

**AIR PHOTO MOSAICS: A SHORT-TERM SOLUTION TO TOPOGRAPHIC MAP  
REVISION IN GREAT BRITAIN 1944-51**

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**Abstract**

Initiated by the Ordnance Survey as a short-term remedy for the lack of up-to-date large-scale mapping, and badly needed for post-war planning and reconstruction, two series of air photo mosaics intended for official use were produced and subsequently published. At first only a series of mosaics at 1:1,250 was planned, but planning authorities successfully pressed for a series of mosaics at 1:10,560 scale. Mosaics were produced originally for government departments, but were put on sale to the public to recoup some of the costs of production. Both series suffered from small demand, high price and interruptions in availability when they were withdrawn for security checks. Those areas covered by the series were selected by planners who needed up-to-date mapping for urban areas which had suffered from wartime bombing or had undergone considerable change. Some rural areas where local authorities had requested them to assist physical planning were also covered. By 1952 the mosaics had served their purpose as substitute maps and were being replaced by regular mapping at the same scales, but they are still valuable for the study of landscape change. Compared with conventional maps, the mosaics show more detail because they are less generalised. They show a rich variety of land uses and urban form, but they have few place names and no descriptive annotations.

One drawback to their use for studying landscape change is their amendment to obscure sites of secret installations. This was achieved by the substitution on the published mosaics of fake landscapes or false clouds to obscure secret installations<sup>1</sup>. Public Record Office files and Ordnance Survey publication reports enable one to reconstruct not only the coverage of the mosaics, but those which were subjected selective editing. Major libraries still hold copies of the unedited mosaics, but these are not yet available for study. Such falsification is strictly limited and mosaics can reveal for the English Midlands and South-East, South Wales and Central Scotland an image of the immediate post-war landscape which may be compared with later air photographs, mapping or the present landscape. Air photo mosaics may well provide the best detailed evidence of the development of urban housing, especially in London before 1940, since large scale mapping of that vintage is out of date or was very hastily revised on the ground. Comparison with German mapping updated from air reconnaissance missions in 1939-41 will be worthwhile<sup>2</sup>.

<sup>1</sup> Board, C. 1991. Things the maps won't show us: reflections on the impact of security issues on map design. Proceedings of the 15th International Cartographic Conference, Bournemouth, Volume 1, pp.136-148

<sup>2</sup> Board, C. 1995. The secret map of the County of London, 1926, and its sequels. *London Topographical Record*, XXVII.

### EARLY EXPERIMENTS IN REVISING MAPS FROM AIR PHOTOGRAPHY

Although Britain's national mapping agency, the Ordnance Survey, had experimented with air photography as a way of up-dating topographic mapping in the inter-war years, this had been confined to an "artistic" air map of Salisbury published in 1919 and experiments to see whether air photography could be employed to revise 1:2,500 plans forced OS to conclude that it was not generally suitable. Indeed the official history of O.S. refers to the "vast amount of work which still needed to be done before aerial methods could successfully be used"<sup>3</sup>.

When the Departmental Committee on the Ordnance Survey (Davidson Committee) reported in November 1938 it recommended the formation of an air survey unit within OS to aid more rapid updating of the 1:2500 plans, but practical difficulties and the outbreak of war put paid to civil air survey. Considerable topographic change occurring around cities and towns had by 1936 made the cyclic revision of 1:2,500 plans inadequate for town planning purposes. In the short-term programme adopted by the Ordnance Survey in 1943 there is no mention of air photo mosaics.

### THE GENESIS OF THE AIR PHOTO MOSAIC SERIES

It was not until 1944, when George Cheetham, Director General of Ordnance Survey initiated another experiment in the Bristol area to see whether Royal Air Force (RAF) air photography could be employed to compile air photo mosaics at 1:1,250. For rural areas the cost of overhauling the 1:2,500 plans by ground survey would have been "out of all proportion to its value"<sup>4</sup> and not then undertaken. Cheetham envisaged a programme of air photography over 12 years starting in the summer of 1945. The Air Ministry agreed that the RAF should undertake this work, provided that the war with Germany were over and that the RAF's operational functions had priority.

