Images of Conflict

Images of Conflict:
Military Aerial Photography and Archaeology

Edited by

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PREFACE

This is a book for archaeologists, historians, anthropologists, cultural geographers, museum and heritage professionals, and military and cultural historians. It is a unique undertaking, being the first multi-disciplinary volume ever to focus on, and provide a comprehensive yet accessible introduction to the technical, philosophical, practical and intellectual aspects of military aerial photographs – their origins, use, and current and future applications. It provides a timely and wide-ranging overview of a discipline approaching its centenary, and one that is informed by the latest thinking and discoveries of a global community of scholars.

The starting point of this project is to find in the need to get correct and reliable information about military aerial photographic archives. Not only the archives are of importance, but it was also interesting to bring together historians of the world war, aerial photography experts, archaeologists, anthropologists, etc. Therefore it was decided to organise a workshop (October 2006) together with the In Flanders Fields Museum of Ypres. This project was funded by the Research Foundation Flanders (FWO-Vlaanderen), the Province of West-Flanders, Ghent University and the In Flanders Fields Museum. The workshop was embedded in a Culture 2000 project "European Landscapes: Past, Present and Future".

The diversity of research encompassed by the theoretical and empirical contributions at the 2006 workshop at Ypres was unique, and the potential for archaeology and related disciplines is equally significant. For the first time, these aerial photographs – dating from the first five decades of the 20th Century – have been documented and analysed in their historical context. This has revealed them to be a powerful source and tool for multidisciplinary research rather than, as hitherto, simply a source of background illustrations.

Readers of this book will learn equally of the technical, military, social, and cultural aspects of military aerial photographs, discover where to find these resources, and appreciate what kinds of information can be deduced from their study as well the historical context of their production. It will also give an incentive to the growing aerial archaeological

community to begin using these alternative sources of information. After almost a century, military aerial photography's relationship with archaeology has begun to be theorized and documented in a variety of exciting and innovative ways.

The rapid increase of public and academic interest in the First and Second World War, and in the material culture of conflict and commemoration around the world is a sign of changing ideas and attitudes towards our experiences of objects, landscapes and memory. It is as this critical point in time that a book such as this is needed to make a new kind of sense of the past, to stimulate debate, and to point the way forward for new cross-disciplinary and trans-national research.

The first part of the book offers an introduction to the theme of historical aerial photography from different viewpoints. A second part focuses more on the early history of military aerial photography. It describes the importance and developments of the discipline in the First World War. The historiography of events such as the exploits of fighter pilots and the technological aspects of early aviation history are well known – yet, to date, there have been few investigations of aerial photographic reconnaissance, despite it being the raison d'être of most aerial activity, and the fact that it transformed not just the conduct of the war, but also human perceptions of landscape in general.

Another cluster of papers presents the main collections of World War One and World War Two aerial photographs, and is a unique source in itself. Key issues and questions are raised: "where are these archives?", "what do they contain?", and "what is their potential for research in archaeology, history, anthropology, and geography?". The physical dissemination of the collection is a great challenge to any researcher interested in using these air photos. Gaining insight in these collections and making them available for a broader public through digitalisation may as well be one the priorities of aerial archaeology in the next years.

The last part concentrates on the modern use and interpretation of these aerial photographs, and their applications for mainstream archaeological research and in particular, for the fast-developing multidisciplinary field of conflict archaeology (20^{th}-21^{st} centuries). There will be an emphasis on the application of new techniques in archaeology such as GIS and stereoscopy, and their wider role for landscape studies, surveys, and heritage.

CHAPTER ONE

IMAGES OF CONFLICT: AN INTRODUCTION

JEAN BOURGEOIS, BIRGER STICHELBAUT

Introduction

In this chapter a general introduction to several issues of historical aerial photography is provided. In a textbook focusing on historical aerial photography, a short overview and introduction to the history of aerial photography is most welcome. However, this topic has already been the subject of detailed research by other authors (Deuel 1969, Nesbit 1996, Bewley 1997: 11, Bewley 2005, Gojda 2007: 18-19, Barber forthcoming). That is why only the most important stages in its development until the First World War are summarised and is tried to analyse how this episode, which we believe was of much importance, is represented in the existing literature. This overview is not intended to be exhaustive. In the following sections, we will emphasize on the possibilities of using historical air photos (i.e. in this case after World War One) and their unique characteristics and some unique fields of application.

