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**Hommage à Roger AGACHE**

pour 35 ans de prospections aériennes dans le Nord de la France

Jimmy  
Glibent



## THE ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

### CO-ORDINATING AERIAL RECONNAISSANCE IN ENGLAND

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#### Résumé

La majorité des photographies aériennes concernant l'archéologie a été réalisée il y a plus de 70 ans. Depuis cette époque de nombreuses personnalités et organisations ont développé les nécessaires études techniques et les structures de travail pour exploiter ce potentiel photographique. En 1967, la Commission royale des Monuments historiques d'Angleterre (RCHME) a créé son propre programme de photographies aériennes et, depuis 1986-1987, est aussi responsable de la coordination des subventions accordées aux photographes aériens individuels en Angleterre.

#### Abstract

The major body of aerial photography for archaeology was realised over seventy years ago. Since then, individually or through organisations, the necessary survey and technical operations have been developed to exploit this potential. In 1967 the Royal Commission on the Historical Monuments of England (RCHME) set up its own programme of aerial photography and since 1986-1987 it has also been responsible for the co-ordination of grant to assist individual aerial photographers in England.

#### Zusammenfassung

Der Grossteil der Luftaufnahmen wurden vor 70 Jahren realisiert. Seither haben zahlreiche Persönlichkeiten und Organisationen die notwendigen technischen Studien und Arbeitsstrukturen entwickelt um das Potential der Photographie zu nutzen. 1967 gründete die königliche Kommission historischer Denkmäler in England (RCHME) ein eigenes Programm für Luftaufnahmen und trägt seit 1986-1987 auch die Verantwortung für die Koordinierung der zu Verfügung gestellten Subventionen für unabhängige Luftphotographen in England.

#### INTRODUCTION

The organisation of aerial reconnaissance in England has evolved as a result of historical circumstance, the available resources and the enterprise of a few individuals. The history of aerial photography has been adequately covered elsewhere (DEUEL 1969, HAMPTON 1989) but a few milestones are worth mentioning. The First World War provided the real impetus for the development of

earthworks of the Wessex area in the proximity of the military airfields on Salisbury Plain. It was O. G. S. Crawford who more than anyone else recognized the potential of air photography in England. His work as the first Archaeology Officer at the Ordnance Survey (OS) and the publication of *Wessex from the Air* (CRAWFORD and KEILLER 1928) and *Air Photography for Archaeologists* (CRAWFORD 1929) established new standards for the non-destructive recording of landscapes. Crawford's publications demonstrated the value of repeated systematic reconnaissance of an area and the potential of the wider application of the techniques. It also led to the establishment of an archive at the OS of all military photographs showing archaeological information.

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It was not long before other, equally enterprising individuals followed his lead. Notable amongst these was Major G. W. Allen who, by flying all year round and using a home-made camera, revolutionised knowledge of the Upper Thames Valley, an area of gravel terraces rich in crop-marks (BENSON and MILES 1974).

Just as the First World War affected the development of aerial reconnaissance in general, so the Second World War led to the expansion of its use in archaeology. Several individuals have made major contributions since then, having started as flying crew or as air photographic interpreters. In 1945 Dr, now Professor J. K. St Joseph began aerial reconnaissance and was instrumental in establishing the Cambridge University Committee for Aerial Photography (CUCAP) a few years later. For the first time aerial reconnaissance covered the whole of Britain. Although archaeology was only one of the disciplines for which Dr St Joseph carried out the reconnaissance he nevertheless has been responsible for recording a vast amount of archaeological information and for the establishment of an important photographic archive. By the mid 1960s his work, together with that of the independent flyers, had demonstrated the need for an increase in aerial reconnaissance.

In 1965, the Royal Commission on the Historical Monuments of England (RCHME), aware of the need for a central archive to house the air photographic collections of the independent flyers, created the Air Photographs Unit (APU) as part of its National Monuments Record (Hampton 1989). Two years later the Unit began its own programme of aerial reconnaissance and was soon flying an average of 200 hours each year. During the dry summers of 1975 and 1976 when crop-marks appeared in abundance, the regionally based aerial photographers, widely referred to as "regional flyers", who had previously borne their own costs, sought financial assistance in order to take full advantage of the opportunities. Through its newly formed Aerial Archaeology Research Committee the Council for British Archaeology pressed for government funds to be made available for aerial photography. In 1976, the Department of the Environment, through what is now English Heritage (EH), provided an initial grant of £10 000 towards their flying costs. By 1985, this had increased to £20 000, and is currently £25 000.