### PRODUCTION OF AIR PHOTO MOSAICS FOR OFFICIAL PURPOSES

Once the Ministry of Town and Country Planning had advised on areas which were to be given priority, permission was obtained from the Treasury in September 1945 to issue air photo mosaics to local authorities, public utility services and government departments at £1 per copy. So far only mosaics at 1:1,250 scale were produced to meet the requirements of planning. These were stamped "Circulation Restricted" and were not available to the general public and monthly cyclostyled lists of mosaics were sent to official OS Agents. Contemplating the wider use of these much more up-to-date products, by March 1946 Ordnance Survey turned its thoughts to problems created by the presence of features normally regarded as

<sup>3</sup> Seymour, W.A. (editor) 1980, *A History of the Ordnance Survey*. Folkestone (Dawson) p.235

<sup>4</sup> Cheetham, G.G. 1944. 57, to C.T. Houghton, 8 Nov. 1944, in PRO OS1/1164 Revision of OS Maps. Air Survey. General File.

secret. A procedure was adopted for dealing with secret information on mosaics<sup>5</sup> In the meantime Dr. Willatts of the Research Maps Office, Ministry of Town and Country Planning had asked for forty-one towns and the Birmingham conurbation to be covered at the 1:10,560 (Six-inch) scale instead of the 1:5,000 scale previously desired for planning the New Towns. Consultants urgently required these to draw up the plan for the Birmingham area. This request gave rise to the second series of mosaics, which covered a greater area and is better known. By October 1947 there was substantial coverage at the smaller scale in central Scotland and South Wales. Work continued into 1948 on producing the 1:1,250 mosaics for London, partly to keep the new Air Photo Section occupied while the case for a 1:10,560 series was being prepared for submission to the Treasury. It seems that this move was driven by the desire to sell more copies to the public and thus to recoup more of the costs of production, which involved a kind of work not normally undertaken by the Ordnance Survey. The latter wished to concentrate on Six-inch mosaics in spite of the possibility that they would not pay their way due to small demand for a product five or six times the cost of a map at the same scale.

#### **EXPANSION OF THE SERIES FOR PLANNING PURPOSES**

During 1946 it had become clear that town and country planning requirements were not merely for rapidly produced substitutes for the 50-inch to one mile (1:1,250) plans but sometimes for 1:2,500 plans and more often for Six-inch (1:10,650) mapping which had become very out of date, despite attempts at rapid revision just prior to the Second World War. One reason for further delay in producing Six-inch mosaics was the industrial haze which interfered with air photography of the Birmingham area. When pressed in September 1947, Ordnance Survey's Director of Field Survey who was not "a great air survey enthusiast" agreed to ask the RAF to try infra-red photography. Shortly afterwards further justification for concentrating more on the Six-inch mosaics was its use as revision material for updating six-inch, 1:25,000 and smaller scale mapping as well as a series for sale to the public. However, approval had to be obtained from the Treasury before a second series at the six-inch scale could formally be launched. In March 1948 support was solicited from the Ministry of Town and Country Planning and the Department of Health for Scotland, which dealt with planning there. The Director General's memorandum explained<sup>7</sup> why airphoto mosaics had been produced, but also reveals that there was a strong case for putting effort into the Six-inch mosaics. The reply from the Chief Planner, S.G. Beaufoy confirmed that the Ordnance Survey had done enough at the 50-inch scale to serve their purposes, adding that although they were acquiring stereoscopic air-photograph cover at 1:10,000, the Six-inch mosaics were indispensable. No doubt this was because they were rectified and could be used as substitute maps and did not need any equipment or

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<sup>5</sup> Board, C. 1991, Things the maps won't show us: reflections on the impact of security issues on map design. Proceedings of the 15th International Cartographic Conference, Bournemouth, Volume 1, p.145

<sup>6</sup> Seymour, 1980, p.295. op. cit.

