



INDEX DATA	RPS INFORMATION
Scheme Title A52 Radcliffe on Trent By-pass	Details Aerial Photographic Assessment Archaeology.
Road Number A52	Date 1994
Contractor ARCUS	
County North Yorkshire	
OS Reference Sk 63	
Single sided <input checked="" type="checkbox"/> Double sided A3 Colour	

# A52 RADCLIFFE ON TRENT BY-PASS, NOTTINGHAMSHIRE

## AERIAL PHOTOGRAPHIC ASSESSMENT: Archaeology

Chris Cox MA MIFA, December 1994



*Photograph RC8-GV 191 courtesy of and copyright to © Cambridge University Collection*

**COMMISSIONED BY**  
Archaeological Research and Consultancy at the University of Sheffield, Sheffield S10 2TN

---

CHRIS COX MA MIFA ROG PALMER MA MIFA  
ARCHAEOLOGICAL CONSULTANTS FOR: *Aerial photographic interpretation, accurate mapping and oblique aerial photography*

A52 RADCLIFFE ON TRENT BY-PASS  
NOTTINGHAMSHIRE

**Archaeology:**  
**AERIAL PHOTOGRAPHIC ASSESSMENT**

Chris Cox MAMFA

AIR PHOTO SERVICES  
7 EDWARD STREET  
CAMBRIDGE CB1 2LS  
0223 316393

## CONTENTS

### 1.0: INTRODUCTION

**1.1: Archaeology from Aerial Photographs**

**1.2: The Study Area: Environment and archaeological landscape**

**1.3: Aerial Photographic Sources**

**1.4: Assessment Specification**

**1.5: Interpretation and Mapping Methodology**

**1.6: Arrangement of Report**

**1.7: Maps**

### 2.0 ARCHAEOLOGICAL ASSESSMENT

**2.1: Area Overview**

**2.2: Assessment Results**

### 3.0: GAZETTEER OF SITES INTERPRETED FROM AERIAL PHOTOGRAPHS

### 4.0: AERIAL PHOTOGRAPHIC SOURCES

**4.1: Source: CUCAP**

**4.2: Source: NLAP**

**4.3 Source: Nottinghamshire County Council**

### 5.0: REFERENCES

### 6.0: ACKNOWLEDGEMENTS

### 7.0: TERMS AND CONDITIONS

## 1.0: INTRODUCTION

### **1.1: Archaeology from Aerial Photographs**

Detailed archaeological interpretation of contemporary and historical aerial photographs allows the accurate mapping of archaeological sites recorded as cropmarks (caused by the differential growth of crops over buried features, Wilson 1979, 1982), soilmarks (caused by differences in soil colour over ploughed features, Wilson 1982) and shadows cast by upstanding earthworks. Aerial photographic evidence is, however, limited by seasonal, agricultural, meteorological and environmental factors which affect the extent to which either buried or upstanding archaeological sites can be detected under a given set of environmental conditions (Riley 1987, 17-40) .

Within its limitations, aerial photography and photographic interpretation provides information which cannot easily be detected by other means, and is a complementary part of multi disciplinary archaeological investigation. It also provides a cost effective landscape overview and accurate guidance for ground based investigations or positioning of evaluation trenches.

### **1.2: The Study Area**

The archaeological study area as defined by Archaeological Research and Consultancy at the University of Sheffield (ARCUS) comprises a zone extending approximately 1 km either side of the proposed Radcliffe on Trent By-Pass between Newgate Farm, Bingham and Polser Brook in the parish of Holme Pierrepont. The area is bounded by National Grid References SK620370, SK693370, SK693404 and SK620390. Some sites lying outside the immediate study area have been included to preserve the integrity of archaeological discussion, and highlight areas where archaeological evidence may be present, but masked by environmental or physical factors such as unsuitable soils, alluvium or overlying features.

All soil type data has been derived from the Soil Survey of England and Wales (SSEW) 1:250000 map, sheet 3 and SSEW 1983. The study area lies on clay soils, being SSEW classification 572g, Dunnington Heath Series (Coarse and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging). There is a small area of alluvium at the Western end of the study area, being SSEW classification 813c, Fladbury 2 Series (River alluvium, stoneless clayey soils variably affected by groundwater.) To the immediate north of the study area, the Trent Valley river gravels begin, being SSEW classification 541r, Wick 1 Series (glaciofluvial or river terrace drift, deep well drained coarse loamy and sandy soils, locally over gravel). the gravels show very detailed and complex archaeological landscapes as crop marks due to their free drainage. These soils contrast markedly with the clays and alluvium in their capacity to produce plant moisture stress in times of drought. They are also highly 'workable' soils, again in contrast to the heavier clays, and thus were probably attractive to prehistoric settlers.

