

BROOKLANDS AERODROME & MOTOR RACING CIRCUIT

TIMELINE OF HERITAGE ASSETS

Brooklands Heritage
Partnership



| | |
|---|----|
| Aerodrome Road | 2 |
| The 1907 BARC Clubhouse | 8 |
| Bellman Hangar | 22 |
| The Brooklands Memorial (1957) | 33 |
| Brooklands Motoring History | 36 |
| Byfleet Banking | 41 |
| The Campbell Road Circuit (1937) | 46 |
| Extreme Weather | 50 |
| The Finishing Straight | 54 |
| Fuel Facilities | 65 |
| Members' Hill, Test Hill & Restaurant Buildings | 69 |
| Members' Hill Grandstands | 77 |
| The Railway Straight Hangar | 79 |
| The Stratosphere Chamber & Supersonic Wind Tunnel | 82 |
| Vickers Aviation Ltd | 86 |

'AERODROME ROAD' AT BROOKLANDS, SURREY

1904: Britain's first tarmac road constructed (location?) – recorded by TRL Ltd's Library (ref. Francis, 2001/2).

June 1907: Brooklands Motor Circuit completed for Hugh & Ethel Locke King and first opened; construction work included diverting the River Wey in two places. Although the secondary use of the site as an aerodrome was not yet anticipated, the Brooklands Automobile Racing Club soon encouraged flying there by offering a £2,500 prize for the first powered flight around the Circuit by the end of 1907!

February 1908: Colonel Lindsay Lloyd (Brooklands' new Clerk of the Course) elected a member of the Aero Club of Great Britain.

29/06/1908: First known air photos of Brooklands taken from a hot air balloon – no sign of any existing route along the future Aerodrome Road (A/R) and the River Wey still meandered across the road's future path although a footbridge(?) carried a rough track to Hollicks Farm (ref. Brooklands Museum archives via the Science Museum).

1909: Construction of Brooklands Aerodrome began inside the Motor Circuit with removal of more trees, farm buildings and further straightening of the River Wey at the North end of the site.

29/10/1909: First public flying demonstrations in Britain (by Louis Paulhan in a Farman biplane at Brooklands) organised by Lindsay Lloyd and George Holt Thomas for Hugh Locke King.

November 1909: Colonel Lindsay Lloyd recognised agreements with applicants for hangar accommodation at Brooklands (ref. Gardner p66).

1910: Brooklands Aerodrome ready for use, preparations having started the previous year; a contemporary photo (undated) from Members' Hill shows no sign of A/R but records 15-20 wooden sheds already built on the Flying Village (ref. Brooklands Museum Copy Neg. F628).

Late 1910: Demolition of Hollicks Farm at North end of Aerodrome (ref. 'The Aero' 26/09/1910, p255).

1911: Formation of the Brooklands Lawn Tennis Club (tennis had become very popular especially with young women after London's 1908 Olympics) saw construction of four well-drained gravel courts by the British Hard court Company (in the area later bordered by the Jackson Shed, Dunlop Mac's and Racing Lock-ups). Unlike other venues, the Brooklands tennis courts were not available during the summer – presumably restricted by motor racing? (see Dench, 1987 booklet, p22 – undated photo, credited to Dudley Gahagan).

?/03/1911: World's first Flight Ticket Office opened by Keith Prowse & Co. Ltd; sketch plan of the Flying Village published in 'Autocar' that month showed its location and the occupants of some 40 sheds there. The general map intriguingly shows a 'New Road' along the later route of A/R but there is no indication of any route existing there before 1912.

c1911?: Undated (published where?) air photo of Motoring Village taken from Tom Sopwith's Howard Wright Biplane shows a small (pedestrian?) bridge over the Wey just South of the Paddock apparently leading to the aviation grounds – but this is NOT the same bridge visible in the 1908 air photo.

19/11/1912: Construction of 'Aerodrome Road' made with 'macadam' laid on top of natural clay but with no kerb/edging as a service road linking the Paddock in the Motoring Village with the Flying Village on the opposite side of the Aerodrome, following the curve of the Byfleet Banking en route and crossing the River Wey via a timber bridge. It functioned as an aerodrome perimeter road but, apart from use by vehicles delivering previously dismantled or part-built aeroplanes (especially by Hawker Aircraft Ltd in the 1930s), it was not used as a taxi-way for aeroplanes and was never designated as a public footpath or right of way. The North section also provided access on race days to car parking between the river and the Finishing Straight.

1912: During the Easter race meeting, an American Tennis Tournament was held on 'the Brooklands hard courts' with 11 invited competitors from Brooklands and Mr Scrivener as referee; tennis spectators paid 1/- for entry from Paddock (see Boddy, 1948 p82 – names the Brooklands players).

1913: Map produced by 1948 by Bill Boddy shows locations of two separate tennis courts Southwest and Northeast of the Paddock (see Boddy, 1948, opposite contents page).

23/03/1914: Major floods at Brooklands along the banks of the Wey: a 'Topical' photo (Hulton Getty ref. 058168H) clearly shows the Northern part of A/R curving East to finish at the Racing Car Bays.

1914: Brooklands requisitioned by the War Office and tennis appears not to have been played again post-war although the well drained courts later proved useful for other purposes.

08/10/1917: Date of 1:2500 site plan for the new 'Brooklands RFC-AA Park' on the flying village. Besides existing and proposed buildings for the new military Aircraft Acceptance Park, this map shows the Southern end of A/R entering the flying village past a 'Vehicle Shed' and 'Store' (later Parry Thomas' bungalow).

23/05/1921: Air photo (oblique, low level – probably taken by Aerofilms) of Paddock and Clubhouse clearly showing the well-used Northern end of A/R – lined with white posts – leading to the Paddock via the Racing Car Bays. The original tennis courts now appear disused. (This photo was published in a Brooklands Society Gazette – when?).

1929-30: Winter site improvements included 'a by-pass round the Paddock via the old tennis courts and Dunlop Shed thus facilitating access to the aerodrome on race days when the Paddock was crowded' (see Boddy, 1949, p418).

Mid-1931: Creating of the 'Colonial Course' in the old gravel pits in the Southeast corner of Brooklands next to A/R. This was an area of rough ground for manufacturers to test and demonstrate new vehicles and was also called 'overseas course' since 'overseas models' were tested there including Morris Commercial six wheeler, Thornycroft half-track and Trojan commercial vehicles demonstrated to Government officials (see Boddy, 1949, p447).

Early 1931: New ferro-concrete bridge built by Surrey County Council to replace old timber bridge carrying Aerodrome Road across the River Wey (see photo of new bridge under construction in 'The Motor', 10/02/1931, p43 or 45? Also reported in Boddy, 1949, p447).

1931: The Brooklands Yearbook reported that 'the road to the aerodrome was completely repaired and re-tarred during the past season'.

1932: 'Brooklands Track 1932' sketch map no longer shows any tennis courts extant (see Boddy, 1950, opposite contents page).

c1934: Further alterations to course of River Wey – a sharp bend just South of the Vickers factory was straightened by 1935 (see Brooklands Museum site map of 1935). The reason for this work is unknown but was probably linked to flood prevention work upstream in Byfleet.

1935: New map produced of 'Brooklands Motor Course' (reference copy held in Museum archives); includes good details of A/R's route at that time.

1936: Aerodrome improvements included re-levelling surface and re-sowing grass, drainage improvements. A/R was re-tarred and gritted between Shell Way and the Aero Club at the same time (see Boddy?).

1937: Air photo taken of Campbell Circuit from South West with A/R's (North end) clearly visible in the foreground (see Brooklands Museum archives – Geoff Goddard Collection).

12/01/39: Air photo (almost vertical) taken of Brooklands from over Byfleet looking North showed the entire length of A/R (ref. Brooklands Society archives).

01/05/44: Air photo (vertical) of camouflaged wartime Brooklands Aerodrome with Wellington, Warwick and Windsor aircraft dispersed around perimeter and A/R clearly visible (see Brooklands Museum archives – RCHM Neg. 106G/LA10 Frame 7002).

Early 1950s: Air photo (oblique, low-level) of Southern end of Vickers factory with new Erecting Shop built over Track, A/R in very good condition and a Vickers Valiant dispersed close by on new hardstanding immediately South of river (see Brooklands Museum archives – F636/5).

1951: Concrete North-South runway built on the Aerodrome for Vickers-Armstrongs; A/R's Southern section crossed the runway's Southern threshold and was now improved for two-way vehicular traffic to act as a perimeter track for emergency vehicles and other site traffic.

Mid 1950s: Norman ('Spud') Boorer and other Vickers-Armstrongs' R&D Dept. colleagues regularly walked along the Northern part of A/R for lunch in the staff canteen when working in the old Clubhouse.

c1960: Air photo (BAC ref. MP216508) of Brooklands Aerodrome looking North with A/R still visible and in use by aircraft factory vehicles.

c1970s?: Southern section of A/R next to the Byfleet Banking was further improved by BAC Ltd. and gained a central painted white line (ref. undated air photo via Tony Hutchings and Vince Holyoak).

c1979/80: Demolition of most of the remaining buildings of the Brooklands Flying Village.

1984: Air photo shows A/R still in good condition with a modern coach visible on its North end (see Brooklands Museum archives – BAe Kingston Colour Neg. 856187).

1986-90: Closure of the Bae Weybridge factory; North section of Aerodrome Road largely abandoned to nature, Southern section used by Brooklands Security for vehicle patrols.

1987: Air photos taken for Brooklands Museum by the compiler of the Bae Weybridge factory during closure; both Northern and Southern sections Aerodrome Road are still intact and clearly visible.

1988-90: Demolition of the British Aerospace Weybridge factory – virtually all remains of past activity removed except for a section of the Campbell Circuit Pits and a long Northern section of A/R.

2001: A/R's now overgrown Northern section proposed for Scheduled Monument status by English Heritage but threatened by a new office development (later 'The Heights') by Helical Bar plc for Prudential.

23/08/01: Inspected by Paul Francis (airfield archaeologist and consultant to Prudential) and the compiler (JCT) – both surviving sections (580m + 670m) were walked in their entirety and the nominal width of the road was found to be 4.01m (13ft 6ins). Evidence of A/Rs original 'macadam' surface/construction found in four sections/trenches recently cut through the roadway by HBG Construction (Helical Bar contractors). A small sample of the material was rescued by JCT for future reference. Note: the full length of the North section beside the river still survived at this time.

September 2001: Initial 'Aerodrome Road Brooklands, An Historical Appraisal' report submitted by Paul Francis (of Airfield Research Publishing) to Prudential (see copy held by the compiler). This report claimed that A/R was not of national importance and therefore should not be Scheduled

October 2001: Construction work started for The Heights with A/R fenced off from contractors' working area.

10/01/02: Designated by the Government's DCMS as a Scheduled Monument (SM) following a major review of heritage protection at Brooklands by English Heritage's Vince Holyoak.

02/02/13: Revised (final?) version of Paul Francis' consultant's report submitted to Prudential (see copy held by the compiler). This records the recent loss (since August 2001) approximately 280m of the Northern section beside the River Wey due to flood prevention work by Helical Bar. Francis now proposed that the surviving 300m riverside section of A/R be removed and de-scheduled due to its poor condition and loss of context.

02/12/02: Draft version of this document sent to Sarah Davenport at Terence O'Rourke plc, consultants to Daimler Chrysler UK (DCUK).

?/08/03: New draft Brooklands Conservation Plan issued by O'Rourke for DCUK. This included a short section about A/R.

08/12/03: Comments by JCT on draft Conservation Plan sent to O'Rourke's Sarah Davenport.

November 2004: Warings (DCUK contractor) began clearing weeds and undergrowth from the Byfleet Banking and its base.

18/04/05: Unauthorised potential damage to A/R discovered by Ann Clark (English Heritage inspector), Mike Rubra (Surrey Arch'l. Society) and JCT: Warings had recently fenced part of its edge and also laid a new tarmac return road directly on top of the South section's Western end close to the Day Nursery.

July 2006: Planning started for new pedestrian entrance to Brooklands Museum via former contractors' bridge across Wey near Dunlop Mac's.

2006: An unknown buried surviving section (not Scheduled) of A/R was discovered (see JCT's photos) during ground works for a new temporary Museum ticket office required by the opening of Mercedes-Benz World that October (giving the Museum a new pedestrian entrance and car park West of the river). This tarmac surface was in good condition and originally part of the bend in A/R where it turned East towards the Pratts/Esso Pagoda before continuing North towards the Clubhouse and Paddock between the Racing Car Bays. This was not disturbed by the building work and was re-buried.

13/06/13: Planning permission submitted to Elmbridge Borough Council (EBC) on behalf of PGS Ltd. for three extensions to their offices as 4, The Heights. Note: EBC planning officers failed to notify/consult Brooklands Museum about this proposal and the applicant's Heritage Appraisal failed to mention the potential impact on Aerodrom Road!

10(?)07/13: PGS application lodged with EBC who notified EH that same day.

02/08/13: English Heritage's Assistant Inspector of Ancient Monuments Rebecca Lambert wrote to EBC advising of the proximity of the scheduled north section of A/R and the potential need for the applicant to see SMC.

??/??/13: Planning permission granted – subject to EH approval on SMC issues.

05/09/13: JCT agreed to assist PGS and its contractors in finding the edges of the Scheduled Monument asap; also showed visiting SCC Archaeologist Tony Howe the area and phoned EH Inspector Richard Massey's Assistant Chris Welch who both agreed that the required action is to carefully clear the adjacent undergrowth and weeds to expose the tarmac surface and then define the extent of the roadway.

06/09/13: Trial excavations by JCT, abd BM volunteer archaeologists Sylvia & Charles Green to define edges of North end of A/R immediately West of PGS offices; estimated road to be approx.. 14ft wide (see photos).

09/09/13: Keysource (PGS contractors) started site preparations having set up a site office and compound last week.

??/09/13: EH's Richard Massey inspected site and approved PGS building work.

10/09/13: Keysource contractors busy constructing base/foundations for the office extension (see JCT photos).

15/10/13: Ditto.

12/12/13: Construction work nearing completion.

ACKNOWLEDGEMENTS

The late Norman ('Spud') Boorer (recollections to JCT 25/07/2001); Brooklands Museum Photo Archives and other reference files; Sylvia & Charles Green; Vince Holyoak (Historic England); Paul Francis (airfield buildings consultant); Tony Hutchings (Brooklands Society); Graham Kempton; John Pulford.

NOTE

A sample section (approx.. 6in x 3in x 2in) of A/R's fragile tarmac/macadam surface rescued from one of the Helical Bar contractors' trenches) is preserved by JCT.

SOURCES

'Autocar' (March 1911 – extract available only)

Boddy, W (1948) 'The Story of Brooklands Volume 1' (1907-1924)

Boddy, W (1949) 'The Story of Brooklands Volume 2' (1925-1932)

Boddy, W (1950) 'The Story of Brooklands Volume 3' (1933-1939)

Brooklands Yearbook, 1931 (p28)

Brooklands Society Gazette

Dench, Peter (Ed, 1987) 'Brooklands Commemorative Brochure 1987' (The Brooklands Society) – see p22

Francis, Paul (2001) 'Aerodrome Road Brooklands, An Historical Appraisal' (Airfield Research Publishing, Ware, Herts.); initial consultant's report for Prudential

Francis, Paul (2002) 'Aerodrome Road Brooklands, An Historical Appraisal' (Airfield Research Publishing, Ware, Herts.); revised consultant's report for Prudential

Gardener, Charles (1956) 'Fifty Years of Brooklands' (Heinemann)

QUESTIONS

1. What prompted the construction of Aerodrome Road – possibly the existence of an unofficial rough track after 1908 or the straightening of the River Wey in 1909 – or just the need for better vehicle access to the Flying Village when motor racing was in progress?
2. When exactly was The Heights development completed?
3. When was PG's 2013 planning application approved by Elmbridge?

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BROOKLANDS HISTORY

THE 1907 BARC CLUBHOUSE (W109/T206/MB1)

SUMMARY

Originally designed c1906 by an unknown draughtsman (possibly Newmarket-based architect A S Manning, it was constructed as part of the new Brooklands Motor Course and officially opened on 17/06/1907 and was originally named 'The Weighing Block'.

Known as 'The Official Block' by 1914, a new first floor 'Tea Room' was added to North elevation in early 1914 (three steel-framed bays with glazed roof, open sides and moveable shutters) above the existing toilet block and car and motorcycle maintenance areas below. A small balcony to the East featured wooden steps leading directly down to the Paddock.

After WW1 started on 4th August 1914, Brooklands closed to the general public by October but any war-time use of the Clubhouse is so far unrecorded.

Returned to regular use when the Track re-opened in 1920, the building was subjected to major alterations in 1929-30 to designs of architect and surveyor A G Stedman. Most notable additions were a new first floor public 'Snack Bar' at the rear ('The Blue Bird Room' today), new external stairs and balcony railings with a more contemporary design and new Ladies Cloak Rooms added on the ground floor. Also the 1914 tea room was converted into a 'Public Dining Room'.

Further alterations were made in the late 1930s, including glazing the first-floor 1914 restaurant extension, fitting a large steel window to front elevation of the cocktail bar (currently the Museum Library) and enclosing various ground floor areas to create more BARC facilities.

After WW2 began in September 1939, the Clubhouse closed to BARC members and, apart from some use by the Home Guard, it was apparently left disused and unheated for the next six years, although the war-time factory dispersal scheme implemented for Vickers factory from 1940 identified the Clubhouse and Paddock area as 'W109' but any war-time use by Vickers is unrecorded.

In Autumn 1945, the Clubhouse was taken over by Barnes Wallis and his new Vickers-Armstrongs Ltd R&D Department and the interior was then converted into offices and workshops. Wallis occupied the former Clerk of the Course's first floor office at the SE corner with Major Teed next door.

The BAC/British Aerospace Film Unit was then based here from 1972-83 after which the Clubhouse was sold off to Gallaher Ltd in 1984 and then leased initially to Elmbridge Borough Council to facilitate the creation of Brooklands Museum established in 1987.

EARLY YEARS (1906-1914)

1906(?): New 'Weighing Block' plans, sections and elevations produced by unknown draughtsman – possibly Newmarket-based architect A S Manning. Scale 1inch to 8ft (see BM archives).

1906(?): New 'Brooklands Automobile Club, Weybridge – Plan of Drains to Weighing Block' produced by unknown draughtsman. Scale 1inch to 8ft (see BM archives).

1906-07: Construction as part of the new Brooklands Motor Course (see detailed description at www.britishlistedbuildings.co.uk).

17/06/1907: Opening of Brooklands Motor Course with Clubhouse originally named 'The Weighing Block'.

29/6/1908: First known air photos taken of Brooklands - from a hot air balloon.

August 1910: Two prominent new 'Records Boards' fitted to front wall of Clubhouse for 1) 'Brooklands Standard Class Records' and 2) 'Records at Brooklands Irrespective of Size of Car' (see 'The Auto' on 06 and 13/08/1910).

1913(?), undated: New 'Plan of Proposed Pavilion at Brooklands Motor Track for Hugh Locking Esq' drawing produced for a new open-sided first floor 'Tea Room' added to the North elevation above existing toilet block, 'passage', 'cycle stores' (six) and 'open shelters'. A small balcony to the East featured wooden steps leading directly down to the Paddock (see BM archives). Note: Roger Bird suggests this may have been originally designed as for a new tennis court complex for Brooklands planned but never built.....

1914(?): Plaque fitted on wall facing the Paddock in memory of Percy Lambert's achievement in covering 100 miles in one hour in a 25hp Talbot on 15/12/13 (see Hulton Picture Library photo).

Early 1914: New first floor Tea Room added as three steel-framed bays with glazed roof and open sides with moveable shutters to North side with a partly open-sided car and motorcycle maintenance area below.

1914: Now known as 'The Official Block'.

WORLD WAR ONE (1914-18)

(04/08/14: Outbreak of World War One).

October 1914: Brooklands closed to the general public – Clubhouse presumably left vacant and disused throughout the conflict.

INTERWAR YEARS (1919-1939)

11/04/1920: Brooklands re-opened for motor racing.

23/05/1921: Oblique air photo of Clubhouse and motoring village from the SW.

04/08/1921: Front cover of 'The Auto & Motor Journal' (est. 1896, ed. Stanley Spooner) showed Clubhouse with verandah roof extension on South side.

August 1921: New Shell Petrol Pagoda drawings produced (see BM archives).

11/08/22: Registration of the new 'Brooklands Estate Company' by Dame Ethel & HLK; each owned one share and they were the only subscribers (ref Surrey Record Office, 2426/9/1).

18/08/22: Sale of property - including Brooklands Aerodrome and Track – for £100,000 agreed by HLK to the Brooklands Estate Company. HLK would receive £2,500 annual salary as governing director (probably so that his heirs avoided heavy death duties) and the deal was completed by 1925.

(26/01/26: Death of Hugh Locke King aged 77).

05/07/1928: Photo of Clubhouse across Paddock from SE at Lagonda Fete.

1929-30: Major alterations designed by architect and surveyor A G Stedman, notably with addition of a new first floor public 'Snack Bar' at the rear ('The Blue Bird Room' today), glazing in the 1914 tea room as a 'Public Dining Room' on the North side and new external stairs and balcony railings with a more contemporary crossed design replacing the original more

decorative style with turned spindles. New Ladies Cloak Rooms were added to the South side of the ground floor. Note: large new clock fitted high up on front elevation at 90 degrees to the wall and original external door to balcony now relocated from South to North side of tower.

1929: Three new 'Brooklands – The Paddock Buildings – Proposed Alterations and Additions' drawings produced by A G Stedman showing South and West elevations and first and ground floor plans. All stamped as received by the local authority on 13/09/1929. Scale 1 inch to 8ft.

14/10/1929: New 'Brooklands – The Paddock Buildings – Plan Shewing New Drainage' produced by A G Stedman. Note: plans for seven new lavatories on ground floor, South side (the 'Ladies Powder Room' today). Scale 1 inch to 16ft.

1930/31(?): Additions and improvements to the 'reconstructed and enlarged Paddock Building' reported in the BARC Yearbook – see sketch of Clubhouse from SW.

1930s(?): Memorial plaque to racing driver Sir Henry 'Tim' Birkin unveiled by Earl Howe on East end of South elevation (see photo in Gardner, p96).

1930s: Floods – see photo behind Clubhouse towards Shell Way

09/01/1930: New 'Brooklands – Suggested Female Staff Cloak Room' drawing produced by A G Stedman of proposed Ladies' Cloak Room on ground floor, South side. Note: identifies the area under new Snack Bar as 'Covered Way'.

Early 1931: Old style stairs and smaller balcony to Paddock Dining Room apparently still extant - see British Pathe film clip 'Old Crocks Meet Again At Brooklands' (ID 1024.18) released on 09/02/1931 – but was this filmed at that time?).

March 1935: Release of British film 'Death Drives Through' (63 mins, b/w); directed by American Edward L Cahn, scripted by John Huston, and starring Chili Bouchier, Robert Douglas and Miles Mander, it included extensive motor racing scenes filmed at Brooklands in 1934 and other film sources too.

1936: The BARC offices moved from London to Brooklands – resulting in an enlarged Clubhouse too?

August 1936: Sale of Brooklands Track and Aerodrome to new company 'Brooklands (Weybridge) Ltd'. Dame Ethel Locke King retired to Caenshill House and the new owners began to improve and update facilities in the Paddock.

November 1936: New 'Plan of Brooklands Motor Course' produced by A G Stedman.

18/04/1938: Clock still fitted at 90 degrees to front elevation (see photos).

1939(?): Further alterations included glazing of the first-floor 1914 restaurant extension(?), fitting a large steel window to front elevation of the cocktail bar (BM's current library) and the enclosure of various ground floor areas to create more BARC facilities.

17/06/1939: Ford Motor Gymkhana event (see film & photos).

18/08/1939: Charcoal & wash sketch by F Gordon Crosby of race scene from Clubhouse Cocktail Bar's large new window published in 'The Autocar'.

Pre-Sept 1939: Removal of original 1907 weighbridge either for planned relocation to Paddock because it was a regular trip-hazard?

September 1939: Closure of Clubhouse; excluding some Home Guard use, it was left disused and unheated throughout the war.

VICKERS-ARMSTRONGS (AIRCRAFT) LTD 1940 – 1959

?/1940: Dispersal scheme implemented for Vickers factory; Clubhouse and Paddock area identified as 'W109'.

October 1941: New Brooklands site plan (Plan No. 6721) produced.

26/05/43: New 'Vickers-Armstrongs Weybridge Works – Dispersal Depots' list produced.

01/01/44: New 'Vickers-Armstrongs Weybridge Works – Premises in Occupation' list produced.

Autumn 1945: BARC Clubhouse taken over by Barnes Wallis' new V-A Ltd R&D Dept. requiring the interior to be converted into drawing offices, workshops, and other offices.

Nov 1945: Barnes Wallis occupied the Clerk of the Course's first floor office at the SE corner with Major Teed next door

07/01/46: Decision to sell Brooklands Track and Aerodrome to Vickers-Armstrongs by Brooklands (Weybridge) Ltd for £330,000 agreed at a shareholders' meeting of the latter organisation. Directors Sir Malcolm Campbell and C W Haywood were fully in favour of the plan especially as the Ministry of Supply said they would not release Brooklands for another three years.

26/01/1946: New 'Vickers Armstrong Weybridge' site plan (Main Factory only) produced by Ley Colbeck & Partners (Drg no. 124). Amended to show new Design Office, Strat Chamber and Wind Tunnel completed by 1948.

1947-48: Construction of Strat Chamber and its cover building North of the 1907 Clubhouse to which it was linked by a first floor bridge.

Sept 1947: 'Launch' of the main Strat Chamber.

1948: Completion of new 19,533sq ft Stratosphere Chamber building (T287) immediately North of 1907 Clubhouse for V-A Ltd's R&D Dept.

27/09/1948: New 'Proposed Adaptation of Existing Buildings at Research Department to Form Drawing office etc – Messers Vickers Armstrongs Ltd' drawing produced by Ley Colbeck & Ptnrs. Scale 1inch to 8ft.

23/11/48: Revised 1946 Vickers site plan 'scheduled' issued by local authority who also received copies of the new 27/09/48 drawings for T206 that same day.

February 1952: Inventory for 'Brooklands Track – Buildings As Per Plan L.1553' produced by V-A Ltd; this covered premises identified by 'T' numbers 51-297 (copy held by the compiler).

June 1954: A V Roe memorial plaque unveiled near SE corner of Paddock by Sir Alliott and Vickers General Manager, Tom Gammon (photo in Gardner, p96).

1956: Photo published showing Clubhouse East and South elevations largely unaltered except for 4,000lb Earthquake bomb displayed vertically outside Wallis' office and Birkin memorial now missing. Former Paddock Dining Room still had two double doors on balcony and two open-ended bays below with Gents toilets yet to be enlarged (see Gardner, p.96ff).

05/07/56: New 1:2500 site plan produced - 'Site Plan of Weybridge Works – Messers Vickers Armstrongs (Aircraft) Ltd', Drg no. L3000LMW (with updated 'T' nos index).

BRITISH AIRCRAFT CORPORATION (1960-1977)

22/10/1962: New Vickers-Armstrongs factory site plan (Drg. no. L3000LMW?) issued with updated 'T' numbers index.

1964: New 'British Aircraft Corporation Weybridge Division Visitor's Handbook' published with site map, written summaries and photos of all facilities.

29/06/1967: New 'Proposed Alterations to Toilet Block T206 R&D Department' drawing (no. L3419) produced by BAC Weybridge Division. Details main toilet facilities on ground floor. Scale half an inch to 1ft.

16/09/1968: Severe flooding of Brooklands when River Wey burst its banks at 2pm – see BAC photos MP32210&32032. Aircraft production (including work on Concorde) was badly disrupted.

Nov 1968: New 'Weybridge Works – British Aircraft Corporation Weybridge Division' factory guide published with site maps and details of buildings and departments.

?/?/1971: New BAC Weybridge Works site plan produced.

