# AARGnews 4

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The 'hot news' in this edition is the note on page 34 (a late contribution, hence its position) which announces the RCHME managed 'Mapping England' project. Although still in its planning stages this can only be seen as a good thing and probably the only opportunity ever to map and describe the aerial evidence for the whole country to a defined standard. We can only hope that care is taken to choose (or train) competent photo interpreters and to use transformation methods suitable for the project.

This edition continues the crop circles debate with a contribution by David Wilson who has obviously thought more about this than most members (or than most members are prepared to admit..?) including the question of whether he, as a respected academic, ought to dabble with such things. Brian Williams gives us an update on Northern Ireland which was originally tabled to the CBA Aerial Archaeology Committee and reproduced here with minor modifications. Brian - and Ireland - remains memorable to me for a comment of his at an earlier AARG meeting which was along the lines of, 'What you [the English] are talking about doing, we [the Irish] have been doing for years.'.

There are two papers from, or following, the Glasgow AARG: Wolfram Letzner gives us the 'real' version of his paper (which some of you may remember being enthusiastically presented by Anne-Marie Martin). He sent his text in German so that the accuracy of the terms used is not lost in translation. Dave MacLeod, currently participating in the Yorkshire Dales Survey, comments on the use of verticals in the interpretation of industrial remains. He also includes some very pertinent remarks on the detail we should seek and depict in industrial survey.

Following the Committee's direction, I was lumbered with introducing you to what we hope to be a series of AARGnews notes and presentations at AARG meetings, 'Problems of Interpretation'. Please send further instalments to me. A second note, on Photo-CD systems, was the pursuit of new and unavoidable technology. As a photo interpreter I was not too impressed by the system but as our libraries will almost certainly acquire these I felt it necessary to give my views on its effects to the users. The Committee hope to persuade Kodak to demonstrate the system at Dublin - and then you can make up you own minds.

By way of light entertainment we reproduce a catalogue which came via Anthony Crawshaw from Derek King (thanks to both). It would seem to date from the early 1920s although much of the text could have been written in the 90s.

During a January visit to RCHME Swindon the subject of developer funded aerial assessments arose. Ought copies of these to be lodged with the NLAP (or NAR if a difference can be detected in this case) and, if so, who ought to provide (and cover the cost of providing) them? Discussion became convoluted but the point may be a valid one, particularly in view of the problems of current and future information availability (Thomas, 1991).

I have been told that the Cambridge Archaeological Unit, one of the non-county bodies that we (Air Photo Services) prepare assessments for, send copies of the final reports to the office of the County Archaeologist where they are available for eventual entry into the SMR. If this practice is common throughout Britain then is it the SMRs which should be expected to provide copies to the NAR as part of any exchange of information which is surely in force (and if not ought to be)? As far as APS is concerned we are engaged to undertake work for each individual contractor, often confidentially, and are not open to share our products with any other body - at least until a certain period has elapsed by which time our original documents will have been lodged with our contractor. We keep record copies of our interpretations, finished drawings and text but these are not the best of documents for archive fodder.
We could slightly stir things by suggesting that if NLAP think it necessary to obtain copies of assessments then ought they also to have copies of all SMR AP plotting.... Are there any comments from AARG members (or the rest of you) on just what material NLAP ought to hold?

Another current issue is that of air photography in education. The broader aspects of this were aired in the short presentation by Kate Fernie and Jane Waite at our Glasgow meeting but AARG members should perhaps be more concerned about the introduction of aerial topics into archaeological education. In February this year the Institute of Field Archaeologists published a Directory of Educational Opportunities in Archaeology. It contains no mention of air photography (nor of AARG although similar groups are listed). I often tend to compare - unfavourably - the progress of 'aerial archaeology' with maritime archaeology, maybe because for one of my years as a research student I shared a room with Keith Muckelroy then working for his PhD and writing a book Maritime Archaeology (CUP, 1978) which tended to upgrade 'underwater archaeology' to its current 'maritime' status. According to the IFA Directory post-graduate courses are available in Maritime Archaeology at two universities. So what has happened to the aerial side of the game?

My very first comment at an archaeological meeting was near the close of the CBA's 1974 conference, 'Aerial Reconnaissance in Archaeology'. As I remember it, discussion had got around to broadening knowledge of our subject; John Collis opened a comment with, "As the first archaeology student to use the Cambridge collections..." [that would have been in the mid 1960s], allowing me, then beginning work on my undergraduate dissertation, to start, "As the second....". I then went on to say that it was more the lack of teaching of the aerial side than any lack of 'publicity' that was its greatest handicap. Taking up the matter - somewhat apologetically - with St Joseph when back at Cambridge he pointed out that he was a research department and not a teaching one. Such were the differences at Cambridge in 1974 and now that the University requires CUCAP to pay its own way things are unlikely to change.

What teaching is there anywhere then? Despite my previous comment, David Wilson does give a course of undergraduate lectures at Cambridge on air photography for archaeologists (as did St J) and, as a means of following on from this essential beginning, I recently offered a series of lectures and practicals to demonstrate current archaeological uses of air photographs. This, apparently, would fit well with the current undergraduate 'Methods Practicals' course which may eventually be built into the M.Phil. But whether anything further comes of that in what is still a theory biased Department remains to be seen. Elsewhere I am aware only of an aerial input to the degree course at Sheffield as taught by Derrick Riley and Bob Bewley and that Bill Hanson is hoping to run a post-graduate course at Glasgow. Sheffield was also host university to Derrick Riley's MA course in 'Aerial Archaeology', subsidised by the Robert Kiln Trust, which ran for only three students - of whom only Chris Cox remains in the subject, not a bad percentage - and dealt with the flying side of the business as much as the archaeology.

Reference

Chairman’s Piece

by Bob Bewley

My first act in this piece is to thank the retiring Chairman, Chris Musson for steering AARG successfully through the last three years. His will be a hard act to follow.

Fortunately the first task as Chairman was to write to Professor St Joseph to ask him, on your behalf, to be the first Honorary Member of the Research Group. Thankfully he replied that it would be a pleasure to accept. He was also interested in the suggestion that the 1992 meeting might be in Dublin; having been asked to cross the Sahara, and having declined, he felt Dublin might be within his range.

Dublin? I hear you cry! The committee met in January and thought that a meeting in Dublin in September would be feasible (even though there is a conference in Amiens in October). The details of the 1992 AARG meeting are listed separately but make a note of the 17-18th September in your diaries.

One new venture which AARG has been promising itself has been the organisation of a day-school during the year. David Wilson very kindly offered to arrange such an event on 'Gardens and Archaeology' in Cambridge on April 4th. By the time you read this you should have had the details or even been to Cambridge for the day.

The role of Chairman in AARG is an ill-defined one and long may that continue; having been elected unopposed (a real fix) I did not have to make any manifesto or claims for radical change. The research group has grown to such a size that it does run the risk of becoming an 'aerial archaeology society'; a move which I would resist at the moment because its 'research' element should be stressed. It is one of the few opportunities in our over-stressed lives to take time out to discuss and talk about the research topics which should be affecting our working year. With this in mind I urge you all to come up with the offers of talks for AARG meetings, be they at the annual meetings or day-schools. One area we seem to neglect is the reconnaissance technique as a form of archaeological survey. We do need research on the effectiveness of our aerial campaigns; also data on the areas which have been 'surveyed' but not photographed. If we were fieldwalking an area we would record where we had walked, how long for, what the weather conditions were etc, etc,. In the air we do not make this a routine part of our work. I think we should, and I think we should be attempting to work out ways of doing this.

