BULLETIN OF INDUSTRIAL ARCHAEOLOGY IN CBA GROUP 9

Number 5 July 1968

Editor: Geoffrey H. Starmer, 17 Mayfield Road, Northampton

COUNTY INDUSTRIAL ARCHAEOLOGY REPRESENTATIVES

Bedfordshire:	Vacancy
Berkshire:	Mr. J. Kenneth Major, 2 Eldon Road, Reading.
Buckinghamshire:	Dr. P.N. Jarvis, 1 Wordsworth Drive, Bletchley.
Northamptonshire:	Mr. Geoffrey H. Starmer, 17 Mayfield Road, Northampton.
Oxfordshire:	Mr. J.F. Carter, Tarvers, Adderbury East, Banbury.

If there are workers pursuing industrial archaeological studies in any of the five counties who are not yet in touch with that County's representative it is hoped that contact will be established as soon as possible so that each representative will have a complete record of the industrial archaeology being undertaken in his County. This will help co-ordination of the work so that:-

(a) Anyone will be able to see if a particular topic is being studied and if so, by whom.

(b) Anyone coming across information or material remains which are relevant to another worker's studies will know to whom to pass the information.

THE BULLETIN.

This Bulletin was started in April 1967 to give information on the industrial archaeological activities in the area covered by the Council for British Archaeology's Group Nine, comprising the counties listed above. It was hoped that through a greater awareness of what is already being done, more people in the area would take an active part in industrial archaeology. Although originally aimed at those in CBA 9, interest in the Bulletin has been much more widespread and the demand for copies has exceeded that which could be supplied by the original methods of production. At the CBA 9 General Meeting in May, it was decided that the production and distribution of the Bulletin would be changed to meet this wider interest. The change will take place with the issue of Bulletin No.6 which will appear in October.

Subscriptions and all enquiries regarding distribution of Bulletin No.6 and subsequent issues, should be sent to:-

J. Kenneth Major, Esq., 2 Eldon Road, Reading.

A subscription pro-forma is on the last page of this Bulletin.

All correspondence regarding the contents of the Bulletin should be sent to the present Editor.

CONFERENCE ON "THE PRACTICE OF INDUSTRIAL ARCHAEOLOGY"

The Industrial Archaeology sub-panel of CBA Group 9 held its first conference on Saturday, 11th May, 1968 at Oxford. This issue of the Bulletin is mainly a report on the Proceedings of that conference.

SESSION I. THE APPROACH

(a) Oxfordshire Watermills, by John F. Carter.

Mr. Carter described how he had come to start this survey of watermills. The Oxford University Industrial Archaeology Group were looking for someone in the Banbury area to help them in a survey they were making of mills in and around Oxford. When he volunteered, Mr. Carter was sent a list of some dozen mills which were shown on the 1st Edition of the 1" O.S. map. He looked up the grid references given and visited one or two of the mills to see what there was.

From conversations with local people, it soon became apparent that there were a lot more mills about than those of which Mr. Carter had been told. He decided that if the job was to be done properly then it would have to be organised and all the information properly indexed from the start. There were two divisions in the work:-

1. To find out where the mills were
2. To make the on-the-spot survey quickly, with the information in handy form for writing up later.

In locating the mills, the 1" ordnance survey map was the obvious cloice and a careful study of the 5th and 6th Editions revealed a surprisingly large number of mills marked on them. He next bought a copy of the latest edition of the 1" map and marked on it the position of each mill found. Obviously quite a number of sites shown on earlier maps did not appear as such on this edition but something else did which Mr. Carter found just as interesting: the footpaths and bridle paths which are public rights of way are marked in red.

All mills must have had access for horses and carts, but since the actual site of the mill for the locality depended on a suitable point on the nearest stream or river, there were possibly many cases where no roads or tracks existed, and these had to be created for the construction and subsequent use of the mill. It follows therefore that even if the mill has been demolished and most visual remains eroded, the rights of way to it are quite likely not to have been erases. These are now quite clearly shown as two or three red lines converging on a point on a stream. This will confirm the site of a mill, of which most or all other evidence has disappeared, or could well discover a mill which does not otherwise appear in local records or in any visual form. Usually, however, having located a mill in this way, a full study of the topographical features will show some remains of headrace, tailrace, mill-pond or building, as indentations or embankments in fields and at streamsides.