May 1971: Closure of the BAC R&D Dept in the 1907 Clubhouse and retirement of Sir Barnes Wallis - aged 84! Most of BNW's office contents were donated to the RAF Museum (opened 1972) to re-create its interior as a display there.

17/06/1972: New 'Installation of Film Unit T206' drawing (ref. no. A17714/1) produced by J Fowler of the BAC Weybridge Division. Shows conversion of South half of first floor for use by new film unit – includes functions of each room. Scale 1:50.

1972(?): BAC Film Unit moved in led by Jack de Coninck and converted the centre of the first floor (above Weybridge) into a film editing suite.

c.1973: Colour photo of centre of front elevation showing tower retaining its original decorative balcony railings with 'turned' spindles.

15/10/74: New 'BAC Weybridge (40 Acre Site)' site plan produced.

1975: Designated as a Scheduled Ancient Monument (No. 33961) by the Department of the Environment together with various other surviving features and parts sections of the former Brooklands Motor Circuit.

31/03/76: New 'Test Facilities on 40 Acre Site' brochure published.

BRITISH AEROSPACE (1977-1984)

(30/10/1979: Death of Sir Barnes Wallis aged 92).

c.1981: New 'British Aerospace Public Limited Company Military Aircraft Division' site plan produced for former BAC East Works (copy in BM archives).

c.1982: New 'Gallaher Ltd Proposed Headquarters' site plan produced by the Building Design Partnership (Drg GO859); also shows the future BM site (see BM archives).

1983: New Clubhouse plans (six or eight?) produced for Gallaher, annotated (quarter of an inch to 1ft scale).

1983: British Aerospace Film Unit moved to alternative premises in the nearby factory. Note: the compiler first visited Brooklands including the Clubhouse with Morag Barton, Alan Jeffcoate and Ann Huckins at this time (see photos).

1984: Sale of 30 acre site by British Aerospace to Gallaher Ltd.

GALLAHER LTD (1984 – 1987)

1984-85: Major refurbishment carried out by Kyle Stewart for Gallaher c/o Site Manager Fred Moore. Note: Andy Lambert recalls a tour of the building by Mike Goodhall in 1984 when two carpenters were working for Gallaher on an internal staircase. All three external staircases and handrails were renewed generally restoring the exterior to its 1930s appearance (see BM archive photos).

1985: Lease of 30 acre site (including Clubhouse) to Elmbridge Borough Council (EBC) for proposed new Brooklands Museum (BM).

August 1986: First BM staff (including the compiler) recruited by Chertsey-based Arrowhead Community Enterprises joined the seconded EBC and Gallaher staff plus original volunteers (Mike Goodhall, Roy & Hillary Lomax, Pip Martin, Jack Stacey, Gerry Winter and others), all largely based in rooms along the South side on the first floor.

c.1986: BM's first offices were along the South side of the first floor with Museum Co-ordinator Morag Barton occupying the former Clerk of the Course/Barnes Wallis office, Secretary Ann Watson in the adjacent room (now the Ford Room) and Fred Moore in the partitioned-off East end of the present Members' Bar.

BROOKLANDS MUSEUM (1987 – TODAY)

1987: Formation of Brooklands Museum Trust Ltd with responsibility for the 30 acre site leased from Gallaher Ltd (initially via a sub-lease from EBC).

12/11/88: Designs for new displays and internal layout produced by Robin Wade's and Pat Read's RWPR Design Partnership.

1989: Pre-war connecting door reinstated between original Clerk of Course's and Secretary's offices.

??/??/1989: Designation of new Brooklands Conservation Area by Surrey County Council – immediately preceded by demolition of most of the Campbell Circuit Pits early that morning!

??/??/1989: Removal of 4,000lb prototype earthquake bomb from front elevation by National Rescue using their new mobile crane 'The Brooklands Belle'. Note: this bomb had been partly dislodged from its foundation plate when a car was accidentally reversed into it at the end of the day before and had to be removed for safety reasons. The adjacent GS bomb remained in situ a little longer. See Andy's video of this job.

??/??/1989(?): Removal of 20,000lb Grand Slam bomb from front elevation by crane contractor to prepare Paddock area for filming scenes for ITV's 'Poirot' series ('The Disappearance of Mr Davenport'?).

Late 1980s: BM's early uses of the building included creating the Library on the first floor, a darkroom next to the Barnes Wallis bath room, inserting double doors in the West end of the 'Chequered Flag' room (to allow a new 'Bentley Brooklands' car to be displayed inside) and also selling the first refreshments and shop items there. The Billiards Room housed an introductory slideshow later replaced by a short video.

25/09/90: 'Brief History of the 1907 Former BARC Clubhouse' research paper completed by BM Curator of Aviation Julian Temple.

1990-1991: Major refurbishment & redecorating work carried out to prepare building for regular public use. More details required (CHECK!!).

01/03/91: Letter from Morag Barton to DoE acknowledging Scheduled Monument Consent granted 'for certain alterations to the Clubhouse' and to renew concrete at the foot of Test Hill. CHECK!!

14/04/91: Official opening of Brooklands Museum on the 30 acre former Motoring Village site.

19/02/92: Scheduled Monument Consent (SMC) applied for by the compiler to construct a new internal doorway from photo archives room (now an Art Gallery) on ground floor.

??/??/92: SMC granted and work subsequently carried out. CHECK!!

c.1993(?): Major repairs made to all external stairs and railings CHECK!!

19/12/1998: Photos taken by JCT at request of English Heritage of end wall of Brooklands Club's first floor corridor in Clubhouse - before new doorway was cut through into Blue Bird room.

07-08/11/2000: Floods up to 18ins deep when River Wey burst its banks after prolonged heavy rain and Clubhouse ground floor was one of the worst affected areas; Museum subsequently closed for six months for repairs (see photos).

??/06(?) /2001: Clubhouse reopened to visitors though some Museum areas remained closed and under repair for another six months.

10/01/2002: Designation by the DCMS of extra parts of the former Brooklands Aerodrome and Motor Circuit as having Scheduled Monument status.

01/11/2002: Designated as a Listed building at Grade II* with English Heritage ID 489856; see detailed description at www.britishlistedbuildings.co.uk.

(21/05/2004: Death of Norman 'Spud' Boorer, OBE, aged 84).

2008: Members' Bar balcony railings and steps (& other areas) repaired by contractor Croystone Ltd (funded by Goodwood Revival 2007 donations).

10-12/11/2008: Roof leaks discovered in ceiling of former shop area under Chequered Flag balcony (see photos).

??/??/2009: Ford Room redecorated by contractor Simon Crabbe.

??/??/2009: Unsafe wooden staircases to Bluebird Room and Members' Balcony replaced by Croystone.

15(?) /01/10: Freehold for 30 acre site transferred from Japan Tobacco International (formerly Gallaher Ltd) to Brooklands Museum Trust Ltd.

??-??/03/2010: Bluebird Room roof cladding repaired by Advanced Roofing Ltd with new felt and insulation below.

??/04/10: New catering contractor 'Creative Events' (MD: John Uphill with Adam Williams as manager) took over from 'Aramark' and refurbished and expanded the tea room as the 'Sunbeam Café'.

(??/09??/2011: Death of former BAC Film Unit manager Jack de Coninck).

23/02/2012: Major refurbishment & redecoration of first floor (phase 1) begun by contractors T W Property Services working for Parker Roberts on behalf of Creative Events – starting in CF Room.

11/03/2012: Phase 1 of Clubhouse refurbishment completed; room first used by RAF Bomber Command veterans on Morris & Austin Day.

02/03/2012: Major repairs/refurbishment to CF balcony & stairs begun by contractor Rick Nightingale (ProMow Landscaping Ltd); structurally complete and ready for use by 24/3 and mostly painted by 29/3.

27/03/12: Birch tree (approx 30-40yrs old) between Clubhouse and Campbell Shed felled and removed from site by ProMow Landscaping.

28-29/03/12: Storm drain (possibly dating from 1907) between Campbell Shed railings and Clubhouse dug up and replaced by contractors Newpoint - totally blocked & destroyed by birch tree roots!

02/04/12: Clubhouse refurbishment (phase 2) begun by T W Property Services: Blue Bird Room, Members' Bar, corridor, landing, stairs and entrance foyer cleared of all exhibits, furniture and carpets. Post-war wooden partition dismantled between Blue Bird and CF Rooms ready for replacement with new bi-fold doors. Replica wooden phone-box (made c1991) dismantled in foyer and moved to store for potential use in hangar project. Also 2nd half of storm drain renewed by Newpoint between Campbell Shed and railings.

03/04/12: Refurbishment progress included sand-basting all painted brick walls in entrance foyer to reveal mainly yellow brick construction and later red brick alterations for new front doors. Note: major problems with dust and water disruption to fire alarm system – building evacuated four times!

04/04/12: Detailed assessment of Clubhouse by consultant architectural historian Charles Brooking and the compiler: results included dating most of the doors and windows, identifying the original form and style of the 1930 fireplace in the Members' Bar, the extent of 1984 restoration work (eg compromises for fire safety), the post-1991 removal of the original picture rail in the Bar and the discovery that the seven 1907 sash windows in the tower originally opened and may still have their sash cords/weights/pulleys fitted (one lower panel removed temporarily but upper one needs to be treated likewise.). See compiler's separate report/notes.

11/04/12: Rediscovered more Clubhouse drawings in BM archives (Library plan chest).

08/11/12: Lecture on the BARC Clubhouse's history given by Roger Bird to the Brooklands Society.

15/11/12: Lecture on the BARC Clubhouse's history given by Roger Bird to the Brooklands Trust Members.

March 2013ff: Restoration of adjacent 1947 Strat Chamber begun (see separate Timeline).

04/12/13: Previously unknown layout plan dated circa late 1945 acquired by BM from the National Aerospace Library at Farnborough showing Clubhouse's use as offices and workshops by Vickers as dispersed 'Research Station W109'.

NOTES

1) All books/refs, drawings/plans & photos are held in Brooklands Museum archives & collections unless stated otherwise.

2) Racing driver (the late) George Harvey Noble recalled that during the 1930s the Clubhouse was usually closed in winter except for a bar but that BARC members were allowed to have meals in the Aero Clubhouse (opened in 1932). The 'Paddock Dining Room' (currently the 'Chequered Flag') was used on major race days instead of the Members' Dining Room (currently the Museum Library). The latter was open to members and guests and had a bar in

the NW corner (see BM archive photo). A door (now blocked up) connected the Members' and Paddock Dining Rooms.

3) Architect and surveyor A G Stedman, MISE, MSE - based at 317, High Holborn, London, WC in 1929-36.

4) Ley Colbeck & Partners FFI(?), RIBA, Chartered Architects – based at Palmerston house, Bishopsgate London, EC2 in 1940s/50s.

QUESTIONS

1. What more do we know of architects A S Manning and A G Stedman and surveyors Ley Colbeck & Ptnrs?
2. Was the building used at all for any purpose during WW1?
3. Were any photos taken of the Clubhouse in WW1 - and do we have any dated photos from either 1914 or 1918?
4. Was the 1914 Tea Room intended for use by the Brooklands tennis club (Roger Bird's current theory)?
5. What is the history of the building's services (boiler/steam-driven central heating, electricity, gas and water)? Was it only connected to the Vickers factory's steam heating system when the Strat Chamber was built in 1948?
6. When was the ground floor boiler house added (see N W Boorer notes/sketch)?
7. What became of Clubhouse-based BARC officials Percy Bradley (died c1940/41?), Col Lindsay Lloyd and Kenneth Skinner and are any biographical details available?
8. When exactly was the large 'picture window' installed on the front elevation between Easter 1938 and June 1939?
9. When was the clock repositioned flush with the front elevation post Easter 1938 (see photos)?
10. When was the 'bowed' or 'bay window' extension added to the Bar Balcony?
11. What related oral history recordings does BM hold – and was the late Jack de Coninck ever interviewed for his memories of the Clubhouse from 1972-83?
12. When were the current radiators installed - pre-WW2 or postwar?
13. When/how was a windsock erected W of Clubhouse – see late 1920s photos)?
14. When were the two Earthquake bombs displayed on the South elevation? Note: the 4,000lb scale model was there by 1956.
15. When was the 'Barnes Wallis bath room' created – before or during his occupation of the building?
16. When (after 1956) were the gents toilets enlarged to fill in the void under today's 'Chequered Flag' room?

17. When (pre-1968) was the walk-in cellar (previously a film store from the late 1940s) built in the centre of the South side of the ground floor (replacing an earlier internal staircase)?
18. When did Gallaher's restoration of the Clubhouse start and finish and what photos exist showing this in progress?
19. What did BAC do to improve ventilation in the 1960s/70s?
20. When were the mid-1980s external balconies & steps rebuilt c.1993?
21. When were the pre-war decorative wooden railings around the tower balcony finally replaced (post-1973)?
22. What became of the memorial plaques to Percy Lambert and Parry Thomas?
23. When did J Pulford & J Temple occupy SW corner ground floor room c.1988?
24. When did BM staff move into the present Admin Building (ex BAe)?
25. When did the Museum Shop move into the new entrance building?
26. When were the BM photo archives located on the South side of the ground floor in the present Art Gallery from the Barbara Cartland Room?
27. When were the two Earthquake bombs installed against the front wall and when were they removed?
28. When was the wall built East of the weighbridge (with the mural painted on it)?
29. When exactly was the Poirot location filming c.1989?
30. When was the present weighbridge and related office reconstructed by BM?
31. When were previous contract caterers such as 'Charlton House' (manager Linda Somerville) appointed?
32. When was the freehold transferred by JTI – on 15 or 20/01/10?
33. When were the Flying Flea and also the new Bentley Brooklands car displayed in the CF room?
34. Also a TOCA racing car installed in the CF by exhibition/rigging specialist Nick Brown (www.nickbrownrigging.com)?
35. Why are there so many different levels on the first floor (Harold Morris is keen to know!)?

SOURCES

ARCHIVE FILM

Cahn, E L (1935) 'Death Drives Through' (Clifford Taylor Productions; Associated British Film Distributors). 63 minutes, b/w, with many racing scenes filmed at Brooklands in 1934.

DRAWINGS & PLANS (11 of MB1)

1906(?), undated: 'Brooklands Automobile Club, Weybridge – Plan of Drains to Weighing Block' produced by unknown draughtsman. Scale 1inch to 8ft.

1906(?), undated: 'Weighing Block' plans, sections and elevations produced by unknown draughtsman – possibly Newmarket-based architect A S Manning. Scale 1inch to 8ft.

1913(?), undated: New 'Plan of Proposed Pavilion at Brooklands Motor Track for Hugh Locking Esq' drawing produced by unknown draughtsman for a new open-sided first floor 'Tea Room' added to the North elevation above existing toilet block, 'passage', 'cycle stores' (six) and 'open shelters'. A small balcony to the East featured wooden steps leading directly down to the Paddock. Scale 1inch to 8ft.

1929: Three new 'Brooklands – The Paddock Buildings – Proposed Alterations and Additions' drawings produced by A G Stedman showing South and West elevations and first and ground floor plans. All stamped as received by the local authority on 13/09/1929. Scale 1inch to 8ft.

14/10/1929: 'Brooklands – The Paddock Buildings – Plan Shewing New Drainage' produced by A G Stedman. Note: plans for seven new lavatories on ground floor, South side (the 'Ladies Powder Room' today). Scale 1inch to 16ft.

09/01/1930: 'Brooklands – Suggested Female Staff Cloak Room' drawing produced by A G Stedman of proposed Ladies' Cloak Room on ground floor, South side. Note: identifies the area under new Snack Bar as 'Covered Way'.

c.1945 'Research Station W109' - site layout plan records later war-time use of Clubhouse as a dispersed Vickers factory workshop, offices and drawing office with a 'temporary wind tunnel' in the adjoining former McEvoy shed.

27/09/1948: New 'Proposed Adaptation of Existing Buildings at Research Department to Form Drawing office etc – Messers Vickers Armstrongs Ltd' drawing produced by Ley Colbeck & Ptnrs. Scale 1inch to 8ft.

1962: Vickers Weybridge Works Site Plan – with 'T' numbers index.

29/06/1967: New 'Proposed Alterations to Toilet Block T206 R&D Department' drawing (no. L3419) produced by BAC Weybridge Division. Details main toilet facilities on ground floor. Scale half an inch to 1ft.

17/06/1972: New 'Installation of Film Unit T206' drawing (ref. no. A17714/1) produced by J Fowler of the BAC Weybridge Division. Shows conversion of South half of first floor for use by new film unit and uses of rooms. Scale 1:50.

PHOTOGRAPHS/SKETCHES

Undated (1907?): View from South showing its original form with an open-sided balcony with tiered seating facing South (BM copy neg. ref A192).

01/11/1913: Mr W F Adams with 12.1hp Vinoter car behind SW corner before later extension was added (see 'The Auto', p1347).

1914(?): Plaque recording Percy Lambert's 15/12/13 achievement in covering 100 miles in one hour (Hulton Picture Library).

21/03/1914: Cars and unidentified woman facing camera in a wet Paddock (Hulton Picture Library).

04/08/1921: Front cover of 'The Auto & Motor Journal' showing Clubhouse with verandah roof extension on South side.

1922: 1) Malcolm Campbell in racing car '9' with West elevation behind; 2) 'Barlow' (?) with racing car '12' next to stairs at SW corner.

05/07/1928: View of Clubhouse across Paddock from SE during a Lagonda Fete (see Venables p122. LAT archives).

Late 1920s(?): Undated view from Members' Hill showing two runs of parallel stairs into NE corner of Paddock Restaurant with another set at NW corner. Windsock also visible - possibly attached to the rear.

15/0/4/1930: Photo published in The Motor, p512.

1930s (not dated): Exhibition of Lagondas(?) parked along South elevation with later style of stairs also visible (Hulton Picture Library).

1930s(?): Memorial plaque to racing driver Sir Henry 'Tim' Birkin unveiled by Earl Howe on East end of South elevation (see Gardner, p96).

1932: Crowded Paddock scene on race day showing Clubhouse with clock on front elevation fitted at right angles to the wall and timber pillar on ground floor at SE corner now encased in brick.

1933: Packard saloon in front of building showing new balcony/stairs behind.

1938: Close-up of unidentified racing car parked beside stairs to ('Chequered Flag') balcony (Geoff Goddard Collection).

Easter 1938: View across Paddock from SE – note: still only small windows on front elevation.

18/08/1939: Charcoal & wash sketch by F Gordon Crosby of a race seen through Clubhouse Cocktail Bar's large new window published in 'The Autocar'.

17/06/1939: Ford Motor Gymkhana event held.

Mid 1950s (post-1954): Clubhouse from NE with parabolic dish on tower & 4,000lb bomb outside and Paddock with new cedar hut foundations being laid (undated Vickers photo ref MP4081).

Mid/late 1950s: Clubhouse (minus radio dish), Race Car Bays, Paddock (with new cedar hut) & airfield (and new 'B1' buildings) seen from top of Test Hill (undated Vickers photo ref MP8732).

Mid/late 1950s: ditto seen from lower down Members' Hill (undated Vickers photo ref MP8733).

Mid/late 1950s: Car Bays and Clubhouse (still unaltered and minus earlier radio dish but with man working on tower) seen from South with T202 and Test Hill (accessible with monkey puzzle tree but no steam pipes visible) beyond (undated Vickers photo ref MP8734).

c.1955/56: View of Clubhouse from SE corner of Paddock largely unchanged from its pre-war appearance (Vickers photo in Gardner p.96)

June 1957: Brooklands 50th anniversary showing vintage cars in Race Car Bays and Clubhouse SE corner (unaltered but with radio dish on front of tower balcony (undated Vickers photo ref IK73).

Early 1970s(?): BAC apprentice posing with 6ft scale rule and Wallis' bombs by Clubhouse SW corner. Note: balcony now fully glazed (undated BAC photo ref WH10291).

1973: Close-up (colour) of front elevation and tower showing decorative/turned spindles on its balcony railings.

1983 – present: Brooklands Museum & compiler's photos of Clubhouse restoration by Gallaher and subsequent use by Brooklands Museum.

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- Anon (1987) 'Under Starter's Orders' (Brooklands Museum Trust Ltd)
- Belton, Gerry (2008) 'All the Years at Brooklands'
- Bird, Roger (2012) 'The Birth of Brooklands' (self-published, no ISBN)
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- British Aircraft Corporation (1976) 'Test Facilities on 40 Acre Site' (booklet published by the Design Engineering Organisation, BAC Commercial Aircraft Division, Weybridge, ref. DEMS/JWF/1001, Issue B, 31/3/76).
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- Gardner, Charles (1956) 'Fifty Years of Brooklands' (Heinemann).
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- Stansfield, Andy (2008) '100 Years of Motorsport – A British Sporting Century' (Ammonite Press, Lewes, Sussex, ISBN 978-1-906672-03-4)
- Venables, David (2007) 'Brooklands – The Official Centenary History' (Haynes Publishing, Sparkford, Somerset, ISBN 978 184425 329 6)

PERIODICALS

Brooklands Society Gazette

Brooklands Yearbook (1930 & 1931)

'Illustrated' (September 1949)

'The Auto' (06 and 13/08/1910 – details of two new record boards fitted to front of Clubhouse.

'The Motor' 11/03/1930 – 'Brooklands new Clubhouse' feature (pp231-32).

'The Motor' 08/04/1930 – 'All About Brooklands' feature on the latest improvements and alterations.

'The Motor' 15/04/1930 – 'A Fine Entry from Brooklands' illustrated feature (p512).

'The Motor' 20/06/1945 – photo feature on state of Track at end of WW2.

OTHER SOURCES

Boorer, Norman W (1989) 'A Historical Account of the Occupation of the Brooklands Clubhouse by the Vickers Armstrongs Aeronautical Research & Development Department' (unpublished document held by Brooklands Museum).

Brooklands Museum Collections (including drawings, photos, oral history interviews/tapes/transcripts/videos).

Flower, Stephen (1990) 'The Clubhouse' (unpublished research notes by Brooklands Museum staff member).

Harvey Noble, George (undated) 'Catering at Brooklands' (unpublished notes held by Brooklands Museum).

Temple, Julian C (1990) 'Brief History of the Former 1907 BARC Clubhouse' (unpublished document held by Brooklands Museum).

WEBSITES

<http://www.britishlistedbuildings.co.uk/en-489856-the-clubhouse-brooklands-museum-weybridg>

<http://www.gettyimages>

ACKNOWLEDGEMENTS

John Allman; Jane Balcombe; Roger Bird; Charles Brooking; Graham Kempton; Andy Lambert; Dick Lewis; Andrew Makosz; Harold Morris; Richard Nash; National Aerospace Library (Farnborough); John Pulford; Andy Wilson.

OTHERS TO CONSULT

Morag Barton; Tony Hutchings; Fred Moore; Ann Watson

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BELLMAN HANGAR T202 AT BROOKLANDS MUSEUM

(c.Late1938: A single Bellman hangar was built beside the Hawker Flight Shed (a pair of WW1 Belfast-truss hangars) at the Byfleet end of Brooklands. This is believed to have been of lower height (with 17ft clear height on the doors) than most other Bellmans built at Brooklands as it was intended for use by Hurricane fighter aircraft. Note: a similar but smaller hangar was built at the same time close to the North end of Hawker's main assembly hangar).

(12/01/1939: Vertical and oblique air photos of Brooklands (especially of the Vickers factory) taken by Aerofilms Ltd from various heights and directions; by now Hawkers had two new temporary hangars (one Bellman and one similar smaller hangar). See copies held by Brooklands Museum and the National Monuments Record (NMR).

(03/09/1939: Britain & France declared war on Germany following the latter's invasion of Poland and subsequent refusal to withdraw).

(c.Early 1940: Three Bellman hangars (complete with camouflage paint) were built near Vickers Main Works at Brooklands – two opposite the Main Erecting Shop on the Finishing Straight (F/S) at the Fork and a third at the south end of the factory just east of the Outer Circuit opposite the 'Running Shed').

(c.May 1940: Contemporary photos confirm the existence on the F/S at The Fork of the Bellman known as 'Archie Knight's Repair Hangar' and the other two Bellmans must also have been built by now. (See archive photos and the November 1940 Luftwaffe target map in Brooklands Museum's archives).

(04/09/1940: The Luftwaffe bombed the Vickers factory at Brooklands killing at least 87 people and injuring at least 419 others in a daring daylight raid. The Bellman repair hangar on the Finishing Straight suffered a direct hit from a pair of bombs and was so badly damaged it had to be subsequently demolished. There are no known records of any Wellingtons being destroyed either at Brooklands or inside the hangar that day but it is unlikely to have been empty at the time. (See NMR air photos taken by the RAF later that afternoon and sketch map in Johnson, p130).

16/09/40: Construction started of four more dispersed Bellman hangars at Brooklands for Vickers-Armstrongs Ltd. One of these, (identified from 1946 as Vickers building 'T202' and later known as Brooklands Museum's Wellington Hangar), was erected on the F/S beside Members' Hill as part of what was soon known as Dispersal Depot W42. The other three Bellmans include one of the Railway Straight and presumably the one in The Sandpits across Brooklands Road. Another narrower hangar of a non-standard design (known as Top Hangar and from 1946 as 'T194' and 'Members' Hill (Upper)') was built behind Members' Hill under Members' Bridge and set into the Banking – as a vital part of this heavily camouflaged new Vickers 'W42' dispersed production facility for Vickers Wellington and Warwick aircraft. An undated photo shows the Top Hangar's interior with Wellington fuselages in production. (Note: apart from a photocopy, this photo and the album of other WW2 Vickers Dispersal Depots held by Brooklands Museum unfortunately could not be located in 2009 - check current status).

12/12/1940: Completion of Bellman hangar (later T202) near north end of the F/S at a cost of £5,513 and Vickers-Armstrongs staff then took possession. Camouflaged with paint and netting, the building is believed to have had no windows or glazing throughout the war but featured an external brick toilet block and a corrugated iron-clad annexe on the West side. Two wooden doors (surviving today but sealed up postwar) in the east side offered easy access to external air raid shelters at each end. The hangar may have lacked roof gutters although it had some by Spring 1947 (see below).

1941-1945: Used for dispersed production of the Vickers Wellington Mk II and Warwick aircraft with access to the aerodrome via a new taxi-way from the Finishing Straight around to the North of the Clubhouse and over a new 'North bridge' over the River Wey. The pitched roof of the Paddock's Shell Petrol Pagoda was removed (and replaced with a flat roof) to allow clearance for the aircraft's outer wings. (See archive maps and photos plus compiler's notes of an interview with the late George Roake).

1941: Various Brooklands site plans (see separate list) show different and sometimes inaccurate details for the two W42 hangars.

10/1941: New Brooklands site map (Plan No. 6721) drawn showing 'T202' and its sister hangar on Members' Banking as 'Finishing Straight Hangar' and 'Erecting Shop' respectively – complete with adjacent air raid shelters and a Boiler House, Sub-Station and Trailer Pump House building located along the East edge of the North end of the F/S (see separate F/S Timeline).

07/11/41: RAF vertical air photo shows T202 camouflaged using netting to appear as an extended part of Members' Hill but with no sign of painted camouflage. A Wellington was parked on the south apron facing the hangar doors (see NMR photo).

08/11/41: T202 was presumably included in certain Vickers buildings at Brooklands to be repainted and be covered with additional camouflage netting.

04/09/1942: RAF vertical air photo shows T202 with three Wellingtons parked on the F/S to the south; one on the apron facing the doors and two more - minus outer wings - opposite the Paddock. (See copy at NMR: RCHM Neg HLA/631 Frame 5:71).

(Late October 1942: End of Hurricane production at Brooklands; Hawkers continued production elsewhere until 1944 and their premises were taken over by Vickers).

26/5/43: Identified on a 'Vickers-Armstrongs Weybridge Works – Dispersal Depots' list as 'Members' Hill' for Erection and Machine Shop work.