<sup>7</sup> Cheetham, 3 March 1948, in PRO OS1/304 Air Photo Mosaics: Sales to the Public. 219A, 219B

special skills to use them. It was pointed out that under the 1947 Town and Country Planning Act Local Authorities were obliged to produce plans within three years: and OS plans were out of date. "So far as we can see, these air mosaics are going to be the only salvation of Local Authorities if they are to keep to the period of three years or anything like it." <sup>9</sup> On behalf of the Chief Planner, Willatts gave their order of priority to the East Midlands Coalfield, Greater Manchester, Merseyside, the Potteries, Birmingham & Black Country, South Wales and Greater London.

#### **AIR PHOTO MOSAICS TO BE SOLD TO THE GENERAL PUBLIC**

Preparation for putting the six-inch series on sale required a paper justifying prices to be charged. This reveals much of the thinking behind the series. First it was regarded as a national service which cost OS far less and could cost the customer far more for a substitute map than would be charged for conventional maps at that scale. A wish to recover some of the costs of production lay behind the desire to increase sales. Calculations suggested that it would be necessary to sell 13 times the current sales of each mosaic at 14 shillings instead of the then price of £1, assuming that a stock were printed and sold through trade channels at a 25% discount. But twice that number would need to be sold to achieve the same level of "profit" at 7s.6d (37.5p) per mosaic. It was generally felt within the Ordnance Survey that the bulk of sales would still be to local authorities and a few others who had to have them and that the general public's needs were better served by oblique air photographs. By attempting to sell the mosaics more widely by publicising them cheaply, a different market could perhaps be reached. However it was likely that slightly higher rates of cancellations of stock held by agents would wipe out any profit. The paper concluded that selling at a price based on recoverable costs of compilation and printing was unlikely to increase sales to a worthwhile extent, and even less likely to recover a higher proportion of non-recoverable costs such as air survey. Due to the small demand for the series the author advocated mosaics should be produced only for those areas for which there was a demand from the local authority and that all copies should be printed on demand, that the selling price should be decided in concert with the Treasury.

Fortified by the support of the planners, Ordnance Survey approached the Treasury in May 1948 with concrete proposals drawing attention to other reasons for the poor demand for mosaics, listing security regulations and the consequent lack of publicity, lack of complete coverage of towns except for two and their high price at £1 apiece. It sought authority for a series of Six-inch mosaics for not more than six areas of county size selected by the Ministry of Town and Country Planning at a price of 10s retail (7s6d wholesale). At the same time the 1:1,250 mosaics would be continued to be produced for towns which were already 60% completed, but their price would be reduced to 7s6d retail. However the Treasury did not accept the suggestion that mosaics should be printed to order, preferring that print-runs should be limited. They also accepted that mosaics could be regarded as temporary maps and could be priced by taking into account the costs of making the negative and

<sup>9</sup> S.G. Beaufoy, reply to DGOS, 18 March 1948, at PRO OS1/304 230A

positives, but not other preparatory work, such as rectification and compilation. Approval was given for a six-month trial from July 1948, extended for a further period ending in October 1949. Sales and issues of the 1:1,250 mosaics to government departments averaged less than one per mosaic published compared with two and a half mosaics of the six-inch scale. The Ordnance Survey asserted that there was little doubt of a demand for the mosaics, but that sales were disappointing given publicity in the national press. For Scotland similar arrangements were agreed with the support of the Department of Health for Scotland. In the Central region Six-inch maps were from 12 to 15 years old, but 30 or 40 years old elsewhere, even the Special Emergency Edition of 1938 was 12 years old and did not cover the country. Likely demand for mosaics was two or three copies of each published.