Early history and development of (archaeological) aerial photography

Birth of the discipline in the 19th century

It is commonly known that the development of aerial photography depended on developments in military ballooning, photography and the birth of aviation in the 20th century. Although there already were experiments with optical and chemical processes before the 19th century (Newhall 1982: 9-12), it is the invention of the Daguerro-type by Louis Daguerre (with help of Nicéphore Niepce) in 1839 which marked a major advance in photography. A new stage was reached when glass plate negatives were made sensitive in 1851 (with the use of collodion), which reduced the exposure time of pictures to a couple of seconds (Newhall

1982: 59-60). This type of photography required the plates to be wet when exposed and developed and therefore required a portable darkroom. Not long after this, in October 1858, the taking of the first air photo is accredited to Gaspard Félix Tournachon, better know under the pseudonym Nadar (Musson, Palmer et al. 2005: 18). From his balloon he took air photos of the French capital (Deuel 1969: 30-31). Unfortunately these air photos have not survived, the oldest air photos that still exist document Boston around 1860 and were taken by James Wallace Black.

Looking back on to the beginnings of aerial photography, it can be noticed that its history is connected with many major conflicts. Obviously the First and Second World War, but this was no different in the 19th century. According to Porter, the French army under command of Napoleon III took aerial pictures of the Austrian troops during the Battle of Solferino (1859) from balloons (Porter 1921: 159, Von Carl s.d.). Balloon air photographs are claimed to have been taken during the American Civil War (1861-1865) (Porter 1921: 165, Deuel 1969: 32, Gojda 2007: 18) on the line between Richmond and Petersburg (Porter 1921: 165) – although clearly contradicted by Nesbit (Nesbit 1996: 4) and during the Franco-Prussian War of 1870 and the Spanish-American War (1898) (Finnegan 2006: 8).

In 1871 another milestone in the photographic process was reached with the invention of the dry plate (as opposed to the wet plates) by Richard Maddox (Newhall 1982: 123). It consisted of glass plates coated with a gelatine emulsion in which silver nitrate and cadmium bromide were added (Ibid.: 123)[1]. The plates were much more sensitive to light and therefore allowed exposure times of less than a second. Additionally plates could be developed much later following the exposures, no longer requiring a darkroom. Exactly for these two reasons aerial photography could now be explored on a larger scale. Several experiments with aerial photography were conducted, mounting cameras on unmanned kites, rockets and even pigeons (Dumarche 1988: 8). In the next years experiments in different armies continued in peacetime and during conflicts such as the Boer Wars (Watkis 1999: 7). The German Franz Stolz was among the first to photograph an archaeological excavation (Persepolis) from the air in 1879 (Chevallier 1971: 8, Nagy, Unold et al. 2001: 8, Musson 2005: 18).

[1] The cadmium bromide and silver nitrate in the gelatine react to form silver bromide crystals (Newhall 1982: 123).

The first decades of the 20th century

Up to this point, balloons, kites and dirigibles were mainly used as aerial camera platforms. It were the events on 17 December 1903 that influenced the history of both aviation and aerial photography forever. On this famous day, the Wright Flyer, constructed by the brothers Wilbur and Orville Wright, made a 12- second flight near the village Kitty Hawk.

Another major milestone in aerial archaeology are the pictures of Stonehenge taken by Lieutenant P.H. Sharpe in 1906 from a balloon. These images are the first air photos of an archaeological site in Britain (Deuel 1969: 32). They are even more important since the pictures reveal a cropmark of an archaeological feature (Bewley 2005: 16). Also in other parts of Europe aerial archaeology developed in this direction. In Italy, ancient monuments and archaeological sites were photographed in the period 1899-1911 under influence of Giacomo Boni (Musson 2005: 18-19, Gojda 2007: 18-19, Castrianni and Ceraudo this volume).

Another step forward in aerial photography is achieved by – again – Wilbur Wright. He is not only credited for partially building the Wright Flyer but also for taking the first air photograph from an aircraft. He took this first picture on 24 April 1909 in Italy (Reeves 1927: 3). From this point on, this new aerial platform for photography would be explored on a couple of pre-war occasions and would be fully exploited during the World War One.