The land use is a mixture of arable farming (intensive ploughing and cereal cultivation ), pasture or rough grassland in waterlogged areas and extensive leisure use. Golf course development has been rapid and expansive since the 1970s. There is also some local quarrying.

### **1.3: Aerial Photographic Sources**

The entire study area was subjected to thorough aerial photographic library search, and the most relevant aerial photographic sources which were available for consultation within the timescale of this assessment were consulted and interpreted as judged appropriate to the assessment.

#### **Cambridge University Collection of Aerial Photographs (CUCAP)**

Mond Building, Free School Lane, Cambridge  
All Obliques and verticals.

#### **National Library of Air Photographs (NLAP)**

National Monuments Record Centre, Kemble Drive, Swindon, Wiltshire.

#### **Nottinghamshire County Council**

Trentbridge House,  
Fox Road, West Bridgford,  
Nottingham.

All photographs consulted are listed in section 4 below.

### **1.4: Assessment Specification**

Vertical and oblique aerial photographs were interpreted to identify archaeological and relevant non-archaeological information (the latter including palaeo-channels, soil depth changes and any recent subsurface disturbances which may affect the integrity and understanding of features evaluated in the field). Photo interpretation aimed to qualify reasons for the visibility of archaeological evidence and to explain, as necessary, any gaps in the aerial record. Search also extended slightly beyond the boundary of the assessment area to determine whether any archaeological features were likely to continue from their sources in to the assessment area.

The entire route as noted above was assessed and all archaeological features (from prehistoric through to the National Archaeological Record terminal date of 1945) which were visible on aerial photographs were mapped at 1:10000 scale. Standing buildings were not recorded unless they showed as degraded stone foundations or robber trenches which are best recorded from aerial sources.

All visible sites, whether plough flattened or upstanding, were interpreted and mapped in detail at 1:10000 to an accuracy compatible with that of the Ordnance Survey and within the tolerances of photographic quality.

### 1.5: Interpretation and Mapping Methodology

Photographic interpretation, rectification and mapping was carried out following procedures defined by Palmer and Cox (1993). All photographs were closely examined, under 1.5x and 4x magnification, and viewed stereoscopically where appropriate. Transparent interpretative overlays were prepared, from which archaeological and associated relevant information was digitised.

Interpreted features were rectified, where appropriate, by computer using the Bradford aerial photographic rectification software, AERIAL 4.20 (Haigh 1993). AERIAL 4.20 calculates values for the closeness of control point match and, using an initial plane surface rectification, the mean control point positioning error in all cases was under  $\pm 2.0\text{m}$ . As a check on the accuracy of the computer rectification, modern field boundaries, digitised from the air photographs, were matched to the base maps to help obtain the best fit location for each individual output plan.

In most cases, ridge and furrow field systems were drawn schematically on to the base maps without rectification. The direction, shape and spacing of the furrows is indicated conventionally. Wherever possible, headlands were digitised to give positional accuracy and create a framework for the mapping of the ridge and furrow.

### 1.6: Arrangement of Report

The assessment report presents an overview of the archaeological sites in the study area in context of the environment and surrounding archaeological landscape. All sites are then fully described in a tabulated format. For ease of identification and reference, the study area has been divided into 16 discreet areas for discussion.

### 1.7: Maps

All the sites recorded from aerial photographs are mapped at a scale of 1:10000. Control information was taken from the dyeline copies of 1:10000 OS quarter sheets SK63NW, SK63NE and SK64SE provided by the RCHME and Nottinghamshire SMR. Slight scale differences were noted between all the copies (this usually happens as a result of the copying process). The construction of a 'perfect grid' was not advisable in this case, as the resulting map is a composite figure, relying on the integrity of an area covering all three OS quarter sheets. Small discrepancies of scale may occur, and the resulting overlay represents a 'best fit' illustration of the archaeological sites within the study area. Appropriate drawing conventions differentiate site type on these plans and are noted in the keys attached to each drawing. The condition of each site is also noted on the maps, where appropriate, as:

- 'C': Plough flattened site showing as crop and/or soil marks.
- 'V': Plough flattened site showing as vestigial earthworks which may not be visible on the ground.
- 'E': Site showing as upstanding earthworks.