#### **OFFICIAL DOUBTS ABOUT THE MOSAICS AS A SERIES FOR SALE**

When the results of the lower prices had been reviewed by March 1949, of the 1:1,250 mosaics, more than three times the number were presented free under the Copyright Act as were sold and issued, while nearly the same number of the Six-inch mosaics were presented, as were sold or issued. This confirmed the greater demand for the Six-inch mosaics, but did little to convince the Treasury that the experiment was a great success. Early in 1950 after further discussions with the Treasury a new policy was adopted for the publication of mosaics. Publication of the 1:1,250 mosaics as a regular series would stop, except for those required to complete the London area. Specific mosaics could be ordered on demand but would cost £24 for the first one and 12s6d for each additional copy. For the slightly more popular Six-inch mosaics Ordnance Survey would complete and publish those on which work had already started or which were required to complete the coverage of areas then nearly covered. After that the publication of Six-inch mosaics as a regular series would cease. Government departments such as the Ministry of Town and Country Planning would be able to obtain mosaics as required. Mosaics would also be produced for local authorities who would be charged the costs of production.

#### **THE IMPACT OF NATIONAL SECURITY POLICY ON THE AIR PHOTO MOSAIC SERIES**

It seems that this restrictive policy was being driven by economic considerations, but the other pervasive issue, that of security was also present in the winter of 1949/50. Suddenly in February 1950 the Ordnance Survey monthly Publication Reports began to advertise sheets of the Six-inch mosaics "republished with slight amendments". The significance of this phrase is revealed by letters from Colonel Bagot, Ordnance Survey to the Superintendent of the Map Room of the British Museum to whom copies of all published sheets had been sent under copyright provisions. On 31 March 1951 he wrote:

"I regret to have to inform you that for security reasons more Mosaics, a list of which is given below, have been withdrawn from circulation. [There follows the list of several Six-inch and 1:1,250 mosaics.] There were two editions of sheets 4204NE, 4204SE and 4253SE. The second editions which can be identified by a small 'B' in the bottom left-

hand corner are not 'security'. I should be glad if any of these Mosaics held in your library could be withdrawn from any catalogues and made inaccessible to readers."

Republished editions carry the letter B and have had certain installations obscured by false fields or painted clouds. At the time of writing (April 1995) the original editions may still not be seen by members of the general public although they are held by the copyright libraries. Examination of the Ordnance Survey's monthly publication reports shows, for the Six-inch mosaics at least, exactly which sheets were republished and therefore which of the original sheets contained installations on the secret list. Thus it is possible to identify those mosaics on which the representation of the landscape has been modified. There is no published record of the 1:1,250 mosaics being republished in amended form, although Colonel Bagot's letter to the British Museum listed six sheets of the 1:1,250 mosaics from Plymouth, London and Dover which were withdrawn from circulation. It can be assumed therefore that they had such a limited circulation, chiefly among planning authorities, that it was not worth the effort of falsifying them. Ordnance Survey sheltered behind the economic considerations when members of the general public wanted copies of a withdrawn 1:1,250 mosaic.

Perhaps reinforced by the security issue, internal criticism of the economically driven policy continued, especially from the Director of Map Production and Publication who in November 1951 wanted to reduce stocks of mosaics and to stop making new ones. He thought "the average member of the public would rather have an out of date map than an up to date mosaic..." There seems little hard evidence for this assertion, except possibly the view by the Assistant Director, Publication Division that the public were misled by relief appearing "inside-out" because North was at the top. This appears to refer to what occurs to relief on air photographs if they are viewed with shadows created by illumination from the south or bottom.<sup>9</sup>

The last notification of mosaics being republished with slight amendments appeared in the report for May 1952. Thereafter economic considerations once again dominated the publication policy for mosaics. In June 1952 Bagot wrote to all Ordnance Survey agents recalling all stocks of mosaics because "it is considered desirable to concentrate all copies of mosaics at this office" <sup>10</sup>. This had the virtue of following policy agreed with the Treasury and reduced the availability of mosaics to zealous seekers of information. Production of new mosaics all but ceased, and to save fruitless enquiries from agents and the public lists of those mosaics whose stock was exhausted were published in the monthly reports between August and October 1952.