Soon after the war started in August 1914, the expected war of movement swiftly changed into a positional warfare in the trenches. The First World War played a key role in the further development of aerial photography and its archaeological application. The significance of the war has been observed in many publications, although few authors look closely at the subject. In one of the standard works on aerial archaeology, *Aerial Archaeology in Britain* (Riley 1996), Derrick Riley states that:

> "the beginnings of archaeological air photography were the result of the impetus given to aviation by the First World War and the increase in the number of fliers at that time. Archaeologists were few then, but among them was one who had been an observer in the Royal Flying Corps, O.G.S Crawford, who became the most important pioneer of aerial photography" (Riley 1996: 7).

B. Bewley and W. Raczkowski mention that:

> "apart from the development and aircraft and cameras at the turn of the last century there can be no doubt that the First World War provided a stimulus to the subject of aerial survey generally" (Bewley and Raczkowski 2002: 12).

Leo Deuel considers the First World War as a turning point because:

> "during those four years the airplane came of age" and "because of the exigencies of war, the construction of planes, flying itself, and the techniques of reconnaissance from the air were perfected at an accelerated pace" (Deuel 1969: 33).

He continues: "*the same was true of photographic equipment, such as lenses and plates or films*"(Ibid.: 33). However he concludes that "*the First World War precipitated relatively few discoveries in aerial archaeology; rather, it sharpened the wits and pointed up the potential*"(Ibid.).

In our opinion this can be considered the general view on Great War aerial photography on the Western Front. In other theatres of war some important archaeological discoveries were made during French, German and British initiatives. These receive more attention in the available literature, for instance the early work of Leon Rey in Macedonia (Deuel 1969: 34, Bewley 1997: 13). German applications of air photos worth mentioning are the investigations of Carl Schuchhardt of the Roman Limes in the Dobrudja (Romania) in 1918 (Crawford 1954: 206-207, Deuel 1969: 34). Theodor Wiegand is amongst the other famous pioneers. He became well-known for the creation of the *Deutsch-Turkischen Denkmalschutzkammando*[2] as a unit within the Turkish Army (Raczkowski 2002: 32-33). A German photographer, *Oberleutnant* Falke provided Wiegand with aerial photographs of archaeological sites mostly located in the Negev Desert (Crawford 1954: 206, Deuel 1969: 34-35). As for the English, aerial photographs of Mesopotamian sites (i.e. Samarra) were made by G.A Beazeley (Bewley 1997: 14). This emphasis on the archaeology in the Near East can be easily explained since it mostly concerns upstanding remains and anti-aircraft artillery was not as present as on the Western Front.

The attention of many authors swiftly jumps to the inter-war period and the further development of aerial photography by O.G.S Crawford. Even Crawford himself considered the war as an interruption in his

[2] Detachment for the protection of monuments.

archaeological research (Bewley 1997: 11). Somehow this corresponds with how aerial photography is dealt with in the historiography of the First World War, a process which is described by James Streckfuss. The history of the war in the air focuses only on some small aspects such as the "romantic" battles in the air, the commencement of aerial bombardments and the famous "aces"(see Streckfuss this volume). Only recently have some publications begun to explore the rich history of aerial photography during First World War (see Finnegan 2006 and this volume).

The Second World War is on the other hand a better known period in the history of aerial photography. Once more there were major technical advances and another important by-product of the war was that many archaeologists received training as air photo-interpreters (Bewley 2002: 13). Also the aerial photographic collections of the Second World War are more widely known and used (Going 2002, Rączkowski 2004, Musson, Palmer et al. 2005, Hegarty and Newsome 2007, Castrianni and Ceraudo this volume). This large scale use of WW2 air photos contrasts immensely with the almost complete lacking of WW1 air photos in scientific research until the 21st century.

The early history of aerial photography can be summarised as a genesis between military observation ("looking at the other side of the hill"), the birth of photography and the invention of the airplane. Retrospectively we notice the strong association of military campaigns and consequent progress in aerial archaeology. This background can still be observed in the aerial photographic jargon, a process distinctively observed by Kenneth Brophy (Brophy 2005). Brophy compiled the following phrases and expressions in the aerial archaeological literature: "*sorties, campaigns, reconnaissance, mission, shooting, target*"(Brophy 2005: 45), all strongly military tinted.

Start of the programmed archaeological surveys

In the short period after the Second World War, the method of aerial photography became established and several initiatives, mainly in the United Kingdom, were started. Among these are for instance the aerial survey of Cambridge University by K. Saint Joseph (Wilson 2000: 20, Bewley 2005: 18), the Royal Commission on the Historical Monuments of England (now English Heritage) and the Royal Commissions in Wales and Scotland (Bewley 2005: 18-19). The development of aerial archaeology in this period is already much debated (Bewley 2005: 16-28, Musson 2005: 23-31) and so will not be dealt with here.