## ORGANISATION

In 1986-1987, the responsibility for funding regional reconnaissance was transferred from EH to the RCHME. The principal objective was to provide a more effective integration of the invaluable work of the individual flyer-photographers with

the RCHME's own programme. This brought together most of the significant contributors and created the possibility of achieving an integrated and more effective national approach to aerial reconnaissance. The aims of this approach are to carry out reconnaissance on a year-round basis, to have the widest geographical and topographical spread and cover the widest possible range from prehistoric times to the twentieth century including buildings such as hospitals and textile mills.

In 1989, as part of a general relocation and regionalisation of the RCHME, the APU established two new bases, in Swindon and in York. This change, with two reconnaissance teams now available, provided the opportunity not only for a greater number of hours to be flown, but also to achieve a wider geographical spread.

Whilst there is still a need for some so called "primary" reconnaissance (WHIMSTER 1983) in England it is also necessary to assess the vast amount of photography now in the archives and to develop more strategic programmes for its enhancement.

In 1986-1987, grants totalling about £20 000 helped to support sixteen separate regional reconnaissance projects operating within some twenty-six English counties. This provided around 200 hours of reconnaissance in addition to the 185 flown by the staff of the RCHME. This pattern has continued until the present year but with more emphasis on project-based applications and with a more obvious element of competition between them. Current funding allows for a total of nearly 300 hours of flying by the RCHME's APU staff and about 200 by the regional organisations (fig. 1).

There are about twenty-five applications for grant-aid per annum, requesting a total of £40 000. These have to be assessed according to the criteria mentioned above to keep within the budget of £25 000. Each project has its own research design and most projects receive a grant which will enable them to do between 8 and 30 hours flying. Exemptions from the Civil Aviation Authority's (CAA) Air Navigation Order are granted by the CAA to enable nominated pilots with commercial licences to fly sorties for any RCHME sponsored surveys. This allows for greater flexibility in arranging reconnaissance flights where there are no licensed operators.

Co-ordination and co-operation of this kind offers a number of advantages in that it enables local people to use and develop their regional knowledge and experience. As a result of this many archaeologists can be in the air on the same few fine