Late 1943: Delivery of another Bellman hangar to 'Vickers-Armstrongs at Weybridge' at a cost of £3,892 as part of an extra government contract for nine Bellmans from the Tees Side Bridge & Engineering Co Ltd (source: The National Archives c.2000, ref. unknown). Its location is not recorded but may explain the extra Bellman visible near the Byfleet Banking and alongside the 1938 Hawker Bellman in an RAF vertical air photo of 01/05/44. Apparently being only 17ft high, perhaps it was required to house smaller aircraft such as the Mosquitoes and Avengers used for Highball trials (before Wisley airfield opened in 1944)? A later RAF air photo shows that it was removed by 23/08/45.

01/01/44: Named (along with its sister hangar) on a 'Vickers-Armstrongs Weybridge Works – Premises in Occupation' list as 'Depot W42' – Members' Hill, Brooklands Track, Weybridge' with functions of 'Erection, Machine Shop'.

03/03/44: RAF vertical air photo of Brooklands shows a Warwick parked on T202's south apron facing the hangar doors (see NMR copy).

01/05/44: RAF vertical air photo of Brooklands shows T202 with a Warwick parked on the south apron facing the hangar doors. A third Bellman had now been built on the ex-Hawker site (see copy held by the NMR, RCHM Neg 106G/LA10 Frame 7002).

(15/08/45: End of WW2 – by this time, 6,376 aircraft had been produced at Brooklands by the Hawker and Vickers aircraft companies between 1939 & 1945. Hawkers built 3,012 Hurricanes and Vickers produced 3,364 aircraft including 2,316 Wellingtons and 845 Warwicks (see McSwein, 1993)

23/08/45: RAF vertical air photo of Brooklands shows T202 with a newly resurfaced north apron and also a small triangular-shaped area of apron by the south-west corner. The third Bellman on the ex-Hawker site had now been removed (see copy in NMR, Swindon).

1945-early 1950s: Possibly still used for production/repair work on Warwick, Viking and other aircraft (confirmation needed). A single wooden 'wicket' door was inserted in both north and south end main doors of T202 to aid engineers' access and the two war-time exit doors on the east side were presumably sealed up at this time.

1946: New Brooklands site plan produced for Vickers-Armstrongs; W42's Bellman was now officially known as T202 and the Top Hangar as T194 on Vickers' new reference system for identifying its premises. The two hangars presumably now began to be used for different purposes.

(07/01/46: Decision to sell Brooklands Track and Aerodrome to Vickers-Armstrongs by Brooklands (Weybridge) Ltd for £330,000 agreed at a shareholders' meeting of the latter organisation).

1946-47: Construction of the Stratosphere Chamber for the new Research & Development Department headed by Barnes Wallis. Contemporary photos show the condition of T202 and surviving nearby pre-war and WW2 buildings at that time. Photos taken in Winter 1946-47 show T202 with guttering fitted but no side windows/glazing but others from Spring 1947 show half a dozen small 'Crittall' (?) windows installed along the west elevation. Air photos taken slightly earlier show the hangar with traces of war-time camouflage on the north and south elevations but the roof now appears to have no remaining camouflage.

Early 1950s-1970: Used as Vickers-Armstrongs 'mock-up' hangar for construction and evaluation of Vanguard, VC10, BAC 1-11 and 3-11 full-size wooden cabin/cockpit and engineering mock-ups.

c.Early 1951: T202's roof cladding renewed as part of Vickers' investment in various factory buildings. The rest of the building was probably re-clad at the same time but no confirmation has been found so far. Clear glazing panels (wired thick glass sheet) were subsequently installed along the side and end elevations and also single wicket doors in the sliding doors at each end (the exact date of such modifications is unknown but probably all done by 1957).

(April 1951: First Valiant production contract (25 aircraft for the RAF) won by Vickers. Together with significant orders for Viscount airliners, this now gave Vickers the opportunity and funds to expand and improve its Brooklands factory).

12/05/51: RAF vertical air photo shows T202's new roof cladding unpainted (ie bare metal) - but with no new access road to T194 at rear.

Feb 1952: T202 (& T194) described in new inventory of buildings at Brooklands as 'Members Hill (lower)', 17,801 sq ft, in good condition and used as 'F.P.S.' (Finished Parts Stores).

Summer 1952: Part of T202's interior became offices and workshop for Vickers' new Guided Weapons Department staff (previously housed in the main Design Office). Former apprentice John Duck recalled (c2008) the hangar being divided along its entire length by a 15ft high screen with GW's to the right and Aircraft Mock-up cabin furnishings to the left with staff rarely crossing the divide. Their Inspection area was in the outside lean-to and staff canteen in the nearby Campbell Shed.

Pre-1953: Undated photo of Barnes Wallis' Green Lizard test vehicle in the Paddock shows part of T202 behind with its original narrow-width windows and gutters (see Wood, 1975, p.184).

1954: Cancellation of Vickers Blue Boar and Red Rapier guided weapons

Pre-July 1954: New concrete roadway to hangar T194 built by this date at a slightly raised level on top of centre of the former F/S behind T202. Vehicle access across the F/S south of T202 was also improved by inserting a new diagonal strip of concrete roadway (see photos including RAF vertical air photo of 20/07/54).

20/07/54: T202's new roof cladding was now painted all-black; the concrete improvements to F/S surface also appear clearly from the air (see RAF air photo)

05/07/56: New Brooklands 1:2500 site plan produced - 'Site Plan of Weybridge Works - Messers Vickers Armstrongs (Aircraft) Ltd', Drg no. L3000LMW (complete with index to all 'T' nos then in use).

06/07/1957: Extra glazing (wired thick glass sheet) and two lower windows now installed in T202's south elevation and much of this survives today. (See Vickers photo ref. IK72 taken from the Race Car Bays during Brooklands' 50th anniversary).

1957: Vickers GW Dept's Red Dean air-to-air missile cancelled by government defence cuts but design started for a new man-portable anti-tank missile (named Vigilant) as a private venture.

25/04/1958: HRH The Duke of Edinburgh toured the Vickers factory facilities at Wisley before being driven to Brooklands where he visited the 'B.1' Continental Airlines Viscount production line, the Vanguard production line, the mock-up hangar T202 with a Vanguard fuselage mock-up and sat inside the TCA VC9 cockpit mock-up. See 'unissued' British Pathe film ref ID 2702.12: 'Duke of Edinburgh at Vickers'.

c.1960: Closure of Vickers Guided Weapons Dept after formation of the BAC company with work and some staff transferred to BAC Stevenage.

1961: First contract for Vickers Vigilant placed for the British Army.

1962: Disbanding of Vickers Guided Weapons Dept at Brooklands – all work and some team members were transferred to BAC Stevenage.

1964: Full-scale wooden VC10 mock-up (minus fin/tailplane and starboard wing) housed in T202 (ref. BAC 1964 'Weybridge Works' booklet).

13/06/67: By this date, T202's roof still lacked any opaque sheets/roof lighting (see vertical air photo in the NMR)

c.1968: T202 housed mock-ups of VC10 and BAC 3-11 (under construction) and the roof was now fitted with insulation and transparent glazing panels; see photos 3 & 22 in Freschi, 2006.

c.1968: Wings of Vickers Vimy replica G-AWAU built by VAFA members/BAC staff inside T202 – see photos in St John Turner's Vickers Vimy book (one shows Eric Skingley/Brooklander with an uncovered wing section on the south apron)

06/08/69: By this date, T202's roof featured four rows of opaque sheet/roof lighting along its length (see vertical air photo in the NMR)

02/12/1970: Cancellation of the twin-jet 245-seat wide-body BAC 3-11 airliner and scrapping of its mock-up. This was almost certainly the last full-size mock-up built by Vickers/BAC in T202.

c.1971-87: Used for storage by BAC/British Aerospace.

18/07/73: Oblique air photo taken by the RCHM(E) shows all WW2 structures North of T202 still extant (including the boiler house for T194); no later photographic evidence of their survival has yet been found.

c.Mid-1970s/early 1980s: Demolition of hangar T194 on Members' Banking (more details sought)

c.1983?: Unidentified Hawker Typhoon cockpit section photographed beside air raid shelter on T202's South apron (photo seen by the compiler some years ago - check Museum archives)

December 1983(?): Closure of Head Wrightson & Co Ltd

(c.1986: Demolition of two Bellmans and one smaller unidentified hangar used by Hawker aircraft at SW end of Brooklands (see photos taken by the compiler).

1987: Formation of Brooklands Museum Trust Ltd which soon took over responsibility for T202 as part of its new 30 acre Museum site. Initially it was still occupied by a British Aerospace Stores Dept. with steel racking and mezzanine floors throughout. Tesco then rented it for temporary storage of baked bean tins and loo rolls.

1987: Air photos of Brooklands Museum and BAe factory site taken by the compiler from an Air Hanson Bell Jet Ranger helicopter.

April 1987: T202 was now one of six surviving Bellmans at Brooklands - the others being T76, T151, T153, T184 and A19 (Sandpits)

1988: First used by Brooklands Museum - Roe I Biplane, Sopwith Camel and Loch Ness Wellington aircraft all moved in (though the Roe 1 departed for the nearby Avro Shed by June).

1989: Final closure of British Aerospace Weybridge East Works; demolition started at the end of the year and was completed within 12 months. Two other modified WW2 Bellmans were also demolished as part of this contract.

April 1990: Detailed plans of T202 issued to Brooklands Museum by Broadway Malyan Architects of

c.1990: South end repainted silver/grey via Brooklands Museum Site Manager, Frank White. Hangar floor repainted with floor sealant/varnish at the same time.

30/01/92: Front two-thirds of hangar swept and cleaned by volunteers T Amos and R Brant; Viking G-AGRU airliner installed (minus outer wings) soon afterwards.

Late 1993: Inspection by Mouchel & Partners of footings of two side trusses after trial excavation of surrounding floor slab (see letter from Mouchel's Marcus Fagent, dated 02/12/93).

02/12/93: Plans revealed by Museum press release for T202's restoration.

September 1997: Loch Ness Wellington restoration work was now largely completed by Museum volunteers inside T202.

02/04/98: Inspected by English Heritage Team - William Holborow, Alan Johnson and Jeremy Lake for ref. use with their thematic study of military airfield buildings. See letter of 24/4/98.

July 1999: Added to Elmbridge Borough Council's local list of buildings of architectural or historic interest.

Oct 1999: Restoration plans submitted to Heritage Lottery Fund (HLF) by Brooklands Museum.

04/11/99: Designated as a Grade II Listed building by the Department of Culture, Media and Sport.

1999: 'Condition Report, Schedule of Works & Repairs Specification' – five page checklist about T202 produced by Museum Site Manager, Brian Topping.

05/10/2000: 'Structural Assessment of Bellman Hangar – Main Points From Initial Calculations' – brief one page summary issued by Mouchel Consulting Ltd.

Oct 2000: 'Brooklands Museum Bellman Hangar Refurbishment – Initial Structural Assessment, Edition 1' report issued by Mouchel Consulting Ltd.

08/11/00: Brooklands flood disaster but T202 escaped unscathed (see compiler's photos).

24/07/01: Inspected by David Brock and Robert Williams of English Heritage SE Region, Guildford.

??/09/01: £994,000 HLF grant awarded to T202 Restoration project - subject to a further £450,000 of partnership funding being secured.

(11/09/01: 'September 11th' terrorist attack on the USA resulted in major contraction of the global airline industry).

24/10/01: Former Vickers/BAC employee George Roake revisited T202 where he had worked in WW2 on Wellington and Warwick production. See compiler's separate notes of this meeting.

06/11/02: Inspected by English Heritage's Listed buildings expert and 'Monitor' for the T202 HLF Project, Robert Williams and Scheduled Monuments Inspector, Judith Roebuck.

13/01/03: Three week reorganisation of hangar exhibits began: Wellington viewing platform dismantled and removed.

16/01/03: Dismantling of Museum's internal partition/hoarding at Northern end of T202's East side; a disused WW2 Broome & Wade air compressor (with large 6' x 3' air tank, switchgear and circuit breaker unit and later/postwar electric motor) was rediscovered behind this screen) – see notes below.

16-17/01/03: Grand Slam bomb moved from West to East side of hangar using Ransome tug and forklift truck.

20/01/03: Hawker Fury project moved into new workshop area (vacated by bomb display) in centre of West side of hangar.

21/01/03: Avro 504K moved to new position on East side of hangar between Wellington and Viking amphibian.

24/01/03: Vickers Viking airliner moved (by forklift) some 10ft further South on West side of hangar – to new position just inside front entrance.

28/01/03: Fuselage of Hawker Hurricane Z2389 moved into NW corner of hangar (former Fury workshop); photos taken by C Knox & C Jones + video by J Were.

(c.2004: Demolition of Bellman hangar T184 on the Railway Straight in advance of construction of Mercedes-Benz World)

April 2006: Visit by English Heritage's David Brock (Team Leader Hants, Surrey, W. Sussex and Isle of Wight) to review new plans to relocate T202 next to Finishing Straight (see Brock's 02/06/06 letter).

04/05/06: 'BM Hangar Restoration and Relocation Justification & Method Statement' document written by A Winn with revised specification.

c. May 2006: Presentation given to potential sponsor Alan Bristow.

03/11/06: Essential repairs by Museum volunteers to runners/bottom rail of one sliding middle door section of hangar doors at South end; one wheel had seized and rail was badly corroded (see J Temple photos).

07/11/06: Visit by Jason Lowe (HLF Case Officer) to review hangar project with A Winn and C Dodds (J Temple unable to attend).

? Feb. 2007: Revised phased bid submitted by Brooklands Museum.

March 2007: HLF turn down Museum's latest bid for restoring hangar in several phases and suggested seeking advice from a Conservation Architect.

??/??/07: Application submitted to HLF for a Project Planning Grant (PPG).

??/??/08: HLF confirmed that the PPG application was successful.

??/??/08: Underground air raid shelter (concrete-lined tunnel) under Members' Hill revealed for first time in years after clearance of undergrowth & vegetation by Museum volunteers led by P Godfrey (see photos)

??/??/08: Modification to part of access ramp made by Museum volunteers led by Bill Risbridger at South end (see photos taken by K Hill/J Temple); curiously no trace was found of the underlying race track in this area, but excavations may not have been deep enough to reveal this.

Late September 2008: Temporary position of HLF PPG Project Officer advertised in local press in the Surrey Advertiser.

08/10/08: Deadline for applications for new PPG Project Officer.

21/10/08: PPG Project Officer applicants (Philip Baker, Anthony Davenport and John Allman interviewed by JCT and Karen McKenna.

27/10/08: JCT informed consulting engineer John Allman that he was to be offered the position of PPG Project Officer.

07/11/08: Appointment confirmed of J Allman as PPG Project Officer.

15/01/09: Tenders issued to four contractors for PPG Project's technical and conservation surveys,

23-25/03/09: Access cleared and Viscount cockpit section relocated by volunteers for consultants to inspect T202's immediate surroundings including the South apron, air raid shelters and area between its East elevation and Members' Hill.

May 2009: Investigations by engineers Hockley & Dawson confirm the existence of the pre-war F/S concrete below the hangar floor slab.

May 2009: South elevation scaffolded and repainted light grey by contractors to improve hangar's external appearance before BBC TV's 'Antiques Roadshow' filming on 31st May.

June-July 2009: Archaeological investigations by Museum volunteers with several test pits/trial trenches excavated by hand to locate Eastern edge of F/S behind T202; archival research by other volunteers eg S Adey also started.

13/07/09: Trial trench at North end of air raid shelter South of T202 dug by volunteer G Kempton to find edge of F/S between it and Members' Hill.

21/07/09: Air photos of F/S, T202 and surrounding local area taken by the compiler from Fair Oaks-based Bell 47G5 G-BAXS helicopter flown by G Savage.

04-11/08/09: F/S immediately North of T202 cleared of accumulated mud, leaves and other debris by Museum volunteers using a hired mini-digger and dump truck.

13/08/09: Visit by Radley House consultants to review results of Museum's latest archaeological and research work.

14/08/09: Air raid shelter North of T202 inspected by D Turner of Balfour Beatty and found to have been constructed almost entirely of pre-cast concrete beams – ie the shelter's construction involved excavating a section of the West side of Members' Hill, erecting the shelter then burying it with earth. Note: during this inspection, the source of a constant water leak was traced to inside the NW corner where the wall meets the floor.

11/09/09: Research visit to English Heritage's National Monuments Record in Swindon by D Corley, M Jones and J Temple to examine air photos of Brooklands including photos of the bomb damage of 4/9/40.

31/11/09: Extra air photos taken by A Winn of the F/S, Wellington hangar and museum from visiting Bell 47G5 G-BAXS flown by G Savage.

Early Nov 2009: Dismantling of museum's radio workshop/store in centre of eastern half of T202 to help make room for Vickers Vimy; most of this steel structure was then reassembled in T202's NW corner behind the Hurricane.

Nov 2009: Completion of new 'Brooklands Museum Aircraft Factory & Race Track Revival Project – Conservation Management Plan' by Jeremy Poll of Radley House Partnership (conservation architects) as part of the report by Hockley & Dawson Consulting Engineers Ltd (2009) 'The Brooklands Museum Aircraft Factory & Race track Revival Project' (Hockley & Dawson, Cranleigh, Surrey).

14/11/09: Removal of rest of dismantled former radio workshop ready for Vimy to arrive a few days later.

17/11/09: Major reorganisation of exhibits to make way for Vimy's arrival; gliders and Bleriot dismantled and stored in trailers, Drone moved to Balloon Hangar and Merryweather fire engine moved to Strat Chamber.

19/11/09: Installation of Vickers Vimy NX71MY (flown into Brooklands four days earlier) in centre of T202 – major operation involving at least 20 volunteers led by Andy Lambert with specialist transport sponsored by Ceejay Systems, Langley Vale Recovery, Rampco and Warwick Trailers.

21/11/09: New 'Brooklands Vimy' exhibition officially opened in T202 by Peter McMillan.

December 2009: PPG Project officially completed.

10/01/10: Acceptance of Hockley & Dawson's Final Report (of Dec 2009) by Brooklands Museum.

??/10: New crew room built at north end (behind Hurricane workshop)

22/03/10: Brief power-point presentation about results of HLF PPG work given by J Allman & J Temple to 150+ museum volunteers at one of their regular meetings.

27/03/10: Dismantling of volunteers' old crew room and adjacent (ex-Hurricane) workshop completed by Paul Godfrey & Martin Strick.

2011: Work begun on new Heritage Lottery Fund 'Round One' grant application.

??/09??/11: Pre-application HLF R1 form submitted via consultants 'A Different View'.

ACKNOWLEDGEMENTS

Steve Adey, John Allman, Brooklands Museum Collections and Library, the late Norman W 'Spud' Boorer, Philip Clifford, Denis Corley, John Duck, English Heritage/The National Monuments Record (Swindon), John Forbat (email 04/04/2009), Andy Gibbs (Specialized Logistics), Paul Godfrey, English Heritage (National Monuments Record), Jack Hill, Karina Hill, Cliff Jones, Maurice Jones, Royden Kemp (owner of Bell 47G5 G-BAXS), Graham Kempton, Cliff Knox, Bill Risbridger, the late George Roake, Gary Savage (Alan Mann Helicopters), Dave Turner (Balfour Beatty).

ARCHIVE MAPS & SITE PLANS

See reference copies held in Brooklands Museum Library.

ARCHIVE PHOTOGRAPHS & ILLUSTRATIONS

Brooklands Museum archives (see photos scanned by Steve Adey and Julian Temple during 2009).

c.May 1940: Vickers Warwick L9704 (2nd prototype, first flown 5/4/40) & an unidentified Wellington were photographed on the Outer Circuit between the Main Erecting Shop and The Fork Grandstand; a Bellman hangar ('Archie Knight's repair hangar') built on the Outer Circuit just south of The Fork is visible behind (copy held in Museum archives).

November 1946 air photo of Vickers Works (copy in Museum archives, published in 'Airfield Review', April 2006, p30).

NOTES

(1) T202 still retains its original WW2 brick toilet block and corrugated iron-clad annexe on the west side. Its 1940s roof gutters survive but are in poor condition and have some replacement plastic down-pipes and other post-war sections. The hangar doors at the north end have long been sealed up as have two original wooden exit doors at opposite ends along the east side. The main doors at the south end have acquired extra post-war (1950s/60s?) draught excluders consisting of sheet metal panels suspended vertically below the top door runners across the full width of the building and internally the same area is lined with aircraft cabin lining/fabric material.

(2) The WW2 Broome & Wade air compressor's maker's plate records: Type D21, Normal RPM: 420, Bore: 6, Stroke: 7, Machine No. 47061, Pressure: 100. The air tank has painted letters/numbers: 'WP-100-LBS Square Inch/No. 109' and its data plate states: 'No. D48411-2/W.P. 100 lbs sq in/T.P. 210 lbs sq in/Size: 6-0 x 3-0 dia.' No date of manufacture evident.

(3) See also the compiler's 'Bellman Hangars - General' draft timeline

QUESTIONS (20)

1. When were the three different styles of windows fitted to the side elevations between 1946 & 1953? Ask architectural historian Charles Brooking ('The Brooking Collection' in Cranleigh) to advise.

2. What were the origins and functions of the WW2 storage building T190 at the top of the Finishing Straight beside today's heli-pad and T193 west of the F/S close to the 1960s Acoustics Building?
3. What were the extent, colour and pattern of the war-time camouflage on T202's exterior? Air photos show that the roof was painted dark grey or black and was covered with netting stretched across to Members' Hill and a Pathe(?) newsreel film clip briefly shows the south elevation still camouflaged in 1946.
4. When was the existing post-war(?) floor slab laid – probably in the early 1950s when Vickers were able to invest more in factory buildings and infrastructure?
5. Was W42's Top Hangar (T194) built to the same design as the Foxwarren Dispersal Depot's Machine Shop building - latterly occupied by the Cobham Bus Museum)?
6. Were any other Bellmans supplied for Vickers' use at nearby dispersed production sites eg the hangar built c.1941 at Corbie Wood in Severn Hills Road opposite the entrance to Whitely Village? Another was at the Smith's Lawn dispersed production depot in Windsor Great Park. Note: another dispersal depot at Pyrford Court had two A.1 Type hangars.
7. What was function of the extra 17ft high Bellman supplied to Vickers, Weybridge in late 1943 (probably erected beside two identical Bellmans on the former Hawker site near the Byfleet Banking)? Did it house smaller aircraft such as Mosquitoes (max height 15'3"/4.64m) and Avengers/Tarpons (15'5"/4.7m high) operated from Brooklands and Wisley on Highball trials?
8. What was T202's function from 1945 to the early 1950s? Storage or used for Vickers aircraft repairs/mods?
9. When was T202 first used as the Mock-up Shop and for which aircraft design? Did the Valiant and V1000 have mock-ups made??
10. Where was the TSR2 mock-up constructed - at Brooklands or at Warton?
11. Was the BAC 3-11 in 1970 the last mock-up built in T202?
12. When were the north doors sealed up – probably by the early 1950s?
13. Did the hangar flood in 1968?
14. When and where was the last new Bellman was built in Britain?
15. When exactly was the HLF grant confirmed in September 2001?
16. When was the ex Air Hanson Bellman hangar T184 demolished on the Railway Straight?
17. What type/design was the smaller WW2 hangar on the Hawker Aircraft site at Brooklands? It was similar to a Bellman, was built before 12/0/09 and was demolished around 1986 (see compiler's photos).
18. When was the Bellman hangar built in 'The Sandpits' off Brooklands Road opposite the Vickers factory? Late 1940 – ie same contract as T202?
19. Was T202 completely re-clad in early 1951 – or just the roof? Note: the existence today of two wicket doors in the East elevation suggest they side walls still have their 1940 corrugated iron cladding.
20. When exactly were the three temporary hangars (two Bellmans one smaller similar but unidentified type) built on the Hawker site?
21. Roughly how many Wellingtons and Warwicks might have been built in T202 in WW2?

22. When were the single wicket doors each inserted in the sliding doors at the North and South ends? Note: the North one does NOT appear in the undat/ed photo of the post-war access road being built pre-July 1954 but the South one is visible in a photo taken at the Brooklands 50th anniversary event in mid-1957.
23. Which three(?) other Bellmans were built at the same time as 'T202' in Sept-November 1940?
24. What other significant dates/events should be listed above for the GW Dept's work in T202 from c.1952-60?
25. How many Bellmans in total were built from 1938-44 or existed at Brooklands (including The Sandpits)? Ten?
26. How old are the numerous assorted electrical fittings (ie power sockets, switchgear, light switches, wall heaters, ceiling lights and other services eg air compressor/tank)?

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b) UNPUBLISHED

Duck, John W (undated - c2008?) 'Reminiscences/Vickers' (J Duck was a Vickers apprentice (1950s) and is a current Brooklands Museum volunteer) – 13pp typescript with some details (pp7-9) of work of the Guided Weapons Dept inside T202.

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Letter (dated 17/07/90) about Hobart House sent to J Temple by P G Torris (Chief Records Officer, British Coal).

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'Vickers-Armstrongs Weybridge Works – Premises in Occupation' (01/01/1944)

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DRAFT (2003-2013 UPDATES NEEDED)

THE BROOKLANDS MEMORIAL (1957)

1957: Designed for Vickers-Armstrongs (Aircraft) Ltd by architects Messrs. Ley Colbeck & Partners (a firm regularly employed by Vickers at Brooklands). The structure measured 31ft long, 5ft wide and 14 ft high. Constructed of square panels of 'white spar cast stone' mounted almost vertically onto central (brick?) core. The main inscription on both sides comprised

'Brooklands 1907 – 1939' in two foot high bronze letters and a large bronze plaque on the North side faced the London-Portsmouth railway. Replica chequered flags were incorporated in the top corners at each end. A local building contractor was presumably employed and the bronze letters and plaque were most likely cast by another Vickers company subsidiary.

06/07/57: Unveiling of new 'Brooklands 1907-1939' Memorial on North end of Brooklands aerodrome by Lord Brabazon of Tara, PC, CBE, MC. A Vickers film directed by Leslie Sansom recorded highlights of the event and its 'memorial parade' of Brooklands racing cars and nine aeroplanes specially invited by Vickers that day. Among those present were Sir Alliott Verdon-Roe, Earl Howe, The Duke of Richmond and Gordon, Major-General C A L Dunphie (Chairman, Vickers-Armstrongs (Aircraft) Ltd), Capt. Duncan Davis and George Edwards. At least one visiting aeroplane (Miles Hawk Speed Six G-ADGP flown by Ron Paine) gave a short flying display too and the large Memorial was specially draped in a huge b/w chequered flag for the start of the ceremony!

12/07/57: Full page report on this new concrete memorial to pre-war Brooklands featured in 'The Aeroplane'.

September 1957: Featured in 'Vickers News' which reported on the unveiling ceremony, named the guests who spoke from a temporary stage erected nearby and specifically said that the site (near the point where the Members' Banking meets the Railway Straight of the Outer Circuit) was

chosen to allow the memorial to be seen from the railway. This illustrated article also described the large bronze plaque in detail and besides publishing the words of

the accompanying bronze text panel, described the relief model 'of the Brooklands track as it used to be' with its representations of John Cobb's Napier Railton motor-car, Noel Pope's Brough Superior motorcycle and a typical biplane flying club light aeroplane. It also bore badges of the Brooklands Automobile Racing Club, the Junior Car Club, the Brooklands Motor Cycle Racing Club and the Brooklands Flying Club – and listed the three world's land speed records set at Brooklands (two of which were by Benz cars in 1909 and 1914).

11/06/67: Described by Bill Boddy in a Brooklands 60th Anniversary programme as: 'that enormous Vickers-Armstrong memorial to the entire circuit and aerodrome and those who achieved great deeds there.....proclaiming the long and illustrious history of Brooklands'. A couple of undated (late 1960s?) photos in Brooklands Museum's archives show the Memorial around this time in slightly weathered condition but with the original letters and plaque still in situ.

24/06/73: Unveiling of the Memorial's original bronze plaques by Brooklands racing driver Raymond Mays and two other unidentified individuals. (NB the plaque was now two separate items – a sculptured 'plan view' and an accompanying panel of text) in the entrance foyer of the 1907 Clubhouse, on the South wall (ie opposite its present day location).