Vertical air photos for topographic surveys

An important, and often overlooked source, are the large collections of vertical air photos that can be found in many countries (Bewley 1997: 18-19). Often these are taken for topographical purposes. Unfortunately these are rarely catalogued or readily accessible. For instance for the small area of Belgium alone, the National Geographic Institute has a collection of some 80,000 post-WW2 air photos. Similar collections of vertical air photos (photographed for non-archaeological purposes) are presumably to be found in many other countries and contain a hidden potential which should not be underestimated.

Why use historical air photos?

It is legitimate to ask why we should focus on the use of air photos? The answer is quite straightforward. Historical images contain a wealth of information which can be applied to several disciplines. First of all the pictures are a major source for archaeological prospection. Although they are mostly not intended to be used for archaeological purposes, the pictures can reveal crop or soil marks that can lead to the discovery of many new sites. In addition they can be used to study the nature and the extent of fossilised landscapes (i.e. Celtic fields, ridge and furrow, medieval landscape of moated sites, etc.). Interestingly the earlier part of these kinds of air photos are often taken in the period before major village and city expansions and intensified agriculture took place. As a result it is possible to record archaeological sites which are now already destroyed. These pictures are also an ideal source for the study of the development of both the urban and rural landscape in Europe.

Recently, R. Bewley and W. Raczkowski observed the necessity and potential of a quest for large archival collections of air photos:

> "unlocking these archives is perhaps the most important development which would dramatically improve our understanding and knowledge of Europe's historical environment" (Bewley and Raczkowski 2002: 5).

One could not agree more.

Why use military historical air photos?

The use of historical air photos that were taken for military purposes gives us the same advantages as the previously discussed air photos. But

the pictures that were taken during the major conflicts of the 20th century have some unique characteristics. These pictures allow us to study the geography of war, a unique development which only took place in a brief period of time (World War One, World War Two, etc.).

If we look at the Great War air photos, we can find literally hundreds of thousands air photos in different collections all over Europe and the rest of the world (see also the contributions of P. Haupt and B. Stichelbaut this volume). For the first time in the history of Europe, a war was fought on an industrial scale. At the same level air photographs were taken all along the frontline at the Western Front and other theatres of war, creating an almost complete coverage of air photos. The combination of these two unique facts, allows us to study this landscape in great detail.

The air photos are in many instances the only source of information which can be of use for the study of this temporal military landscape. After the Great War, the destroyed cities and fields were reconstructed and most of the military features were erased. In the case of the Great War, the landscape was in many cases even converted to an Allied post war landscape where there is a major dominance of Allied monuments and cemeteries, as it is for instance in the Ypres area. The landscape of the Great War is unique and cannot be compared to any other landscape.

Air photos of war zones allow for the detailed identification of aspects of the battle-zones, as for instance they allow the reconstruction of the battlefield on a given timescale, thanks to the fact that many pictures have been preserved. Moreover, it has been observed that a thorough photo interpretation of these images allows the discovery of "types" of monuments, such as trenches, pillboxes, etc., which have not been recorded in other sources in many cases.

With the use of modern photogrammetric technologies, it is already possible to "reconstruct" this military landscape in 3D (see Stichelbaut this volume). This will without a doubt allow for a better understanding of some detailed military aspects in the field. Moreover, this reconstruction of the landscape of war offers a huge potential for the wider public.

Why conflict archaeology of the 20th Century?

Some authors focus their attention on 20th century military remains (see Haupt 1998, Hegarty, Newsome et al. 2005 and Newsome this volume). Yet it becomes apparent that besides these publications, little

attention is paid to this specific kind of heritage in the modern aerial photographic literature. D.R. Wilson for instance, places the remnants of disused military sites in his standard work under the heading of "*identification of non-archaeological features*"(Wilson 2000: 193-199). Yet he clearly states that:

> "they could well be regarded as archaeological sites in their own right, but for most archaeologists they still seem like modern intrusions into the "genuine" archaeological record" (Wilson 2000: 193).