Another invaluable help in identifying a mill site is the 25" O.S. map, especially the 1st Edition of 1898 or 1899. Most mills were in working order when this scale was surveyed and "since you are lucky to get an edition of any sheet as recent as 1923, most of these seem to be the 1904 revision." Mill sites are well documented and the then existing buildings shown in a measurable form. Mr. Carter is lucky in that he has access to the greater part of Oxfordshire on the 25" scale and can photocopy the part round a mill without much trouble. Consequently he can go to a mill site armed with the relevant bit of the 25" sheet and know roughly what he might find.

Yet another way of identifying a site is by the old and new layout of the water-courses. A parish boundary along an old stream bed is a very good clue. He gave as an example, Hazleford Mill (3-4 miles WSW of Banbury) where the old stream bed with its parish boundary is shown on the map as a narrow stream but at present is almost dry. The stream is still running, but in the man-made headrace and falls through the site of the wheel into the old course.

Other sources were also used, one of the most interesting being Stanfords Railway map of 1878, a geographic map overlaid with red lines showing existing and proposed railway routes of the time, but also showing the rivers, shading for hills and by very tiny stars, mills.

Each site was ringed with bright blue ink and numbered in order of discovery. The number came from a columned list which shows Number, Name and Grid reference with further columns for date of visit, and the result. The combined result of these investigations has established the sites of 3 paper mills, 1 fulling mill and approx. 90 cornmills. Two of the paper mills have been converted to cornmills, with very unusual machinery layouts and as such, are still in working order. At least three of the cornmills are also in working order.

Mr. Carter then discussed his methods of full-recording and used as his example Salford Mill, near Chipping Norton. By the use of slides, he indicated a general look round to find out what exists at the mill. This one was generally of what Mr. Carter called a standard pattern but with one or two unusual features. Having looked round, he measured and sketched the arrangement. As well as drawing, Mr. Carter has produced his own questionnaire, covering all the essential features of the mill. Completion of this questionnaire and photographs of all essential features provided his main recording notes. He mentioned that he found inscriptions very difficult to photograph successfully and had resorted to rubbing with black wax on drawing paper. The result could then be photographed if required.

In conclusion, Mr. Carter said that as a novice at research and a newcomer to watermills, he was surprised to find so many mills in working order and also that so much else remains, even if in a derelict condition. There are over a hundred mill sites in North Oxfordshire : there must be just as many in other counties and plenty of Oxfordshire is not yet touched.

(b) The Industrial Archaeology of Blisworth, by George Freeston.

In contrast to Mr. Carter's study of a particular aspect of Industrial Archaeology over a substantial area, Mr. Freeston considered all aspects of Industrial Archaeology in a comparatively small area, namely the village of Blisworth (5 miles WSW of Northampton on the A43) and its immediate surroundings. He took as his starting point, the documentary evidence in the Church Register in 1793, that work had commenced on the Grand Junction Canal and that a mark ⊗ would be used against all persons in the register who were concerned with or connected with the building of the canal. Mr. Freeston showed many slides of old scenes on the canal and indicated the present condition of the sites.

One of the features of the canal at Blisworth is the tunnel, 3056 yards long. Because of the constructional difficulties, work on this was abandoned in 1797 in order to concentrate on finishing the rest of the canal. By 1800 the canal was in full use except for the obstruction presented by the Blisworth Hill. Northamptonshire's first railway was laid between Stoke Bruerne and Blisworth, forming a temporary connection between the two completed sections of the canal. Tunnelling recommenced in 1802 and was completed in 1805 when the Blisworth Hill Railway was removed. Mr. Freeston showed slides of the many traces of this early railway, including sleeper stones in situ on the embankment crossing near

Tunnel Hill Farm. He also displayed actual sleeper blocks, broken pieces of plate rail dug up at various places on the railway and two complete plate rails which had been extracted from chimney breasts of cottages being demolished in the village.