Mid-1980s: Memorial letters believed now made of plywood – the bronze originals believed to have been stolen for their high scrap value.

c.1991: Memorial's original plaque (minus the related text panel) again displayed in the entrance foyer of the former BARC Clubhouse (now the central feature of Brooklands Museum). With the sale of the building to Gallaher Ltd c.1983, the plaques were removed for safekeeping/storage for the new Brooklands Museum which was then in its early stages of development. The text panel is now merely a wooden replica and was temporarily displayed in the building's new Visitor Reception.

c.Mid-1990s: Landowners (Trafalgar House Business Parks?) renew memorial lettering with plastic cut-outs (slightly different in size and style to the originals).

10/01/02: Increased protection given to Brooklands heritage with DCMS announcement that the Brooklands Memorial and other parts of the former Aerodrome and Motor Circuit are now legally protected by Scheduled Monument status.

01/03/03: Close inspection by the compiler found the concrete paving slab base and border in poor condition - particularly on the North side. Note: bolt holes for the original bronze plaque are still evident in the lower left hand corner of the structure's North side. Most of the 1990s plastic letters have now fallen off, although some are currently stored at the Museum. The Memorial's single surviving bronze plaque is still displayed in the main foyer of the Clubhouse and the wooden replica text panel is in the Campbell Shed.

ACKNOWLEDGEMENTS

Brooklands Museum, Philip Clifford, Albert Kitchenside, John Pulford & David Weguelin.

ARCHIVE PHOTOGRAPHS

1) View (b/w) of North side of the new Memorial on its unveiling on 6/7/57 (BAC ref MP62814, via Brooklands Museum)

2) Undated (late 1960s?) photo shows the North side of the Memorial in slightly weathered condition but with the original letters and plaque still in situ (Brooklands Museum, no ref.).

3) Undated (late 1960s?) photo shows the North side of the Memorial in slightly weathered condition but with the original letters and plaque still in situ (Brooklands Museum, no ref.).

4) Contact sheet of set of 9 photos of the unveiling by racing driver Raymond Mays (and two other unidentified individuals) of the two bronze plaques in the 1907 Clubhouse on 24/6/73 (ref '73011', Brooklands Heritage Partnership Radley House Partnership
Timelines: October 2017

Brooklands Museum - D1367)

POTENTIAL FURTHER SOURCES

Brooklands Society archives; 'Flight' magazine.

QUESTIONS

1. Where were the bronze fittings/plaque(s) made/cast?
2. Was the surviving bronze plaque ever stolen? Rumours persist that it was – if so, when and how was it later recovered?
3. When were the original bronze letters and text panel stolen?

SOURCES

Anon (1957) 'In Memory of Great Days', in 'The Aeroplane' 12/7/57, p.39.

Official Programme (11/6/67) for 'Godalming Round Table – 60th Anniversary Commemorative Meeting of Brooklands Track 1907-67'

Georgano, G N (1995, 2nd Edition, hardback) 'Brooklands – A Pictorial History' (Dalton Watson Fine Books, Loughborough, Leics, ISBN 1-85443-129-3). See undated photo (p.108) showing North side of memorial.

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Sansom, Leslie (1957 film) 'Vickers Aviation' (Vickers-Armstrongs Film Unit) – see scenes of the Brooklands Memorial at the beginning and end of this short b/w film directed by the late L Sansom about the history of Vickers-Armstrongs (Aircraft) Ltd at Brooklands.

'Vickers News', September 1957

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BROOKLANDS MOTORING HISTORY

(07/10/1848: Birth of Hugh Fortescue Locke King).

30/06/1909: Taxi Race for 12 FIAT taxicabs hired from the FIAT Motor Car Club and allotted to entrants via a draw; each cab was 'in London hiring trim' with two passengers and most lapped at just over 30mph (see photo).

c.1915: Army motorcycle competition held using Test Hill (see photo).

??/01/1921: Demonstrations by W O Bentley of his prototype Bentley EXP3 (registration 'BM9771') included driving down Test Hill with passenger Sammy Davis (Sports Editor of The Autocar).

04/05/1921: New Test Hill motorcycle record set by Tony Vandervell (who later founded of the Vanwall Grand Prix racing team) on a 500cc Norton in 8.57 seconds.

23/05/1921: Air photo (oblique, low level - Aerofilms neg 6229) taken of Paddock and Clubhouse.

25/06/1921: Air photos taken of Brooklands (ref Aerofilms negs 6786, 6787, 6788, 6789, 6791).

1922: Construction completed of new Redline and Shell petrol pagodas in the Motoring Village (see photo of the latter in Boddy, 1948, p192).

??/11/1923: New Test Hill car record (8.23 secs) set by J A Joyce in an AC.

Mid-1924: Launch of 'The Brooklands Gazette' published monthly – later to be renamed 'Motor Sport'.

04/04/1925: 30,000 spectators attended the Bank Holiday Race meeting although drizzle rain caused cancellation of the faster races.

02/05/25: Junior Car Club High Speed Trials (see Pathe newsreel coverage & photos showing use of Shell Way tunnel).

26/09/1925: Major Henry Seagrave won the 200 Mile race (see Stansfield, pp.16 & 135)

1926/27: New style of Test Hill railings replaced originals; probably part of Track improvements for the 1926 & 27 Grand Prix events (completed before Lagonda Fete on 18/08/27).

07/08/1926: 1st British Grand Prix.

28/08/1926: Air photos taken of Brooklands (ref Aerofilms negs 16858, 16860).

18/08/27: The Lagonda Fete.

01/10/1927: 2nd British Grand Prix.

1928: Visit by HRH Prince Albert, Duke of York to a race filmed by Pathe (ref newsreel ID 2440.15); also shows start on F/S, turning anti-clockwise onto Banking (note solid and dotted black lines on Track, drainage channel and pair of single-decker buses at intersection and policeman standing at the corner + details of timekeeper's hut, timber-built Pits and refuelling scenes).

10/08/1929: Air photos taken of Brooklands (ref Aerofilms negs 28329, 28330, 28332, 28334, 28336).

1930(?): New 'Mountain Circuit' introduced as a cross between road and track racing; this ran for one and a quarter miles up the Finishing Straight (FS), with a right turn onto Members' Banking (MB), right again at The Fork (a challenging 'hairpin' bend) then back up the FS.

09/05/1930: Fatal accident on day one of the JCC's Double-12 race – two Talbots collided on the FS and Rablagiati's car hit trackside railings just South of the footbridge killing his mechanic Ted Allery and one spectator Mr Hurworth. Twelve other spectators were injured, the other car overturned but its driver Hebelier and his mechanic had only minor injuries and the race later continued. The inquest and a subsequent legal action against the BARC resulted in greater safety measures (including more crash barriers) and new guidelines for motor race meetings (see Venables, p.135).

25/05/1931: Huge crowds attended a Whit Monday race meeting (see Getty Images photo of packed public enclosure on MH).

20/04/1932: World record-breaking Blue Bird demonstrated by Malcolm Campbell (see Stansfield, p.213)

24/10/1932: Ultimate Test Hill car record set by R G J Nash in a single-seat Frazer Nash special (named 'The Terror') in 7.45 seconds at 32.44mph! This was the fastest time ever recorded by a motor car ascending Test Hill and the car took off at the summit at 50mph and 'flew' 40ft before landing.

~~??/??/33: Construction of the new 'Cobham Bridge' carrying the Outer Circuit over the River Wey, south of the Fork – after major floods damaged the foundations of the earlier bridge.~~

(??/??/1933: Opening of Donington Park motor circuit – until now Brooklands was mainland Britain's only motor racing circuit).

02/08/1933: Gordon Lindsay Clegg drove the V-twin JAP-engined car 'Dorcas' up Test Hill in 8.41 secs (at an average of 28.56mph).

28/04/1934: JCC International Trophy Race won by Whitney Straight (see Stansfield, p.219) March

1935: Release of British film 'Death Drives Through'; directed by American Edward L Cahn, co-scripted by John Huston, and starring Chili Bouchier, Robert Douglas and Miles Mander, it included extensive motor racing scenes filmed at Brooklands in 1934 plus other film sources too. An early sequence showed two Gipsy Moths flying from Brooklands too. (Note: useful ref. source for pre-war Brooklands; DVD copies available by 2013).

09/06/1936: Absolute Test Hill record set by Francis Beart on a 500cc JAP-engined Grindley- Peerless motorcycle at 6.99 secs (average 34.55mph); he came off the bike when airborne at the summit but was unhurt.

19/09/1936: 500 Mile Race won by Freddie Dixon (see Stansfield, p.226)

??/??/1936: New Brooklands road circuit designed by Sir Malcolm Campbell to address the Track's declining popularity as a motor racing venue.

??/??/1936: Construction started of Campbell's new road circuit.

Late 1936: Annual repairs made to Members Banking (see photo via Dick Lewis).

(August 1936: Sale of Brooklands Track and Aerodrome to new company 'Brooklands (Weybridge) Ltd).

(??/??/1937: Opening of new road racing circuit at Crystal Palace).

27/03/1937: Construction of Campbell's new circuit nearing completion – see Getty Images photo of new section joining Members' Banking behind MH.

20/04/1937: Official opening of new road course 'The Campbell Circuit' (CC) by Dame Ethel Locke King. S F Edge and his daughter led a cavalcade in a loaned Gordon Bennett Napier around the new circuit. This crossed the river at The Fork via the 1926 Vickers Bridge (presumably modified and re-surfaced and renamed the Howe Bridge). Two new footbridges gave spectators access to the public enclosure on Members' Hill (MH) and its summit. The unfinished CC Pits were completed later.

01/05/1937: First race held on the CC - The Campbell Trophy - won by Prince Bira. See British Pathe 'News in a Nutshell' newsreel which records details of the CC's features including two new footbridges on MH, a new metal side gate with b/w posts at the top of a short flight of concrete steps at the foot of Test Hill (TH), a continuous concrete wall along the South side of the CC below MH, but no concrete wall on the North side of the road on the bend West of 'The Motor' footbridge.

05/08/1937: International Trophy Race won by Raymond Mays (see British Pathe newsreel?).

??/??/38: Annual repairs to the Members' Banking.

??/??/1938: Dunlop Jubilee meeting held (anyone racing on Dunlop tyres could enter) - said to be the largest race meeting ever held at Brooklands!

14/03/1938: 'Brooklands Opening Meeting' (see British Pathe newsreel ID 957.32); CC race (note: no concrete wall on TH side of bend), motor-cycle race starting on FS by Vickers factory & Eric Fernihough posing after setting new 143mph speed record.

(23/04/38: Death of racing motorcyclist Eric Fernihough (aged 33) while testing a new motorcycle near Budapest, Hungary).

07/05/1938: Fatal accident on CC just after the start of the JCC International Trophy Race (see Gaumont British News film): Frenchman Joseph Paul's V12 4.5 litre Delage ('No.9') caught fire passing the Pits, ran over an earth safety bank and crashed into spectators and the FS's metal railings behind them – instantly killing Peggy Williams and injuring some ten others including two women racing drivers (Kay Petre and Jill Thomas), well-known motorcyclist Noel Pope and talented supercharger designer Murray Jamieson (who died in hospital afterwards). The accident occurred between the CC Pits and FS footbridge near the 1930 Talbot crash site (see Stansfield, p.159 & 229-230).

08/05/1938: Motorcycles photographed racing around the CC's Dunlop's Delight bend, viewed from MH with FS and TH beyond.

29/08/1938: 'Speed Aces at Brooklands' (see British Pathe newsreel ID 977.51); CC race won by J P Wakefield (note: no wall yet built on the TH side of Dunlop bend or West edge beside FS).

??/??/39: Death of Col. Lindsay Lloyd aged 73 at Hatfield, Herts.

12/01/39: Aerofilms oblique aerial photos (only two taken?) of Brooklands taken from over Byfleet looking North with CC clearly visible.

17/06/1939: 'Ford Gymkhana' event attracted 30,000 people – claimed to be Brooklands' largest ever crowd – stunt driving by Ford V8s on grass beside the CC filmed by British Pathe (CC now had a continuous concrete wall along the West side North of the Pits continuing into the bend).

16/07/1939: 'Soap Box Derby' event held on CC.

??/08/39: Last official use of CC before Brooklands closed with start of WW2.

07/08/39: Last ever motor race held by the BARC at Brooklands (see rare colour photo published in 'Veteran & Vintage' magazine via Dick Lewis).

(03/09/39: Britain declared war on Germany & World War Two began).

20/06/45: Illustrated feature in 'The Motor' about Brooklands' poor condition.

07/01/46: Decision to sell Brooklands Track and Aerodrome to Vickers-Armstrongs by Brooklands (Weybridge) Ltd for £330,000 agreed at a shareholders' meeting of the latter organisation. Directors Sir Malcolm Campbell and C W Haywood were fully in favour of the plan especially as the Ministry of Supply said they would not release Brooklands for another three years.

10/10/1956: Obituary for Dame Ethel Lock King published in the Surrey Herald.

12/07/57: 'Farewell to Brooklands' feature in 'Autosport' about unveiling the new Brooklands Memorial.

19/09/69: 'The Ghosts of Brooklands' feature in the 'Daily Telegraph Magazine'.

August 1975: Golden Jubilee issue of 'Motor Sport' published to mark its 51st year of publication with special adverts, editorial & features including colour cover photo of a vintage

Bentley and modern Jaguar on the Banking.

ACKNOWLEDGEMENTS

Brooklands Museum Library; Tony Hutchings; Graham Kempton; Dick Lewis.

KEY

Bold text = details require checking or further research; underlined text = significant fact.

QUESTION

Which was the largest motor racing event (ie attracted the largest crowd)? The Spring Bank Holiday meeting of 1925, the Dunlop Jubilee Meeting of 1938 or the Ford Gymkhana in 1939....?

NOTES

See separate document for Brooklands Motor Cycling history/timeline

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BROOKLANDS – BYFLEET BANKING

1906-1907: Construction of Hugh Locke King's 3.25 mile concrete Brooklands Motor Course including footbridge across the Byfleet Banking (BB) from Oyster Lane (opp. Chertsey Road) for access to Wintersells Farm.

Brooklands Heritage Partnership
Timelines: October 2017

Radley House Partnership

17/06/1907: Official opening of the new Brooklands Motor Circuit (see archive photos/news-cuttings).

28-29/06/09: S F Edge's 24 Hour Run led to complaints from local residents and damaged the new Track surface.

Summer 1907: Track repairs made after damage from S F Edge's 24 Hour Run.

1914-18: Track closed with entire site being taken over by the War Office for aircraft manufacture; the flying village gained many new temporary and permanent military buildings during this time. Sopwith test pilot Harry Hawker is said to have flown under the BB footbridge too.

1917: New military Aircraft Acceptance Park (with two double and one triple bay Belfast truss hangars) built in the centre of the pre-war flying village for use (see official site plan). Wintersells Farmhouse is believed to have been demolished around this time.

05/09/1919: Start of Brooklands Track repairs to prepare for the 1920 season reported by the Surrey Herald.

1919 - 20: Major repairs required after four years' of war-time neglect; damage to the Track from heavy military vehicles was later claimed to have caused this problem but is unproven.

April 1920: Re-opening of Brooklands for motor racing.

13/04/1922: Vickers Viking IV amphibian G-EBBZ, crewed by Sir Ross Smith and Sgt. J M Bennett, crashed near the BB soon after take-off on a test flight, killing both on board. The aeroplane was built for a round-the-world flight but had yet to be issued with a Certificate of Airworthiness.

c1925(?): (early a.m.) Joe King flew an unidentified civilian biplane under the BB footbridge (see photo!), witnessed by brothers Ron and 'Buster' Paine.

??/??/1927: Death of record-breaking racing driver and designer Parry Thomas in an accident at Pendine Sands; he lived in a converted WW1 hut ('The Hermitage') at the time and was buried in St Mary's Churchyard, Byfleet.

Winter 1927-28: Despite heavy snow around Christmas, extensive Track repairs were made with reinforced concrete especially to small areas of broken surface (see Boddy, 1949, p371).

09/11/1928: SE5A G-EBQQ (ex C1091) spun in and crashed on the BB killing pilot Lt. Gwynne H B Maddocks.

Winter 1929-30: Winter Track repairs 'were made very carefully, with particular attention to the 'bumps' of which some competitors had complained during 1929' (Boddy, 1949, p417)

Winter 1930-31: Winter Track repairs again paid particular attention to the bumps which had caused complaints in 1930 and the 'very extensive repairs necessitated to the Track's surface were now carried put with reinforced concrete' (Boddy, 1949, p446)

??/12/1930: Track repairs on the Byfleet(?) Banking (see photo in Venables, p139)

Early 1933: Bridge carrying the Track over the river at the start of the East section of the BB was damaged beyond repair by major flooding; contractors rebuilt it in just six weeks (see air photo in BSG).

16/09/1933: Vickers Virginia K2670 crashed just inside near the BB shortly before start of the BRDC 500 mile motor race. The aeroplane was from 500 Squadron, RAuxAF, and the two crew are believed to have died.

1935: Opening of new Hawker assembly hall inside and adjacent to the BB's Western half.

12/01/1939: Extensive air photos taken of Brooklands by Aerofilms Ltd; the Hawker factory now had two new temporary hangars (one Bellman and one similar smaller hangar). (See copies in Museum

08/08/1939: Final motor races held at a BARC meeting at Brooklands.

27/08/1939: Final cycling event held at Brooklands.

03/09/1939: Closure of the Brooklands Circuit when Britain declared war on Germany. The entire site was extensively camouflaged to meet the very real threat of enemy bombing as the Vickers and Hawker aircraft factories made Brooklands an easy and very obvious target for the Luftwaffe).

1939-45: Camouflage in WW2 (with 'fake' houses over the BB beside Oyster Lane made with painted hessian netting). Anti-aircraft defences along the BB included several gun posts (one beside Wintersells Road).

06/09/40: Luftwaffe bombers attacked the Hawker sheds

??/??/4? : (Early WW2) Access road cut through BB from Oyster Lane to the Hawker factory premises.

03/03/1944: RAF vertical air photo of Brooklands (see NMR copy).

(07/01/46: Decision to sell Brooklands Track and Aerodrome to Vickers-Armstrongs by Brooklands (Weybridge) Ltd for £330,000 agreed at a shareholders' meeting of the latter organisation).

1951: New hard runway built for Vickers and this required a central section of the BB to be removed at its southern end.

????: Construction of two new access roads cut through the BB from Oyster Lane for Vickers/BAC use.

1968: 'Weybridge Works' factory guide published detailing all buildings used. Late

1960s(?): Demolition of the pre-war BB footbridge for safety reasons.

1971: Revised BAC factory site plan issued.

25/06/71: Air photo survey by the RCHM(E) of the Brooklands Track showed that much of it was now overgrown and badly neglected.

1975: Parts of the former Brooklands Motor Circuit designated as a Scheduled Ancient Monument by the Department of the Environment (see contemporary air photos for its condition).

02/04/1978: BB's east section (between runway and river) finally fully cleared by BS team and sprayed with 'Synchemicals' weedkiller two days later (ref BSG 1978 No.3)

April 1983: Byfleet Banking clearance work by Brooklands Society Trackclearers (see Harold Hatton report in BSG Vol 8, No.2, p.5).

1989: Designation by Surrey County Council of a new Brooklands Conservation Area.

c.1991: Construction of new Tesco & M&S superstores with new services laid along bottom

edge of west half of BB and new public road (named 'Barnes Wallis Drive') cut through the BB from Oyster Lane with Scheduled Monument Consent on condition that two redundant post-war roads were closed and these missing sections of BB reinstated.

August 2003: Draft Brooklands Conservation Plan prepared by consultants T O'Rourke for DaimlerChryslerUK (but this was not completed or adopted by EBC or EH).

??/??/2003: Sold by USS to DCUK/M-BW along with rest of the central area.

Early December 2006: BB damaged by contractors (Murphy) working for EDF Energy dug a power cable trench along the bottom of the Western section of the BB opposite Tesco without SMC (see Brooklands Heritage Partnership Radley House Partnership Timelines: October 2017)

JCT photos of 10 & 13/12/06); reported to EH, they eventually escaped prosecution with a severe caution.

c.May 2007: Temporary repairs made on behalf of BM for the Brooklands Centenary.

08(?)06/2007: Brooklands Centenary celebrations included a parade of vintage cars around all accessible parts of the BB.

17/08/2007: Further damage to BB caused by contractors cutting new trenches into the Track without SMC & subsequent repairs were made with the wrong mix of aggregate (see JCT photos)

01/01/2009: BB's badly neglected overgrown West section inspected and photographed by JCT.

??/06/2009: BB's neglected West section (badly needing weeding) opposite Tesco photographed by JCT

??/??/2009?: Filming of James May's BBC TV Scalectrix programme & featured in his weekly column in the Daily Telegraph (date?)

21/07/2009: Air photos taken by J Temple from a visiting Bell 47 helicopter.

19/09/2009: BB's badly neglected overgrown NW section again photographed by JCT.

23/11/2009: Initial discussion meeting held at BM about a proposed new Brooklands Heritage Partnership Agreement between BM, EBC, EH & SCC.

29/01/2010: Further damage to BB's North-West section caused by BT subcontractors 'Options Utilities' renewing buried cables along the bottom edge of the Track nr Nomalites' premises just North of Barnes Wallis Drive without SMC (see JCT photos).

02/02/2010: EH's Richard Massey sent written complaint to BT's Sevenoaks-based Wayleaves Manager, Mr Challis, about latest damage to BB

07/02/2010: Damage by unauthorised vehicle access to North end of BB NW section beside footpath to Wintersells Road, due to broken derelict fencing.

03/03/2010: Name change agreed for Brooklands HPA to the 'Brooklands Heritage Partnership' (BHP).

31/05/2010: Land at rear of BB's Eastern section inspected and photographed by JCT (many original spiked railings found to survive).

16/09/2010: Anonymous letter 'Why Let Our Heritage Sink Into Oblivion?' complaining about the state of the BB published in the Byfleet News & Mail

??/??/2010: BB inspected and photographed by Dr Richard Massey (EH) & JCT (BM) as part of an audit of the Brooklands SM – this confirmed that the section between Barnes Wallis Drive and the footpath to Wintersells Road is the most badly neglected section of the Monument (see JCT photos).

03/09/2011: BB's even more neglected and overgrown NW section again photographed by JCT confirming rumours of increased litter and possible fly-tipping.

24/02/2012: NW section of BB inspected by BM's JCT & John Silver and photographed by JCT.

04-06/07/2012: Contractors cleared weeds & undergrowth from the increasingly neglected section of BB opposite Tesco/M&S – just in time for the Olympics!

c.12/09/2012: Weeds on BB opposite Tesco/M&S again treated by contractors.

??/??/13: Spiked railings behind BB's Eastern section found by Richard Codd and JCT to have recently had their spikes removed (presumably for H&S reasons?! Subsequent enquiries failed to identify those responsible.

Today: Owners of certain sections of the BB are unidentified although those that are known include Luxfords, Mercedes-Benz World/DC(UK), Nomalites, Royal Mail & Tesco (jointly with M&S?).

ACKNOWLEDGEMENTS

John Allman; Richard Codd; Graham Kempton; Martin Strick.

PHOTOGRAPHS

See scans from back issues of the Brooklands Society Gazette.

Photo archives held by BM, Dick Lewis and the compiler to be checked further.

QUESTIONS

1. What was the name of the Wintersells' farm workers' house which survived in use by Vickers/BAC/the ATC into the 1970s(?) and what more is known of its history?
2. When was the BB footbridge demolished?
3. When and how often did BS trackclearers clear the BB?
4. When was the CCTV mast installed at the end of the section beside the footpath to Wintersells Road? (it was already there by Feb 2010).

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THE CAMPBELL ROAD CIRCUIT (1937)

1930(?): New Brooklands 'Mountain Circuit' introduced as a cross between road and track racing; this ran for one and a quarter miles up the Finishing Straight, with a right turn onto Members' Banking, right again at The Fork (a challenging 'hairpin' bend) then back up the FS.

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01/05/1937: First race held on the CC - The Campbell Trophy (won by Prince Bira and which saw Earl Howe crash and injured) filmed by British Pathe as its 'News in a Nutshell' newsreel (ref film ID 919.06), which records details of the CC's features including two new footbridges on MH, a new metal side gate with b/w posts at the top of a short flight of concrete steps at the foot of Test Hill (TH), a continuous concrete wall along the South side of the CC below MH, but no concrete wall on the North side of the road on the bend West of 'The Motor' footbridge.

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British News.

08/05/1938: Motorcycles photographed racing around the CC's Dunlop's Delight bend, viewed from MH with FS and TH beyond.

29/08/1938: British Pathe newsreel 'Speed Aces at Brooklands' issued - showing the CC with concrete wall only along Southern edge along MH ie not on the Dunlop bend or on West edge beside FS.

29/08/1938: Photo taken showing Mrs A C Lace in white overalls signalling from the CC Pits during a race (see Stansfield, p.161).

12/01/39: Aerofilms oblique aerial photos (only two?) of Brooklands taken from over Byfleet looking North with the CC clearly visible.

17/06/1939: 'Ford Gymkhana' event attracted 30,000 people – claimed to be Brooklands' largest ever crowd – stunt driving by Ford V8s on grass beside the CC filmed by British Pathe News (CC now had a continuous concrete wall along the West side North of the Pits continuing into the bend).

16/07/1939: 'Soap Box Derby' event held on the CC (photo of the start on the CC shows large marquees, Ford signage, a new(?) tall square building and the Vickers factory behind).

??/08/39: Last official use of CC before Brooklands closed with start of WW2.

(03/09/39: Britain declared war on Germany & World War Two began).

20/06/45: Photos published in 'The Motor' show the poor state of the Track.

01/07/46: Sale of Brooklands Track and Aerodrome to Vickers by Brooklands (Weybridge) Ltd for £330,000.

1951: Concrete North-South runway built on the Aerodrome for Vickers-Armstrongs.

1971: New BAC Weybridge Works site plan produced.

1975: Various sections of the former Brooklands Motor Circuit (including the CC?) designated as a Scheduled Ancient Monument by the Department of the Environment.

1978 (Winter?): Photos (published in the Brooklands Society Gazette?) show the CC below MH with significantly fewer trees and rhododendrons but more metal uprights (crash barrier supports?) extant along the roadway compared to today.

c.1981: New 'British Aerospace Public Limited Company Military Aircraft Division' site plan produced for former BAC East Works (copy in BM archives).

?/07/1986: Closure announced of the BAe factory (in 'Industry Year!').

1986-90: Closure and demolition of the BAe Weybridge factory.

1987: Formation of Brooklands Museum Trust Ltd with responsibility for a 30 acre site leased from Gallaher Ltd (initially via Elmbridge Borough Council).

1987: Air photos of Brooklands Museum and BAe factory taken by the compiler.

1989: Designation of new Brooklands Conservation Area by Surrey County Council – immediately preceded by demolition of most of the Campbell Circuit Pits early that morning!

21(?) /11/1989: Demolition of the CC Pits except for one section at the southern end.

1989-90: Demolition of BAe Weybridge factory with total site clearance excluding one section each of the CC Pits and of Aerodrome Road.

14/04/1991: Official opening of Brooklands Museum on its 30 acre site.

10/01/2002: Designation by the DCMS of extra parts of the former Brooklands Aerodrome and Motor Circuit as having Scheduled Monument status.

??/08/2003: Draft Conservation Plan for Brooklands issued by Terence O'Rourke plc, consultants to DaimlerChrysler UK included a section about the CC.

21/07/2009: Air photos of Brooklands (including Members' Hill) taken by the compiler.

??/??/2010: Collapse of part of CC road immediately East of the Howe Bridge near the Fork; the river had undermined the river bank and MBW staff immediately demolished the full width of the damaged section for H&S reasons.

April 2011: Damage to CC East of Howe Bridge still awaiting MBW repairs.

29/09/2012: Air photos of Brooklands taken by the compiler and BM's Paul Stuart from Gary Savage's R-44 helicopter.

June 2013: Radley House Partnership consultants start work (funded by English Heritage) on updating the draft 2003 Brooklands Conservation Plan for the Brooklands Heritage Partnership.

