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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

Map evidence for the London balloon apron 1917-1918

Bernard Anderson and Deborah Stebbing

In his article describing a mystery map¹ Gerry Zierler included a photograph of a “balloon apron” which like the map itself prompted our interest and speculation. The same photograph appears as the frontispiece in a book written by the Commander of the London Air Defence Area, Major General E.B. Ashmore.² The photograph raised two questions, first whether such an apron was actually deployed and second if it was, are there maps and plans to show its location and hence the location of the apron shown in the photograph. This short article outlines our findings in respect of these issues.

One possible piece of cartographic evidence is found in the section of the ten-mile map covering Southern England included in official history of the War in the Air.³ This map shows the defence arrangements in place around London in January 1918. In addition to giving the location of anti-aircraft guns and searchlights it also shows the path of a balloon apron. This stretches from Enfield via Hainault, Ilford, Barking and Blackheath to Lewisham (*fig 1*). The path of the apron is shown in two colours, yellow for the sections which were already in place and black for those sections which had been authorised but not yet deployed. Two sections are shown in yellow, one north of Tottenham and a second between Ilford and Barking.

Although this map appears to confirm the existence and approximate location of the balloon apron it was produced by Ordnance Survey in 1935, one must assume for inclusion in this official history, and uses as its base the ten-mile map published by Ordnance Survey in 1925. However, Jones quotes from orders given to home defence pilots on 22 September 1917: *Balloon aprons and other obstructions will be established on the line: east side of Lewisham, east side of Plumstead one mile east of Barking, east edge of Ilford, east edge of Wanstead north of Tottenham. No machines are to fly across this line during operations at a height of less than 10,000 feet.*⁴ He adds that on 23 October 1917 the Commander-in-Chief (Home Forces) stated that approval had been given for twenty aprons on a line Tottenham-Ilford-Barking-Woolwich-Lewisham subject to such alterations as experience may suggest.⁵ Both of these provide clear evidence for at least a definite proposal for the balloon apron if not for its actual deployment.

Despite this, the authors were interested in whether cartographic material existed which was produced closer to the time that the balloon apron was being planned and established. Additionally, whether any information it might provide clarified the location of the sections indicated on the map produced almost two decades after the cessation of hostilities.

¹ Gerry Zierler, ‘London Area AD: A mystery map’, *Sheetlines* 102, 36-40.

² EB Ashmore, *Air Defence*, Longmans Green, 1929.

³ HA Jones *The war in the air*, Vol V, Oxford University Press, 1935.

⁴ Jones op. cit. p 68.

⁵ Jones op. cit. p 69.

One possible source came from the chance discovery of an unusual negative outline map (white detail on a black background referred to as “black map”) which though on a different scale (approximately 2.5 miles per inch) matches the information on the ten-mile map in Jones, including the path of the balloon apron (*fig 2*)⁶ This unusual map is a photographic enlargement of the quarter-inch London Area outline sheet originally published in 1916.⁷ It is described as a “photostat copy of the London area showing the defence against hostile air raids 17.1.18”.⁸ Close inspection showed that it comprises nine separate photographs of different sizes which have been mounted to form the enlarged map. It also suggests that the original outline map had already been annotated to show the location of airfields around London and their associated flight paths. The coloured annotation was added once the photographs had been mounted and the enlarged map assembled.

Several books dealing with the impact of bombing raids on London in the summer of 1917 mention the development of the balloon apron, for example Jones,⁹ Cole and Cheeseman,¹⁰ Doyle¹¹ and Castle.¹² Although a detailed account of the development of the balloon apron lies outside the scope of this article, it is appropriate to provide some background information. By early summer 1917 balloons and balloon cordons had been tried as a defence mechanism by the German forces, with the aim of preventing low level bombing. An outline for one such arrangement was found in an undated plan of Pola, a submarine base located in the northern Adriatic (*fig 3*). Similar defences existed in Venice and a delegation from the Royal Flying Corps had visited them in June 1917 to assess their potential value.¹³ One proposal for London appears to have envisaged a series of isolated aprons rather than a continuous screen (*fig 4*).