Turning to roads, he showed slides of the building which used to be the "Grafton Arms" coaching house until 1877, and of the former toll-house in the parish of Blisworth, which was demolished by the late Pickering Phipps, a Northampton businessman, and reconstructed in High Street, Collingtree where it still stands. Mention was made of physical evidence of the improvements effected by the Turnpike Trust, particularly the straightening of the road near the canal bridge.

The London & Birmingham Railway was opened in 1838 and Mr. Freeston showed slides of the Bourne and Ackerman series of prints illustrating early scenes in the district and compared these with recent photographs of the same sites. Of particular interest was the cast iron bridge over the canal, as it appeared under construction in 1838, contrasted with its present appearance after having been encased in concrete for the recent electrification of the line. Stone sleeper blocks of the original London & Birmingham permanent way survive, apparently having been purchased by the Grand Junction Canal and used as kerbs at the numerous bridge holes within the parish.

In connection with the railways, reference was made to the wagon repair works at Blisworth of which there are a few old photographs. Other industries which have left their mark were brickmaking, stoneworks and ironstone quarrying. The fine buildings of the Blisworth stoneworks still stand by the Blisworth-Stoke Bruerne road, although now used as farm buildings. Alongside was, until recently, a cutting to the stone and limestone quarries. During the reinstatement of this cutting, further examples of plate rails, one clearly embossed 'GJ', have been discovered indicating further re-use of the materials of the Blisworth Hill trainway.

The oldest ironstone quarries, in the Midlands, of which record has been preserved, was at Blisworth in 1853. From that time, numerous companies exploited the iron ore, paying royalties to the Duke of Grafton. They have left evidence of their work in the sunken fields, with hedges left high on an earth ridge. One interesting instance is where two excavated fields, one in the parish of Blisworth and one in Gayton parish, are separated only by a narrow wall of untouched stone. The last of the ironstone quarries ceased last year and already many traces have been obliterated.

Mr. Freeston concluded with a recent aerial photograph of the parish, showing field marks, lines of communications and the traces of developments over the years covered by his talk. He observed that in spite of all the comings and goings, Blisworth was still undeveloped as a commercial enterprise and the present population is little greater than it was in 1793, the date given at the start of his talk.

After the two speakers had presented their talks, there was discussion covering:-

(i) The amount of engineering training necessary to undertake studies in industrial archaeology. Mr. Major, Chairman for this Session, stated that very few industrial archaeologists were engineers.

(ii) The apparent lack of wear on the plate rails of the Blisworth Hill Railway, exhibited by Mr. Freeston. Dr. Lewis pointed out that on the wagons used, the rims of the wheels would have been comparatively wide so that contact and therefore wear, would have been over a larger area than one is accustomed to find with flanged wheels.

(iii) Reasons for the population of Blisworth remaining approximately constant over the years covered by Mr. Freeston's talk. He added that at one period, there was a significant decrease in the population despite the industrial activities of which he had talked.

(iv) Availability to others, of the questionnaire prepared by Mr. Carter for his mill survey. He said he had made copies only for his own use but was quite happy for others to copy the format he had developed. Reference was also made to the headings on the S.P.A.B. Wind & Watermill Section's Record Cards and the same Section's more detailed form for full-recording of mills.

SESSION II. RESEARCH, FIELDWORK AND DATING : Dr. M.J.T. Lewis, Staff Tutor in Industrial Archaeology, University of Hull.

Research

Fieldwork must go hand in hand with documentary research. The most generally useful sources of information are local libraries, record offices and museums, with their newspapers, directories, guidebooks, local history and technical journals, and their vast range of manuscript material - estate, legal, and commercial papers. The local archivist is probably the best guide to sources of this sort. A visit to national repositories like the British Museum, Public Records Office or British Transport Historical Records is sometimes essential. Maps are always one of the chief aids to fieldwork - whether county, estate, enclosure, tithe, or the great series of O.S. maps. Old prints and especially old photographs can be invaluable in reconstructing a site. Aerial photographs may be as informative to industrial as to other archaeologists. Verbal information, though often revealing, must be treated with caution unless it can be checked.