21/06/2013: Richard Codd (Radley House) & JCT made an initial 'recce' of the Brooklands Conservation Area.

ACKNOWLEDGEMENTS

British Pathe; Brooklands Museum; Graham Kempton; Martin Strick.

PHOTOGRAPHS

1937: 1) Construction of CC nearing completion behind MH (Getty Images photo ref 3364249); 2) - 4) Aerial views of CC (Brooklands Museum archives).

1938 (7th May): 1) JCC Int'l Trophy Race 'rolling start' on FS opp Paddock (P A photo – Stansfield, p.159); 2) - 4) Aftermath of J Paul's crashed Delage near MH (Getty Images photo ref 3402159 + PA photos - Stansfield, pp229 & 230 – note: a 'new' three-storey building is visible behind the scene towards the Vickers factory); 5) Percy Maclure winning the JCC Int'l Trophy Race opp. CC Pits (P A photo – Stansfield, p.159).

1938 (8th May): Motorcycles racing on the CC's Dunlop's Delight bend, viewed from MH with FS and TH beyond (P A photo – Stansfield, p.160).

1938 (29th August): Mrs A C Lace (in white overalls) signals in the CC Pits (P A photo – Stansfield, p.161).

1939: Start of the Soap Box Derby on the CC (PA photo - Stansfield, p163).

NOTES

Raymond Mays (1899-1980) was the all-time record holder for both The Campbell Circuit and The Mountain Circuit.

QUESTIONS

1. What other names were given to various features of the CC eg Howe Bridge and Dunlop's Delight?

2. What was the tall square building located East of the CC between MH and the Vickers factory by 07/05/1938?
3. Were any other significant changes made to the CC in 1937-39?
4. When were CC's concrete retaining walls added in several stages around 'Dunlop's Delight' and along the bottom of MH?
5. What caused J Paul's fatal accident in his Delage on 07/05/1938?
6. When was 'The Motor' footbridge demolished?

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Ref TIMELINES/CAMPBELL CIRCUIT (v3).doc.

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BROOKLANDS HISTORY EXTREME WEATHER

Jan/Feb 1907: Snow disrupted construction of Brooklands Motor Course.

Early May 1907: Heavy rain then flooding of the Track's Paddock area disrupted construction work especially completion of the 'Weighing Block' (now the Clubhouse) see photo in Bird. p98. Bird states that Edwardian flood risks dictated the Paddock and Finishing Straight were raised five feet higher than their surroundings. Hennebique Bridge construction drawings also indicate a distance of two metres from river level to the bottom of the arch on the Byfleet side and archive photos indicate that the normal level varied from four to eight feet so this was a realistic estimate.

28/10/1909: Floods photographed at Brooklands (Brooklands Museum archives via Roger

Brooklands Heritage Partnership
Timelines: October 2017

Radley House Partnership

Bird?).

17/12/1910: Photo in 'Automotor Journal' of floods upto the edge of the Finishing Straight.

23/03/1914: Major floods at Brooklands when River Wey burst its banks again - see 'Topical' photo (Hulton Getty ref. 058168H).

1917: Heavy snowfall (5ins deep in Byfleet).

1928: Major flooding of the River Wey (presumably affecting Brooklands too).

1930s: Further floods (more details sought) – for example see undated photos of a) swans swimming on water beside the Railway Straight and b) car in floodwater behind Clubhouse (ref BM copy neg F648-4).

(Note : 1930s River Wey Improvement Scheme (RWIS) planned by Surrey County Council with the Thames Conservancy - possibly including adjustable weirs, more details of the scheme are sought (note: related archives are held in the Surrey History Centre).

Early 1933: Serious flooding damaged the Track bridge (south of The Fork) beyond repair; contractors duly replaced the entire bridge in just six weeks (ref aerial photo in an undated copy of the Brooklands Society Gazette).

1946/47: Harsh winter weather with heavy snow, prolonged freezing temperatures and fuel shortages affecting much of the country especially industrial and agricultural output (see Wikipedia page below).

1962-63: 'The Big Freeze of 1963' saw severe cold weather again affecting most of the country - this is one of the coldest winters recorded in the UK (see Wikipedia page below).

16/09/1968: Severe flooding of Brooklands and local area when River Wey burst its banks at 2pm; aircraft production including Concorde badly disrupted. See archive photos including BAC photos MP32210 & 32032 and BAC leaflet'. Residents were evacuated from the Weymede housing estate in nearby Byfleet and many others were rescued by two amphibious vehicles. The floods also caused a section of the Hennebique Bridge to collapse after damage to its foundations (see undated archive photo published in the Brooklands Society Gazette) after which the entire bridge was demolished for safety reasons.

Summer 1976: Heat wave saw the UK's hottest average summer temperatures since records began and a drought declared (see Wikipedia page below).

January 1987: Heaviest snowfall in SE England/London/East Anglia since 1981-82 - parts of Surrey had over 50cms/20 ins of snow (see Wikipedia page below).

15-16/10/1987: 'The Great Storm' - severe hurricane-force gales hit SE England causing widespread damage especially in Surrey. The Clubhouse roof and Shell Pagoda south elevation were among buildings damaged at the newly-opened Brooklands Museum.

25/01/1990: Gales hit Weybridge again and a woman was trapped badly injured when a tree fell on her car in Brooklands Road.

07-08/11/2000: Floods up to 18ins deep affected much of Brooklands Museum (especially Paddock, motoring sheds, Strat Chamber and archives stores) when River Wey burst its banks after prolonged heavy rain. The Clubhouse ground floor was one of the worst affected areas and the Museum subsequently closed for six months for repairs (see photos). In nearby Byfleet, homes were flooded in Sanway Road and Viscount Gardens.

??/06(?) /2001: Clubhouse reopened to visitors though some Museum areas remained closed and under repair for another six months.

Jan 2002: New Environment Agency (EA) monitoring station activated on the River Wey at Brooklands (located nr Staniland Drive); linked to the EA website, it states that typical river levels for Brooklands Heritage Partnership Radley House Partnership
Timelines: October 2017

this location range from 0.24 to 2.3 metres.

2004-2006: Construction of £6M(?) flood alleviation scheme for the Mercedes-Benz World development at Brooklands.

27/07/2006: Storm and subsequent flash flooding at least 12ins deep affected Paddock and Clubhouse; roof leaks in Strat Chamber caused water ingress to Education Centre with extensive damage to internal ceiling panels (see compiler's photos).

Autumn 2006: Completion of Mercedes-Benz World's new Brooklands flood alleviation scheme; works included

18/01/2007: Gales caused some disruption to Museum with fallen trees (eg silver birch across Shell Way near Acoustics) and Concorde G-BBDG's elevons breaking loose from their gust locks.

07/03/2007: Very high river levels noted (see compiler's photos).

08/08/2007: Storm/flash flooding approx 12 ins deep again affected Paddock and Clubhouse (see compiler's photos).

15/12/2008: Very high river levels noted (see compiler's photos).

11/02/2009: 2.5M = highest river level recorded to date by EA's Brooklands monitoring station (later surpassed by Xmas 2013 floods).

(Spring 2010: Public consultation on new EA draft 'River Wey Flood Risk Management Strategy' produced - with a 14/05/10 deadline for replies. See compiler's copy).

23/02/2010: Very high river levels noted (see compiler's photos).

30/04/2012: High river levels noted (see compiler's photos).

(14/05/2010: Brooklands Museum's written response submitted by email to the EA's River Wey flood consultation - a two page letter from Allan Winn included comments about the Museum not having been formally consulted and that the document made no specific mention of the Mercedes-funded flood compensation works of 2004-2006).

(April 2013: Publication of Environment Agency River Wey Flood Risk Management Strategy Briefing Note).

25-26/12/2013: Floods up to approx 15ins/40cms deep when River Wey burst its banks after severe gales and prolonged rain and flooded Clubhouse, Paddock, motoring sheds, Strat (25ins deep underneath Main Chamber) and other adjacent buildings for some 24 hours. Clubhouse again badly affected although damage was less than in 2000 due to earlier planning & preparations (see compiler's photos).

26/12/13: EA recorded 3.99m river level at 0645hrs (reduced to 3.90m that afternoon) - highest ever recorded at the Brooklands monitoring station?

27/12/13: Floods and river level receded slowly but remained very high.

30/12/13: Museum reopened but with only limited access to Clubhouse and motoring sheds.

01/01/2014: Clubhouse Tower leaked during prolonged stormy weather (gusty southerly winds and heavy rain for much of the day) - water ingress via balcony and south elevation through ceiling above wooden staircase with slight damage to library stock stored nearby. (Note: sealant applied next day as temporary repair but proper repairs needed).

03/01/14: EA recorded 2.8m river level at 1530hrs. Museum again prepared for flooding with further heavy rain and rising river levels (severe storms hit the UK's west and south coasts with many
Brooklands Heritage Partnership
Timelines: October 2017

Radley House Partnership

areas flooded).

04/01/14: Museum closed all day due to flooding risk (EA recorded 3.19m river level at 0500hrs and a peak of 3.24m that afternoon) - visitor car park and storage area under Strat Chamber already flooded by 0900hrs with river spilling over its banks and touching the bottom of the bailey bridge. Note: Mercedes flood relief scheme only partially working as the flood ditch beside the Railway Straight is currently blocked by vegetation and recent construction works (see compiler's photos).

05/01/14: (EA recorded 3.12m river level at 0430hrs, reduced to 2.98M by 1340hrs). Dry sunny morning then clouded over and light rain from early afternoon. Heavier rain/winds by early evening including a brief thunderstorm.

ACKNOWLEDGEMENTS

Roger Bird; Maurice Jones; Graham Kempton; Jeff Sechiari, Bob Stace.

DISTRIBUTION

Dick Alder, John Allman, Roger Bird, Richard Codd, Maurice Jones, Graham Kempton, Andy Lambert, John Pulford, Jeff Sechiari, Allan Winn and John Woodhouse.

NOTES

Historically, flooding has long been a problem along the Thames Valley and the River Wey, its tributaries and other Surrey rivers often overflowed.

QUESTIONS

1. What do we know about improvement works (eg straightening the course?) done to the River Wey at Brooklands from 1906-39 ie during the working life of the Track? Were some of these the result of Surrey CC's 1930s 'River Wey Improvement Scheme' to address local flooding problems?
2. What other records are available of local weather conditions?
3. When exactly were other 1930s floods?
4. How accurate & reliable are the official river levels recorded by the Environment Agency's Brooklands monitoring station - and did it get flooded and stop working at Xmas 2013?
5. How far back do EA river levels' records go?
6. When were there other incidents - including heat waves/droughts and heavy snowfalls too?
7. When - about 6-7 years ago(?) - did severe gales damage the Strat Chamber's glazed roof panels requiring them all to be replaced?

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Brooklands Heritage Partnership
Timelines: October 2017

Radley House Partnership

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THE FINISHING STRAIGHT (F/S)

BRIEF DESCRIPTION

Linking 'The Fork' to the 'Members' (or 'Home') Banking', it measured five eighths of a mile (approx one kilometre) long and 100 ft (30m) wide and North of the Paddock it featured an increasing gradient up to the base of the Banking. Although the Track was closed due to WW1 from October 1914 to April 1920, the Finishing Straight F/S was used to start and finish many Brooklands races by cars, motorcycles and even bicycles from 1907-1939, including the first and second British Grand Prix in 1926 and 1927. It also included a Paddock exit road which was used from 1907 until c.1928; this ran approx two-thirds of the distance to the Banking and was parallel to but separated from the F/S by a wooden fence.

Adjacent to the F/S and mainly near the Paddock, were the Judges Box (1907), Programme Sellers' Hut, Results Board (1907), Soda Fountain Hut and Telegraph Board. Most if not all of these features continued in use until the Track closed at the start of WW2 in September 1939.

TIMELINE

(23/05/1906: Formation of Itala Automobiles Ltd – see separate document).

(03/07/1906: Plan produced of 'Site for new premises at Weybridge for Itala Automobiles Ltd').

1906-1907: Construction of Hugh Locke King's 3.25mile concrete Brooklands Motor Course complete with half-timbered two-storey 'Judges' Box' on the east side of the F/S opposite the Paddock plus two white tall 'Results Stands' (?) on the western edge either side of the Paddock.

17/06/1907: Official opening of the new Brooklands Motor Circuit (see archive photos/newscuttings). Note: the F/S had to be higher than the River Wey floodplain (see photos) and, for reasons unknown, its north end also had a distinct 'kink' on the east edge.

28-29/06/09: S F Edge's 24 Hour Run led to complaints from local residents and damaged the new Track surface.

20/07/1907: First motoring accident – involving Huntley Walker’s Darracq – during the second ever Brooklands race meeting (see Brooklands Commemorative Brochure, 1987, p17).

September 1907: ‘Avroplane’ hangar built alongside the F/S at the foot of Members’ Hill for aviation pioneer Alliott Verdon Roe’s first full-size aeroplane.

(Autumn 1907 - pre-June 1908: Itala Works completed to assemble imported Itala motor car parts. Built between Brooklands Road and the Track, the factory had a distinctive ‘Northlight’ roof (see early photos of the F/S) but its construction and opening dates remain elusive).

Late 1907 - July 1908: Used by A V Roe for taxiing and towed flight trials with his new biplane; contrary to previous claims, there is no evidence that he made any ‘hops’ or brief flights under engine power (see Jarrett, 2008).

(25/05/1908: Sale of land next to Pinewood House, Byfleet Rd (now Brooklands Rd), by Locke King to Itala Automobiles Ltd for £1,200, but Itala possibly already occupied the site before the Track was built).

June 1908: Relocation of Roe’s Avroplane hangar to the Paddock.

25/03/1909: Opening of Test Hill on Members’ Hill opposite The Paddock and adjacent to the F/S.

1910: Completion of new Paddock Grandstand along west side of the F/S.

1912: To meet high demand for tennis, the new Brooklands Lawn Tennis Club created six more courts between the North end of the Finishing Straight and the Shell Way entrance tunnel road.

1911: New lap scoring board erected near foot of Test Hill on east edge of F/S.

04/02/1911: Oblique air photo taken by Tom Sopwith of North half of F/S published in ‘Flight’.

1912: Six new hard tennis courts and related two-storey structure (similar to the Judges Box and presumably used by tennis club officials and equipment storage - later identified on post-WW2 Vickers site plans as ‘T192’) built north of Paddock and west of F/S.

19/06/1914: Publication (in ‘Flight’) of oblique air photo taken from ‘Jack Alcock’s Sunbeam-engined biplane’ of north half of F/S.

(14/08/1914: Itala Automobiles Ltd wound up voluntarily due to its liabilities).

October 1914: Brooklands closed to the public soon after the start of WW1.

18/03/1915: Vickers Aviation Ltd took over the former Itala Works to build military aeroplanes.

June 1915: Construction of ‘The First Extension’ to the Vickers Works (ex Itala).

(02/11/1915: Liquidation of Itala Automobiles Ltd; Vickers purchased the Itala Works for £4,750).

February 1916: Vickers’ ‘Second Extension’ doubled its floor area allowing up to eight different aircraft types to be produced simultaneously.

1918: Major expansion of Vickers factory led to large aeroplane assembly sheds (the ‘Main Erecting Shop’) fronting the Track at The Fork by this date.

Sept 1919 – April 1920: Track repairs made after war-time damage.

April 1920: Re-opening of Brooklands for motor racing.

c.1921: New Grandstand built on the Outer Circuit just north of The Fork.

23/05/1921: Air photo (oblique, low level - probably taken by Aerofilms) of North end of F/S. (This photo was published in an early edition Brooklands Society Gazette - Vol. 1, No.?).

18/08/1922: Agreement for property sale by Locke King to the Brooklands Estate Company for £100,000. Unclear when this went ahead but it was pre-1925, included Brooklands Track and Aerodrome and Locke-King would receive £2,500 annual salary as governing director.

Jan – March 1923: Brooklands Circuit again closed for repairs using nearly 400 tons of concrete to restore large areas of the Track.

Nov 1923 – 01/04/1924: Brooklands again closed for major repairs (using five tons of concrete daily).

1926: 1) Construction of first footbridge (a temporary scaffolding structure) over the F/S linking Paddock and Members' Hill for the first British Grand Prix. 2) Low-level oblique air photos of Brooklands taken by Aerofilms.

07/08/1926: First British Grand Prix (GP) had its start line at top of F/S (see photo in Venables).

September 1926: Fire destroyed the Outer Circuit Grandstand near The Fork

1927: Construction of 1) a permanent single span footbridge from Paddock to Members' Hill for the second British GP; 2) The Fork Grandstand and Tea Room (also required for the GP?). The Paddock exit road fencing was now incomplete and neglected.

1928: Paddock exit road fencing removed (date unknown but gone by 1929).

March 1935: Release of British film 'Death Drives Through'; directed by American Edward L Cahn, co-scripted by John Huston, and starring Chili Bouchier, Robert Douglas and Miles Mander, it included extensive motor racing scenes filmed at Brooklands in 1934 plus other film sources too. An early sequence showed two Gipsy Moths flying from Brooklands too. (Note: useful ref. source for pre-war Brooklands; DVD copies available by 2013).

15/03/1935: Former tennis courts North of Paddock resurfaced as a car park and more space for spectators created at same time by infilling lower levels (floodplain?) beside F/S near The Fork (see report/photos in 'The Light Car').

August 1936: Sale of Brooklands Track and Aerodrome to new company named 'Brooklands (Weybridge) Ltd'.

1937: Opening of the new Campbell Circuit, a 1.5 mile road circuit inside the North half of the main Outer Circuit with one section and the Pits parallel to the F/S

(October 1938: Formation of Vickers-Armstrongs (Aircraft) Ltd; the new company took over the business of Vickers Aviation Ltd., at Brooklands).

12/01/1939: Vertical and oblique air photos of Brooklands (especially of the Vickers factory) taken by Aerofilms Ltd from various heights and directions; by now Hawkers had two new temporary hangars (one Bellman and one similar smaller hangar). (See copies in Museum archives and at the NMR).

08/08/1939: Final motor races held at a BARC meeting at Brooklands.

27/08/1939: Final cycling event held at Brooklands.

03/09/1939: Closure of the Brooklands Circuit when Britain declared war on Germany. The entire site was extensively camouflaged to meet the very real threat of enemy bombing as the Vickers and Hawker aircraft factories made Brooklands an easy and very obvious target for the Luftwaffe).

(c.Early 1940: Three Bellman hangars (complete with camouflage paint) were built near the main Vickers factory at Brooklands – two were opposite the Main Erecting Shop on the F/S at the Fork and a third at the South end of the factory just East of the race track's Outer Circuit opposite the 'Running Shed').

(c.May 1940: Contemporary photos confirm the existence on the F/S at The Fork of the Bellman known as 'Archie Knight's Repair Hangar' and the other two Bellmans must also have been built by now. (See archive photos and a November 1940 Luftwaffe target map in the Brooklands Museum's archives).

(04/09/1940: The Luftwaffe bombed the Vickers factory at Brooklands killing at least 87 people and injuring at least 419 others in a daring daylight raid. The Bellman repair hangar on the F/S opposite the Main Erecting Shop suffered a direct hit from a pair of bombs and was subsequently demolished. Recently discovered RAF air photos taken later that afternoon show the extent of the devastation with at least 13 bomb craters visible on or close to the F/S (see NMR air photos and sketch map in Johnson, p130).

16/09/40: Construction started of four(?) more dispersed Bellman hangars at Brooklands for Vickers-Armstrongs Ltd. One of these, (identified from 1946 as Vickers building 'T202' and later known as Brooklands Museum's Wellington Hangar), was erected on the F/S beside Members' Hill as part of what was soon known as Dispersal Depot W42. This Bellman survives today at Brooklands Museum and is the subject of this document. Another narrower hangar of a non-standard design (known as Top Hangar and from 1946 as 'T194') was built behind Members' Hill under Members' Bridge and set into the Banking – as a vital part of this heavily camouflaged new Vickers 'W42' dispersed production facility for Vickers Wellington and Warwick aircraft.

12/12/1940: Completion of Bellman hangar (later T202) near the north end of the F/S at a cost of £5,513 and Vickers-Armstrongs staff then took possession.

c.1940-41: A Barrage Balloon Site was set up on the F/S behind the centre of the Campbell Circuit Pits; another was located between the F/S and the Campbell Circuit opposite the F/S Grandstand (see undated site plan, c.1940)

1941-1945: W42 produced Vickers Wellington Mk II and Warwick aircraft which accessed the aerodrome via a new taxi-way from the Finishing Straight North of the Clubhouse and over a new 'North bridge' over the River Wey. The pitched roof of the Paddock's Shell Petrol Pagoda was removed (and replaced with a flat roof) to allow clearance for the aircraft's outer wings.

10/1941: New Brooklands site map (Plan No. 6721) issued identifying 'T202' and its sister hangar on Members' Banking as the 'Finishing Straight Hangar' and 'Erecting Shop' respectively, complete with adjacent air raid shelters and a Boiler House, Sub-Station and Trailer Pump House building located along the East edge of the North end of the F/S. A circular static water supply tank and a metal storage building were also built opposite these on the lower edge of the Banking.

26/5/43: Fork Hangar identified on a 'Vickers-Armstrongs Weybridge Works – Dispersal Depots' list as used for 'Aircraft Repairs'.

November 1943: Unidentified building located on the F/S just south of the 1927 footbridge with a circular static water tank built nearby (see surviving site plan). Identified as dispersal site 'W103' – 'Embodiment Loan Hangar' its function was 'Store of Embodiment Loan Material'. (This became 'T229' post-war and was used as an Embodiment Loan Store for many years; it was finally demolished in 1989/90).

1/1/44: Fork Hangar named on a 'Vickers-Armstrongs Weybridge Works – Premises in Occupation' list as 'Depot W90' – Fork Hangar, Brooklands Track, Weybridge' with function of 'Aircraft Repairs'.

03/03/44: RAF vertical air photo of Brooklands (see NMR copy).

01/05/44: RAF vertical air photo of Brooklands shows some 1940 bomb craters still visible on the F/S (see copy held by the NMR, RCHM Neg 106G/LA10 Frame 7002).

(15/08/45: End of WW2 – by this time, 6,376 aircraft had been produced at Brooklands by the Hawker and Vickers aircraft companies between 1939 & 1945. Hawkers built 3,012 Hurricanes and Vickers produced 3,364 aircraft including 2,316 Wellingtons and 845 Warwicks (see McSweine, 1993)

23/08/45: RAF vertical air photo of Brooklands clearly shows T202 with a newly resurfaced North apron and also a small triangular-shaped area of apron by the South West corner – these details may also be found in earlier photos but if so, are unclear (see copy in NMR, Swindon).

1946: New Brooklands site plan produced for Vickers-Armstrongs.

1946-47: Construction of the Stratosphere Chamber for the new Research & Development Department headed by Barnes Wallis. Contemporary photos show the relatively intact condition of the F/S (with no access road to T194) and surviving pre-war and WW2 buildings and structures at that time including the 1927 footbridge and the 1910 Grandstand.

07/01/46: Decision to sell Brooklands Track and Aerodrome to Vickers-Armstrongs by Brooklands (Weybridge) Ltd for £330,000 agreed at a shareholders' meeting of the latter organisation. Directors Sir Malcolm Campbell and C W Haywood were fully in favour of the plan especially as the Ministry of Supply said they would not release Brooklands for another three years.

July 1946-early 1950s: Financial constraints in early post-war Britain saw Vickers gradually adjust to a peacetime economy with only limited orders and production for the Viking airliner then its Valetta and Varsity derivatives.

November 1946: Air photo taken of the main Vickers factory at Brooklands.

Late 1940s/early 1950s: Vickers won major commercial and military contracts for the Viscount airliner and Valiant V-bomber respectively and this vital income gradually funded new post-war factory buildings and construction work including a new access road to hangar T194 on Members' Banking plus a large new East Side Restaurant (T312), Aircraft Laboratories (T229, 307 & 334) and Technical Publications departments. Hangar T202 was re-used from the 1950s to house the Mock-Up and Guided Weapons Departments.

(02/02/1949: Vickers won an Air Ministry contract for two new prototype bombers (later to become the Valiant); the first aircraft was first flown from Wisley on 18/05/1951).

(April 1951: First Valiant production contract – 25 aircraft for the RAF. Together with significant orders for Viscount airliners, this presumably gave Vickers the required funds to expand and improve its factory at Brooklands during this decade).

12/05/51: RAF vertical air photo shows construction started of the vast new aircraft assembly hall for Valiant production; probably the largest single building seen at Brooklands, it extended the pre-war Vickers factory out onto the Outer Circuit and The Fork and required demolition of the Fork Grandstand and Chronograph Villa. (see NMR photo).

Feb 1952: Inventory for Vickers site plan L1553 records hangars T194 & T202 as both being in good condition and used as Finished Parts Stores.

1953-54: Plans finalised for new New Canteen (later known as T312 and the East Side Canteen) to be built on the F/S's South end for Vickers staff (see plans - eg drg no. 7177/14, dated 01/10/53 – in Museum archives).

Spring 1954: Construction started of new Vickers factory buildings on the pre-war F/S South of the Paddock

June 1954: Unveiling by Sir Alliott Verdon-Roe of memorial and plaque in Paddock commemorating his pioneering flight trials on the nearby F/S in 1907-08 (see photo in Gardner, 1956).

Pre-July 1954: New concrete access road built behind T202 for vehicles using hangar T194 (then a Finished Parts Store and later a Castings Store) on Members' Banking (see photos including Vickers photo MP95); cut into the former F/S but completed at a slightly raised level on top of centre of the F/S. Vehicle access across the F/S South of T202 was also improved by inserting a new diagonal strip of concrete (see photos including RAF vertical air photo of 20/07/54).

20/07/54: RAF vertical air photo clearly shows the new concrete roads laid on the F/S and also a large new Vickers staff canteen/restaurant built on the F/S immediately North of The Fork Hangar (see NMR photo).

04/08/55: RAF vertical air photo shows Members' Banking looking neglected and rather overgrown

(see NMR photo).

05/07/1956: Revised Vickers-Armstrongs factory site plan issued; T192 is shown at the north end of the F/S but is noted as demolished by this time.

(1957: Unveiling of the new Brooklands Memorial by Lord Brabazon on North end of the aerodrome to mark Brooklands' 50th birthday).

23/02/1957: Drawing issued (ref no L2264/11) of Fork Hangar T76 & new Southern extension T343 adjacent to the Fork Grandstand (copy in Museum archives).

Late 1950s?: Demolition of the 1910 Grandstand (see Gardner: photo shows it derelict by 1956).

(1960: British Aircraft Corporation formed).

22/10/1962: New Vickers-Armstrongs factory site plan (Drg. no. L3000LMW?) issued (with updated T numbers index) – see note 3 below for details of surviving WW2 buildings then still in use on the F/S and Members' Banking.

08/04/64: RAF vertical air photo shows many of the surviving sections of original Track to be badly neglected with the north end of the F/S, Members' Banking and Railway Straight all covered by undergrowth and/or stored factory materials and equipment (see NMR photo).

13/06/67: RAF vertical air photo (taken from 32,000ft) shows location of a new Acoustics Building north of Strat Chamber on part of the site of the 1913 tennis courts (see NMR photo).

1968: 'Weybridge Works' factory guide published – see note 4 below for details of surviving WW2 buildings then still in use on the F/S and Members' Banking.

1971: Revised BAC factory site plan issued (copy in Museum archives)

25/06/71: Air photo survey by the RCHM(E) of the Brooklands Track showed the Members' Banking badly overgrown and all of the WW2 buildings still standing on the North end of the F/S.

18/07/73: Oblique air photo taken by the RCHM(E) shows the banking less overgrown and all WW2 structures North of T202 still extant (including the boiler house for T194); no later photographic evidence of their survival has yet been found.

1975: Various sections of the former Brooklands Motor Circuit designated as a Scheduled Ancient Monument by the Department of the Environment – including the F/S? Note: the RCHM(E) air photos may relate to this development.