Finally, 1992 sees a double change for the AARG committee; the Secretary, Adrian and the Meetings Secretary, Vikki, are both retiring from their posts. Their efforts have ensured the smooth running of the Group and I am sure you will want me to thank them in September for their hard work. We do want volunteer replacements, so anyone interested and keen in helping the Group to continue please let me know. The good news is that the Committee only meets once or twice a year.
AERIAL ARCHAEOLOGY RESEARCH GROUP

1992 MEETING

17 - 18 SEPTEMBER IN DUBLIN

The meeting will begin in the morning of THURSDAY 17th September and finish in the afternoon of the 18th September. There will be an optional extra - a FIELD TRIP on SATURDAY the 19th.

TOPICS TO BE DISCUSSED:

- Integration of aerial photography and fieldwork; examples from Ireland, Scotland, Wales and England. Offers of papers welcomed.

- Recording of Industrial Archaeology from the air; use of aps in mapping industrial sites. Offers of papers welcomed.

- Recent developments in RCHME's mapping programme; including Yorkshire Dales and Hertfordshire.

- Technical advances of 'in-flight' data: GPS and links with archaeological data; developments in G.I.S.; Autocad. Offers of papers welcomed.

- Up-dates on Kodak CD-Rom; Laser copying; RCHME's education and aerial photography package.

- RESULTS of reconnaissance in last five years - emphasis on the addition to our archaeological knowledge. Offers of papers welcomed.

ACCOMMODATION IN TRINITY COLLEGE, DUBLIN. NUMBERS HAVE TO BE LIMITED 55 RESIDENTS - ALL BOOKINGS WILL HAVE TO CONFIRMED BY JULY 1992. For further information contact Vikki Fenner, RCHME, Shelley Ho., Acomb Rd., YORK. Y02 4HB.

See separate page about Travel to Ireland - it's a lot easier to travel than you think!
TRAVELLING TO IRELAND.

FLYING TO IRELAND CAN BE RELATIVELY CHEAP IF BOOKED IN ADVANCE - FLIGHTS ARE AROUND £80 depending on the point of departure.

Frequent flights are available (Mon-Sat, fewer on Sundays) from all the major British airports - Heathrow, Gatwick, Luton, Stansted, Liverpool, Manchester, East Midlands, Birmingham, Leeds/Bradford, Bristol, Glasgow, Edinburgh, Newcastle and Teesside.

There are also good connections from Europe to Dublin.

The major carriers are Ryanair, Aer Lingus and British Midland.

Telephone Numbers for further information:

Ryanair 071 435 7101 or 0800 567 890
British Midland 071 589 5599, 031 447 1000, 0532 451 991.
Aer Lingus 081 569 5555, 031 225 7392 or 0345 010101

If you don't want to fly the British Rail offer some good deals - for example the return cost from Leeds by rail is £49.00. For more information contact BR on 071 734 4681, 071 734 7512, or 051 227 3131.

See you there.
AERIAL ARCHAEOLOGY IN NORTHERN IRELAND

BY BRIAN WILLIAMS

It is more than sixty years since the first interest was shown in aerial photography in Northern Ireland. Inspired by results of work in the Wessex area the Ancient Monuments Advisory Council set up a sub-committee on aerial archaeology in 1927. The RAF 520 Ulster Bomber Squadron based at Aldergrove, Cc Antrim, took aerial photographs (APs) of sites proposed by the sub-committee. Initially this was confined to well-known monuments, but as the fliers, under the command of Wing Commander Wright, became more experienced and interested in the project they started to identify previously-unrecorded sites from the air. Lyles Hill was the first and most notable of these discoveries and was later excavated by Professor Estyn Evans (Evans 1953). Wing Commander Wright proposed a small study area close to the flying base at Aldergrove, and flying at low level plotted sites on six-inch maps supplied by Ancient Monuments Branch. This identified several hundred previously-unrecorded ringworks in the area and many of these were confirmed by subsequent fieldwork in the 1920s and again in recent HMBB survey in the 1980s. The growing numbers of photographs, together with the necessary follow-up fieldwork, caused the AMAC sub-committee in 1929 to decide not to proceed with APs on a large scale before completing ground investigations. This decision, combined with the transfer of Wing Commander Wright, eventually led to the abandonment of the project. Details of this early AP venture were published in Antiquity (Chart 1930) and several of the photographs were published in the Preliminary Survey (Chart 1940). Some but not all of the photographs, together with the annotated six-inch maps, are in the HMBB collection.

St Joseph Collection

Little work was done in aerial archaeology between 1930 and 1950, but on the initiative of Professor Jope, a series of oblique APs was taken between 1951 and 1971 by the Cambridge University Committee for Aerial Photography under the direction of Professor J K St Joseph. These prints are catalogued and stored in the Public Records Office (NI). The collection contains 1802 photographs of 904 subjects. Within the collection there are 490 subjects of archaeological, industrial, archaeological and historical interest, of which 108 are cropmarks. Other subjects include geology, land-use and climatology.

Individual Projects in the 1980s

Since 1983 there has been a succession of interesting projects, each of which has involved aerial archaeologist Barrie Hartwell of Queen's University Belfast (QUB).

An area of one square mile in the vicinity of Crumlin, Co Antrim, was flown in advance of a proposed opencast lignite mine. Despite the known richness of the adjacent area recorded by Wing Commander Wright, relatively few sites were located. One site identified at Ballyvollen was found on excavation to be a specialist ironworks of the Early Christian period (Williams 1985).
The Belfast Archaeologists Group undertook a project in 1981 in which a cross-section of Ulster countryside in south Antrim, 8 by 3 km, was examined using 1/3000 verticals taken by RAF Air Photographic Unit at Aldergrove. The photographs and annotated maps are held in the School of Geosciences, QUB. The most notable site identified in this project was the causeway camp at Donegore Hill excavated in 1984-85 (Mallory and Hartwell 1984).

The Glencloy project under the direction of Professor P C Woodman examined a small valley in the Carnlough area of Co Antrim from sea-level to mountain top. Aerial photography was one technique used in a strategy of various survey methods combined with selective excavation (Woodman et al forthcoming).

The environs of Navan Fort were examined by Barrie Hartwell on behalf of the Friends of Navan and the Navan Research Group between 1987 and 1989. Six runs of vertical 1/10000 scale APs available in the OS collection were supplemented by low-level oblique photos in the area of Navan Fort, Haughey's Fort and the King's Stables. Excavations were undertaken from 1988 to 90 and are to continue at Haughey's Fort (Mallory forthcoming).

A site-specific survey was undertaken in the dry summer of 1989 in the area of the Giant's Ring, Co Down, a well-preserved henge close to Belfast. This revealed internal structures and a rich prehistoric complex outside the Ring. Excavations of a cropmark site were undertaken in 1990 and 1991 (Hartwell forthcoming).

Private Collections

Private fliers have made a major contribution to aerial archaeology elsewhere in the UK but unfortunately in NI this is not the case. Two private collections, however, deserve some comment.

The Newman Collection is a series of black and white and colour obliques of good quality. They were taken by the late Cecil Newman, a planner, and are primarily urban, reflecting his specialism, but also include a great deal of Ulster countryside. The collection is temporarily housed in the Institute of Irish Studies, QUB.

The Mitchel Collection is a series of black and while and colour obliques of good quality with a considerable emphasis on archaeology. They were taken by geographer and private flier Noel Mitchel of QUB. Some photos from the collection have been published (Common (ed) 1964).