Fieldwork

Winter and spring are often the best seasons. Equipment need be of the simplest: notebook or paper; short steel and long linen tapes; camera, tripod and flash; brush and knife for cleaning;

torch; string, compass and spirit level for simple surveying. Field notes should be made on paper clipped to a board, or in a notebook. Neatness and legibility do not matter, provided the sketch and measurements are intelligible to the recorder. In recording a building, it is best first to draw the plan, elevations and perhaps a section, noting the structure. Then, if desired, details can be added. But often detailed recording is unnecessary, and in buildings measurement to the nearest inch is normally quite adequate. Beware of non-squareness. Big buildings need not be daunting - they are often repetitive. In recording elevations, a horizontal datum is essential as a base. Inaccessible heights can be gauged by counting brick courses or by simple trigonometry; so too can gable angles, where measurement off photographs is also feasible. No training - only common sense - is needed for elementary surveying with level, compass and ranging poles. Dr. Lewis recommended 'photographing heavily' - it is a great help in drawing up. Scale drawing should be made as soon as possible, before details are forgotten, whether it is for publication or only a working drawing.

Dating (mainly buildings)

Dating is possible by style - a factory often proclaims its approximate period, whether functional Georgian or high Victorian Gothic. Materials are much more risky to date - masonry for example, shows no development in technique in the industrial revolution. Bricks give no clue in their bond or hardness. In size, their thickness generally increased up to a maximum of 3" in the late 18th century, where it remained static although many thinner bricks continued to be made too. A smooth texture and regular surface usually means the brick is machine made (mostly from the 1840s, with beginnings in the 1820s) - either extruded and wire-cut or machine-moulded (usually with frogs and sometimes with maker's name, datable from directories). Colour depends on the firing - the same baking can make the same brick different colours - as well as on the clay. The range of local bricks is vast, differing in colour, size, texture, hardness and date from area to area. Much study is needed to produce local typologies, for no national development is visible until the Fletton brick achieved a nation-wide market late last century (although the Staffordshire blue or engineering brick was widespread from the 1850s).

A few hints can be given for other materials. Circular saw marks on timber put it after about 1810. In cast iron, railings first appear c1710, window frames c1760, lintels c1790, columns c1784. Iron-framed buildings, and wrought-iron beams, go back to the 1850s. Tieplates sometimes bear a date or a maker's name. Window glass normally shows an irregular or slightly curved surface till 1838. Concrete was little used before the invention of Portland cement, and remained fairly rare until after the middle of the 19th century (mainly in foundations). Pottery, tobacco pipes and similar small finds are often datable, but must be treated with caution, within the context of their stratigraphy or associations, as in any other branch of archaeology. Graffiti can be instructive. In every aspect, repairs and rebuildings must be taken into account.

The discussion following Dr. Lewis' talk was mainly concerned with materials. Several lesser known types of building materials were mentioned and it seemed that many of those present would like a 'pocket guide' to the identification and use in dating, of materials. During the discussion, Mr. D.E.Hogan, Curator of the Pilkington Glass Museum, commented on the use of glass for dating purposes. He said "Whilst it is admitted that windows (frames) can give a clue to the age of a building it must not be forgotten that the glass itself could also be used 'in evidence'. At the present time window glass (sheet glass) is manufactured by the Pittsburgh Drawn Sheet process, whereby a sheet of glass is drawn from the tank continuously up a vertical lehr. In days gone by, however, window glass was made by one of three methods: Crown, Cylinder or Norman Slab processes. There is no need now to discuss these processes in detail for many books describe them, particularly "Glass in Architecture & Decoration" by Raymond McGrath. The two points that I am making are that these methods leave distinctive marks on the glass and that they were popular at different times. From Elizabethan times until the middle or later part of the 17th century the glass most produced was green cylinder glass with its distinctive elongated marks. From then until the 1830's Crown glass was popular and this is the glass found almost without exception in Georgian sash windows. From 1831 Chance Brothers were producing Improved Sheet (cylinder glass) and this was used to glaze the Crystal Palace in 1851. After this date the production of Crown glass began to decrease. In 1910 the last major modification to the cylinder process was introduced into England. In this process cylinders up to 40 ft. were drawn. Only from 1926 was window glass drawn flat from the furnace."

SESSION III. RECORDING WITH CINE-FILM.

(a) Wolverton Railway Works, by the Bletchley Archaeological and Historical Society.

Dr. Peter Jarvis gave the commentary on this 8mm silent film which showed the wheelwrights shop, the bandsaw, mortiser, universal woodworking machine and brass foundry.