(1977: British Aerospace formed).

c.Mid-1970s/early 1980s: Demolition of T194 on Members' Banking (more details sought)

1980-81: Plans (eg ECH/81/1A of 01/04/81 and 5316/004 of 14/01/80) finalised for extensions to the BAe factory Canteen T312 (copies in Museum archives).

1983-84: Gallaher Ltd purchased 40 acres of the North-East corner of Brooklands and built a new headquarters on Members' Hill. They also laid a major stormwater drain through the F/S just North of Bellman hangar T202.

July 1986: Closure announced of the British Aerospace Weybridge (ex Vickers/BAC) aircraft factory more than 70 years after opening early in WW1.

1987: Formation of the Brooklands Museum Trust.

1987: Air photos of Brooklands Museum and BAe factory site taken by Julian Temple from an Air Hanson Bell Jetranger helicopter.

1989: Designation by Surrey County Council of a new Brooklands Conservation Area. The last British Aerospace staff vacated the site that same year.

1989-90: Demolition of the former aircraft factory buildings, including The Fork Hangar T76 and the former Embodiment Loan Store T229 (built c1943), together with the suspected remains of the underlying Finishing Straight. Attempts were made at the time to have the area assessed for Scheduling or Listing but were unsuccessful.

1990s: Extensive redevelopment of the former factory but at Elmbridge Borough Council's insistence, the alignment of the F/S was respected and its edges were duly marked by lines of tall fir trees.

Car parks were constructed for the adjacent new office buildings.

1991: Formal opening of the new Brooklands Museum by HRH Prince Michael of Kent; the museum was now open six days per week (only closing on Mondays).

04/11/1999: Bellman Hangar T202 listed Grade 2 by the DCMS.

10/01/2002: Designation by the DCMS of extra parts of the former Brooklands Aerodrome and Motor Circuit as having Scheduled Monument status.

c.2004: Trial excavations made along edge of helipad by Brooklands Museum (A Green, A Winn & B Titcombe involved) to define edge of F/S prior to plans being prepared for Cobham Bus Museum's relocation. Photos taken and report compiled.

Late 2007: Application made to HLF for Project Planning Grant for a revised Wellington Hangar and Finishing Straight restoration scheme.

Early 2009: New 3-ton(?) vehicle weight limit introduced by Brooklands Museum for vehicles using Members' Banking and areas of F/S (excluding the post-war access road) to reduce risk of accidental damage to these parts of the Scheduled Monument. Note: this policy was first tested in Feb? 2009 by Gallaher contractors accessing the east end of the Banking, for which several layers of temporary metal trackway were deployed to spread heavy loads.

May 2009: Investigations by engineers Hockley & Dawson confirmed the existence of the pre-war F/S concrete below the Bellman hangar floor slab.

June-July 2009: Archaeological investigations by Museum volunteers with several test pits/trial trenches excavated by hand to locate eastern edge of F/S behind T202; archival research begun by other volunteers (eg S Adey).

13/07/09: Trial trench at North end of air raid shelter South of T202 dug by volunteer G Kempton to find edge of F/S between it and Members' Hill.

21/07/09: Air photos taken by J Temple from a visiting Bell 47 helicopter.

28/07/09: Undated (early 1950s) photo found showing F/S and T202 seen from Members' Banking with new concrete roadway being prepared for the Finished Parts Store hangar under Members' Bridge.

03/08/09: Mini-digger & dump truck hired for a week to clear undergrowth and debris to redefine edges of F/S North of hangar with approval requested from R Massey at English Heritage.

04/08/09: Approval obtained late a.m. from Massey; work started 2.30pm at top of F/S by P Godfrey, G Kempton, N Read, M Strick and R Voice and ceased c.8pm (Note: digger went u/s c.5pm and needed repair).

05/08/09: 8amff Mini-digger repaired then resumed work on East edge of F/S with same team as before + J Downey. The surprisingly 'kinked' section at the North end of the Eastern edge was revealed for the first time.

06/08/09: Completion of majority of mini-digger work on the F/S's East edge North of T202 (J Downey, P Godfrey, G Kempton, R Mackey, M Strick & N Tuppen) – see photos. Two other volunteers (John & Joan S) weeded & exposed other sections of F/S edging South of T202.

10-11/08/09: Mini-digger used (by A Gibbs, P Godfrey, M Strick & R Voice) to clear and re-define the Brooklands Heritage Partnership
Timelines: October 2017

Radley House Partnership

F/S's West edge North of T202– see photos. G Kempton & R Mackey continued to tidy the East edge beside Members' Hill.

12/08/09: Photo found in BM archives showing removal of pre-war F/S during T194's post-war access road construction (see Vickers/BAe photo MP95).

13/08/09: Visit by Radley House consultants to review results of Museum's latest archaeological and research work.

11/09/09: Research visit to English Heritage's National Monuments Record in Swindon by D Corley, M Jones and J Temple to examine air photos of Brooklands including photos of the bomb damage of 4/9/40.

31/11/09: Extra air photos taken by A Winn from visiting Bell 47G5 G-BAXS.

Today : Two sections of the Finishing Straight survive as part of both the Brooklands Conservation Area and the Brooklands Scheduled Monument and are on the Brooklands Museum site either side of the Wellington Hangar, but only the section north of the hangar is currently Scheduled. Although replaced in some areas by war-time or post-war alterations, both edges are still defined by the original concrete kerbs and/or gutters which run along much of its length. The original Paddock exit road survives as foundations and surroundings for the hangar annexes along the east side with a small section also extant in the Paddock behind the P.1127.

SOURCES

a) PUBLISHED

Boddy, William, MBE (2001) 'Brooklands – The Complete Motor Racing History' (MRP Publishing, Croydon, ISBN 1 89987056 3).

British Aircraft Corporation (1968) 'Weybridge Works' (BAC Ltd, Weybridge). Published in November 1968 by the Admin Manager's Department, this guidebook covers in detail all BAC departments and buildings including their square footage.

'Brooklands Track Buildings As Per Plan L1553' (inventory of buildings T51-T297, Vickers-Armstrongs, February 1952)

Dench, Peter (Ed, 1987) 'Brooklands Commemorative Brochure 1987' (The Brooklands Society).

Gardner, Charles (1956) 'Fifty Years of Brooklands' (Heinemann).

Jarrett, Philip (2008) 'Trials, Troubles and Triplanes' (Ad Hoc Publications, Ringshall, Suffolk)

Johnson, Howard (1981) 'Wings Over Brooklands' (Whittet Books).

McSwein, Donald R (1993) 'Brooklands Aircraft – All Aircraft First Flown At Brooklands Including All Aircraft Manufactured Or Assembled At Brooklands' (unpublished research paper, copy held in Brooklands Museum Library)

Pulford, J S L (1996) 'The Locke Kings of Brooklands Weybridge' (Walton & Weybridge Local History Society & Brooklands Museum).

Venables, David (2007) 'Brooklands – The Official Centenary History' (Haynes).

b) UNPUBLISHED

'Bellman Hangar T202 Timeline' – unpublished draft list of dates and events compiled by Julian Temple, November 2009.

Brooklands Museum collections (library, maps, photos, reference files and site plans).

~~The National Monuments Record (c/o English Heritage, Swindon, this includes air photos taken by the Brooklands Heritage Partnership (c/o English Heritage, Swindon, this includes air photos taken by the Radley House Partnership~~
Timelines: October 2017

RCHM(E) and the Aerofilms archives (recently acquired and still being accessioned).

ACKNOWLEDGMENTS

Steve Adey, John Allman, Brooklands Museum Collections and Library, Philip Clifford, Denis Corley, English Heritage/The National Monuments Record (Swindon), Paul Godfrey, Doug Hollingsworth, Tony Hutchings (Brooklands Society archivist), Bob French, Maurice Jones, Royden Kemp (owner of Bell 47G5 G-BAXS), Graham Kempton, Dick Lewis, John Pulford, Gary Savage (Alan Mann Helicopters), Gerry South, Martin Strick, the late Arthur Urmston, www.latphoto.co.uk.

ARCHIVE FILM

Cahn, E L (1935) 'Death Drives Through' (Clifford Taylor Productions; Associated British Film Distributors). 63 minutes, b/w, with many racing scenes filmed at Brooklands in 1934.

ARCHIVE MAPS & SITE PLANS

See reference copies held in Brooklands Museum Library.

ARCHIVE PHOTOGRAPHS & ILLUSTRATIONS

Brooklands Museum archives (see photos scanned by Steve Adey and Julian Temple during 2009).

The National Monuments Record c/o English Heritage, Swindon (includes air photo archives from Aerofilms and the Royal Commission for Historic Monuments (England).

The Vickers archives, c/o Cambridge University Library

Pre-1926 : Drawing (pen and ink) of F/S, elevated view from North looking from top of Members' Banking to The Fork (copy via pub'd in The Autocar – undated but with no bridges over the F/S it must be pre-1926)

? May 1940: Vickers Warwick L9704 (2nd prototype, first flown 5/4/40) & an unidentified Wellington photographed on the Outer Circuit between the Main Erecting Shop and The Fork Grandstand; a Bellman hangar ('Archie Knight's repair hangar') built on the Outer Circuit just south of The Fork is visible behind (copy of photo held in Museum archives).

November 1946 air photo of Vickers Works (copy in Museum archives, published in 'Airfield Review', April 2006, p30)

QUESTIONS

a) MOTORING

1. When was the Itala Works built and opened between late Summer 1907 and June 1908? Do any more photos survive except three archive views (one interior, one of workers outside and a third showing a car chassis – D1218)?
2. When were the tennis courts constructed (pre-23/05/21?) and later removed (pre-05/07/28?) from beside the F/S?
3. What was the specific function of the two-storey mock-Tudor wooden structure built (in similar style to the 1907 Judges Box) for the new tennis courts beside the F/S by May 1921? Note: it survived WW2 and was identified on post-war Vickers site plans as 'T192' but was demolished by 1956.
4. Was the 'Paddock exit road to the F/S' abandoned in 1928? Note: its wooden fencing was increasingly neglected in the mid-1920s and finally removed in 1928. Was the exit road still used subsequently?

5. Why was such a prominent 'kink' built in the eastern edge of the F/S in 1907? Purely for aesthetic reasons so that the Track remained 100ft wide where it began to bend westwards towards the Railway Straight?
 6. When were two flights of concrete steps laid on the east edge of the F/S to improve pedestrian access to Test Hill? These still exist near the Avroshed.
 7. When and how was the F/S camouflaged before/at the start of WW2?
 8. When were the Judges Box, Programme Sellers' Hut, Results Board, Soda Fountain Hut and Telegraph Board demolished?
 9. When was 'The Fork Grandstand' demolished c.1957?
 10. What do we know about the use of earth or sand banks as crash barriers and to mark special circuits or routes on the F/S?
 11. What do we know about motor racing support equipment eg portable wooden crash barriers, marshalls' & timekeepers' facilities and support vehicles? What form of crash barriers, fencing or railings marked the edges of the F/S at the top and bottom of the gradient sloping down to the tennis courts (ie where the old heli-pad was)?
 12. Precisely how much of the pre-WW2 F/S survives today - ie how long and wide are the two remaining sections north and south of T202?
 13. Where exactly was the Timekeeper's Box on the F/S (see Venables, p17)?
 14. Was the F/S included in the Scheduled Monument designated in 1975?
 15. Did the 10/01/2002 designation by the DCMS of extra parts of Brooklands as having Scheduled Monument status apply to any surviving parts of the F/S?
- b) AVIATION
1. When was T202's approx eight-inch(?) floor slab laid post-1940?
 2. What is the known history of T76 'The Fork Hangar' from 1940-89?
 3. Do any photos confirm a 'Barrage Balloon Site' located c1941 on the F/S immediately West of the Campbell Circuit Pits?
 4. What were the origins and function of the metal rails/foundations still visible in the concrete of the south apron of hangar T202?
 5. When was T201 'Packing Case Store' built behind T202?
 6. When were the WW2 factory buildings north of hangar T202 demolished?
 7. When was the Vickers factory steam heating system installed and later removed from the F/S?
 8. When were the following built: Aircraft Laboratories (T229, 307 & 334) and Technical Publications Departments? Also any others?
 9. When exactly were the various (3?) storm drains laid across the F/S behind T202?
 10. Was the 23ft x 17ft steel-framed corrugated iron clad rectangular storage building ('T190' from 1946) originally a dope store (this being its 1946 use)? It is believed built c.1941 and surviving until at least c.1970 at the NW corner of the F/S (beside the old heli-pad)? Note: ~~its concrete base was re-discovered 10/08/09 during archaeological work.~~

11. What was the original function of the large rectangular concrete block found on the West edge of the F/S near the old heli-pad?
12. What was building T192 located under the Museum's former heli-pad?
13. What was the original function of the 1940s brick building known as T193 (demolished in late 2010)? It may be of WW2 origin, was built by 1946 and in 1962 and 1968 its function was listed as 'Electric Instruments'. It was mainly used to store weed-killer and its wooden roof was in v poor condition by 2010.

NOTES

- 1) Official Start and Finish lines from 1907-39 were in various positions – see sketch maps by Tony Hutchings and photocopies of archive photos in the compiler's file.
- 2) The area of the former Brooklands Motor Circuit known as The Finishing Straight is defined as that part of the Track running roughly North-South between the Members' Banking and The Fork.
- 3) The following functions for buildings sited on top of the original Track are given on a 1962 site plan: T190 (blank), T191 – Septic Tank, (no sign or mention of T192), T193 – Electric Instruments, T194 – Finished Parts, T195 - Unused, T196 – Swarf Bins Unused, T197 – Swarf Bins, T198 – Sub-Station No 24, T199 – Boiler House, T200 - Trailer Pump House, T201 – Packing Case Store, T202 – Mock-up Shop, T203 – Sewage Pump House.
- 4) In 'Weybridge Works' (1968), Map No 7 identifies the following: T190 - Store, T193 – Electric Instruments, T194 – Stamping & Casting Store, T195 - Unused, T196 – Swarf Bins Unused, T197 – Swarf Bins, T198 – Sub-Station No 24, T199 – Boiler House, T200 - Trailer Pump House, T201 – Packing Case Store, T202 – Mock-up Shop, T203 – Sewage Pump House, T294 Dope Store.
Note: not shown on the plan are T191 – Septic Tank, T196 – Swarf Bins (136sq ft) & T197 Swarf Bins (200 sq ft) but these are included in the supplementary list. No mention is made of T192 and T195 is listed without a function but as being 300 sq ft.

POTENTIAL FURTHER SOURCES

Brooklands Museum: report on NW end of F/S ref Cobham Bus Museum plans, c2004.

Brooklands Museum Library: Steve Flower's research notes/files for 'Raiders Overhead' book; 'Identities of Buildings' folder (held in Library).

Brooklands Museum volunteers: Albert Pruden (early 1980s Museum site photos); Steve Devereux.

LAT Photographic Digital Archive (www.latphoto.co.uk) – major photographic archive including Autocar and other publications owned by Haymarket Publications.

Vickers archives: Vickers Dispersal Depots photo album (copies held by Brooklands Museum and at Cambridge University Library).

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FUEL FACILITIES AT BROOKLANDS AERODROME & RACE TRACK

(1896: 'Pratts Motor Spirit' first advertised in Great Britain by the Standard Oil Co. Ltd. of New Jersey, USA, and named after one of the company's founders, Charles Pratt).

1907-14: Basic re-fuelling facilities provided for racing drivers alongside Shell Way (see BM archive photo).

(11/04/1920: Brooklands re-opened for motor racing).

(Sept 1919 – April 1920: Track repairs made after war-time damage).

(23/05/1921: Oblique air photo of Clubhouse and motoring village from the SW - before any construction of any permanent petrol re-fuelling facilities).

c1921: Undated early 1920s location plan produced for 'Proposed new Union Petroleum Products & Co Ltd station' (the future 'Redline' pagoda) beside south end of Shell Way entrance road (see BM archives).

(1921: British engineer Harry Ricardo patented racing fuels RD1 and RD2 (for Ricardo Discol) containing methanol and ethanol (alcohol), acetone and water. These were widely used at American and European race tracks in the 1920s/30s - see wikipedia ref below).

August 1921: New Shell Petrol Pagoda drawings produced (see BM archives).

1922: Four (or five?) new fuel depots built in brick and timber at Brooklands by the BP, (Cleveland Discol?), Pratts (later Esso), Redline and Shell petrol companies. Each had its own pumps, forecourt, manager's office and store (see copies of original plans in Brooklands Museum archives).

1926: Air photo of Motoring Village from SW showing all five fuel depots - including the building used by Cleveland Discol (see BM archives).

April 1926: Parry Thomas photographed re-fuelling 'BABS' at the Shell depot.

(07/08/1926: First British Grand Prix (GP) had its start line at top of F/S - see photo in Venables).

May 1927: Brooklands became the first British aerodrome to have a petrol filling station for aircraft, installed by the Anglo-American Oil Co Ltd on SE corner of the central pair of WW1 Belfast-truss hangars complete with 'Pratt's Air Service' sign.

(1928: New 'Cleveland Discol' alcohol-based fuel blend introduced to UK by Harry Ricardo, National Distillers Ltd and the Shell Oil company. This product continued to be available until 1968 and 'Discol' was a Distiller Company Ltd trademark).

29/07/1929: Shell pagoda with (unpainted roof (no 'Aeroshell' lettering) photographed with Jack Dunfee 'filling up' (see Stansfield, p.136).

Late 1920s(?): Opening of new 'modern style' petrol station near Vickers factory in Brooklands Road. This may have been owned by pre-war racing motorcyclist Eric Fernihough and by post-war racing driver Tony Brooks in the 1980s. (See air photo of Vickers factory and The Fork c1930)

1935: 'Pratts' petrol rebranded 'Esso' (after 'S.O' from Standard Oil) and the Brooklands depot was renamed.

Late 1930 : Thompson refueller vehicle used on Brooklands Aerodrome by Brooklands Aviation Ltd.

1939: Photos (3) taken from Clubhouse tower looking north, south and north-west - showing all five petrol pagodas (see BM archives).

1939: New oil store built behind the Esso (Pratts) depot in similar 'pagoda style'.

(08/08/1939: Final motor races held at a BARC meeting at Brooklands).

Late 1940: Demolition of Redline Petrol Pagoda (and removal of its underground fuel tank/s) and also modification of Shell pagoda roof to make way for new war-time access road/taxiway for Vickers Wellington bombers being transferred to the aerodrome from Bellman dispersed production hangar built on north end of F/S.

(Spring(?) 1947: Aerial photos (3) taken of Vickers new R&D Dept site in the former Motoring Village during Strat Chamber construction. (See BM archives).

1950s: Disused 'BP Ethyl' pagoda survived among the R&D workshops (see Vickers photo MP8738).

03/10/55: Vickers Weybridge Works memo from V H Mole-Dennis to A D Grant reporting removal of two underground fuel tanks (each approx 10ft long x 4ft 6in diameter) from the site of the new intermittent Supersonic Wind Tunnel and that both tanks should be considered for re-use as useful permanent equipment for the Strat Chamber - one to store chilled water underneath and within the insulation and the other modified into a low pressure/low temperature unit ie as a 2nd 'Stratosphere

Chamber', useful for continuing tests while the main chamber was acting as a vacuum reservoir for the new wind tunnel! (see 31/10/13 info below).

1957/58: Demolition of former Cleveland Discol fuel depot (but not its underground fuel tank) to make way for construction of new Supersonic Wind Tunnel (SWT) facility for Vickers-Armstrongs.

22/10/1958: Ground works began for new SWT beside Strat Chamber.

02/04/1959: Inaugural (though limited) running of SWT.

1968: Former Esso/Pratts depot still used a 'petrol station' as part of the BAC aircraft factory (ref 1968 BAC Weybridge Works handbook).

Summer 1986: Brooklands Museum began tidying the 30 acre 'heritage' site with Esso/Pratts pagoda outside its boundary but both BP & Shell & BP buildings disused/in poor condition. (See BM archives).

1987: Front elevation of Shell pagoda collapsed during the infamous 'hurricane'.

Late 1980s/early 1990s(?): Closure of Air Hanson's helicopter base in the Railway Straight Bellman hangar at Brooklands and removal of its fuel storage facilities.

1990-2003: Fixed wing flying operations Brooklands Aerodrome revived with regular Museum fly-ins for visiting aircraft organised by an all-volunteer team (led by Simon Ames, the late John Cook and Peter Westacott) but with no refuelling facilities.

1992(?) - 1993: Shell pagoda restored (partly funded by an insurance claim).

08/06/1993: Restored Shell petrol pagoda officially opened by HRH Prince Michael of Kent (see plaque inside). Also dedicated to memory of founder Trustee and former Shell Retail Manager John Wilkins (see another plaque).

04/08/2003: Rare pre-war Thompson MkIII 'Mobile Refuelling Tender' acquired by Brooklands Museum from the Shuttleworth Collection at Old Warden.

Early 2008: Restoration of former Esso/Pratts petrol pagoda begun by contractors funded by the Brooklands Trust Members and other donors.

20/08/2010: Official opening of newly restored Esso/Pratts pagoda by HRH Prince Michael of Kent.

September 2013: Restored American-made 'Bowser' petrol pump installed on BP pagoda forecourt after major restoration by volunteers (see photos).

September /October 2013: New partition built by museum volunteers inside east end of Shell Pagoda.

Autumn 2013: Interior of BP pagoda redecorated and refurbished by Museum volunteers.

30/10/2013: Unsuccessful metal detector search for underground Discol/Redline fuel tank outside Balloon Hangar. Tank cover removed to re-photograph the tank filler cap and breather pipe - protruding through a concrete layer above the (presumably) cylindrical steel tank.

31/10/13: Vickers memo dated 03/10/55 from V H Mole-Dennis to A D Grant found by S Devereux - this confirmed two underground fuel tanks (each approx 10ft long x 4ft 6in diameter) were removed from the site of the new wind tunnel.
Timelines: October 2017

from the site of the new intermittent Supersonic Wind Tunnel in 1955 (& considered for modification then re-use as extra Strat Chamber testing equipment (see 03/10/55 info above and BM's Strat Chamber archives).

01/11/13: Underground 'CAT scan' survey by A Makosz confirmed that the size/extent of the remaining ex-Redline tank outside the Balloon Hangar is of similar size to the other two removed nearby in 1955.

NOTES

Brooklands Museum archives do not appear to include details of the underground fuel tank immediately north of the Balloon Hangar.

Castrol and Mobil (& other?) oil companies also had depots at Brooklands in the 1930s (& earlier?)

The Esso/Pratts depot's fuel tank is partly located under the main building but was backfilled with rubble (when?).

'BP' was a brand of the Anglo-Persian Oil Company Ltd and advertised by its distributor The British Petroleum Co Ltd of 22, Fenchurch St, London, EC3 (and also of Britannic House, Moorgate, EC2) as 'the British Petrol'.

'Redline' was a brand owned in the early 1920s by Union Petroleum Products Co Ltd, 16, Charles Street, Haymarket, London, SW1 and marketed by Redline-Glico Ltd of Waterloo House, Haymarket by the early 1930s. See contemporary adverts in The Light Car Club Programme (26/07/30), The Motor (11/03/30) and The Brooklands Yearbook 1933.

PHOTOGRAPHS

Discol Depot - undated (1930s), with Alta racing car on forecourt (see BM archives, ref F414).

Esso Depot - undated (1930s), with Arthur Dobson's ERA R7B racing car in foreground (see BM archives, ref F414).

Shell Depot - April 1926, Parry Thomas re-fuelling 'BABS' with 'aviation' fuel and Redline depot clearly seen in background (Getty Images archive).

Shell Depot - 08/05/1931, close-up of unidentified car being re-fuelled with Redline and Discol depots in background (Getty Images archive).

QUESTIONS

1. When exactly were the four (or five?) new depots built in 1922?
2. What and where was the 'R.O.P.' depot?
3. Was the Cleveland Discol depot built in 1922? Note: photos prove that it was definitely there by 1925.
4. When were the first hand-operated petrol pumps introduced in Britain?
5. What became of the aerodrome's 1927 petrol station?
6. What specific types of fuel bowsers/tankers were used for refuelling racing cars and aeroplanes at Brooklands? Does anyone have photos of these?
7. How many original Brooklands petrol pumps survive at the Museum?
8. What happened to the Shell pagoda's fuel tanks?
9. What equipment and facilities for de-fuelling and re-fuelling aircraft were available at Brooklands from 1915-1987?

10. When did Air Hanson leave Brooklands for Blackbushe and what re-fuelling facilities did they have? Note: Andy Lambert recalls National Rescue removing a large ex military/dark green fuel tanker (type?), possibly to Blackbushe.

SOURCES

Brooklands Museum archives

<http://search.catflaporama.com/post/browse/2311880>

<http://www.vintagegarage.co.uk/>

http://en.wikipedia.org/wiki/Timeline_of_alcohol_fuel

ACKNOWLEDGMENTS

John Allman, George Burton, Richard Codd, Steve Devereux, Graham Kempton, Sylvia and Charles Green, Andy Lambert, Andrew Lewis, Andrew Makosz, John Pulford & Martin Strick.

OTHERS TO CONTACT

David Lockspeiser; Jeremy Parkin; Alan Smith;

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MEMBERS' HILL, TEST HILL & MEMBERS' HILL RESTAURANT BUILDINGS

01/10/1906: Members' Banking construction under way with major excavations behind Members' Hill – note the cedar tree there then (Getty Images photo ref 3278097).

01/02/1909: Construction of new Test Hill started on Western edge of Members' Hill with a 12ft wide 352ft long concrete roadway in three increasingly steep sections (see drawing and technical data in RAC Journal, 01/04/09). It started at a gradient of 1 in 8, changed to 1 in 5 and the upper third sloped at 1 in 4. White wooden post and rail fencing lining each side (with shaped horizontal railings inserted into sides of vertical posts) and two pedestrian crossing points with stone steps. Wooden bench seats were also installed – said to be made from timber from trees felled to create TH. The bottom was secured by a pair of steel gates and also a single gate with a 10-12ft high cast iron gatepost on the East side.

25/03/1909: Official opening of Test Hill. Designed to encourage the motor industry to use Brooklands for testing and development work both for hill climbing ability and braking when descending, it soon became irresistible to car drivers, motorcyclists and even cyclists. As vehicle performance increased, those driven at full bore inevitably 'took off' at the summit and this extra risk made the Test Hill Record a popular challenge until speeds got so high that there was too little room at the top to land safely.

July 1910: Formation of the Lane Gliding School at Brooklands – its first pupil Mrs Gavin was photographed in a glider on MH just below one of the Grandstands.

01/05/1911: Accident on TH with an open-top car lying on its side halfway up (see Getty Images photo ref 3315461).

20/06/1914: British Red Cross Field Day event held with a tented camp at foot of MH.

c.1915: Army motorcycle competition held using Test Hill (see photo)

??/01/1921: Demonstrations by W O Bentley of his prototype Bentley EXP3 (registration 'BM9771') at Brooklands included driving down TH with passenger Sammy Davis (Sports Editor of The Autocar). Note: LAT archive photo shows good detail of 1909 fencing and TH's condition at the time.

04/05/1921: New Test Hill motorcycle record set by Tony Vandervell (who later founded of the Vanwall Grand Prix racing team) on a 500cc Norton in 8.57 seconds.

??/11/1923: New Test Hill car record set by J A Joyce in an AC in 8.23 seconds.

1926/27: New style of TH railings replaced originals (date unconfirmed but presumably related to Track improvements for the 1926 & 27 GP events).

(07/08/1926: 1st British Grand Prix staged at Brooklands)

18/08/1927: New railings visible in Lagonda Fete photo (Brooklands Society archive photo ref A8536)

(01/10/1927: 2nd British GP held at Brooklands)

29/07/1929: New railings visible in photo of J Dunfee & Shell Pagoda (Stansfield p136).

09/05/1930: Fatal accident on day one of the JCC's Double-12 race – two Talbots collided on the FS and Rablagiati's car hit trackside railings just South of the footbridge killing his mechanic Ted Allery and one spectator Mr Hurworth. Twelve other spectators were injured, the other car overturned but its driver Hebler and his mechanic had only minor injuries and the race later continued. The inquest and a subsequent legal action against the BARC resulted in greater safety measures (including more crash barriers) and new guidelines for motor race meetings (see Venables, p.135).