#### **FURTHER IMPACT OF SECURITY RULES**

This remained official policy until early in 1954 when the sale of air photo mosaics was stopped, as recorded by a minute made by the Director Establishment and

<sup>9</sup> Ordnance Survey, PRO OS1/305 Minutes 135, 22 Nov 1951 & 134 19 Nov 1951,

<sup>10</sup> Ordnance Survey, PRO OS1/305 142A, 21 May 1952

Finance which read: "The sale and issue of OS Air Photo Mosaics is one of the items that is likely to be affected by new security rules that are expected to be issued during the course of the next week or two. Meanwhile the DG has decided after consultation with DMP and DEF, that further sales and issues should be withheld." <sup>11</sup> What precisely triggered this revision of security rules can only be surmised, but its effect was significant. For, in July of that year another minute referred to the problems created by the new situation, giving details of the impact of current instructions on the sale and issue of air photo mosaics.<sup>12</sup> Crucially, air photo mosaics had passed the test if they did not include a "key point" [a secret installation], but now they had to be examined one by one to see whether they included a feature of the kind embargoed by the new restrictions on what kinds of things could be shown. As requested, information on average issues of mosaics was supplied later that month, showing that demand had declined considerably .

Average Monthly Issues of Air Photo Mosaics:

	1949	1950	1951	1952	1953
Six Inch	390	370	170	160	40
50 Inch	90	40	35	12	8

The number of issues to official libraries was considerable and extended beyond the usual places of deposit to the Natural History Museum. The National Library of Scotland had received 1395 six-inch mosaics, the Natural History Museum 1524 plus 3432 1:1,250 mosaics and the Ministry of Housing and Local Government (incorporating the former Ministry of Town and Country Planning) 745 of the latter. It is also known that the Ministry of Agriculture had been issued 5 six-inch mosaics and that some of these were annotated. Despite this evidence of use, Brigadier M.O. Collins, the Director of Map Production (DMP) wanted to get rid of mosaics. He thought that security implications made the series valueless and that the time had come to destroy remaining stocks and return the negatives to store. The Director of Establishment and Finance (DEF) disagreed, preferring to wait until August 1955. Not satisfied, Collins pressed the point with the Director General, arguing that any change in security regulations was irrelevant to a decision to cancel the series<sup>13</sup>. In the meantime all mention of air photo mosaics was removed from the booklets describing Medium-Scale Maps and Large-Scale Plans whose earlier editions had included them.<sup>14</sup>

Official notification of the impact of this latest security complication was sent in September 1954 under confidential cover to government departments and the

<sup>11</sup> Ordnance Survey, PRO OS1/305 Minute 143, 29 January 1954

<sup>12</sup> Board, C. 1991. op.cit. p.137

<sup>13</sup> Ordnance Survey, PRO OS1/305 Minutes 173-176 January 1955

<sup>14</sup> Ordnance Survey, *A description of Ordnance Survey Medium Scale Maps*. 1955 and *A description of Ordnance Survey Large Scale Plans*. 1954

copyright libraries who had been receiving copies of mosaics. The letter reminded them that "the issue and sale of Air Photo Mosaics was discontinued 'until further notice' pending consideration of the matter by a sub-committee of the Cabinet Committee on the Security of Economic and Industrial Information. This committee has now issued instructions to the effect that Air Photo Mosaics may may not be supplied outside the Government service if they cover certain installations."<sup>16</sup>

