrome from south-west, 1930

Oblique photograph of Hooton Aerodrome from south, 1930s

Oblique photograph of Hooton Aerodrome from south, 1940

Photograph of the interior of Building 18, 1923

Photograph of the interior of Building 17, 1923

Photograph of Hooton Park Aerodrome from the roof of Hooton Hall, 1918

Vertical aerial photograph over Hooton Aerodrome, 18th May 1918

Vertical aerial photograph over Hooton Aerodrome, 1945

National Archives, Kew

AIR 1/452/15/312/26Volume 1 – RAF Quarterly Survey, September 1918. Description and plan of Hooton Park TDS

RAF Museum, Hendon

6A/54/45 (W/436/45) – Plan of Hooton Aerodrome, 1945

PC71/19/155 – Photograph of a group of RFC personnel and women auxiliaries, Hooton Hall, Cheshire, 1917-1918

This report has been prepared for use on the internet and the images within it have been down-sampled to optimise downloading and printing speeds.

Please note that as a result of this down-sampling the images are not of the highest quality and some of the fine detail may be lost. Any person wishing to obtain a high resolution copy of this report should refer to the ordering information on the following page.






ENGLISH HERITAGE RESEARCH AND THE HISTORIC ENVIRONMENT

English Heritage undertakes and commissions research into the historic environment, and the issues that affect its condition and survival, in order to provide the understanding necessary for informed policy and decision making, for the protection and sustainable management of the resource, and to promote the widest access, appreciation and enjoyment of our heritage. Much of this work is conceived and implemented in the context of the National Heritage Protection Plan. For more information on the NHPP please go to http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/.

The Heritage Protection Department provides English Heritage with this capacity in the fields of building history, archaeology, archaeological science, imaging and visualisation, landscape history, and remote sensing. It brings together four teams with complementary investigative, analytical and technical skills to provide integrated applied research expertise across the range of the historic environment. These are:

* Intervention and Analysis (including Archaeology Projects, Archives, Environmental Studies, Archaeological Conservation and Technology, and Scientific Dating)
* Assessment (including Archaeological and Architectural Investigation, the Blue Plaques Team and the Survey of London)
* Imaging and Visualisation (including Technical Survey, Graphics and Photography)
* Remote Sensing (including Mapping, Photogrammetry and Geophysics)

The Heritage Protection Department undertakes a wide range of investigative and analytical projects, and provides quality assurance and management support for externally-commissioned research. We aim for innovative work of the highest quality which will set agendas and standards for the historic environment sector. In support of this, and to build capacity and promote best practice in the sector, we also publish guidance and provide advice and training. We support community engagement and build this in to our projects and programmes wherever possible.

We make the results of our work available through the Research Report Series, and through journal publications and monographs. Our newsletter *Research News*, which appears twice a year, aims to keep our partners within and outside English Heritage up-to-date with our projects and activities.

A full list of Research Reports, with abstracts and information on how to obtain copies, may be found on www.english-heritage.org.uk/researchreports

For further information visit www.english-heritage.org.uk

ENGLISH HERITAGE

ISSN 2046-9799 (Print)
ISSN 2046-9802 (Online)