(b) Wroxton Ironstone Quarries. Production of iron ore from these quarries, belonging to the Oxfordshire Ironstone Company, began in 1919. These developed considerably over the years until there were 22 steam locomotives and up to 30,000 tons of ore per week were moved from the crushing plant at Wroxton about 5 miles to the Great Western Railway, $1\frac{1}{2}$ miles north of Banbury station. The quarries ceased production at the end of September 1967. The 8mm film, presented by Mr. Young, Manager at the quarries, showed all aspects of the quarrying operations including the use of steam excavators in removing overburden, loading ironstone into rail wagons, the crushing plant and steam locomotives and trains from the quarries to the connection with the Great Western Railway.

SESSION IV. OLD PHOTOGRAPHIC RECORDS : R.J. Ayers

The Wolverton and District Archaeological Society began to copy old picture-postcards connected with North Buckinghamshire and South Northamptonshire in 1965. Today the Society has 4,000 slide-copies. The Survey has developed to include modern views to keep the record as far as possible up-to-date. The copying is done on Agfa-Gevaert Dia-Direct film. Mr. Bailey, the Photographic Secretary, uses a Pentax camera with tubes. It has been suggested that it would be better if copies were done as prints instead of slides, but the Society finds the latter better for their own purposes as they are shown not only at the Society's meetings at the towns and villages in the area, but also by request at the meetings of other organisations - Women's Institutes, Mothers' Clubs, Young Wives and the like. At such meetings the Society often obtains further postcards or photographs which they can borrow to copy. Examples shown at the Conference included :

Mills, e.g. Passenham (now cottages) and Olney (destroyed by fire) water-mills; New Bradwell wind-mill; 'Iron Trunk' Aqueduct at Wolverton, carrying the Grand Union Canal over the Ouse; Lace-makers at Loughton, Bucks; Ladies at work in the Composing Room, McCorquodale's Printing Works, Wolverton, c.1910; Threshing at Shenley Church End, Bucks; Steam Tram of the Stony Stratford and Wolverton tramway, 1886-1926; Wolverton Works, 1906; Housing at Wolverton and New Bradwell built by the London and Birmingham Railway, and the L.N.W.R; Font at St. James' Church, New Bradwell, "donated by the Enginemen at the Locomotive Factory"; Salmons' Car Works, Tickford, Newport Pagnell in the 1920's - now the Aston-Martin Lagonda Works of the David Brown Organisation.

Hayes Boatyard. Mr. Ayers showed the use of such photographic records by talking about one specific item: the Hayes Boatyard, Stony Stratford. Although this is a most unlikely place to build sea-going vessels, Mr. Ayers showed slides of the works, their products and of boats being towed by a Fowler steam engine along the London Road and High Street of Stony Stratford and then launched sideways into the Buckingham branch of the Grand Junction Canal.

SESSION V. THE NATIONAL INDUSTRIAL MONUMENTS RECORD AND THE PROTECTION AND PRESERVATION OF INDUSTRIAL MONUMENTS : J. Kenneth Major.

Mr. Major stated that Industrial Archaeologists seem loth to fill in the Industrial Monuments Record cards of the C.B.A. This may be because they wish to do more work on the industrial monument, in the field or in research. It is also known that they do not wish the card to be available until they have used it for publication purposes. Copies of the cards are lodged at the University of Bath, at the Council for British Archaeology, and at the National Monument Record in London. Though the cards can be seen at all these places, Mr. Major considered that anyone who used them without fieldwork and site visits would be sadly misinformed, and he felt that any publication from them would be invalid.

He asked "How do the cards affect the protection and preservation of the Industrial Monuments?" The Civic Amenities Act of 1967 lays it on the County and local Planning Officers to consult with local societies and individuals to obtain their recommendations for the listing of buildings, groups of buildings, and in some cases, their contents under the Town and Country Planning Acts. This listing in no way ensures the continuing life of the monument but ensures that any alterations to the monument are the subject of closer scrutiny. In the case of monuments listed graded I, II* or II the local Planning Office and Committee have to refer the case to the Ministry. In the case of grade III monuments only the local authority have control of the case. Mr. Major suggested that in working on a subject the Industrial Archaeologist should aim to cover the whole of an administrative area so that if his work is examined by the local Planning Committee they will know how many examples of this monument exist in the area, and what the relative importance is.