As the security checking neared its end in October 1957, it was noted that some key points had been added to the list since the mosaics had been published. While not specifying which the new ones were, this justified the review, which was finally completed in December 1957. The complete list of all mosaics containing details of installations which appear on the current secret list is given in the Ordnance Survey file.<sup>16</sup> It was reported to the Director of Map Production that 6% of the six-inch mosaics and 0.3% of the 1:1,250 were in this category and therefore issued to the British Museum. Should the British Museum be told that "in the interests of national security the listed mosaics are not shown to anybody?"<sup>17</sup> In reply the Director of Map Production considered that the information in the list made it possible to release most of the mosaics for sale to local authorities and schools, to issue unclassified (non-secret) mosaics to the Commission on Ancient Monuments, but wished to defer discussion of access to the listed mosaics by readers at the copyright libraries such as the British Museum. Ordnance Survey were in no hurry to answer the British Museum's queries about the availability of the mosaics because someone had to examine carefully each of the listed mosaics to judge whether it disclosed the existence of a "secret point". Even in January 1958, the recommendation was still to take no action and it was not until 1962 that the issue again became a live one.

#### THE END OF AIR PHOTO MOSAICS AS AN ORDNANCE SURVEY SERIES

As the security checking neared completion in November 1957 the Ordnance Survey's Map Publication Division called for a review of policy to decide whether the remaining stocks ought to be written off. There were 3,745 Six-inch mosaics and 513 1:1,250 mosaics in stock. Only four Six-inch mosaics had been issued in the previous 15 months and no issues of the 1:1,250 mosaics had been made for several years. A few requests for mosaics had been received, but all were turned down.<sup>18</sup> No decision was taken at this stage. Five years later stocks had been reduced by issues to official bodies (137 in 1961) to 2,222. There were then available 800 different Six-inch mosaics and 96 at the 1:1,250 scale. Once again the Publication Division recommended the cancellation of the Policy statement and

<sup>16</sup> Ordnance Survey, Confidential letter to Superintendent of the Map Room, British Museum, dated 1 September 1954

<sup>16</sup> Ordnance Survey, 1957, PRO OS1/305 List 246A, to accompany Minute 246 dated 3 December 1957 by Assistant Division Officer, Large Scale Drawing Branch

<sup>17</sup> Minute 245, *op. cit.*

<sup>18</sup> Ordnance Survey, PRO OS1/305, 243 Minute from Assistant Director Publications Division to Director Publications Division, 4 November 1957

writing off remaining stocks.<sup>19</sup> Mindful of their value to the British Museum, the latter was given first refusal from a list sent to them.<sup>20</sup>

Requests made to the National Library of Scotland (NLS) had disclosed that some individuals who were refused access to the mosaics in Edinburgh had seen them instead at the Department of Health for Scotland. The National Library of Scotland wondered whether the mosaics in their possession were no longer restricted.<sup>21</sup> In a holding reply, Ordnance Survey stated that rules for the issue of air photographs had recently been revised, but that because of the age of the air photography most of the mosaics could be made available, "pending a general ruling from the Departments concerned which they may not yet be in a position to give you, I suggest you should refer individual mosaics for decision on their release whenever any demand for them arises".<sup>22</sup> An inconclusive exchange of correspondence dragging on into 1963 indicates that the newly established Ministry of Housing and Local Government and the Scottish Development Department were responsible for security clearance for air photographs and it seems that no one wished to become involved in the painstaking task of checking each mosaic. Hence the issue remained unresolved - as it does at the time of writing.

#### **THE VALUE OF THE AIR PHOTO MOSAICS: THEN AND NOW**

When the Ordnance Survey finally decided to dispose of the remaining stocks of mosaics they approached the British Museum, who suggested that a set of those available be offered to a university, indicating that "the six-inch mosaics are of great value to geographers and receive considerable use in this Map Room"<sup>23</sup> (Skelton, 1963, 34A). The Director of Map Production sought the cancellation of the Policy Statement and approval for the action taken on disposing of remaining stocks, most of which were given to the new University of Sussex.<sup>24</sup>

When the Ordnance Survey were on the point of cancelling the Policy Statement which had brought the mosaics into being, their assessment was that the series had achieved their aim. Only the Archaeology Division expressed any interest in them, but they had no idea how useful they were without examining each one<sup>25</sup> (Ordnance Survey, 1963, 30). It seems that the desire to release storage space was more