The real impetus for the development of this type of defence came with the air raid on the night of 4 September 1917. On the following day Ashmore commented on the limitations of London’s air defences and made a recommendation for a balloon apron to be considered as a further means of defence.¹⁴ He provided a detailed outline on 19 September by which time he had identified specific sites for two experimental sections, which if successful would form part of a line of aprons.¹⁵ Early indications of planning are in the form of a small tracing of a section of OS one-inch Sheet 108 (*fig 5*).¹⁶ This undated extract shows the possible locations of three balloon apron sections. It is accompanied by survey reports and field sketches for two of the proposed aprons (1 and 2) undertaken on 15 and 16 September 1917

⁶ TNA MR 1/1907.

⁷ We are grateful to Richard Oliver for drawing our attention to this.

⁸ Note in TNA AIR 1/512/16/3/62.

⁹ HA Jones *The war in the air*, Vol V, Oxford University Press, 1935.

¹⁰ C Cole, E Cheeseman, *Air Defence of Britain 1914-1918*, Putnam 1984.

¹¹ P Doyle, *Fields of the first*, Forward Airfield Publishing, 1997.

¹² I Castle, *The first blitz*, Osprey, 2015.

¹³ C. Cole, E. Cheeseman, *op. cit.*

¹⁴ LADA/157 dated 5 September 1917 in TNA AIR 1/609/16/15/271.

¹⁵ LADA/157 dated 19 September 1917 in TNA AIR 1/609/16/15/271.

¹⁶ London and Epping Forest extract tracing in TNA AIR 1/609/16/15/271.

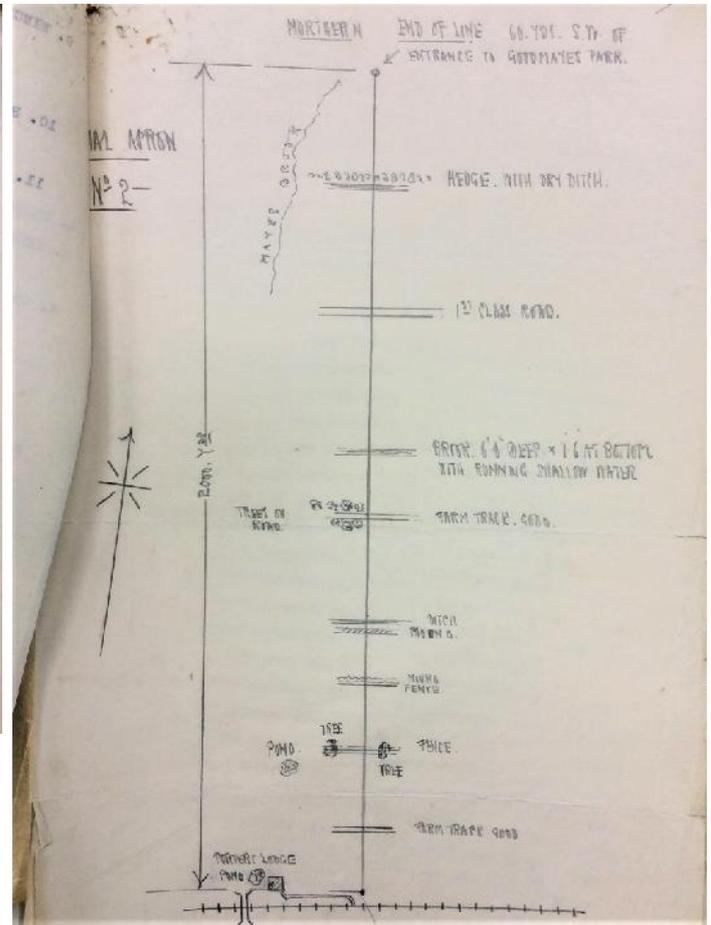
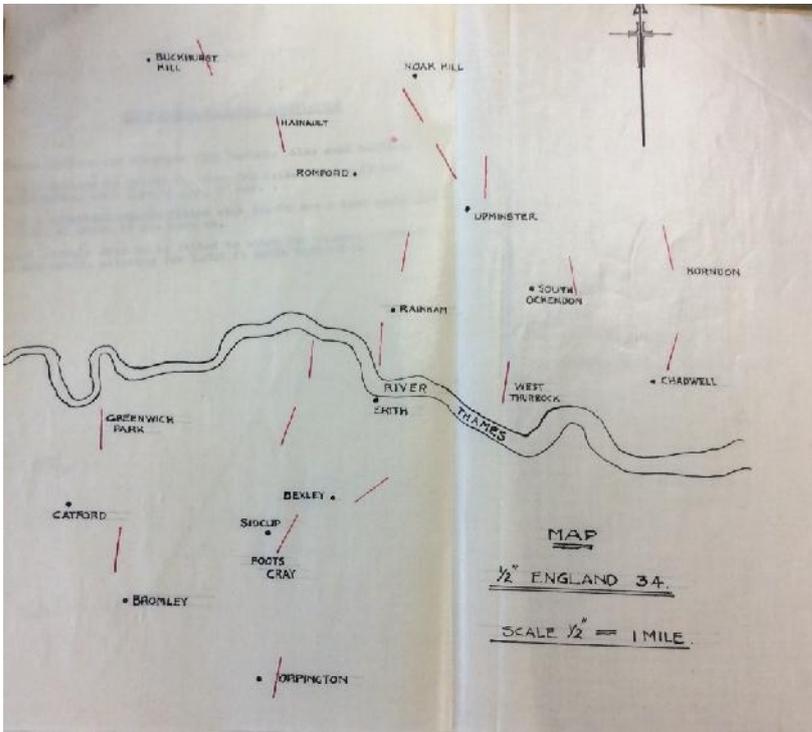