Mr. Major emphasised that the listing of a building does not ensure its future - the owner can allow the building to collapse by decay without any penalty. The local authority can, however, in some cases, do the necessary repairs to ensure the safety of the monument, but this is unlikely with industrial monuments as the problem is one of economics and justification. There are, however, ways in which owners may be able to obtain monies for repair and preservation. The main point in the award of all grants is that the monument is sufficiently important, and when safe and protected it is opened to the public. The Ministry of Works and the Historic Buildings Council do give money to Industrial Monuments and Mr. Major cited as examples, the Round House at Chalk Farm and the Crofton Pumps on the Kennet & Avon Canal. The Local Authority may also give grants. For example, Devon County Council made a grant to Finch Foundry, Sticklepath towards its repair. Then there are the Charitable Trusts - such as the Landmark Trust, the Pilgrim Trust and the Carnegie Trust which all make grants. Finally of course there is the appeal which also produces some money from interested members of the public.

Industrial Archaeologists can therefore help the further protection and preservation of Industrial Monuments by making their finds known to the authorites on as great a scale as possible. In 4 years of the Industrial Archaeology movement only 3,000 record cards have been sent to the University of Bath. This is bad - it is known that 10,000 mill sites must exist in the country and that is only one industry. Mr. Major urged that more cards must be returned by workers to ensure that protection of the monuments can grow. In the discussion, Mr. Geoffrey Starmer the Chairman for this session, asked the conference for reasons why people do not send in Record Cards?

The reasons given were:-

(a) Many of those present had been unaware of the Record Cards before the conference. They expressed appreciation of the opportunity to see examples of completed Record Cards which were on display.

(b) The variety of places at which the record cards are stored, e.g. R.C.A.M. Wales has some of the Welsh Cards.

(c) The long time for which the records cards were away from the sender. However, other speakers quoted times of return as short as two to three weeks which was regarded by the conference as reasonable. It was also pointed out that if the University of Bath received a batch of only a few cards, it was uneconomic to send these for photocopying until more cards were received to make up a worth-while quantity. Waiting for other cards to be sent in could account for the long delay experienced by some people in getting back their cards.

CONCLUSION.

In concluding the conference, Mr. Geoffrey Starmer emphasized that the proceedings had been concerned with the practice of industrial archaeology, concentrating on what had been done in the area of CBA 9 and the methods used. He hoped that all present had benefited from what others had been able to achieve. So that the work of the conference would be available to all in CBA 9, Issue No.5 of the Group's Bulletin of Industrial Archaeology would contain a report on the proceedings. A copy of this issue would be sent to all those attending the conference irrespective of whether they are in CBA Group 9.

Before the conference dispersed, Mr. Rex Wailes thanked the organisers for what he considered to have been a very worthwhile meeting.

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FUTURE COURSES

Berkshire : It is proposed to offer a course of lectures on "Industrial Archaeology" in Reading, starting in the Autumn 1968. Further details may be obtained from Mr. J. Kenneth Major, 2 Eldon Road, Reading.

Northampton : The Leicester University's Department of Adult Education is offering a course of 24 meetings on "Industrial Archaeology", to be held on Friday evenings, 7.30 - 9.00 p.m. beginning in September 1968. The course tutor is Mr. Geoffrey H. Starmer, Principal Lecturer at the Rugby College of Engineering Technology and there will be contributions from several national authorities and specialists in particular aspects of industrial archaeology. The course will be held at the University Centre, Barrack Road, Northampton and further details can be obtained from Mr. R.L. Greenall, Warden at the Centre.

Wellingborough : The Wellingborough branch of the W.E.A. is organising a course of 12 lectures on Industrial Archaeology, for Wednesday evenings starting September 1968. Further details can be obtained from Miss Douglas, Secretary of the Wellingborough branch of the W.E.A. or from the course tutor, Mr. Geoffrey H. Starmer, 17 Mayfield Road, Northampton.

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To:- J. Kenneth Major, Esq., 2 Eldon Road, Reading.

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