HMBB Project on Vertical APs in the Ordnance Survey Collection

Much of the vertical cover of NI in the OS collection was studied between 1980 and 1990. Photographs were examined using a binocular stereoscope. Sites were identified, plotted on 1/10000 or equivalent maps and written descriptions supplemented by sketch drawings were made for each site and lodged in the NI Sites and Monuments Record. The OS project did much to fill out our knowledge of the distribution of ringworks, but it has been especially useful in leading to the recognition of certain settlement forms and types, sometimes for the first time (Williams 1983, 1984 and 1985).
**HMBB Oblique Photographs**

A small number of obliques has been taken of specific sites in counties Armagh and Fermanagh for publication in forthcoming survey volumes by HMBB. Some State Care and other major monuments have also been photographed obliquely from the air for use in publications.

**Remote Sensing**

Satellite imagery is available in OSNI, and HMBB has kept in touch with this development, but at present it is not considered to be particularly useful for historic monuments work.

**The Way Forward**

Our objective over the next five years is to continue to use aerial photography to locate and interpret archaeological sites and monuments and to monitor scheduled and State Care monuments.

Not all runs of APB in the OS collection have been examined. We plan to continue work on that collection. Upland areas of NI with only highlevel AP cover will be identified and photographed at 1/5000 scale. Where overlaps of interest can be identified, as in ESAs or AONBs, joint funding will be sought with other agencies such as Countryside and Wildlife Branch, Department of Agriculture, Ordnance Survey etc. Although the Antrim uplands have proved very rich, this may be a reflection of the good soils of the area and not all upland areas will necessarily be so rewarding. Recent fieldwork in south Antrim, south Londonderry and parts of Tyrone has identified areas of substantial destruction and has pointed to areas of risk. We hope to commission oblique aerial surveys to identify and record sites damaged in the past and to record sites which may be at risk. Aerial monitoring of all scheduled monuments and State Care sites has started, but there is a long way to go (DOENI 1990). These are often the best-quality archaeological sites, and this aerial survey will not only allow site monitoring but it should also establish an archive of oblique APB of our most impressive monuments with obvious potential for publication in various ways.

**References**


Common, R (ed) 1964: *Northern Ireland from the Air*.


Evans, E E 1953: *Lyles Hill: A Late Neolitic site in County Antrim*, HMSO, Belfast.

Hartwell, B forthcoming (Giants Ring).
Mallory, J P forthcoming (Haughey's Fort).


Woodman, P et al forthcoming (Glencloy project).
AVIATION CMERAS 1920 (±)

Extracts from a Thornton-Pickard catalogue
Picture Making

With camera and aeroplane or airship months of work accomplished so arduously on the ground might have been achieved in a few weeks, and the accumulated intelligence brought back in permanent photographic form would have been of more value in subsequent decision because the preliminary or flying survey merely serves to indicate the characteristic of the more permanent work to be assumed. The searching lens would have revealed the courses of the rivers in plan form; have laid bare the narrow canyons breaking the rocky wall of mountain far more readily and convincingly than "Shanks' pony." Do not let me be misunderstood. Aerial photography will not displace the surveyor working with transit and level upon the ground, but it will facilitate and expedite his work by revealing the general topographical features of the country, which information must first be acquired to allow the grand attack to be made, and which initial endeavor takes so long to complete owing to its laborious character.

There are immense tracts of this world waiting to be mapped. If all the cameras supplied to the Royal Air Force for the war were turned upon these millions of unknown square miles of the interior of Africa, China, the Himalayas, Arabia, Siberia, Australia, the South American Continent, Alaska, and Canada to make bird's-eye pictorial maps they would be kept busy for the next quarter of a century or more. Even this country should be photographically surveyed, a work which it is intended to fulfill, and this in turn will emphasize the advisability, even necessity, for the independent aerial survey of private estates.

Another phase of the new application of the photographic art has recently been revealed. In the campaign for trade novelty plays a prominent part. The presentation of something in a new and striking form will arrest attention. So we see enterprising organizations introducing aerial pictures of their factories and premises into their literature. The building may be a relative dot upon the photograph of the bird's-eye view of the city presented, but its enclosure within a white circle effects its purpose and compels the attention of the recipient whose earnest interest is attracted by the picture to the unconventional views of various public buildings which with possibly he is familiar, and in studying the latter he unconsciously achieves the purpose in view. His eye and mind are not permitted to wander far from the little white circle and the building it encloses—the home of the firm which is seeking his patronage.

From the "sport" point of view, what can be more absorbingly

Picture Making

Interesting and fascinating than snap-shotting possibly familiar landmarks or other natural pieces de resistance such as a snow-capped mountain range? The photographic enthusiast sighting for new worlds to conquer will speedily discover that aerial photography possesses its own measure of attraction and picture-seems. He will appreciate the new phase of his hobby which is presented from being compelled to enter a new field which hitherto has been inaccessible, owing to absence of suitable lenses, plates, and photographic apparatus. He will speedily discover that in this realm his abilities, resourcefulness, and skill are likely to be taxed to a supreme and possibly incredible degree, and the subjugation of these problems will offer him the excitement and fascination he desires.

As he dips deeper and deeper into this new photographic world he will be compelled to marvel at the wonderful strides which have been accomplished in regard to the techniques of the craft. Should he venture to the utmost heights attainable by the aeroplane, he will be compelled to dwell upon the persistence and skill of British camera and lens makers, chemists, and technicians. He will witness a new, probably unconscious, but nevertheless equally profound and valuable, interest in the wonderful working and wide range of the focal plane shutter, the ingenuity of the magazine or plate-changing system, the simplicity as well as beauty of design and operation of the special camera which has been evolved for this peculiarly distinctive range of work, and its unusual releases. Finally he will discover that aerial photography is certainly an art apart, bent with its own problems and difficulties, which, however, are readily solved and overcome by careful hands. In common with the clever operators attached to the Royal Air Force, whose work he unequivocally admires and applauds, he will extend untarnished praise to the excellence of British design and workmanship.
Mk. III Hythe Gun Camera

Soon after the commencement of the Great War, and when the British Air Force was developing into an organized factor in the fighting forces of the country, it became imperative that some method should be devised by which to speedily and efficiently train the men engaged in actual aerial work in the use of the Lewis or other guns usually mounted on the aeroplane.

It was necessary that a man should be able to instantaneously judge the distance from a moving target to a moving target—such as an enemy plane—to align his gun on the object, and to hit his mark with a minimum of conscious effort.

Prior to the advent of the Mark III Hythe Gun Camera, gun practice from an aeroplane was very unsatisfactory. The training such as was given to the land units, where a definite record can be made of the progress in marksmanship and manœuvre, is naturally quite unsuitable for an airman, the prevailing conditions being totally different, the distances and positions of both gunner and target constantly changing, and consequently also the direction of the light. Obviously neither was it possible to use live ammunition so that the aim and hits could be recorded as on land.

After much experimenting but with little success the aid of photography (which had now become so absolutely essential in reconnaissance work over enemy lines) was called on to solve the difficulties, and the first and second model gun cameras were designed and made as quickly as possible; these were recognized as but temporary substitutes to be used whilst experimenting with a more complete instrument which would actually take the place of the gun itself. This necessitated much consideration and forethought. The prime object was to make the gunner an efficient marksman, but at the same time it was essential that he should be trained to handle his weapon expeditiously and intelligently, therefore means had to be provided to register the mechanical action as well as the aiming, for unless this was done he would concentrate his attention on making a successful photographic exposure rather than an efficient manipulation of the gun.

The various movements and refinements suggested by the increasing knowledge of the exigencies of aerial combat were embodied one by one into the Mark III Hythe Gun Camera until eventually it was issued as practically a replica of the Lewis gun, as the illustration on page 11 shows, and to obtain the necessary photographic records must be used in the same manner as the Lewis gun. It has proved itself a most effective instrument for training pilots in machine gunnery.