## 2.0: ARCHAEOLOGICAL ASSESSMENT

### **2.1: Area Overview**

The study area contains evidence of Medieval agricultural land use in the form of extensive ridge and furrow field systems and their associated headlands (formed at the point where the plough turned, and seen as a sinuous bank). Much of this Medieval landscape has now been eroded and is used predominantly as arable land or as golf course. The ridge and furrow on the present golf course can be seen very clearly beneath the modern land use.

The question of extent of any prehistoric archaeological features surviving, but masked by soil type or Medieval and present land use in this area, is important. In general, as Medieval landscape is ploughed away, it begins to reveal underlying pre Medieval archaeological features, which were ploughed in the Medieval period. These remains of banked and ditched settlement sites show as crop or soil marks, as their presence affects the condition of the soil and subsoil beneath the ridge and furrow. This is common to many areas of ridge and furrow throughout the UK. However, the clay soils are not regarded as having been particularly attractive to prehistoric settlers, being heavy and difficult to work. They are also very slow to produce crop marks in the presence of buried features, except during times of high soil moisture deficit, due to their small particle size and water retentive properties. (Jones and Evans 1975). Persistent aerial reconnaissance over many years can reveal buried sites on clay soils, as has been observed by the author during aerial reconnaissance in Cambridgeshire and Nottinghamshire. These sites show infrequently and faintly. One such site, lying just outside the study area near Cropwell Butler, is mapped and described below as Area No. 15. It is therefore incorrect to state that there are no prehistoric archaeological sites in the area because they are not visible on aerial photographs, or have not been photographed to date. There is an unfortunately unquantifiable likelihood that some prehistoric sites are masked beneath ridge and furrow or by soil type. The area to the immediate south of Area 1, a complex cropmarked site, should be regarded as one of high archaeological potential, although no definite archaeological features are visible here. The area lies on the interface of gravel and alluvium, and any further features may be masked by the alluvial soils at this location.

Possible crop marked sites recorded at SK638379 at SMR 801, and at SK634378 as SMR 804, were not seen on photographs examined for this assessment, and may be of non-archaeological origin.



**2.2: Assessment results**

**AREA NO: 1**

**NB: Out of assessment area - included for information only.**

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK625386	Holme Pierrepont	Holme Pierrepont	SK6238/1-8, 10-26	Ring ditches, enclosures, ditches and possible gravel quarrying. Cropmarked. A possible feature, at SK67453830, was not seen, but was noted by TPAT during assessment at Holme Pierrepont, as a possible feature.
			CII 9-13	
			BTK 25-6	

There is a high likelihood that these features may extend into the assessment area to their south, at the interface of the alluvium and gravel, although they have not been recorded as crop marks within the assessment area.

**AREA NO: 2**

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK630380	Not named on map	Holme Pierrepont	RC8-GV 191	Ground disturbances, probably due to undated quarrying.

**AREA NO: 3**

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK632378	Not named on map	Holme Pierrepont	FSL 3/348	Linear features, seen as dark lines in crop, probably non archaeological / agricultural. Not seen on other photos, therefore an unknown quantity for assessment.

A52 Radcliffe on Trent By Pass Aerial Photographic Assessment: ASSESSMENT RESULTS

Area No: 4

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK625375	Polser Brook	Holme Pierrepoint	FSL 3/348	Traces of former stream channels, seen in relief (slight) in pasture.

Area No: 4a

**NB: Out of assessment area - included for information only.**

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK622376	Holme Lane	Holme Pierrepoint	SK6237/1-8	Ditched enclosure and possible ring ditch. Cropmarked.

Area No: 5

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK634378	Mineral Railway	Holme Pierrepoint	RC8-GV 191	Ridge and furrow. Earthwork.
SK634381	Holme House	Holme Pierrepoint	RC8-GV 191 RC8-GS 44	Ridge and furrow. ?Earthwork.

Area No: 6

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK640379	Sewage Works	Radcliffe on Trent	RC8-GV 191 RC8-GS 44	Ridge and furrow plus ?recent field boundary. Cropmarked.
SK637384	Nursery	Radcliffe on Trent	RC8-GV 191	Ridge and furrow. Vestigial.
SK645380	Sewage Works	Radcliffe on Trent	RC8-GS 13	Ridge and furrow. Cropmarked.