This specific kind of archaeology has been condoned rather than embraced in the past and was until recently the domain of amateur archaeologists. Recently, however, 20th century conflict archaeology received more attention by an increasing number of professional archaeologists (Saunders 2002, Saunders 2007, Desfossés, Jacques et al. 2008). The past development of this field in archaeology and its acceptance as a legitimate and scientific field of research can probably be compared to the status of medieval and post-medieval archaeology some decades ago.

If we swiftly glance through the aerial photographic collection of the Department of Archaeology (Ghent University), we can notice on a number of oblique air photos traces of trenches and gun emplacements that show up as a still visible earthwork and in some (rare) cases even as a crop mark (see Fig. 1-1). However, in Belgium this does not happen very frequently. For instance on Fig. 1-2 we can observe a very rare example of a preserved breastwork trench in the sand dunes on the Belgian coast. These earthworks can be easily determined as being wartime trenches. Because this trench system is associated with and partly overlain with a German coastal battery (WW2) of the Atlantic Wall, the interpretation of these features as WW1 trenches was not immediately self-evident. The examination of WW1 air photos revealed the true nature of the recorded features, i.e. that they formed part of a Great War trench system.

However, the small number of these sites that are recorded in the slide collection of the Department of Archaeology (Ghent University) leads us to suspect that these kinds of features do not show up very often on modern air photos. Especially when we compare them to the hundreds of kilometres of trenches that rest preserved under Flanders' fields. This view can be biased by the occurrence of breastwork trenches (which were possibly not dug into the ground), the distance of the prospection zone

from the operated airfield (meaning that the front area was less prospected in the past) and difficult soil conditions.

An important characteristic of using historical military air photos is the simultaneity of the air photos with the main subject on the air photos: the Great War landscape and a large diversity of war features. Unlike modern aerial archaeology, most of the visible features are not recorded as crop- or soil marks. Instead they are related to the Great War and were constructed in the period 1914-1918.

Fig. 1-1: Trench system near Lichtervelde, observed as cropmark (Source: Department of Archaeology, Ghent University, Jacques Semey, n° 103823)

Because of the large abundance of air photos taken throughout 1915-1918, this military landscape had been documented several times during the war. This means that many of the recorded traces are contemporary with the air photos or at least not much older. From an archaeological and anthropological point of view this creates an interesting and perhaps unique situation where the archaeological heritage is being studied with contemporary remote sensing data. On one hand this means that most of the traces such as trenches and gun emplacements were visible for a long time and are clearly noticeable on many of the pictures. This also means that for a study of the military features on historical photos, the “right

time" or day for taking aerial photographs is less important than for traditional aerial photography. On the other hand, ground troops were also informed of their visibility from the air. This resulted in an ongoing battle of camouflage between troops on the ground and the aerial photographers.

Fig. 1-2: Breast worked World War One trench in the Belgian dunes (Source: Department of Archaeology, Ghent University, Birger Stichelbaut)

In the United Kingdom, France and Belgium, at least a part of the professional archaeological world considers the material remains of recent conflicts as archaeological heritage. The developments, focus points and future directions of each of these countries in this matter differ slightly. Nicholas J. Saunders's *Killing Time. Archaeology and the First World War* (Saunders 2007) provides a useful overview of different initiatives on the Western Front and their history.

References

Anon. (1915) Une fusée photographique militaire. In: *L'Aérophile, Revue technique et pratique des locomotions aériennes* 23, 7/8: 73.

Barber M. (forthcoming) *Mata Hari's Glass Eye and Other Stories: A History of Aerial Photography and Archaeology.* English Heritage.

Bewley R. (1997) From military to civilian: a brief history of the early development of aerial photography for archaeology. In: Oexle J. (Ed.) *Aus der Luft. Bilder unserer Geschichte. Lüftbildarchäologie in Zentraleuropa*. Landesamt für Archäologie, Dresden: 10-21.

—. (2002) Aerial Survey: Learning from a Hundred Years of Experience? In: Bewley R. & Raczkowski W. (Eds.) *Aerial Archaeology.*

Developing Future Practice. NATO Science Series vol. 337. IOS Press, Amsterdam: 11-18.

—. (2005) Aerial Archaeology. The First Century. In: Bourgeois J. & Meganck M. (Eds.) *Aerial Photography & Archaeology 2003. A century of information.* Academia Press, Ghent: 15-30.

Bewley R. & Raczkowski W. (2002) Future Development of Aerial archaeology. In: Bewley R. & Raczkowski W. (Eds.) *Aerial archaeology. Developing Future Practice.* NATO Science Series vol. 337. IOS Press, Amsterdam: 1-8.