Figure 4 (top left) Proposed balloon defences to the east of London, Home Defence: Proposed Apron Scheme and Establishment, TNA AIR 1/2051/204/379/3.

Figure 5 (above) Extract from tracing of a section of OS sheet 108, TNA AIR 1/609/16/15/271.

Figure 6 (top right) Extract from sketch showing the location of Balloon Apron number 2, TNA AIR 1/609/16/15/271.

Figure 7 (right) Extract from the section of half-inch map, TNA AIR 1/609/16/15/271.

by members of the Free Balloon Section of the Royal Flying Corps. The plan for one of these, Number 2, is shown in figure 6.¹⁷

Details of deployment are found in the document L.A.D.A/157¹⁸ received by GHQ Home Forces on 5 October 1917; "... *the first of the two balloon aprons for which personnel were sanctioned ... has been installed and is in successful operation.*" The same document goes on to state: "*the approximate positions of the proposed aprons is as shown on the attached map.*" The attached map is a section of OS half-inch sheet 34 which has been cut to slightly larger than foolscap size, the right edge of the map section has been folded in and with the passage of time has become damaged with the result that some of the hand-written text has been lost (*fig 7*). The top margin of the map includes a typed heading: "*The suggested Balloon-Aprons will be installed at intervals along the red line. The two blue lines numbered 1 and 2 indicate the position of the existing APRONS.*"

In the event, the installation of balloon apron sections was slower than had been anticipated, by January 1918 only three had been deployed and at the end of hostilities only ten of the twenty sections planned had been put in place.

The reports, field sketches and maps, all confirm the existence of a balloon apron. Additionally, there is at least one report of a German plane striking one of the apron sections which had been installed north of the Thames and reported general concern among German airmen about the apron sections and their locations.¹⁹ However, unfortunately the cartographical evidence is inconsistent, the sketches and annotations, most notably the extract from half-inch Sheet 34 and the 'black map' give conflicting information concerning the location of the sections and the overall path of the apron.

Turning to the photograph contained in Ashmore's book and included in the article by Gerry Zierler, the Imperial War Museum has the negative²⁰ but does not possess any contemporary prints. However, this implies the possibility of it being an official photograph of a section of the balloon apron. We found only one reference to such a photograph. In a letter describing the apron, the commander of Number 7 Balloon Wing includes the comment: '*Attached please find a photograph of the apron in the air at 2000 ft*'²¹ Unfortunately, the photograph itself is missing from the file.

Our hypothesis is that the photograph alluded to in this letter is the one used as the frontispiece in Ashmore's book and is probably Apron 2 – the first to be installed and the most likely to be the subject of an official photograph. Some support for this comes from entries in Ashmore's diary, on the 26 September 1917 he inspected the balloon apron in Barking and then paid further visits linked with testing before gaining approval for the scheme on 21 October 1917.²²

Although initially there seems little in the photograph to indicate its position, closer examination reveals the tell-tale trail of steam from a train. Above that in the middle distance is what appears to be the junction between Barley Lane and Hainault Road and closer to the bottom of the picture Green Lane and its junction with Bennetts Castle Lane (*fig 8*), details which suggest the location as being Apron 2.

¹⁷ Reports of positions 1 and 2 in TNA AIR 1/609/16/15/271.