A52 Radcliffe on Trent By Pass Aerial Photographic Assessment: ASSESSMENT RESULTS

Area No: 7

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK644385	Grantham Road	Radcliffe on Trent	FSL 3/377	Ridge and furrow and headland. Cropmarked and vestigial. Small pit or depression, of unknown origin.

Area No: 8

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK650387	Sunpit Plantation	Radcliffe on Trent	RC8-GS 13	Probable headlands. Cropmarked.
SK653384	Sunpit Plantation	Radcliffe on Trent	RC8-GS 13	Ridge and furrow. Earthwork, vestigial
SK657384	Sunpit Plantation	Radcliffe on Trent	FSL 3/377, 4/497	Ridge and furrow. Vestigial.

Area No: 9

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK655378	Hall Farm	Radcliffe on Trent	RC8-GS 13	Ridge and furrow. Earthwork.
			FSL 3/377	

Area No: 10

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK661379	Radcliffe Barn Farm	Radcliffe on Trent	RC8-GQ 272	Ridge and furrow. Cropmarked.
SK662380	Radcliffe Barn Farm	Radcliffe on Trent	RC8-GQ 272	Ridge and furrow. Earthwork.
			FSL 3/377	

A52 Radcliffe on Trent By Pass Aerial Photographic Assessment: ASSESSMENT RESULTS

Area No: 11

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK656390	Golf Course	Radcliffe on Trent	RC8-GQ 272 RC8-GS 13	Ridge and furrow. Earthwork, vestigial and cropmarked.
			FSL 4/497	
SK664394	Parr's Barn Farm	Radcliffe on Trent	SK6639/1 RC8-GQ 271	Ridge and furrow. Earthwork in 1930s. Now levelled
SK666395	Parr's Barn Farm	Radcliffe on Trent	SK6639/1 RC8-GQ 271	Ridge and furrow. Earthwork in 1930s. Now levelled

Area No: 12

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK670393	Home Farm	Radcliffe on Trent	RC8-GQ 271 FSL 4/497	Ridge and furrow. Cropmarked.

Area No: 13

Whole area also surveyed from photos: FSL 4/496-498.

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK671399	Oatfield House	Saxondale	SK6640/2 SK6740/1	Ridge and furrow. Earthwork in 1933, cropmarked in 1977
SK678401	Lodge Farm	Saxondale	SK6740/2	Probable ridge and furrow. Vestigial in 1978.
SK683393	Lings Farm	Cropwell Butler	PQ 93, 95-96	Ridge and furrow. Earthwork in 1955.
SK688399	Saxondale Island	Saxondale	JC 94	Ridge and furrow. Earthwork in 1952. Now levelled.

Area No: 13 *continued*

NGR	SITE NAME	PARISH	PHOTO SOURCE	DESCRIPTION
SK684398	Manor Farm Cottages	Saxondale	LI 67	Ridge and furrow. Earthwork in 1953.
			SK6839/4	
SK681401	Lodge Farm	Saxondale	SK6840/4-5	Possible ridge and furrow. Cropmarked.
SK684401	Lodge Farm	Saxondale	SK6940/1	Ridge and furrow. Earthwork in 1933.
SK682395	Ling's Farm	Cropwell Butler	RC8-GR 243	Ridge and furrow. Cropmarked.

Area No: 14

NGR	SITE NAME	PARISH	PHOTO SOURCE	DESCRIPTION
SK688392	Foss Farm	Bingham	FSL 4/496	Ridge and furrow. Cropmarked.

Area No: 15

NB: Out of assessment area - included for information only.

NGR	SITE NAME	PARISH	PHOTO SOURCE	DESCRIPTION
SK678378	Lodge	Cropwell Butler	SK6737/1-4	Complex of ditches and enclosures, possibly a prehistoric settlement or agricultural landscape. Cropmarked.
			SK6738/1	

Area No: 16 *over page*

Area No: 16

**NB: Out of assessment area - included for information only.**

<i>NGR</i>	<i>SITE NAME</i>	<i>PARISH</i>	<i>PHOTO SOURCE</i>	<i>DESCRIPTION</i>
SK691398	Bingham	Bingham	SK6939/1	Natural striations in underlying soil or geology showing as crop marks, which could be mistaken for archaeological linear features running into the study area. This phenomenon has been frequently recorded, where natural features are mistaken for archaeological (see Palmer, 1992). The site is now built over by modern Bingham.