Mk. III Hythe Camera

In the barrel (1) is mounted the shutter and lens which focuses the image on to the sensitive film in the removable spent cartridge holder (2) inserting the light from the lens and in contact with the film is a ruled glass screen marking off the exposed area into circles of predetermined diameters so that the value and effectiveness of the aim may be recorded.

Behind the film box is the mechanism barrel and mounting handle, the hinged clip of the gun mounting on a fastener around the barrel, and loads the barrel in the mechanism connected to the cocking handle and to the film spool frame for changing the film after each exposure. No. 6 (Fig. 1) shows the magazine pillar and adjacent (No. 7) is the magazine plunger, which is depressed each time the cartridge magazine is placed in position. This operation a perforating device, making a hole in the sensitive film each time the magazine is placed in position. No. 4 (Fig. 1) is the cocking handle, which must be drawn along the slide to the set position previous to making each exposure, this movement bringing an unexposed length of film into place. No. 5 is the trigger for releasing the cocking slide actuated by a spring drum in the mechanism barrel. The slide before coming to the rest position strikes a trip lever which operates the shutter of the box and makes the exposure on the film. No. 8 (Fig. 1) is the magazine pillar, which is depressed each time the cartridge magazine is placed in position. No. 9 is the film spool frame, which contains the exposed film and is released by depressing the perforating device.

The course of training involved by the use of this Camera "Gunn" outlines systematic subconscious action in manipulation, rapid judgment, and speedy decisions with accurate marksmanship.

SPECIFICATION

GUN CAMERA complete as illustrated, with Lens, Cartridge Magazine, Ruled Screen in metal frame, R. B. Film Sport Holder, Shutter opening red. Complete in canvas case, steel box, storage cases, with carrying handle.

PRICE, complete as specification, £50
PHOTOGRAPHING CROP CIRCLES
David Wilson

Crop circles have now been featured twice in AARG news (Hempstead, 1991 a, b). What is a respectable air-photographer to think of them? Should he or she photograph them, look for them, make ground visits, or simply pass them by as something obviously spurious?

Before going any further, I should say something about what they are. Despite much publicity on television and in the tabloids, not everyone knows what it is that this term 'crop circle' is applied to (and that includes many of those who write about them in the press). They are patterns of laid crop, often circular but increasingly more complex in form, that have been observed in growing numbers in Wessex and elsewhere since about 1980. They have mostly been seen in cereals, but can occur in other crops such as flax and rape. When in a nearly ripe cereal crop, the edges of the formation are notably clear and sharp and the affected stems are laid really flat. In a young cereal crop, the stems are resilient and tend to recover, so the pattern will be lost unless observed and recorded within a few days of its creation. In neither case do they resemble normal storm damage, which makes patterns that are more ragged and less regular, nor do they look like archaeological sites, whose patterns are quite distinct. The basic 'crop circle' is a disc of flattened crop, not a ring, so even when a crop-circle formation includes multiple rings, there will normally be a disc at the centre.

Crop circles, then, do not indicate archaeological sites. If your concern is only to photograph archaeological sites (real or potential), then crop circles are not for you and you will ignore them, unless you take a sample photograph for demonstration purposes or to liven up your lectures. Those air-photographers whose professional remit or personal vision is broader may take a different view. Whatever you think about them, crop circles are there and are most readily appreciated and recorded from the air (though ground survey by an experienced investigator is also essential for their scientific study). If we saw a message written in the crop saying VOTE BLOGGS, most of us would wish to photograph it, whether as a curiosity or as a piece of social history. Crop circles are surely more interesting than that.

And why are crop circles interesting? Because the means by which they are created is still quite uncertain and highly controversial. None of the existing theories is satisfactory. This fact has prompted much wild speculation and, more recently, the beginnings of sober scientific investigation.

Where do crop circles come from?

Explanations of the origin of crop circles fall into three broad categories, depending on whether the agency is thought to be natural, human, or some non-human intelligence.

1. A natural agency

An original proposition by Dr Terence Meaden that crop circles (at that time mostly simple discs) were caused by some sort of whirlwind effect had a certain plausibility, but that plausibility has diminished to vanishing point as the number and complexity of crop circles has increased. Dr Meaden has battled doughtily to refine and elaborate his theory of what is now
termed the 'plasma vortex' in order to keep up with new developments, and this has contributed much to a little-studied branch of meteorology, but the attempt is doomed.

Counter-arguments are legion. Here are some of them.

a. The classic crop circle area is Wessex. Aerial archaeologists interested in circular patterns in laid crops had been looking at Wessex from the air for over half a century by 1980 and no example of a crop circle had been reported. Nor can they be found on old vertical surveys. While the coverage is undoubtedly sparse, it is spread over a long period, and a purely natural phenomenon should have been detected.

b. Crop circles have grown in numbers and complexity in response to public interest. This is incompatible with undirected natural processes.

c. The elaborate patterns now being produced have a geometrical complexity and structure, including the use of straight lines, that go far beyond what any vortex could be expected to produce. For example, the 1991 formation close to Barbury Castle (Wilts) consisted of the following. A central disc lay inside two concentric rings; the inner of the rings was enclosed by a triangle which cut across the outer ring; the three angles of the triangle were bisected by lines leading to the central disc; and touching the corners of the triangle were three different geometrical patterns based on circles of similar diameter. This is a virtuoso demonstration of the art of the crop circle, and all the more interesting in that the artist was not wholly accurate - one side of the triangle had to be bent outwards to steer clear of the inner ring that it was not supposed to touch.

2. A human agency

There is in my mind no doubt at all that an intelligence is involved, and one with a waggish sense of humour. You only have to put forward a new theory, or a new modification to an old theory, to have it refuted by actual examples, sometimes within a week. (This can hardly be proved objectively, but I shall not be surprised if we see a few rings without central discs in the Cambridge area later this year.) If there is one pattern that seems designed to prove once and for all that crop circles have nothing to do with plasma vortices, megalithic art and other forms of ancient esoteric wisdom, it is the one seen near Ickleton (Cambs) in August 1991. This reproduced, as nearly as the medium will allow, the essential elements of the fractal pattern known as the Mandelbrot Set. A deliberate reference to Chaos Theory? Well, certainly a reference to the modern wisdom, and not far from a university where it would be instantly recognized.

Cambridge pundits, including Professor Stephen Hawking, immediately recognised the Ickleton formation as a 'hoax', though none of them had the first idea of what it looked like on the ground. If by a 'hoax' we mean the kind of crude hoax perpetrated by Doug and Dave of television fame with a few bits of string and a board, or even the better efforts of the Wessex Skeptics with a garden roller, then this was not a hoax. Here, and at a fair number of other crop-circle formations, the way the stems are laid is not compatible with simple mechanical devices of that sort. And what of those examples when the stems are bent over several inches above the ground? Where does the hoaxer walk after the stems are bent as he continues to make the rest of the pattern?
The hoax theory, at this level, also has to take into account the sheer numbers of crop circles and the great complexity of some of the designs. Even if we grant that the work could have been done by people with appropriate skills, could they have done so in the time, even under a full moon? No confessed hoaxer has claimed to have done more than a fraction of the known formations, and given the consistent techniques and the elaboration of the best examples, an appeal to 'copycat' hoaxing is none too convincing either.