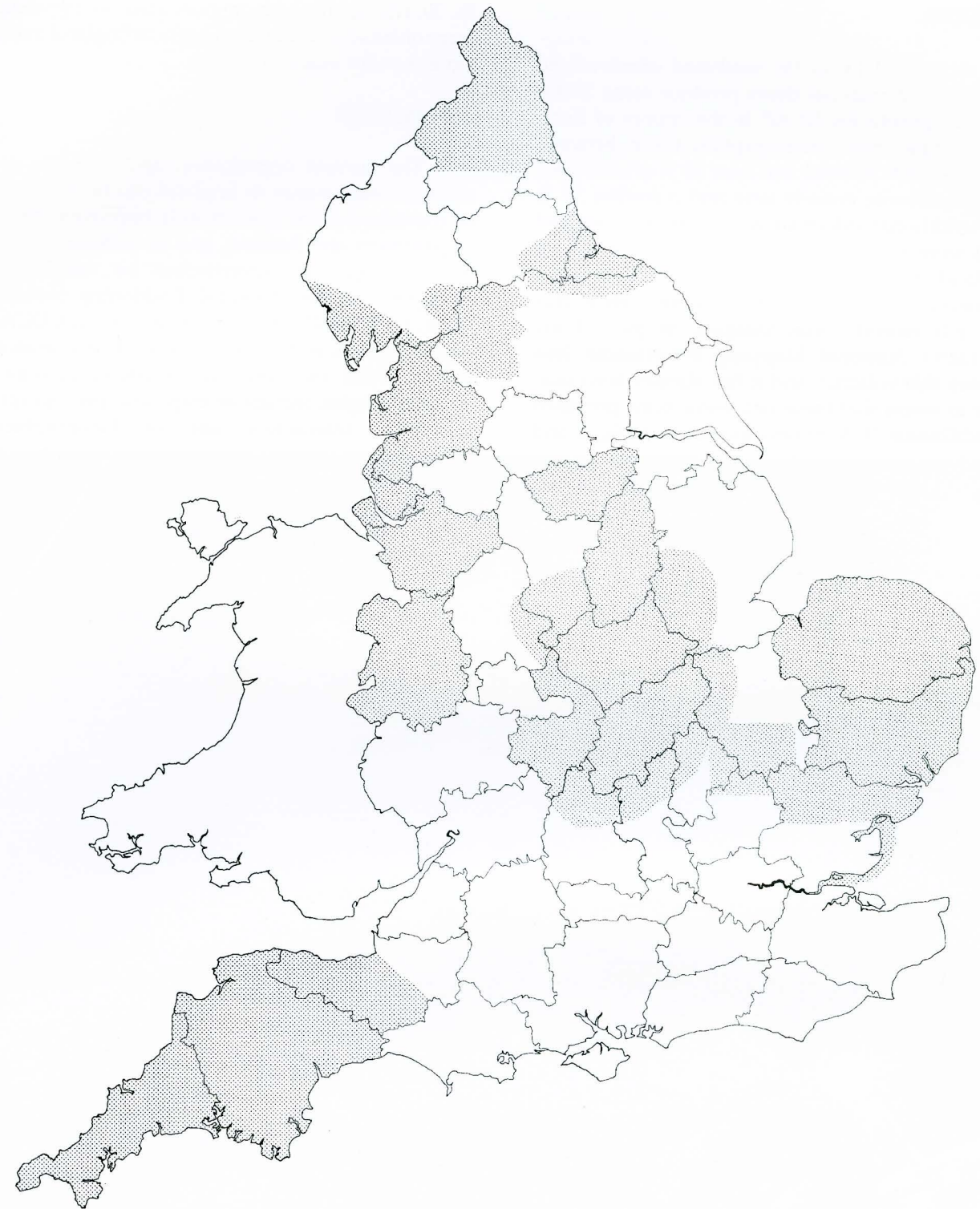


Fig. 1 : RCHME grant-aided regional reconnaissance in 1993-1994.

days throughout England. Research projects are able to run for several years knowing there will be continuity of funding. The approach helps to maximise the relatively modest resources available annually, equivalent to £543 per county, but they can result in over 1 000 new sites being discovered in a good year. In exceptionally dry years there is the possibility of additional hours being granted from a contingency fund.

The system of national grants allowed the establishment of common standards for material destined for the National Library of Air Photographs (NLAP) and the National Archaeological Record (NAR). A copy of every photograph taken is deposited in the RCHME's NLAP. Since 1986-1987, the RCHME has had an overview of almost all proposed reconnaissance.



## RESULTS

In a typical year the combined efforts of the RCHME and regional flyers produce some 20000 air photographs for NLAP. In the county of Kent, for example, new photographs taken between 1987 and 1990 showed that over 40 % of sites photographed were entirely new and a further 37 % had additional information. The years 1989 and 1990 were exceptionally dry ones over much of England and the RCHME's southern reconnaissance concentrated on the Upper Thames Valley. This area has recently been mapped, as part of the RCHME's National Mapping Programme (see Bewley this volume), and it has already been possible to assess that these two years alone provided an additional 10 % of new information (fig. 2 and



Fig. 2 : Buckland, Oxfordshire. Recently discovered causewayed enclosure and other prehistoric enclosures on the south bank of the River Thames. Photographed July 1990 (SU 3299/10) RCHME Crown Copyright.

3). Similar results were experienced on the chalk areas of Wessex and in most parts of England in the same two dry years.

## THE FUTURE

The current organisation and structure for aerial reconnaissance in England can be shown to be cost effective and to work well. Improvements in organisation and funding, and in technology and methodology can nevertheless be made. For example, the use of Global Positioning Systems (GPS) by RCHME's two offices, as well as CUCAP and RCAHMS, will allow for more efficient work in the air. With the future development of digital cameras, digital storage of maps and photographs and the interactive use of Geographical



Fig. 3 : Stadhampton, Oxfordshire. Cursus, long barrow and mortuary enclosure on the east bank of the River Thames, a tributary of the River Thames. Photographed July 1986 (SU 5998/3) RCHME Crown Copyright.

Information Systems (GIS), aerial reconnaissance will become more technical but will be a better informed part of archaeological survey.

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