#### 4.0: AERIAL PHOTOGRAPHIC SOURCES

##### **Photographs Consulted**

##### **4.1: Source: CUCAP**

###### **Obliques**

BTK 25-26	30 June 1975
CJI 9-13	10 July 1979

###### **Verticals**

All monochrome prints, good quality clear photographs, minimal cloud.  
1:10000 scale county survey, 1984.

RC8-GQ 271-75
RC8-GR 226-227, 243-246
RC8-GS 13-14, 43-44
RC8-GV 191-194

##### **4.2: Source: NLAP**

Specialist oblique collection coversearch No:CLK935197BQ

Specialist collection, monochrome oblique prints and Crawford Collection verticals.

SK6237/1	1 June 1967
SK6237/2, 3	6 July 1970
SK6237/4	19 July 1971
SK6237/5-8	28 July 1977
SK6238/1-5	1 July 1962
SK6238/6-8	01 June 1967
SK6238/10-14	01 January 1965
SK6238/18, 19	6 July 1970
SK6238/20, 21	1 July 1966
SK6238/22	15 July 1970
SK6238/23	30 July 1971
SK6238/24	10 July 1976
SK6238/25, 26	28 July 1977
SK6639/1	Crawford Collection , pre-1940
SK6640/1	10 July 1932
SK6640/2, 3	13 May 1933
SK6737/1, 2	1964
SK6737/3, 4	15 July 1970
SK6738/1	June 1961
SK6740/1	25 July 1975
SK6740/2	13 June 1978
SK6740/3	19 May 1974

SK6838/2	1964
SK6838/3, 4	15 April 1955
SK6838/5-9	Unknown date
SK6839/1-3	30 June 1952
SK6839/4, 5	21 April 1953
SK6839/6, 7	15 April 1955
SK6840/1, 2	1963
SK6840/3	28 July 1977
SK6840/4-6	13 June 1978
SK6839/1	1964
SK6839/2	28 February 1969
SK6939/1	1967
SK6940/1	8 June 1933

#### 4.3: Source: Nottinghamshire County Council

Verticals      Fairey Surveys Ltd (FSL), 1 June 1971, 1:12000, monochrome prints.  
Good quality clear photographs, used for archaeological assessment.

7145/ 3/ 232-234, 346-348, 374-377  
7145/4/ 534-536, 496-498

Geonex Ltd., 11 June 1992, 1:10000 Colour prints.  
Good clear photographs, used for comparison and checking of modern  
land use.



5.0: REFERENCES

- Haigh, J G B, 1993. A new issue of AERIAL – Version 4.20. *AARGnews 7*
- Jones, R.J.A., and Evans, R., 1975 Soil and crop marks in the recognition of archaeological sites by aerial photography. in D.R. Wilson (Ed.) *Aerial Reconnaissance for Archaeology, CBA Research Report No. 12.*
- Palmer, R., 1992 Problems of Interpretation. *AARGnews 4.*
- Palmer, R and Cox, C, 1993. *Uses of aerial photography in archaeological evaluations. Institute of Field Archaeologists, Technical Paper 12.* IFA, Birmingham..
- Riley, D.N., 1987. *Air Photography and Archaeology.* London.
- SSEW 1983 *Legend for the 1:250000 Soil Map of England and Wales (A brief explanation of the constituent soil associations).* Harpenden.
- Also SSEW 1983 Soils of England and Wales. 1:250000 map, Sheet 3, Midland and Western England.
- Wilson, D.R., 1979. 'Factors affecting the distribution of crop marks in the Anglian region', *Aerial Archaeology 4*, 32-36.
- Wilson, D.R., 1982. *Air Photo Interpretation for Archaeologists,* London.

6.0: ACKNOWLEDGEMENTS

The author wishes to thank the following for their help with this assessment:

*Rog Palmer*, Partner, Air Photo Services, for interpretation of CUCAP vertical photographs.

*Alice Deegan*, Aerial Photographic Interpreter, Air Photo Services, for library search and photograph sorting.

*Air Photo Library staff* at CUCAP and NLAP for library search facilities.

*Jane Webster*, ARCUS

*Nottinghamshire SMR* for provision of maps and information.

*RCHME APU and NAR* for provision of maps and information.