It is more plausible to think of a human agency using or experimenting with technology that is not generally known or available to the public. The impression given to many ground observers is that some force has been applied to the crop other than the direct pressure of a physical object. Residual electro-magnetic anomalies and disturbances are a commonplace on crop-circle sites. Current scientific work is identifying and investigating apparent abnormalities in the microscopic structure of bent stems from crop-circles and seems to have found differences in the level of radio-activity inside and outside circles. These are provisional results that have to be confirmed or discredited by further work; if validated, they will direct our gaze somewhere other than the garden roller.

3. **A non-human agency**

There is little to choose between the theory of a human agency using advanced technology and extra-terrestrials doing the same. I should prefer to believe in the former but I am trying to keep my mind open.

The trouble with admitting the possibility of a non-human intelligent agency is that there is then no limit to the fantasies that become possible, other than our own imaginations. The door is opened to a vast world of myth, mystery and mysticism that lies outside the scientific domain. If you think crop circles are the work of fairies or of archangels, the precise mechanism is not very important.

**So what are we to think?**

I have tried to maintain a detached, objective and factual attitude to this intriguing phenomenon. A certain effort is required: so many people start talking rubbish as soon as they talk about crop circles. When an enthusiast says that two formations were identical, what he means is that one was sufficiently like the other to make him think of it. When a linear formation is said to point directly at Silbury Hill, it is actually pointing in that general direction, but its axis may well just miss the visible mound - something that may be even more significant. When Chris Chippindale publishes a photograph of a crop-circle formation of quincunx type in an *Antiquity* editorial and claims that both sides of the quincunx are aligned on the camera position, you don't have to be a professional air-photographer to know that this is utter nonsense!

There are a lot of things I have not mentioned. Ley-lines, for instance. I find it difficult to accept that the term 'ley-line' has been taken over by dowsers to mean a line of force detectable by their methods. But leaving that aside, I would be more impressed by the presence of dowsable ley-lines at crop-circle sites if the dowsers were to give us any idea of what the ordinary spacing of such lines might be. If the spacing of ley-lines is closer than the diameter of a crop-circle formation, one or more such lines is bound to be present. The dowsers will tell me that there is more to it that that, but they do little to set out a proper case.
I take a similar attitude to prehistoric monuments. Crop circles are common for some reason in Wessex. So are prehistoric burial and ceremonial monuments. The two often occur close to one another. So what? Recently there have been a lot of crop circles near Silbury Hill; before that they were conspicuous by their absence. Were both of these two effects due to the numinous quality of that great mound? Or did the crop-circle makers realize they were missing a trick?

In the end we do find ourselves talking about crop circle makers. Are they light-hearted military boffins based somewhere on Salisbury Plain, experimenting with new modes of propulsion, hence all the sightings of UFOs near crop circles? Or, to explain the abundance and spread of crop circles, should we think of some secret sect with a hidden agenda, like the Freemasons? Crop-circle makers have been at pains to catch our attention and by subtle development of their designs to rule out virtually all obvious explanations and interpretations of them. There are still many doubters, and the 'hoax' theory has received a general endorsement from the media and the establishment; so perhaps they will have to go on for a year or two to get everyone to pay attention. Ultimately, though, the whole effort will have been a waste of time if there is not some message. Will it be a giant raspberry? - or an appeal to save the planet?

Watch that space!

References


1991b 'Speak softly and carry a big roller: crop circle notes', AARGnews, 3, 19 - 24, with helpful bibliography.
At an AARG committee meeting it was suggested that many members might benefit from, and contribute to, presentations and open discussion of problems of interpretation. Our initial thoughts were that these problems may be currently unsolved or be those for which an answer has been provided by other means - perhaps further photography (or earlier cover, then unseen), or geophysics, or field investigation. The range of problems can be broad and cover those which caused doubt to the air photographer - those targets, for example, which are circled in the attempt to untangle the archaeology from the background geology and recent boundaries - and which, in the end and perhaps intuitively, were photographed 'just in case'. Or they can be examples from the range of problems which the desk-bound photo interpreter meets. In neither case does the subject need to be strictly archaeological but to refer to features which are, or have been, puzzling.

Some of these, it is anticipated, would necessitate the perusal of several photographs and therefore would make a welcome display at our annual meetings but others might also be shown and discussed reasonably effectively through the pages of AARGnews. Other examples may be found in the literature and a corpus of potential problems will be found in David Wilson's work (1975; 1982; 1987; 1989) the reading of which will provide background information on the topic.

One problem that accompanies any interpretative work is the belief of one person in the results of another. This is not confined to archaeological interpretations but occurs in other branches of photo interpretation as, for example, was mentioned by John Henry (of Ove Arup and Partners) in his paper on 'Photo-geomorphology' given at the second NAPLIB symposium in February 1992. In such cases ground truth may provide the only acceptable solution to a problem raised during photo interpretation.

Sometimes even field data is not wholly believed as was shown in a recent Monument Protection Programme (MPP) enquiry in Cambridgeshire which, for some reason, an assistant of the County Archaeologist deflected in my direction. With my usual tact I can comment that the Cambridgeshire SMR needs a thorough and competent editing. This might help clear up cases, as below, in which a one-time 'possible' site has been proven since to be natural. The county has few (?)three) hill forts so it is perhaps understandable that something suggested as a 'camp' some sixty years ago is clung to in 1992 as a potential fourth.

The site in question is Limlow Hill, Cambridgeshire (TL3241), which was first published (as a 'camp') by Crawford (1936). This site, and two or three neighbours of similar kind, was first noticed on a vertical survey taken in 1921 (and now apparently surviving only in copy form, held by CUCAP, of a published mosaic: D Wilson, pers com) and allowed Crawford to produce a distribution map of the Royston area in which a ridge of chalk sprouted as many hillforts as occur in parts of Wessex. The relevant photographs used to illustrate this article were two obliques by Allen of which Crawford comments on his interpretation difficulties:

'Limlow Hill...was crowned by a fine camp which appears to have two ramparts. Air-photographs...show plain indications; but when one attempts to analyse them it is not easy to interpret the individual markings.... The most probable interpretation is that the camp had a single ditch with a rampart on each side.' (Crawford 1936, 101)

And similarly of the adjacent 'camp' on Hoy Hill where he was uncertain whether the two ramparts were paired by two ditches or one (Crawford 1936, 102; cf Wilson 1975, 63). Looking at the published photographs (Crawford 1936, plates XXV and XXVI) with the hindsight of today (and more distinct marks on the CUCAP print used by Wilson) one can see the nature of Crawford's problem - the features give an initial impression of flattened defences, but on more critical examination the 'ditches' and 'banks' just do not make archaeological sense and show as a series of staggered lengths of positive and negative marks. No hillfort, however flattened, would present such a plan.

Limlow Hill was subsequently trenched by Grahame Clark who found no trace of the 'ramparts' in a trench 430 feet long (this length being due to the difficulties of locating on the ground the 'ditch' from Allen's oblique photograph) or any indisputable evidence to demonstrate their archaeological origin (Clark 1938). However, Clark obviously remained influenced by Crawford's tentative interpretation of the site as a hillfort to the extent that the one feature
found, a '...ditch of such feeble proportions...', was argued to be a marking out ditch despite the lack of archaeological material in its very natural looking fill (Clark 1938, 171; fig 1).

Today, even after the fieldwork at Limlow Hill and the classification of the feature as natural, doubt appears to continue as to its nature. Photo interpreters recognise the type of feature as part of the background of geological noise to be aware of and, were it necessary, a corpus of such 'natural hillforts' could be compiled (the CUCAP index holds entries on six sites under 'Interpretation: geological structure resembling hill fort'). Best known from more recent publications, and one of the most spectacular, is that at Upper Coscombe, Gloucestershire (Bowen 1972, 39; RCHME 1977, xxxiii-xxxiv, plate 67; Wilson 1982, fig 87) photographs of which immediately raise the question, 'But how could they [the farmers] flatten that so completely?'.