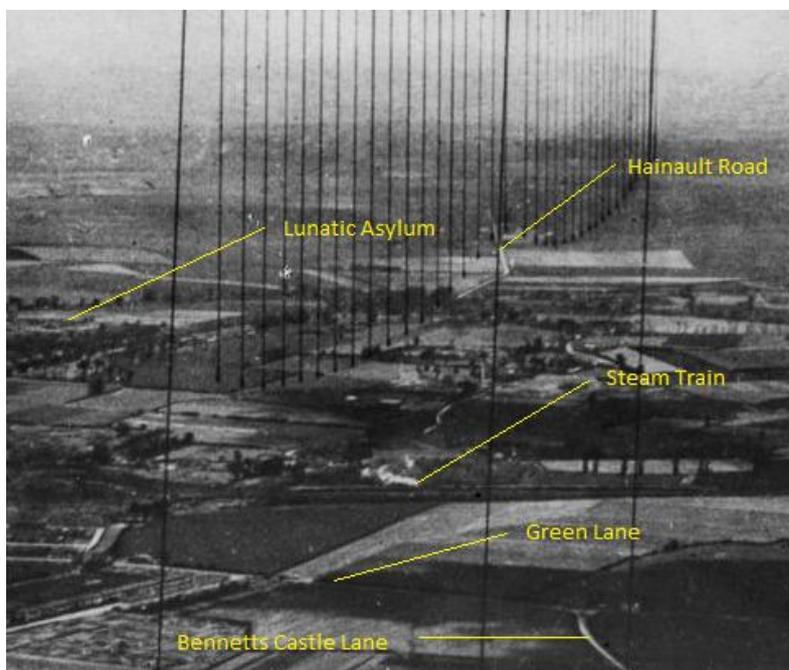
¹⁸ LADA /157 in TNA AIR 1/609/16/15/271.

¹⁹ Extract from the report on examination of prisoners captured on the night of May 19/20, 1918; LADA/157(ii) in TNA AIR 1/609/16/15/271.

²⁰ Home Defence Balloon Apron IWM Q61156.

²¹ TNA AIR 1/609/16/15/271.

²² Private papers of Major General E B Ashmore IWM Docs 11911.



Figures 8a 8b. Extract from the photograph showing a steam train and Hainault Road and one-inch sheet showing the same area.

Midlands Group 'Show and Tell' evening

Lez Watson showed official mapping from many west European countries. His selection demonstrated not only wide variations in styles of presentation, but also highlighted how legends and symbols reflect local priorities. The large number of water-related features on Dutch maps might be expected, but the identification of doctors' houses on maps of Iceland was more surprising, no doubt a reflection of the realities of life in such a sparsely populated country.

Phil Pearson had the largest offering of the evening, a bound set of 1940s six-inch maps (Provisional Edition with National Grid) of south Lancashire, annotated by the Lancashire United Transport bus company for calculation of fares, and mileages for Fuel Duty Rebate, when operating local bus services in the area bounded by Manchester, Liverpool, Bolton, Wigan, St. Helens and Warrington. Phil became custodian of the maps after LUT was absorbed into Greater Manchester PTE.

David Walker offered another example of how annotation can add to a map's interest. A One-inch map of part of Aberdeenshire, with the name of a house underlined by a relative, revealed where he had spent part of the Second World War as a young boy. He retained memories of the experience, but until the map was passed down to him, had not known the exact location.

Bill Henwood brought a pair of World War Two-related items. Unlike the metricated and coloured series of 1938-40, a German monochrome 1:100,000 enlargement of coloured OS half-inch sheet 15 of 1937 retained the OS legend and publication information, to which German text had been added, resulting in a curious hybrid. From the Allied side, the second edition of the English Channel Handbook was published by The Hydrographer of the Navy in March 1944 ahead of D Day. Its 500+ ring-bound pages of charts, photographs, views and navigation data cover both sides of the Channel and beyond, but with no mention of the war, except for one chartlet showing a minefield, which seems to have escaped the censor's notice. Bill also showed the 1909 edition of Bartholomew's Two-inch map of the Road Surfaces of London, the colouring of which demonstrates how many of the capital's streets were once paved with wooden blocks to deaden the sound of horseshoes.

The next Midlands meeting will be at Wall on Wednesday 8 May 2019, with the theme of 'Mapping of canals'. For more information contact Lez Watson at lez@watsonlv.net.