25/05/1931: Huge crowds attended a Whit Monday race meeting (see Getty Images photo of packed public enclosure on MH).

24/10/1932: Ultimate Test Hill car record set by R G J Nash in a single-seat Frazer Nash special (named 'The Terror') in 7.45 seconds at 32.44mph! This was the fastest time ever recorded by a motor car ascending Test Hill and the car took off at the summit at 50mph and 'flew' 40ft before landing.

25/02/1933: Photo taken of JCC Rally Start on wet Finishing Straight shows zig-zag footpath lined with long benches near foot of MH.

02/08/1933: Gordon Lindsay Clegg drove the V-twin JAP-engined car 'Dorcas' up TH in 8.41 secs (at an average of 28.56mph).

09/06/1936: Absolute Test Hill record set by Francis Beart on a 500cc JAP-engined Grindley-Peerless motorcycle at 6.99 secs (average 34.55mph); he came off the bike when airborne at the summit but was unhurt.

Early 1937: Construction of new concrete Campbell Circuit road circuit including a section along foot of MH & TH with new footbridge (advertising 'The Motor' on both sides) linking public enclosures to car parks further South.

27/03/1937: Construction of Campbell Circuit nearing completion – see Getty Images photo of new section joining Members' Banking behind MH.

01/05/1937: Campbell Trophy Race filmed by British Pathe – shows details of the CC's features including two new footbridges on MH, a new metal side gate with b/w posts at the top of a short flight of concrete steps at the foot of TH, a concrete wall all along the South side of the CC below MH but no concrete wall on the North side of the 'Dunlop's Delight' bend just West of 'The Motor' footbridge.

??/09/1937: Gordon L Clegg in his 12hp 'Special' photographed airborne with all four wheels off the ground over the summit of TH.

08/05/1938: Motorcycles photographed racing around the CC's Dunlop's Delight bend, viewed from MH with FS and TH beyond but no concrete retaining walls on bend.

??/??/1939: Hand rails on footbridge and top rails on TH fencing repainted (or stripped of paint and treated?) darker colour (see Ford Gymkhana photos)

17/06/1939: 'Ford Motor Gymkhana' event attracted 30,000 people – claimed to be Brooklands' largest ever crowd – stunt driving by Ford V8s on grass beside the CC was filmed by British Pathe News (also now showing a continuous concrete wall along the West side of the CC North of the Pits continuing into the bend).

??/08/1939: Last official use of Test Hill before Brooklands closed with start of WW2.

(03/09/1939: Britain declared war on Germany & World War Two began).

c. early 1940: 'Gas-driven car' trials around a deserted Brooklands filmed by British Pathe (ref film ID 612.10.). Film clip starts with view of the car (possibly a Morris, reg. 'HPD 585' fitted with a large collapsible gas bag on the roof) ascending Test Hill and briefly shows the footbridge near the summit.

c1941: Construction of concrete anti-aircraft gun tower complete with 40mm 'Bofors' gun on MH behind former MH Restaurant to defend Brooklands against further enemy air attacks.

(01/07/1946: Sale of Brooklands Track and Aerodrome to Vickers by Brooklands (Weybridge) Ltd for £330,000).

Mid/late 1950s: Test Hill cleared of extensive undergrowth (see Vickers photos MP1541-43, MP2286 & MP8731)

Mid/late 1950s: Car Bays and Clubhouse (still unaltered and minus earlier radio dish but man working on tower) seen from South with T202 and Test Hill (accessible with monkey puzzle tree but no steam pipes visible) beyond (undated Vickers photo ref MP8734).

Early 1960s(?): New steel steam-pipe heating system constructed up the West edge of Test Hill roadway (see BAC photo MP52661); purpose unknown but former Restaurant buildings are believed used as Vanguard and 1-11 spares stores during this decade.

1964: Publication of new 'British Aircraft Corporation Weybridge Division Visitor's Handbook', with site map, written summaries and photos of all facilities.

November 1968: Publication of new 'Weybridge Works – British Aircraft Corporation Weybridge Division' factory guide, with site maps and details of buildings and departments.

Early 1970s: Former Restaurant buildings given a new teaching/training role by BAC (note: more details promised via Bob Stace in early 2012).

??/1971: New BAC Weybridge Works site plan produced.

Early 1973: Brooklands Society Track Clearers team formed and began to clear undergrowth and decades' of rubbish and scrap from TH & elsewhere around the Track.

1975: BS track clearers working on TH – note: at least six pre-war posts and rails survived at the summit on the east side at that time and the foot was blocked off with a steel barrier (see Dick Lewis photos)

1975: Various sections of the former Brooklands Motor Circuit (inc. Test Hill?) designated as a Scheduled Ancient Monument by the Department of the Environment.

Autumn 1976: Further work clearing TH reported in the Gazette including news of large ants pestering the team! Note: 1960s steam pipes still 'in situ'.

1978: Removal of all 1960s factory steam pipes and most of their concrete bases by BS track clearers and a JCB.

c.1978: British Aerospace transport drivers (including Dick Alder) used to drive vans up TH (which was therefore presumably navigable again by then?).

c.1981: New 'British Aerospace Public Limited Company Military Aircraft Division' site plan produced for former BAC East Works (copy in BM archives).

1982: BS Reunion event programme included a picture of the three sided observation tower and stated 'this rather flimsy construction has managed to survive over 43 years' which dates it back to at least 1939.

1983: Julian Temple first visited Brooklands including Test Hill with Morag Barton, Alan Jeffcoate and Ann Huckins (see photos).

?/07/1986: Closure announced of the BAe factory (in 'Industry Year!').

1986-1990: Closure and demolition of the BAe Weybridge factory.

30/01/1987: Sketch plans/dimensions for replica slatted wooden safety fence (in approx 8ft 3in sections) produced by Gallaher/BM Site Manager and surveyor Fred Moore.

June 1987: Formation of Brooklands Museum Trust Ltd with responsibility for a 30 acre site leased from Gallaher Ltd (initially via Elmbridge Borough Council).

Spring 1988: New 625ft long replica wooden railings (with 92 posts) constructed in approx 10 weeks by Brooklands Museum along T H roadway, with slightly different sized (metric) posts and using new post-holes. Approx £3,000 of timber was donated by sponsor Walton-based Sabah Gridley Miskin Ltd (now Jewson).

12/05/1988: Official re-opening of Test Hill (despite new fencing being unfinished) by the BM Trustee and Mayor of Elmbridge, Cllr Ruth Lyon with reception and buffet lunch for sponsors and VIPs, plus a dozen pre-war cars seen in action on the hill and Joyce's record-breaking 1921 AC car on static display. See report in Esher News & Mail.

18/08/1988: Sketch plans/dimensions for new replica seats/benches for TH produced by BM Site Manager and surveyor Fred Moore.

Nov 1988: TH and other parts of BM site used for training by Plessey's Addlestone-based world champion winning tug of war team (see Surrey Comet report, 11/11/88).

c1989: Original(?) gate posts and pair of gates erected by Brooklands Museum at foot of Test Hill.

c1989: Concrete foundations (seven plinths) of western MH Grandstand and of the later Vickers hut 'T96' (built on part of the same site) discovered by BM's MSC team led by Peter Scott(?) and directed by Fred Moore and the compiler.

1989: Designation of new Brooklands Conservation Area by Surrey County Council

01/03/91: Letter from Morag Barton to DoE acknowledging Scheduled Monument Consent 'to renew concrete at the foot of the historic Test Hill' and to insert a new doorway in Photo Archives (now the Art Gallery in 2012) on Clubhouse ground floor.

c13/06/1991: Excavation of TH roadway's buried bottom section.

10/01/2002: Designation by the DCMS of extra parts of the former Brooklands Aerodrome and Motor Circuit as having Scheduled Monument status.

2007-2008: Museum stores cleared by BM work party volunteers out of entire former MH restaurant buildings ready for major restoration by Steve Gray of A C Heritage/The Brooklands Motor Company.

2008: Start of restoration work by by Steve Gray of A C Heritage/The Brooklands Motor Company with SM & LB consent plus architectural input from Maxwell New.

18/03/2009: TH prepared and tidied by BM work party volunteers for its centenary, including gates repainted by Kai Choi.

21/07/2009: Air photos of Brooklands (including Members' Hill) taken by the compiler.

??/04/2010: Rotting sections of TH railings strengthened or removed for safety reasons by Allan Win and the compiler before Auto Italia event.

??/??/2010: Work party volunteers cleared undergrowth and tree branches encroaching over the roadway and spectators' viewing areas.

16(?)08/2010: Featured in the record-breaking Scalextric Challenge event filmed for James May's BBCTV series 'Toy Stories'.

26/04/2011: Rotten wooden fencing inspected and urgent repairs for unsafe sections.

27/04/2011: Museum volunteers & staff tidied the TH roadway (weeding, trimming bushes, undergrowth & trees) and replaced or temporarily repaired the worst sections of fencing (the five bays at the bottom on the West side).

28/04/2011: Further (temporary) repairs made to fencing near summit of TH for Auto Italia event).

07/05/2011: Original TH concrete and kerb photo'd by JCT at extreme SW foot of TH & also joint in CC retaining wall on West side of bend nearby.

Nov 2011: Appeal launched by the Brooklands Trust Members for restoration of TH railings.

07/12/2011: Surviving concrete foundations of TH's 1937 footbridge cleared and defined by BM volunteers Graham Kempton and Dick Alder (see compiler's photos).

21/12/2011: BM volunteer team cleared undergrowth from four original concrete plinth foundations from the front of MH's western Grandstand and also the raised concrete-framed foundations for hut T96 on the same site. Also explored the footings of several 1988 replica fence posts and a few unused (1920s?) concrete postholes on Test Hill (see compiler's photos).

04/01/2012: BM team cleared bracken and brambles to rediscover three more concrete plinths from the front of the western Grandstand – now seven in total – and also found the remains of several sections of low red brick wall which presumably once formed part of the back/north side of the same Grandstand.

09/01/2012: Existing railings measured by compiler, G Kempton & M Strick – 625ft 6ins of rails supported by 92 posts (excluding several posts recently added for H&S reasons). Also discovered that the top rails had a darker colour by June 1939.

14/06/12: New replica railings structurally completed by contractor ProMow Landscaping – in time for D12 event on 16-17/6

16/06/12: Partly restored Members' Hill Restaurant buildings open to visitors for first time by Steve Gray during D12 event.

??/07/2012: Final painting/completion of new railings by ProMow.

??/??/2012: English Heritage approval granted by Dr Richard Massey for metal detector survey of Members' Hill by BM volunteers Charles & Sylvia Green.

17/08/2012: Briefing of BM metal detector team & introduction to Steve Gray by JCT.

08/10/12 (1530hrs): Metal detecting survey begun.

NOTES

Bicycle races held at Brooklands included descents of TH which Gardner (p.60) claimed 'usually resulted in a heap of entangled, fallen bicyclists at the foot of the hill'!

A number of pre-WW2 concrete post-holes survive along the line of the existing 1988 replica fencing.

PHOTOGRAPHS

1909: Test Hill opening (LAT photo – Venables p.29).

1909 (30th June) : ‘Taxi Race at Brooklands’ viewed from bottom of Members’ Hill showing finishing line, raised decking in front of Judges Box, TH railings and gates including main gate with very tall post (via T Singfield, 2010).

1910: Mrs Gavin & glider (Getty Images photo – see Venables p57).

1911: Accident with overturned car on Test Hill (Getty Images photo ref 3315461)

1914: British Red Cross Field Day (LAT photos – Venables p50).

c.1915: Army motorcyclists using Test Hill (see photo via David Riley)

1921: Bentley descending TH (LAT photo – Venables p76).

1922: Spectators & their cars on Members’ Hill (Getty Images photo ref 2638701 – **pub d** as a Brooklands Museum postcard, c. late 1980s)

1923: 1) J A Joyce airborne at the summit of TH (John Maitland Collection photo – Venables p90); 2) Picnic scenes on Members’ Hill in 1923 (Getty Images photo refs 3311309 & 53076397)

1927: New railings visible in Lagonda Fete photo (Brooklands Society archives)

1929: TH and new railings visible behind Jack Dunfee filling up at the Shell Pagoda (Stansfield, p136)

1931: Huge crowd attended a Whit Monday race meeting (Getty Images photo – ref 796682944).

1933: JCC Rally Start on Finishing Straight with TH behind (LAT photo - Venables p.171).

1937: G L Clegg airborne at summit in his 12hp ‘Special’ (photographer unknown – Gardner pp.32-35 photo-spread).

1937: Construction of Campbell Circuit nearing completion behind Members’ Hill (Getty Images photo ref 3364249).

1938 (7th May): Aftermath of Joseph Paul’s crash near foot of MH (Getty Images photo ref 3402159 + PA photos - Stansfield, pp229 & 230 – note: a ‘new’ three-storey building is visible behind the scene towards the Vickers factory).

1938 (8th May): Motorcycles racing on the CC’s Dunlop’s Delight bend, viewed from MH with FS and TH beyond – note: no concrete retaining walls on bend and good ref to TH metal railings (P A photo – Stansfield, p160).

1939 (17th June): Ford Motor Gymkhana event – see framed photo in Ford Room (photographer tbc).

1950s: Test Hill: Vickers negs MP1541-43, MP2286 & MP8731.

1960s: BAC neg MP52661.

1976 (?): Test Hill in use for Brooklands Society event.

1983 – present: Brooklands Museum & compiler’s photos.

1986: Overgrown hill shortly before BM’s restoration work began.

QUESTIONS

1. Were the original 1909 railings replaced with the later style during Track improvements for the British GPs of 1926-27?
2. Did the new post-1926 railings re-use the original 1909 post holes – ie did both sets of railings

have the same number of posts?

3. Were the original posts spaced equally apart at 8ft intervals (this being a standard length for timber rails)?
4. When and why were the top rails repainted in a darker colour before June 1939?
5. How many spectators' viewing enclosures were located on MH and how were they and related car parking organised?
6. What is the history of the seating and footpaths on the slopes of both MH & TH and how much were these altered between 1908 and 1939?
7. When exactly were any pre-WW2 cycle races held up or down TH?
8. Did the wooden footbridge near TH's summit built in 1937 replace any earlier concrete steps and what more do we know of this structure's construction, dimensions and history?
9. Were some removable temporary 'bridges' deployed at the crossing points in the late 1930s (possibly earlier too) as several archive photos from 1937-39 suggest this? Possibly just on big race days eg 1st Campbell Trophy Race on 1/5/37 and the 1938 200 Mile Race? Or was Test Hill not even used after 1937?
10. When and where were services (electricity, gas & water) laid on to the Members' Hill Restaurant buildings?
11. When were the MH Grandstands demolished? During WW2?
12. What is the history of the flimsy triangular observation platform/tower which (according to the BS 1982 Reunion programme) dates from at least 1939 and survived until at least the late 1980s on the eastern (JTI) part of MH?
13. What postwar function(s) did the Restaurant buildings have for Vickers/BAC postwar - were they used to store Vanguard and 1-11 spares in the 1960s and as a training centre in the early 1970s?
14. What is the history of the wooden hut (Vickers building 'T96') built in WW2(?) on the site of the western Grandstand identified on factory site plans of 1951, 1968 and 1971 as an 'Electricians' Room'? See 1950s Vickers archive photo ref MP2286)
15. When was the large monkey puzzle tree felled (note: it was planted pre-1907 and survived at the top of Test Hill until at least the early 1970s)?
16. When and why were the steam heating pipes installed to the Members' Hill Restaurant buildings in the early 1960s?
17. When were the existing posts and gates installed at the foot of TH (post-May 1988)?
18. Was the surviving lower section of the CC's retaining wall added after the adjoining section further along the Dunlop bend?
19. What was the layout of the spiked metal spectators' fencing at foot of TH/MH in 1937-39?
20. Do any traces remain today of Holden's 1909 electrical timing installation?
21. What are the dimensions of the concrete remains of the 1937 footbridge near the top of TH?
22. When did Richard Massey approve metal detector survey in early summer 2012?
23. When did ProMow start/finish the new railings?

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Venables, David (2007) 'Brooklands – The Official Centenary History' (Haynes Publishing, Sparkford, Somerset, ISBN 978 184425 329 6).

ARTICLES

Brooklands Society Gazette – Autumn 1976 issue.

RAC Journal, 01/04/1909

OTHERSOURCES

More photos are bound to be held by other archives/collections/libraries eg the Brooklands Society, Commercial Motor, Getty Images, LAT, Geoff Goddard, John Maitland, and the Motoring Photo Library (at Beaulieu).

WEBSITES

<http://www.britishpathe.com/record.php?id=7342>

<http://www.brooklandsmuseum.com/index.php?/explore/test-hill/>

<http://chrishodgetrucks.co.uk/gallery/Truck-Archive/Earlier>

<http://gettyimages.com>

http://www.itnsource.com/shotlist/BHC_RTV/1938/05/09/BGU407230518/?s=brooklands+accident&st=0&pn=1 (Gaumont British news film of the 1938 fatal crash).

<http://www.latphoto.co.uk>

<http://www.prints@paphotos.com>

<http://www.stilltime.net>

<http://www.warlinks.com/memories/humphreys/index.php> (memories of a soldier based on Members' Hill early in WW2).

ACKNOWLEDGEMENTS

Doug Hollingsworth, Tony Hutchings, Graham Kempton, Andy Lambert, John Pulford, David Riley (see Jan 2012 emails via Bob Stace), Tom Singfield, Bob Stace, Martin Strick & Chas Walker.

DISTRIBUTION

Keith Adams, Dick Alder, Denis Corley, Charles & Sylvia Green, Doug Hollingsworth, Graham Kempton, Andy Lambert, Richard Nash, John Pulford, Bob Stace & Martin Strick.

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MEMBERS' HILL GRANDSTANDS

1906-07: Constructed with open sided timber-framed structure mounted on concrete plinths at the front and red tiled roofs with tiered wooden bench seating on earth floors.

June 1907: Opened with rest of Brooklands Circuit.

1937: Changes (check!) to layout and adjacent spectators' enclosures caused by construction of the new Campbell Circuit.

c1940(?): Demolished or dismantled early in WW2 – note: a wooden military-style hut (with an open-fronted verandah/extension facing south) was built on top of modified foundations of the Western Grandstand. Function of this hut unknown.

1950: Planning application submitted by Vickers for relocating an existing war-time timber shed (T96) from near the Byfleet Banking to the upper slope of Members' Hill for use as an Electronics Room by the R&D Department sited approx. 150 yds(?) from the BARC Clubhouse tower.

1950s-70s: Building T96 identified on official site plans in 1951, '68 and '71 as an 'Electronics Room' ('T96'); also see undated (1950s) Vickers photo neg. no. MP2286 – currently the only known photo showing T96 (viewed from the foot of Test Hill).

Late(?) 1970s: Foundations cleared by Brooklands Society track clearers.

1984/'85: Remains of easternmost Grandstands demolished for Gallaher Offices development.

c1989: Foundations of T96 and Western Grandstand re-discovered by Brooklands Museum during site clearance/restoration work.

21/12/2011: Brooklands Museum volunteer team cleared undergrowth from four original concrete plinth foundations from the front of Members' Hill Grandstand and also the raised concrete-framed foundations for hut T96 on the same site. Also explored the footings of several 1988 replica fence posts and a few unused (1920s?) concrete postholes on Test Hill (see compiler's photographs).

04/01/2012: Brooklands Museum team cleared bracken and brambles to rediscover three more concrete plinths from the front of the western Grandstand – now seven in total – and also found the remains of several sections of low red brick wall which presumably once formed part of the back/north side of the same Grandstand.

06/08/13: Planning application letters and drawings (dated 1950) for shed T96 found in Brooklands Museum's Vickers archives by Steve Devereux and Graham Kempton confirming the use of T96 by the Vickers R&D Department.

07/08/13: T96 document first seen by the compiler.

QUESTIONS

1. What were the dimensions of the Grandstands?
2. How many separate structures were built?
3. When exactly were they demolished and why?
4. What changes were made to the surround spectators' enclosures' seating, access pathways and boundary fences from 1907-'39?
5. When and where was the shed T96 originally located at Brooklands and what was it first used for?
6. What electronics research was conducted by Vickers R&D from 1950 and was T96 demolished when the department closed down after Barnes Wallis' retirement in 1971?

PHOTOGRAPHS

View up Test Hill in 1950s – showing 'T96' (Vickers archives ref. MP2286).

ACKNOWLEDGEMENTS

Brooklands Museum archives; Steve Devereux, Graham Kempton and Andy Lambert

SOURCES

<http://www.youtube.com/watch?v=Erzlhb7LZWA>

THE 'RAILWAY STRAIGHT HANGAR' (W44/T184) AT
BROOKLANDS

Autumn 1940: 'Bellman' type hangar built on the Brooklands Motor Circuit's 'Railway Straight' by the war-time Ministry of Aircraft Production (MAP) under the Vickers-Armstrongs factory dispersal scheme. Cost and completion date unknown. Known as dispersal site 'W44' and used for repair work on Vickers aircraft, namely the Wellington and Warwick.

194?: One surviving WW2 photo (undated) of W44 shows it in use with a Wellington outside the east end and the hangar well-camouflaged with netting.

04/09/42: Visible with several Wellingtons(?) parked outside both ends - on an RAF vertical air photo (ref. RCHM(E) - now English Heritage - archives in Swindon : RCHM Neg HLA/631 Frame 5:71)

26/05/43: Identified on a 'Vickers-Armstrongs Weybridge Works - Dispersal Depots' list as 'Repair Hangar, Railway Straight, Brooklands Track, Weybridge - Aircraft Repairs'.

01/01/44: Named on a 'Vickers-Armstrongs Weybridge Works - Premises in Occupation' list as 'Repair Hangar - W44 - Aircraft Spares'.

01/05/44: Visible in use with Warwicks outside each end - on an RAF vertical air photo (ref. English Heritage archives : RCHM Neg 106G/LA10 Frame 7002)

1946: Identified on new Vickers site plan as 'T184 - Depot W44 Railway Straight Hangar, 27,240 sq ft'.....'Production G2 Dept.' and noted as being in a good state of repair.

1957: Painted all-black and seen briefly in the background at the start and end of Leslie Sansom's short b/w documentary film 'Vickers Aviation'.

April 1964: Identified as the 'Hammer Shop' on new BAC site plan.

1971: Identified on new fully detailed BAC Site Plan as T184, but with same function as before.

Spring 1973: Occupied by helicopter maintenance/charter company Air Hanson Ltd, operating a fleet of Bell 206 Jet Ranger and other helicopters.

01/05/73: Air Hanson operated four Jet Rangers (ref Jeremy Parkin).

1974: Sale of surplus land at Brooklands (ie the former BAC West Works and aerodrome west of the river Wey) for £8M by BAC to Oyster Lane Properties Ltd (new joint venture company formed by Vickers and GEC). T184 was one of the hangars included in the deal.

August 1988: End of Air Hanson's tenancy of T184; they moved to Blackbushe Airport where they could expand on an active airfield. Vehicle recovery specialists, National Rescue (previously renting another Bellman hangar (ex Hawker Aircraft Ltd) in the SW corner of Brooklands) later moved into the western end of the hangar which was then subdivided to allow another tenant to use the eastern half.

c.1994 (probably earlier): AES Ltd (Automotive Export Services Ltd) rented T184 (later known as Unit 184) from Trafalgar House Business Parks Ltd

(05/11/99: DCMS designated the Finishing Straight Hangar (T202) at Brooklands Museum as a Grade II Listed building, following the advice of English Heritage. Note: the nearby identical Railway Straight Hangar was possibly not assessed for Listing at this time).

07-08/11/2000: Floods hit Brooklands including Unit 184 tenants AES and the National Rescue Group (NRG) who both suffered damage to their property.

(10/01/02: DCMS designated extra parts of the Aerodrome and Motor Circuit as having Scheduled Monument status but this had no direct implications for T184).

c31/01/02: End of NRG's tenancy of western half of hangar ('Unit 184') with relocation to smaller premises near its New Malden control room. AES continued to operate from eastern half of Unit 184.

2002: Rumours persisted that Railtrack might rent NRG's former premises, but nothing came of this. Instead, this end of the building was rented later in the year to Waitrose as a vehicle depot for its new 'Ocado' internet delivery service.

?/11/02: End of AES's tenancy of Unit 184 – perhaps partly due to uncertainties about DC(UK)'s plans for the Brooklands Central Area.

c.01/03: Local bus operator 'Repton's Coaches' moved into part of the former AES premises. c.?/02/03:

Waitrose repainted their end of the hangar in white; eastern half already had a blue/white colour scheme.

??/??/2004(?): Photographed in detail by the compiler.

??/??/2004(?): Demolition of T184 prior to redevelopment of central area by DC(UK) to create Mercedes-Benz World; some of the main doors were saved and donated to Brooklands Museum and the floor slab and door runners also survive today.

ACKNOWLEDGMENTS

Brooklands Museum Library, Philip Clifford, Denis Corley, Paul Francis, Jeremy Parkin, English Heritage & Royal Commission for Historic Monuments (England) archives; David Weguelin Productions.

ARCHIVE PHOTOGRAPHS

Undated (WW2) - hangar 'W44' well-camouflaged with netting plus a Wellington bomber outside eastern end. Photo caption (post-war) : 'Service Hangar – Railway Straight – Now T184' (ref Brooklands Museum: WW2 Dispersal Depots photo album).

NOTES

1) Hangar W44/T184 was generally identical to three other 25ft high ('tall') Bellmans built at Brooklands, including the 'Finishing Straight Hangar' on the East side of the River Wey (now part of Brooklands Museum). Two more 'short' 17ft(?) high Bellmans were built for Hawkers near the Byfleet Banking pre-WW2.

2) Vickers used a new buildings ref. system with 'T' numbers soon after WW2.

3) Around 2003, helicopter research specialist and local resident Jeremy Parkin began compiling a history of Air Hanson and was setting up a dedicated website on this subject.

POTENTIAL FURTHER SOURCES

Andy Lambert (former Co-Director, National Rescue Group)

QUESTIONS

1. When did change from being a Vickers repair/servicing hangar?
2. What function did Vickers' Production G2 Dept. have in 1946?
3. When did it become BAC's 'Hammer Shop'?
4. When was T184 demolished?

SOURCES

Air Publication 3236 (1956) 'The Second World War 1939-1945 Royal Air Force WORKS' (Air Ministry) - see pp 134-136 about Bellman hangars.

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Aircraft Corporation – Weybridge Site Plan – 1971 (via Brooklands Museum).

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Sansom, Leslie (1957) 'Vickers Aviation' (Vickers-Armstrongs Film Unit) – see scenes of the Brooklands Memorial at the beginning and end of this short b/w film directed by the late L.Sansom about the history of Vickers-Armstrongs (Aircraft) Ltd at Brooklands.

Temple, Julian C (2001) 'The Bellman Transportable Aeroplane Shed – Type History' (unpublished reference list, Brooklands Museum – unfinished draft).

Temple, Julian C (2003) 'List of Known Bellman Hangars at WW2 British Military or Factory Airfields' (unpublished reference list, Brooklands Museum – unfinished draft).

'Vickers-Armstrongs Weybridge Works – Brooklands Track – Buildings as per Plan L1343' (dated 1946).

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Ref TIMELINES/BUILDINGS/RAILWAY STRAIGHT HANGAR T184.doc

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THE STRATOSPHERE CHAMBER (T287) & SUPERSONIC WIND TUNNEL (T326)

November 1945: BARC Clubhouse occupied by Barnes Wallis' new V-A Ltd R&D Dept. Norman ('Spud') Boorer joined Wallis to work initially as a senior designer on the Stratosphere Chamber and variable wing sweep research, later to become Chief Designer R&D.

26/01/1946: New 'Vickers Armstrong Weybridge' site plan (Main Factory only) produced by Ley Colbeck & Partners (Drg no. 124). See Brooklands Museum copy - modified to show new Design Office, Strat Chamber and Wind Tunnel completed by 1948.