Archaeologists working within a defined area (such as a county) are likely to be as much aware of the local ranges of natural confusion as its man-made features. Problems, of course, can still arise with new data but, in the above case, the enquiry was due to the confused and unedited entry in Cambridgeshire's SMR. This includes the allusion of hillfort status although noting that the feature is more likely to be natural. Perhaps the SMR keepers in AARG could explain the processes by which a discredited site can be, or is, removed effectively from the record.

All of which is a bit of side-tracking to introduce 'problems of interpretation' as a potential series in AARGnews and at our meetings. I was going to write about some recent confusion in the Lincolnshire fens - but I’d no longer got the relevant photographs.... Your contributions please.

References


LUFTBILDARCHÄOLOGIE IN HAMM
BUNDESREPUBLIC DEUTSCHLAND

von Wolfram Letzner

1. Einleitung


2. Aufgabenstellung


3. Arbeitsgrundlagen


Sehr wichtig für das Projekt "Luftbildarchäologie in Hamm" ist die Auflistung "Archäologische Fundstellen in Hamm", die vom Westfälischen Museum für Archäologie/Amt für Bodendenkmalpflege in Olpe herausgegeben und ständig fortgeschrieben wird (Wrede 1991).
4. Naturräumliche Bedingungen


Neben dem unmittelbaren Bereich entlang der Lippe und auf den Lippeterrassen bietet die naturräumliche Gliederung noch eine Anzahl von weiteren Siedlungsflächen, die als Hügelland oder Platten ausgewiesen sind.

5. Beispiele


Abb. 4 Auszug aus einer Erstkartierung nach Senkrechtbildern im Bereich Hamm-Kötterberg (DGK 5 1630)

Abb. 5 Umzeichnung einer Schrägaufnahme im Bereich Hamm-Kötterberg


Beim folgenden Beispiel ist am linken Bildrand (Abb. 7,1) ein rechteckiges Feld mit vielen kleinen Punkten erkennbar. Vielleicht handelt es sich um ein Gräberfeld. Am rechten Bildrand ist ein größeres Feld mit Kreisstrukturen und Rechtecken, die sich auch bis zum unteren Bildrand fortsetzen (Abb. 7,2). Im oberen Bildabschnitt ist ein ausgegrenzter Bereich erkennbar (Abb. 7,3). Besonders deutlich ist eine Grabenstruktur im vorderen Bereich, die daher auch nur in die Skizze eingetragen ist. Strukturen wie Kreise und Rechtecke sind als positive und negative Bewuchsmerkmale erkennbar.

Ein Vergleich mit den Senkrechtbildern (DGK 5 1830 Hamm-Frielick) hat gezeigt, daß eine hohe Konzentration in diesem Bereich vorliegt. Um diese aber sinnvoll kartieren zu können, müßten Aufnahmen größeren Maßstabs vorliegen.

Archäologische Funde in einem Umkreis von etwa 1 km sind vorhanden (Wrede 1991), doch ist ihre zeitliche Stellung sehr unterschiedlich. Sie reichen von der Steinzeit über die Spätantike bis zum Mittelalter. Daher sind sie für eine Interpretation und Datierung in diesem Falle nur wenig hilfreich.

1Diese Kartierungen stellen einen Nachtrag dar, der durch günstigere Arbeitsverhältnisse möglich wurde.
Im oberen Abschnitt des letzten Beispiels (Abb. 8,1) sind Grabenstrukturen erkennbar, die Kreise und
Rechtecke umschließen. Weitere Strukturen sind unmittelbar an der Straße zu sehen (Abb. 8,2). Unterhalb der Straße befindet sich ebenfalls ein großer Komplex mit 'Siedlungsspuren' (Abb. 8,3). Die Bäume und die Straßenkreuzung sprechen dafür, daß hier ältere Wege vorhanden sind.

Bei der Interpretation des letzten Luftbildes deuteten sich relativ enge Paralleleien Erscheinungsbild römischer Übungslager in Luftaufnahmen an, so etwa mit Anlagen in Alpen in der Nähe von Xanten (Sölter 1981, S. 254 f.). Sollten Geländebegehungen in diesem Bereich römisches Material erbringen, dürfte man die Beobachtung als Dokument zur augusteischen Germanienpolitik, besonders aber im Zusammenhang mit der Varus-Schlacht des Jahres 9 n. Chr., sehen. Bedenken in der Beurteilung wurde allerdings durch die wenig planmäßige Verteilung der oben beschriebenen Innenstrukturen geweckt, so daß der Verfasser die Deutung höchstens als Hypothese verstanden wissen will.

6. Geländearbeit


Der Begriff läßt sich am besten mit lay archaeologist übersetzen.

7. Resumee


Abbildungsverzeichnis:
Abb. 3: Umweltamt - Vermessungs- und Katasteramt der Stadt Hamm (Hrsg.), Stadt Hamm, Naturräumliche Gliederung (auf Grundlage des Blattes 97 Münster der naturräumlichen Einheiten, hrsg. vom Institut für Landeskunde [1960])
Abb. 4: Kartierung W. Letzner auf DGK 1630
Abb. 5-8: Kartierung (10.9.91) nach Schrägaufnahmen (21.8.91). Copyright Wolfram Letzner.

Auswahlliteratur:
Landesvermessungsamt Nordrhein-Westfalen (Hrsg.), Deutsche Grundkarte 1:5.000 (unterschiedliche Jahrgänge).
H. Wrede (Bearbeiter für das Westfälische Amt für Bodendenkmalpflege Olpe), Archäologische Fundstellen in Hamm. EDV-Datei und Karte 1:25.000, letzte Ausgabe 1991.
This letter to the editor is inspired by Strat Halliday's enthusiastic (brave) presentation to AARG in Glasgow last year, in which he highlighted a few of the problems encountered by the Royal Commission on the Ancient and Historical Monuments of Scotland's Afforestable Land Survey (ALS) team.

Strictly with reference to the survey of an Industrial landscape at Muirkirk in Strathclyde, Strat made it clear that in his opinion plotting from vertical APs, even with the benefit of EDM ground control, produced unsatisfactory results. The following, taken from RCAHMS's Afforestable Land Survey vol.1, might be a summary of Strat's presentation. "Overlay sheets were created.... On to this a framework of EDM plots and existing map detail was drawn, to which were added transcriptions or plots of aerial photographs....., it proved inadequate for the complexities of Muirkirk's industrial landscapes." But why? The answer, corporate as quoted, though Strat's in spirit; "....industrial landscapes are too complex, [to be drawn by lines] because of the processes of extraction involving the use and reuse of the same ground and the creation of inter-related monuments of high density and variable relief."(spoil heaps?) This does not explain why plotting from APs with the benefit of EDM control was inadequate, a situation which I would think near to ideal. If Strat meant to say that the detailed analysis of the generative and degenerative processes that resulted in the relict landscape at Muirkirk was impossible by the above method then he is quite correct. If as I suspect, he is saying that this methodology is incapable of producing plots of sufficient detail to satisfy the requirements of a planning constraint map then he is mistaken. Perhaps the problem lies in the structure of the ALS team which does not appear to include an AP interpretation specialist; not very forward thinking for a team which is engaged in "....experimentation with new approaches to survey techniques." The extracts above, quoted from a chapter entitled 'The Development of a Methodology' illustrate the low priority accorded to APs by the survey team. AP transcriptions seem only to have been added after the completion of field survey.

Another possible approach appears to have been overlooked with the failure to recognise the potential of John Haigh's AERAL software as a rapid survey tool. This is despite the support of staff in the drawing office where AERAL is in frequent use.