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<sup>19</sup> Ordnance Survey, PRO OS1/306, 9A. Note from Assistant Director Publications Division to Director, Publications Division, 20 July 1962

<sup>20</sup> Ordnance Survey, PRO OS1/306 33A. Letter from Lt. Col. C.W. Farrow to Director, British Museum, 9 September 1963

<sup>21</sup> National Library of Scotland, Letter from Keeper, Dept. of Printed Books to Director General, Ordnance Survey. PRO OS1/306 dated 11 October 1962

<sup>22</sup> Ordnance Survey, PRO OS1/306 Letter 12A to NLS, 18 October 1962

<sup>23</sup> Letter from the Superintendent Map Room to Director General, OS, PRO OS1/306, 10 September 1963. PRO OS1/306 34A

<sup>24</sup> Ordnance Survey, PRO OS1/306 Minute 44 Report from DMP to DG's Committee 12 December 1963

<sup>25</sup> Ordnance Survey, PRO OS1/306 Minute 30 from Archaeology Officer to Assistant Director Production, 5 September 1963

pressing and consequently the Ordnance Survey kept no record copies of the mosaics. Nevertheless the mosaics, for all their faults, contain much more detail than appears on the maps that replaced them. For the Ordnance Survey, the air photo mosaics were not themselves used to revise large and medium scale mapping. They were not sufficiently accurate. Mosaics were temporary maps whose value to OS was to fill a short-term gap in the supply of up-to-date mapping, but to be replaced by regular mapping as soon as it was available.

But for geographers and historians one of their chief advantages lies in their being rectified and related to National Grid sheetlines, making comparison with later mapping much more straightforward. Extra information not found on regular maps includes land use, field boundaries on the Six-inch mosaics and even traffic flow on the 1:1,250 mosaics. The date of air photography is given on each mosaic. Falsification of some detail on some mosaics presents a complication, but it is possible to identify those Six-inch mosaics which were "doctored" and thus to infer from detailed inspection and local knowledge which areas on the mosaics do not represent the landscape at the stated date of air photography. In some parts of lowland England enormous changes in land use and the removal of field boundaries have taken place since with increasing economic support for farming until quite recently. Drainage and enlargement of fields coupled with mechanisation have all played their part. The provisional large-scale maps at 1:10,560 and 1:25,000 of the early post-war period do not normally reflect the changes wrought by the plough-up campaign to increase food production during the Second World War. For students of the rural landscape, the Six-inch mosaics deserve to be taken seriously as an additional source of information to be examined in association with the maps made for the National Farm Survey 1941-43.<sup>26</sup> For students of urban geography the larger scale mosaics give some depth to the urban landscape as it existed for those towns and cities which were badly affected by wartime destruction and before reconstruction on a grand scale began. In particular the almost complete coverage for London warrants much closer inspection as a record of urban land use and traffic densities to supplement contemporary planning documents. It is now clear that the hastily revised large-scale maps of the London area incorporating revisions to the Three-Inch map of London and earlier coverage in 1938 as a precaution against air raids is inconsistently revised and of dubious accuracy.<sup>27</sup>

Major collections of air photo mosaics survive in the copyright libraries in London, Oxford, Cambridge, Edinburgh, Aberystwyth and Dublin, as well as at the University of Sussex in Brighton. Unfortunately there still remain problems of access to some of them by members of the general public.

Note. Sources in official files in the Public Record Office are given thus: PRO OS1/

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<sup>26</sup> See Foot, W. *Maps for Family History A guide to the records of the Tithe, Valuation Office, and National Farm Surveys of England and Wales, 1836-1943*. Public Record Office Reader's Guide No 9, 1994

<sup>27</sup> Board, C. 1995, *The secret map of the County of London, 1926, and its sequels*. *London Topographical Record*, XXVII