10/05/46: Plans of Vickers-Armstrongs Ltd's proposed Stratosphere Chamber produced by H J Collis (ref. L1364/3).

Autumn 1946-48: Construction of Strat Chamber and its cover building North of the 1907 Clubhouse (see Brooklands Museum photos).

30/09/1947: 'Launch' of the main Strat Chamber onto its foundations via specially prepared rails (see three air photos taken shortly before the event which was also filmed and photographed from the ground by Vickers).

1948: Completion of new 19,533sq ft Stratosphere Chamber building (T287) - claimed to be the world's largest facility of its type - immediately North of 1907 Clubhouse for V-A Ltd's R&D Dept.

23/11/48: Modified and updated 1946 Vickers site plan 'scheduled' by local authority,

17/01/1950: Closure of the 'Great Door' for the first time – after a period of preparation & testing.

c.1950: Modifications to the Strat Chamber enabled it to produce snow and ice for more authentic cold weather trials.

February 1952: Inventory for 'Brooklands Track – Buildings As Per Plan L.1553' produced by V-ALtd (copy held by compiler).

c.1957/58(?): Demolition of pre-war Redline petrol pagoda between Paddock & Shell Way tunnel to make way for new wind tunnel & Balloon Hangar.

1958: Opening of new 4,578sq ft Supersonic/High Speed Wind Tunnel (T326) and related 'Balloon Hangar' beside the Strat Chamber.

25/04/1958: HRH The Duke of Edinburgh toured Vickers factory facilities at Wisley and Brooklands including the Strat Chamber for a guided tour with Spud Boorer and other managers. See 'unissued' Pathe film ref ID 2702.12: 'Duke of Edinburgh at Vickers'.

22/10/1958: Ground works began for new Supersonic Wind Tunnel beside West side of Strat Chamber.

02/04/1959: Inaugural (though limited) running of Supersonic W/T.

May 1959: Spud Boorer returned to the Vickers Design Office to continue variable wing sweep work.

July 1959: Cold weather trials of DH Sea Vixen FAW.1 XJ842 inside main chamber. Note: XJ842 survives today on display at the Norfolk & Suffolk Aviation Museum.

Early 1960s: Tested VC10 forward fuselage structural section and still promoted by BAC as 'the world's largest stratospheric and climatic chamber' (see large white BAC booklet)

June 1968: Barnes Wallis awarded a Knighthood.

May 1971: Wallis retired from BAC's Research and Development Department aged 84!

1975: Closure of the Supersonic Wind Tunnel.

30/10/1979: Death of Sir Barnes Wallis aged 92.

1980: Closure of the Stratosphere Chamber with Joe Hancock supervising its decommissioning.

1982: Retirement of Spud Boorer and Joe Hancock from British Aerospace Weybridge - both former Barnes Wallis R&D Dept staff in the 1950s.

c1983: Floor plans drawn by Gallaher surveyor Fred Moore.

2004: Death of Spud Boorer aged 88.

Feb 2010: Joe Hancock interviewed by Jeff Sechiari for BM oral history project and also donated further written info about the refrigeration plant.

2013: Restoration work funded by the AIM-Biffa Fund and carried out by contractors and Museum volunteers.

??/11/13: Great Door almost fully closed for first time since c1979.

ACKNOWLEDGEMENTS

John Allman; (The late) Norman W 'Spud' Boorer; Brooklands Museum archives; Steve Devereux; Andrew Lewis, Nik Read & Jeff Sechiari.

QUESTIONS

1. How were the dismantled sections of the Strat Chamber delivered to the construction site at Brooklands - ie which access route was used by Pickfords to enter the site?
2. When exactly was the Strat's construction completed?
3. Where are all the original photos and their negs – BM Photo Archives?
4. Does John Pulford have Joe Hancock's extra written records (donated 2010) about the refrigeration plant?
5. Where is the Strat's original 'Work Diary' referred to in Spud's 2008 booklet, p16?
6. What other construction plans/drawings of both Strat and Balloon Hangar are held at BM?
Note: a detailed 1996 list of two plan chests full of drawings in Control Room has just been retyped by Ann Watson.
7. Where are any surviving original 1950s drawings for the Balloon Hangar?
8. Where was a similar underground (!) facility built in Germany at the end of WW2, was it ever used and do any plans/records of it survive? Note: Steve Devereux recalls Spud once showing him some plans of it.
9. What was the 'Proving Ground' immediately north of the Strat used for? (see undated drawing found in the Control Room by JCT & SD on 20/01/12)

SOURCES

INTERNET

British Pathe

PHOTOGRAPHS

1946-48 : various construction photos including some air views (see Boorer, 2008)

Sept 1947 : launch of chamber onto foundations (also filmed)

1948-80 : various test photos (see Boorer, 2008)

PLANS & DRAWINGS

1. Undated (mid-1940s?) : 'Layout of Stratosphere Chamber and Proving Ground, Fig 1' (b/w plan and elevation with scale, on linen(?) showing basic shape of Strat plus location in relation to adjacent land to north – including members' Banking and the Shell Way tunnel. No other refs given.
2. Undated (late-1940s?) : Untitled Stratosphere Chamber structure in both plan and two sections but without cover building. Framed b/w paper copy with slight water damage, currently displayed in front of Chamber.
3. 26/01/1946 : 'Vickers Armstrong Weybridge' site plan (Main Factory only) produced by Ley Colbeck & Partners (Drwg no. 124) – see pdf file copy.
4. 10/05/46 : Drawing, elevations only of (proposed) 'Stratosphere Chamber at Weybridge' produced by H J Collis, in colour at scale of one eighth of an inch to one foot (ref. L1364/3) – see b/w copy print in BM library plan chest.
5. 04/12/47 : Drawing, north and south elevations only, of 'Stratosphere Chamber for Messrs Vickers Armstrongs Ltd at Weybridge' produced by Ley Colbeck & Ptnrs in colour at scale of one eighth of an inch to one foot (ref. Job no. 3799, Drawing no. 4, Issue B) – see original print currently in BM Admin Office plan chest.

6. 20/09/55 : Ley Colbeck & Partners drg no 7843/2C – Proposed Supersonic Intermittent Wind Tunnel.
7. 28/05/56 : Vickers-Armstrongs Ltd., Strat. Chamber construction drawings 93029 Sht. 137.
8. c1983 : Floor plan survey drawing of Strat and Balloon Hangar prepared by F J Moore.

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British Aircraft Corporation (1968?) 'Climatic & Altitude Testing - Put it to the test at British Aircraft Corporation' (undated four page BAC promotional leaflet with front cover artwork signed: 'Alan Harlow '68')

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Murray, Dr. Iain (2009) 'Bouncing-Bomb Man: The Science of Sir Barnes Wallis (Haynes, [ISBN 978-1-84425-588-7](#)).

UNPUBLISHED PAPERS

Boorer, N W, OBE, CEng, FRAeS, (1986) 'The Stratosphere Chamber and Associated Installations', unpublished illustrated paper produced for Elmbridge Borough Council in October 1986.

'The Stratosphere Chamber' – letter from N W Boorer to various Museum staff (including the compiler) and others dated 24th March 2003 – note: two proposed appendices to his 1986 report.

Compiled by Julian Temple, Brooklands Museum,
Ref JCT/STRAT CHAMBER & BALLOON HANGAR.doc. 11/12/2013
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BROOKLANDS AVIATION HISTORY

VICKERS AVIATION LTD (1829-1939)

1829: Formation of Naylor, Hutchinson, Vickers & Company as a steel manufacturer at Mill Sands, Sheffield. Edward Vickers married George Naylor's daughter that year.

c.1841: Formation of Naylor, Vickers & Company after dissolution of the original partnership of Naylor and Sanderson in 1829? (Check).

17/04/1867: Formation of Vickers, Sons & Company Ltd with £155,000 capital in shares of £100 each and Edward Vickers' son Tom as technical head of the business.

1888: Vickers, Sons & Co Ltd entered the armaments industry.

November 1897: Formation of Vickers, Sons & Maxim Ltd after Vickers' acquisition of Maxim Nordenfelts with factories in Bexley Heath, Birmingham, Crayford, Dartford and Erith.

1901: Formation of the Wolseley Tool & Motor Car Co. Ltd as a wholly-owned Vickers subsidiary.

September 1910: Vickers' airship 'Mayfly' first emerged from hangar at Barrow but returned inside for modifications without flying.

28/03/1911: Vickers Sons & Maxim Ltd appointed Captain Herbert F. Wood as Manager of its newly-formed Aviation Department initially based at Erith, Kent, using Joyce Green Aerodrome near Dartford. Date?: Vickers negotiate rights to build French R.E.P. machine (Robert Esnaelt Petrie).

April 1911: Formation of Vickers Ltd after renaming of Vickers Sons & Maxim Ltd.

22/05/1911: Completion by Vickers of the 'Mayfly' No. 1 Rigid Naval Airship at its Barrow shipyard ordered for the Admiralty as Britain's first rigid airship at a cost of £35,000. Sadly it was wrecked at its mooring during a storm before its first flight.

29/07/1911: The Vickers No.1 monoplane first flew at Brooklands soon after making its first flight at Joyce Green earlier that month.

20/01/1912: Formation of the Vickers School of Flying at Brooklands with premises near the Byfleet Banking, ultimately occupying Sheds 37-42? (See Goodall (1995), p.45).

??/1912: R Harold Barnwell joined staff of the Vickers School of Flying at Brooklands. (photo in Goodall (1995), p.45).

??/1912: Harold Barnwell appointed Chief Instructor with the Vickers School.

??/191?: (pre-May 1913?) R Harold Barnwell began flying as a test pilot (later chief test pilot) with Vickers Aviation at Brooklands and Joyce Green. Together with Harry Hawker (Sopwith Aviation), Howard Pixton (Sopwith Aviation) and Fred Raynham (A V Roe), Barnwell was one of the very first test pilots to be employed by Brooklands aviation companies.

??/1913: First flight of prototype Vickers FB5 Gunbus made by Barnwell at Joyce Green Aerodrome, Dartford, Kent (ending with a crash). See also 27/12/1913 below – CHECK DATE!

19/12/1913: Hugh Dowding gained his aviator's certificate (no. 711) on a Vickers biplane at the Vickers School – presumably taught by Harold Barnwell, he was finally sent solo by 'Archie' Knight.

27/12/1913: Barnwell made first flight of a new Vickers two-seat pusher biplane – designed by G H Challenger and later known as the FB5 Gunbus – the world's first fighter aeroplane - which entered military service at the start of WW1 (ref Gardner, p.80) CHECK DATE!

1914: Vickers started to concentrate its aircraft production work (REP a/c manufacture) at Crayford having previously carried this out at Dartford and Erith (Frank Hearle – later to work for de Havilland – started work at Erith at this time when the Gunbus was being built there: ref 'DH' by Sharp, C M)

13/04/1914: Archie Knight came 2nd in the Easter Aeroplane Handicap Race at Brooklands, flying a Vickers biplane.

??/06/1914: Barnwell came 3rd in the June Aeroplane Handicap race at Brooklands, flying the Gunbus.

(04/08/1914: Outbreak of World War One).

12/08/1914: Company's aircraft Design Office (along with majority of its existing aircraft production work) transferred to Vickers' Crayford Works, Kent. Rex Pierson already appointed as Chief Designer. (Check!)

18/03/1915: Vickers Ltd took over existing factory premises at Brooklands from the Itala Automobile Co. and prepared to build military aircraft there.

April 1915: Frank Hearle tasked with starting up Vickers' new factory in the old Itala Works; an urgent order for 25 BE2 biplanes had to be completed by that September, which Hearle achieved albeit with much subcontracting (ref 'DH' by Sharp, C M).

June 1915: Construction of 'The First Extension' to the Vickers (ex Itala) Works at Brooklands. By the end of the month, 50 employees were working on the first aircraft contract, an order for 20 BE2Cs.

17/08/1915: Completion and delivery of the first Vickers-built BE2C from Brooklands.

25/12/1915: Total of 50 BE2Cs completed by Vickers at Brooklands.

1916(?): Major contract won by Vickers to build SE5A fighters at Brooklands.

February 1916: 'Second Extension' to Vickers factory doubled its floor area so that up to eight different aircraft types could be produced simultaneously.

(01/07/1916: Battle of the Somme began with almost 60,000 British casualties on the first day)

(April 1917: Delivery of Vickers R9 rigid airship to the RNAS, completed as a trainer.

June 1917: Completion and delivery of first Vickers-built SE5 fighter. A peak production rate of 30 aircraft per week later achieved. (Total production: 1,650).

18/06/1917: Rex Pierson appointed Chief Designer for Vickers Aviation Ltd at Brooklands.

16/08/1917: First flight of prototype Vickers FB26A Vampire II made by Harold Barnwell. Only one built, s/n B1485 – see below and photo in Smith, p.123).

25/8/1917: Death of Vickers' chief test pilot Harold Barnwell in the prototype FB26 Vampire night fighter (fitted with a 200hp Hispano Suiza engine) at Joyce Green. Note: he may have been taken ill while flying.

30/11/1917: First flight of prototype Vickers FB27 Vimy bomber made from Joyce Green by Captain Gordon Bell. (Total production: 232 (or 239?), 134 built at Brooklands.

c.December 1917: Seven large 'Belfast truss' type aircraft hangars built for a new Aircraft Acceptance Park (AAP) established in the Flying Village; the triple-bay hangar at the north end later became the Vickers Aviation flight sheds.

1918: Vickers bought a controlling interest in S E Saunders Ltd (but sold this in 1921 to Sir Alliott Verdon-Roe)

Date?: R.23, R.37 and R.80 airships at Barrow.

(02/01/1918: Maj. Gen. Sir Hugh Trenchard appointed Chief of the Air Staff on the formation of the Air Ministry, followed 24 hours later by creation of the Air Council).

31/01/1918: Completion of the 400th SE5A at Vickers' Weybridge factory.

(01/04/1918: Formation of the Royal Air Force and the Womens Royal Air Force. RFC and RNAS were thus amalgamated).

(19&20/05/1918: Last casualties caused by a German aeroplane raid on Britain).

(05/06/1918: Creation of the Independent Air Force for strategic bombing of Germany, commanded by Maj. Gen. Hugh Trenchard).

(26/10/1918: Trenchard appointed C-in-C, under Marshal Foch, of the Inter-Allied Independent Air Force).

(11/11/1918: Armistice signed with Germany, hostilities ceased on the Western Front at 11am. The RAF was now the largest air force in the world with 22,647 aircraft, almost 700 aerodromes, 27,333 officers and 263,410 other ranks!)

1919: Paul Wyand, Vickers' Chief Draughtsman at Brooklands, redefined the factory's aircraft type numbers and drawings classification system: the new coding system began with the Viking IV as the Type 54.

07/01/1919: First flight of prototype Vickers Vernon.

(12/02/1919: Formation of the Department of Civil Aviation within the Air Ministry).

13/04/1919: First flight of prototype Vickers Vimy Commercial (K-107) made by Stan Cockerell from Joyce Green.

(01/05/1919: Civil flying in Britain authorised).

(16-31/05/1919: First air crossing of the Atlantic made (in stages) by a US Navy Curtiss flying boat).

(18/05/1919: Hawker and Mackenzie-Grieve made an unsuccessful attempt on a non-stop trans-Atlantic crossing; flying the Sopwith Atlantic biplane they set off from Newfoundland for Brooklands, ditched after 1,000 miles, but were rescued.)

14-15/06/1919: First successful non-stop trans-Atlantic flight made by Alcock and Brown flying a Brooklands-built Vickers Vimy 1,890 miles from St. Johns, Newfoundland to Clifden, Ireland, in 16hrs 27mins.

(02-06 & 09-13/07/1919: First trans-Atlantic airship crossing and first double air crossing made by airship R34 from East Fortune to New York to Pulham).

12/11/1919: Start of first flight from England to Australia made by Brooklands-built Vickers Vimy G-EAOU flown from Hounslow by Australian brothers Ross & Keith Smith. They reached Darwin on 10th December.

21/11/1919: First flight of prototype Vickers Viking amphibian (G-EAOV) made from Brooklands. Vickers' first postwar design. (Total production: 31).

10/12/1919: Arrival at Darwin, Australia, of Vimy G-EAOU flown by Keith and Ross Smith; the trip ended in Adelaide (where the original aircraft is still preserved).

18/12/1919: Death of Vickers test pilot John Alcock in France flying a Viking amphibian to the Paris Aero Show in bad weather.

1919-20: Order for 40 Vickers Vimy Commercials received from China; WWI fighter ace and author Cecil Lewis was sent as test pilot to assist with deliveries.

24/01/1920: Vickers Vimy Commercial G-EAAV (ex K-107) crewed by Capt. T. Broome and S. Cockerell departed from Brooklands for Capetown. Crashed on take-off at Tabora, Tanganyika, without injury to crew on 27/2/20.

04/02/1920: First flight from England to South Africa by Brooklands-built Vimy G-UABA 'Silver Queen' (a standard Vimy) departed from Brooklands flown by Lt. Col. Pierre van Ryneveld and Major C J Quintin Brand of the South African Air Force with Vickers engineer Frank W Sherratt. They crashed a week later at Korosko between Cairo and Khartoum (radiator leak), borrowing another Vimy ('Silver Queen II') from the RAF in Egypt, they next reach Bulawayo, Southern Rhodesia, but had to borrow a DH9 for their final stage to reach Cape Town on 20th March.

20/03/1920: Arrival of van Ryneveld and Brand in Cape Town; the crew won £5,000 each from the South African government and were knighted by King George V.

11/04/1920: Re-opening of Brooklands Motor Circuit for the first time since WWI.

(19/06/1920: First flight of the Vickers R80 rigid airship - 'designed' by Barnes Wallis).

31/07/1921: Delivery of the first Vickers Vernon RAF transport (J6864) to No. 45 Squadron in Iraq.

April 1922: First flight of prototype Vickers Vulcan (G-EBBL). This design was not a commercial success.

13/04/1922: Death of Sir Ross Smith and Lt Bennett when Viking IV G-EBBZ crashed near the Byfleet Banking after taking-off from Brooklands.

22/08/1922: First flight of prototype Vickers Victoria I (J6860).

February 1923: First flight of prototype Vickers Vixen made by T Broome.

November 1923: Formation of The Airship Guarantee Co. Ltd by Vickers in conjunction with Burney.

1925: Vickers Ltd acquired its first offices at Brooklands by conversion of two detached Victorian houses next to the factory entrance in Brooklands Road and which previously formed part of the Locke King estate.

September 1925: First flight of prototype Vickers Vespa.

31/10/1927: Formation of Vickers-Armstrongs Ltd with the merger of the Armstrong-Whitworth and Vickers engineering companies (excluding Armstrong-Whitworth Aircraft Ltd). Sir W.G. Armstrong-Whitworth and Co. Ltd., joined with Vickers Ltd to become.

April 1928: First flight of prototype Vickers Vildebeest (N230/G-ABGE) torpedo bomber made by 'Tiny' Scholefield.

5/07/1928: First aircraft to be fitted with an automatic pilot: Vickers Virginia IX J7558 was fitted with a three-axis autopilot and tested it at Martlesham Heath as a method of bomb-aiming (ref Air Pictorial, Nov 1969).

29/06/1928: Formation of Vickers (Aviation) Ltd to manage the aviation interests of its parent company Vickers-Armstrongs Ltd.

November 1928: Vickers (Aviation) Ltd expanded its aviation interests with the acquisition of the Supermarine Aviation company at Southampton for £390,000. Sir Robert McLean appointed as Chairman of Vickers (Aviation) Ltd and Supermarine Aviation Works (Vickers) Limited.

(1929: First flight of the R100 airship, built by Vickers subsidiary, the Airship Guarantee Company, at Howden employing Barnes Wallis' geodetic design principle for the first time).

16/05/1929: Death of Chief Test Pilot F/Lt E R C 'Tiny' Scholefield and Observer Frank W Sherratt, AFM, when Vickers Vanguard transport G-EBCP (JE924) crashed near Shepperton.

Mid-1929: Capt. J 'Mutt' Summers joined Vickers at Brooklands as a test pilot, making his first flight for the company on 11/06/29 (in the Type 143 Scout); he also finished 10th in the Kings Cup Air Race that year.

13/07/1929: Vickers took part in the annual RAF Air Display at Hendon.

16-27/07/1929: Vickers took part in the International Aero Exhibition at Olympia, London, exhibiting a Vickers Victoria and an all-metal single seat Interceptor Fighter.

30/11/1929: First flight of the Vickers B.19/27 bomber made by 'Mutt' Summers (now Chief Test Pilot).

01/03/1930: C of A issued to Vickers (Aviation) Ltd at Brooklands for DH80A Puss Moth G-AAZX. This was sold by 22/04/38 (possibly sooner).

24/06/1930: First flight of Vickers Vellore III (G-AASW).

(16/08/1930: R100 airship completed a successful return trip to Canada).

(04/10/1930: Crash of R101 airship at Beauvais, France killing 47 of the 54 occupants including the Secretary of State for Air and Director of Civil Aviation. British airship development effectively ended and Barnes Wallis soon moved from Barrow to Weybridge.

01/10/1930: First flight of prototype Vickers Vialra I made from Hamble by 'Mutt' Summers.

04/10/1930: RAF F/Lts Frank Whittle and Pat Johnson visited Brooklands flying an Avro 504K(?) from Cranwell trying to promote their turbojet invention to Vickers (ref 'Genesis of the Jet' and Whittle's logbook (held by his son, Ian).

1931: Closure of Vickers' Erith Works – Crayford took over its production.

(27/06/1932: First SBAC Show held at Hendon – 13 manufacturers and 30 aircraft displayed in the 'New Types Park').

24/09/1932: New world height record of 43,976 ft (13,404m) set by a Bristol Pegasus-engined Brooklands-built Vickers Vespa (G-ABIL) flown by test pilot Cyril Unwins from Filton, Bristol.

24/11/1932: First flight of prototype Vickers Vincent, S.1714 (converted from a Vildebeest). This aircraft departed on a Middle East tour on 21/12/1932.

1933: Vickers offices modernised by addition of a three-storey rear extension and white cement rendering in 1930s 'art deco' style.

11/01/1933: First flight of Vickers M.1/30 experimental torpedo bomber (S1641) made from Brooklands by 'Mutt' Summers and John Radcliffe.

23/11/1933: Vickers M.1/30 S1641 broke up (structural failure) on test flight over Brooklands; both occupants, Summers and Radcliffe, escaped by parachute and landed on the Track.

23/01/1934: First flight of prototype Vickers Vellox transport.

May-June 1934: Rex Pierson, Beverley Shenstone (Supermarine aerodynamicist), Mutt Summers & Trevor Westbrook (Supermarine then Vickers Works Manager) toured the USA visiting American designers and viewing new monoplane prototypes.

16/08/1934: First flight of prototype Vickers Type G.41 biplane torpedo bomber made from Brooklands. No orders materialised.

18/02/1935: George Edwards, aged 27, joined Vickers Drawing Office staff at Weybridge for 5 guineas per week. Ten years later, he became the company's chief designer and later still, Chairman of the British Aircraft Corporation.

01/06/1935: 'Brooklands At Home' flying display and open day held on the aerodrome; Vickers participated with a marquee near the Aero Clubhouse and entered a Vickers Vincent flown by 'Mutt' Summers in the air display.

19/06/1935 (11.20 hrs): First flight of prototype Vickers (G.4/31 PV09 later named Wellesley) monoplane made by 'Mutt' Summers. NB: The 15 minute flight involved three landings; B N Wallis flew as an observer on a 20 min. test flight the next day. (Total production: 177).

01/07/1935: G.4/31 PV09 flown by 'Mutt' Summers at Hendon (Air Display?)

23/07/1935: G.4/31 PV09 badly damaged on crash landing at Brooklands with 'Mutt' Summers and R C Handasyde on board - 'port undercarriage failed during flight' (Summers' logbook). Much modified during its rebuild, this aircraft reappeared in early 1936 as pre-production Wellesley K7556.

30/11/1935: Liquidation of The Airship Guarantee Co. Ltd.

30/01/1936: First flight of pre-production Wellesley K7556 made from Brooklands by Summers and J Quill. Summers took B N Wallis as passenger on a 3rd flight (20 min) later that day.

05/03/1936: First flight of prototype Vickers Supermarine Spitfire, K5054, made from Eastleigh by 'Mutt' Summers. He then flew the aircraft for a total of 20 hours from Eastleigh up to 22/10/1936.

15/06/1936: First flight of prototype Vickers B.9/32 bomber (K4049) - forerunner of the Wellington - made by 'Mutt' Summers with Barnes Wallis and Trevor Westbrook also on board.

17/06/1936: First flight (15 mins.) of prototype Vickers Venom PV010 fighter made from Brooklands by 'Mutt' Summers. This all-metal stressed skin monoplane had eight machine guns and was to the same Specification as the Spitfire and Hurricane. No production examples were ordered.

22/06/1936: Wellington and Spitfire prototypes filmed flying at Eastleigh, Southampton (see British Pathe newsreel).

06/07/1936: Vickers B.9/32 flown from Brooklands to A & AEE Martlesham Heath by Summers.

01/01/1937: Trevor C.L. Westbrook appointed as General Manager of the Vickers Works at Weybridge; transferred from the Vickers-Supermarine Works, and was largely responsible for organising mass production of the Wellington bomber. He remained with the company until 1940.

30/01/1937: First flight of the first production Wellesley (K7713) made by 'Mutt' Summers.

18/03/1937: First Wellesley (K7713) delivered to the RAF. Production ended in early 1938.

05/07/1937: Wellesley K7737 abandoned in the air near Brooklands by test pilot Jeffrey Quill who landed safely by parachute.

08/12/1937: Official visit by HM King George VI to Vickers (Aviation) Ltd at Weybridge; he inspected Wellesley aircraft on the production line.

23/12/1937: First flight of production Wellington Mk1 (L4212) made by 'Mutt' Summers with Trevor Westbrook and Barnes Wallis also on board. This was the first true Wellington. (Total production: 11,461 - 2,524 built at Weybridge, 5,540 at Chester and 3,406 at Blackpool).

1938: End of Wellesley production - 177 airframes completed.

April 1938: Design completed by American architect C. Howard Crane (1885-1952) for a new three storey 'art deco' headquarters building for the Vickers factory.

October 1938: Formation of Vickers-Armstrongs (Aircraft) Ltd; the new company took over the business of Vickers Aviation Ltd., at Brooklands. Southampton's Woolston factory was now operated by Vickers-Armstrongs (Supermarine) Ltd.

14/10/1938: Resignation of Sir Robert McLean as Chairman of Vickers- Armstrongs (Aircraft) Limited.

07/11/1938: Four long-range Wellesleys, led by S/Ldr. Richard Kellett RAF, set a new world long distance record of 7,157.7 miles flying between Ismalia (Egypt) and Darwin (Australia).

1939: Completion of Howard Crane's new impressive three-storey Vickers-Armstrongs (Aircraft) Ltd headquarters building in Brooklands Road, Weybridge.

(1939: Opening of Vickers-Supermarine's Itchen Works at Southampton).

13/08/1939: First flight of first prototype Vickers Warwick (K8178) made by 'Mutt' Summers and Trevor Westbrook (observer). (Total production: 845).

(1950s (?): 'A Time to Remember' TV series using Pathe archive newsreels and voiceovers telling the story of early 20th C aviators. Shown again in 2010 & on BBC4 on 22/02/2011, it includes rare film of Harry Hawker, the Vimy in the Clifton bog and Brooklands scenes).

ACKNOWLEDGEMENTS

The late Barry H Abraham (pers. comm. 13/10/98ff); Peter Amos; the late Eric Morgan, Ian Whittle (via email, 21/09/2010).

QUESTION

How did the Vickers factory move its aeroplanes from the factory east of the river and outside the Motor Course onto the aerodrome - at least before the central bridge was built in 1926/7? Note: site plans and photos give no clues to this except that they could perhaps have been towed or trailered (dismantled in the case of larger machines) either north along the Finishing Straight to gain access to Aerodrome Road or south past the Fork and around the Byfleet Banking until an apparent access point near the Byfleet footbridge?

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