In fairness, Strat implied that the main problem was lack of familiarity with the subject which meant that the ALS team could not understand a lot of what they were seeing on otherwise good quality verticals. This is a problem some of us face on a regular basis and counter by familiarisation visits to keep
our "learning curves vertical", but we leave the survey equipment in the office.

Perhaps the crux of the problem lies in deciding what questions or contingencies we are trying to answer or to meet by surveying any landscape. In this case just how much detail is needed in order to assess the likely archaeological impact of large scale development such as afforestation? In terms of creating a basic record for previously unrecorded industrial landscapes non-specialist vertical APs are proving invaluable (even without the benefit of EDM ground control.) This has recently been demonstrated by the Yorkshire Dales Project (RCHME) which involves 1:10,560 manual transcription and by a photogrammetric survey of Greenside mine in Cumbria (RCHME) which was carried out in conjunction with field survey. There is no other effective way of obtaining a rapid and low cost overview of such landscapes from which the majority of the key elements can be identified and recorded - albeit at a basic level. Having completed the AP transcription stage, problem sites and areas of negative response with poor or non-existent AP coverage can be highlighted and recommended to field teams for ground prospection and/or detailed survey. By positive targeting of effort in this way substantial savings in field time can be made, steering the survey team around areas which in terms of the basic record, have been adequately covered by the AP survey.

Unlike prehistoric landscapes which are often hard to identify and impossible to define, recent industrial landscapes are often made easier to decipher by a wealth of related cartographic and documentary evidence. We frequently know the names of the men who created them, the dates when production started and ended, the size of the work-force, the mechanical and scientific processes involved, the economic and political factors behind an industries rise and fall. Is it therefore necessary to always survey every nuance of the "....inter-related monuments of high density and variable relief."?

Industrial landscapes are relative new-comers to the national archaeological record, they come with a whole new range of challenges for the surveyor, whether aerial or terrestrial, so rather than picking at them with old survey methods we should be coming together to devise new methodologies that will bring them into the record efficiently and comprehensively. Maybe we can all do more to encourage our colleagues on the ground to appreciate the excellent aerial photographic archives as a primary source rather than as a post ground-survey poly-filla.
PHOTO-CD SYSTEMS
Rog Palmer

During a meeting of the AARG committee some of the latest developments in accessible (ie not too expensive) technology were aired and included mention of the development, by Kodak, of an image storage system on CD. Such discs, new on the market and known generically as CD-ROM, can hold vast quantities of information - there is, for example, a Guinness Disc of Records - and enable its rapid access from a virtually indestructible source. As with the introduction of audio CD some 10 (?) years ago, prices are initially high. The Guinness disc costs £65, a Photo-CD player (Philips are manufacturing one in conjunction with Kodak) between £300 and £400 or, for interaction with a computer, a CD-ROM drive will cost upwards of £300, plus a similar amount for any necessary upgrade boards and basic software.

Kodak's advertising is aimed at the amateur market, which will help bring the price down, with such blurb as 'lets you watch your photographs on TV' (although even to avid TV viewers a sequence of still shots is unlikely to have quite the same attraction as a video of the family). Despite this, gimmicks catch on and it is not the intention of this note to investigate amateur use of Photo-CD but to consider its uses, and their effects, in our aerial world.

To get from exposed film to CD, the film (monochrome or colour) goes through its normal processing (and printing if required) after which the film is scanned and digitised and written to the CD. Alternatively old film stock can be similarly transferred. The written CD can then be read to a TV screen, into a computer, or used to produce digital prints - although prints are cheaper using conventional photographic processes.

One of the obvious advantages is the storage capacity of a disc - curators of our air photo libraries will love it. A single 120 mm disc can hold about 100 frames of scanned in 35mm pictures, which is equates to one of the CUCAP oblique boxes, or a not-overfilled NLAP red box (which have been known to squeeze in about 200 photos and weigh several pounds!). Another advantage is that, once in digital form, any image is available for manipulation using image processing software so that fun and games - and maybe something useful - may result. In this respect some of the major companies, including IBM, Hewlett-Packard and Microsoft, 'endorse Photo-CD for software' which should be available to coincide with the system release.

Writing as an occasional user of our air photo libraries I can foresee one potential disadvantage of disastrous proportions - that the curators of these collections, overawed by the creeping expansion of red boxes or filing cabinets, will think that Photo-CD is the answer to all their storage problems. In that respect they are correct - but how are the users to gain access to the digital record? CD storage might be suitable for access, via screen, by the picture researcher but will screen resolution be high enough to pursue the odd elusive crop mark? As one who fully intends to map a mere 10 percent of England before senility strikes what, I wonder, will be the process necessary to maintain the supply of copies of all the photographs which I need to refer to during interpretation? One of John Hampton's achievements when head of the RCHME APU was to win the battle which resulted in all 70mm negatives being enlarged to 250 x 250mm prints - an ideal size for interpretation. Since John's retirement there has been passing thought to reduce the size of these prints, but good sense prevailed, although I can see that with the advent of Photo-CD the chance to foil the photo-interpreter may again arise. I cannot make the point more strongly than to insist that anything less than the current practice to print all air photographs, as large as practicable, will result in a considerable degradation in the confidence and quality of their interpretation.

Cost is another matter to consider. Once away from Kodak itself prices will be set by the photo finishers and I have read estimates ranging from £15 to £44 for writing 100 frames to disc. Once there, prints can be output rapidly and for a cost of £2.65 per 8" x 10" (plus the ??thousands needed to purchase a suitable printer-computer system) although the 'commercial' price is likely to be in the region of £8. The demonstration digital print sent to me by Kodak is (of course) good - until looked at through a pocket stereoscope, when I could not see what I would call a single sharp line, although this may be due to using colour film and enlarging from 35mm to 8" x 10". Black and white stock (there was no monochrome demo print available) may also suffer loss of image quality due to scan.

Another, perhaps minor, point is that in all the advertising seen so far I have not yet detected any hint of permanent labelling of discs. Imagine the potential, even during picture research, for separating a dozen unlabelled CDs from their boxes....
These first impressions of the new Photo-CD system may be somewhat short-sighted. Bob Bewley commented that he welcomed the system, and could envisage its use some, say, ten years hence when, using national (and international) communication networks, a scanned image might be whizzed from one person to another along with the comment, 'What do you think of that?'. and elicit a response in time for the sender to remember the original question. Photo-CD may also be a future means of lending photographs when, instead of carting boxes of prints about the country, a handful of discs may hold the same information.

At present the cost of writing to disc prohibits such a use but with CD-ROM drives becoming a standard option on computers their use will obviously increase as a use of conveying read-only information. It would be then up to the user to scan the frames - much as with conventional prints - select the most suitable for its purpose and then obtain working hard copy. When the computer can show me stereoscopic images I might show a little more enthusiasm for the system but until then I, as a photo interpreter, prefer to work with conventional paper prints.

THE INTERPRETER’S LOT - 1

Rog Palmer

Why is it that air photographers take many photographs of a site which is showing well, whereas they often take just one shot of a poor one?

This question posed itself again recently during a long and tedious time spent feeding a basic CUCAP index for the Lincolnshire fens into a dBase file when such a pattern was commonplace. I could argue that the CUCAP material is biased towards the photogenic and may not thus reflect current reconnaissance practice but at the same time I am aware of a lot of recent cover from other sources which shows the same bias. From the interpreters' point of view this is an inverted approach - we want a lot of photographs of the dubious bits and can frequently work from one, suitably controlled, of a goodie.

Aerial photographers in AARG are now all aware of the interpreters' elementary requirements, 'fly higher, take more vertical(ish) pictures, include control points', which resulted from the major change in the use of archaeological air photographs from illustrative to cartographic. Could we now add to the list and ask for more photographs to be taken of the less photogenic stuff?
'MAPPING ENGLAND'

The forthcoming financial year will see a welcome boost to RCHME's budget for external projects to SMR's for mapping at 1:10,000. As many readers will already know there has been a development phase in mapping and description (undertaken by RCHME) allied to English Heritage's Monuments Protection Programme. This has resulted in the production of a software system, MORPH, and mapping projects in Kent, Hertfordshire, Thames Valley and the Yorkshire Dales which are nearing completion.

The approach, using 1:10,000 mapping with a systematic description system (MORPH), is now to be extended for the whole country. The detailed specification and project manuals have yet to be finalised but the programme of mapping will receive an injection of funds in 1992/3. Before the country can be tackled a quantification exercise will have to be done for those counties where the current mapping is not up-to-date or falls within the proposed specification.

As with recent mapping projects, RCHME are most likely to fund those SMR's which can cope with the work, other external contractors, as well as using their own in-house mapping staff.

For further information contact Bob Bewley (RCHME, York) or Roger Featherstone (RCHME, Swindon)

29.2.1992

Map extracts from Yorkshire Dales and Hertfordshire Projects

I am a sucker for any book of aerial photographs, the purchase being justified as ‘in-depth study of techniques and results’. This one didn’t disappoint me as it is packed with very fine photos taken in exotic locations, and not just on page 3 either. The book is a welcome change from the usual Numbsire from the Air routine, in that the locations are mostly maritime, often including ships, as that is the author’s speciality.

The text is less appealing in that much falls into the ‘Flash, Bang, Wallop - What a Picture! - What a Photograph!’ category. However, if the text is shorn of this element there remains a core of useful advice on setting up photographic missions, which is rarely set down in such books. That said, the book does not live up to the second half of its subtitle, in that there is little discussion of applications other than the maritime.

The professional techniques area is better covered although much still has to be put down to experience and a good eye for a picture. I was most interested in the author’s wholehearted endorsement of gyro-stabilisers as being the means to the use of slow shutter speeds and films - pity they are so expensive. There is no formal archaeology in the book, but I think it still well worth having. If undecided, remember the maxim that ‘today is the archaeology of tomorrow’ and suggest it to (or steal it from) your library.

(I bought this book for £10 at a photographic fair in May 1991. I have since seen it elsewhere for about £15. It might be worth keeping an eye open for it in remaineder book shops.)

Anthony Crawshaw


This volume is a posthumous publication, undertaken by ADANE, presenting the results of Maurice Marsac’s aerial surveys and archaeological researches in the Bas-Poitou region bordering the Golfe des Pictons on the western coast of France, between 1965 and 1988. The aerial reconnaissance which revealed the extensive archaeological landscapes described in this complex volume began systematically in 1971.

The book comprises three parts:

Part One deals with the regional context of the archaeological survey, describing geology, geography, and history, and giving a detailed account of archaeological knowledge prior to the aerial survey. The text is clear and informative, but would have been improved tremendously by the addition of clear locational, soil and geological maps plus period sorted maps of known archaeological sites, for those of us who are not familiar with this area (understanding required the resurrection of my old school atlas!). Despite these problems, the Bas-Poitou area is textually well described, and most interesting to me, as it contains lowland wetlands utilised as pasture and arable, (drained in the manner of polders) rising to a cultivated limestone plateau. This gives ample opportunity for recording archaeological sites bordering wetlands in a region with climate and landuse similar to that of north west England. Prior to aerial survey, the knowledge of prehistoric sites in the region was very limited: chapter three gives a good and concise insight into the way in which buried structures show in this region.

Part Two is an inventory of the sites discovered by aerial reconnaissance, divided regionally into two areas, Vendée and Deux-
Sevres. There is a lot of archaeological material locked within this section of the book, but it took a great deal of perseverance, driven by interest on my part, to place the sites therein described into any sort of landscape or archaeological context. Each site is described concisely, and referenced to 'plates' (in Part Three) where applicable. The 'plates' are maps showing representative areas in detail. A wide range of site types show as crop and soil marks in this area spanning periods from prehistoric to recent. Some of these sites hold tremendous archaeological potential for the determination of wetland exploitation in prehistoric and Gallo-Roman times.

Some of the sites described in Part Two are illustrated by line drawn figures which are interpretative tracings (unrectified) from oblique photos. Some of these obliques are reproduced in the volume but are not numbered nor cross referenced from the text. I had to search each of them to see if a particular figure was accompanied by a photograph. I also noticed, eventually, that the figures in Part Two are interpretations from single photographs, chosen as representative, whereas the same sites shown as map-rectified drawings in Part Three often look quite different, being composites of data from multiple photographs. The interpretations, in some cases, are not totally accurate. For example, the photograph from which Figure 13 was drawn shows more detail than the interpretative drawing. There are also no north points on the figures, and the drawings seem somewhat hastily done.

By this point a less interested reader may have given up, but it really was worth the effort to read on through the volume.

Part Three classifies and interprets each site type, drawing information together from the inventory in Part Two.

The increase in knowledge of the prehistoric settlement and exploitation of the Bas-Poitou region which has been gained through aerial photography is akin to the contribution of Derrick Riley's reconnaissance and photo interpretation to the study of the agricultural landscapes of North Nottinghamshire, England (Riley 1980). However, the confusing presentation of Marsac's work makes it difficult to understand the sites within their landscape context. Despite this, the book contains a great deal of information which may be extremely useful to archaeologists with aerial, wetland and fieldwork interests - and the cover photo is rather good.

Reference

Chris Cox

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AMIENS

Latest information

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Is?
This ridiculously expensive book is the third volume resulting from the recent Fenland Survey. Attention is drawn to it mainly because of the short section (pages 97-115) covering the Fen Causeway. The small area of silt fen studied, some 5 x 10 km, is rich in aerial evidence which, if not presented in a way of which I fully approve, allows the reader to see and comprehend the complex landscape which was left after some 400 years of Romano-British settlement and industry. As the person responsible for interpreting the patch next door in Cambridgeshire, I - as is the author - am puzzled by the features called 'pit networks', numbers of evenly sized, square pits (‘c 3–4m in diameter’ p 112) cut in close-spaced groups (plate XII). They appear to respect the RB ditches and, so far, have been recorded only in Norfolk with nothing of the kind being known from Cambridgeshire. Bob Silvester and I have discussed the things and it is only honest to say that we haven't a clue what activity, or activities, they depict. Any ideas?

Pretty, low-level, technically good aerial photographs of (mostly) towns, villages and people (yes, people) in Italy.

The same author may be responsible for Tuscany from the Air which we saw in passing in a Cambridge bookshop (published by Thames and Hudson). Photographic style is similar.

An attempt to make archaeological sense of an area complete with ancient classificatory games. Kindly described by RCHME as a 'pioneering work'. Those of you who missed the glut of publicity in 1984 - buy now.

We thought this may show an interesting use of air photographs. Remembering my fenland field work walkers may find APs useful for the detection of planks which cross dykes and other hints to ease access. Stereo pairs would come into their own as guide for steep bits to avoid - but we didn't notice any in the book.
REGISTER OF CURRENT MEMBERS
1992, PART 1

Members are listed alphabetically, and the following format is used throughout:
NAME, Address/General interests (period, technique, area etc.)/Aerial archaeology interests (reconnaissance, post-reconnaissance, interpretation, transcription, application etc.)

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