Brophy K. (2005) Subjectivity, bias and perception in aerial archaeology. In: Brophy K. & Cowley D. (Eds.) *From the air: understanding aerial archaeology.* Tempus, Stroud: 33-49.

Chevallier R. (1971) *La Photographie Aérienne.* Librairie Armand Colin, Paris.

Crawford O.G.S. (1954) A Century of Air-photography. In: *Antiquity* 28: 206-210.

Desfossés Y., Jacques A. & Prilaux G. (2008) *L'archéologie de la Grande Guerre.* DRAC, Villeneuves d'Asq.

Deuel L. (1969) *Flights into Yesterday. The story of Aerial Archaeology.* Penguin Books, Suffolk.

Dumarche L. (1988) La photographie aérienne 1914-1918: une nouvelle arme de guerre. In: Humbert J.-P. (Ed.) *Vues d'en Haut 14/18. La photographie aérienne pendant la guerre de 1914/1918.* Musée de l'Armée, Paris: 8-16.

Finnegan T.J. (2006) *Shooting the front.* National Defence Intelligence College Press, Washington.

Going C. (2002) A neglected asset. German aerial photography of the Second World War period. In: Bewley R. & Raczkowski W. (Eds.) *Aerial Archaeology. Developing Future Practic*e (= Nato Science Series I: Vol. 337. IOS Press, Lesno: 23-30.

Gojda M. (2007) *Flights into the past.* Narodni Muzeum, Prague.

Haupt P. (1998) Die Mainzer Armierungsstellungen des Ersten Weltkriegs im archäologischen Luftbild. In: *Mainzer Archäologische Zeitschrift* 1998/99, 5/6: 337-350.

Hegarty C. & Newsome S. (2007) *Suffolk's Defended shore.* English Heritage, Suffolk.

Hegarty C., Newsome S. & Winton H. (2005) The Greatest Battlefield that never was - Suffolk Aerial Archaeology. In: *Battlefields Annual Review* 2005: 63-71.

Musson C. (2005) Archeologia Aerea: Storia e approcci diversi. In: Musson C., Palmer R. & Campana S. (Eds.) *In volo nel passato.*

Aerofotografia e cartografia archeologica. All'Insegna del Giglio, Siena: 15-34.

Musson C., Palmer R. & Campana S. (Eds.) (2005) *In volo nel passato. Aerofotografia e cartografia archeologica*. All'Insegna del Giglio, Siena.

Nagy P., Unold W. & Vogt S. (2001) Flug in die Vergangenheit. Die Luftbildprospektion im Dienste der Archäeologie. In: *Helvetia Archaeologica* 32, 125/126: 4-85.

Nesbit R.C. (1996) *Eyes of the RAF. A history of Photo-Reconnaissance.* J.H.Haynes & Co. Ltd, Sparkford.

Newhall B. (1982) *The history of photography from 1839 to the present.* The Museum of Modern Art, New York.

Porter H.E. (1921) *Aerial Observation.* Harper & Brothers Publishers, New York.

Raczkowski W. (2002) *Archeologia Lotnicza: Methoda Wobec Teorii (Aerial Archaeology: Method in the Face of Theory).* Adam Mickiewicz Univeristy Press, Poznan.

—. (2004) Dusty treasure: thoughts on a visit to The Aerial Reconnaissance Archives at Keele University (UK). In: *AARGnews* 29: 9-11.

Reeves D. (1927) *Aerial photographs: Characteristics and military applications.* Ronald Press, New York.

Riley D. (1996) *Aerial Archaeology in Britain.* Shire Publications, Princes Risborough.

Saunders N. (2002) Excavating Memories: Archaeology and the Great War, 1914-2001. In: *Antiquity* 76, 291: 101-108.

—. (2007) *Killing Time. Archaeology and the First World War.* Sutton, Gloucestershire.

Von Carl F. (s.d.) *Die Entwicklung des militärischen deutschen Luftbildwesens 1911-1918 und seine militärische wie kulturelle Bedeutung*. Ferko Collection UTD Box 63.

Watkis N. (1999) *The Western Front from the Air.* Redwood Books, Wiltshire.

Wilson D. (2000) *Air photo interpretation for archaeologists.* Tempus, Stroud.

CHAPTER TWO

THE LAST WITNESS. MILITARY AERIAL PHOTOGRAPHY USED IN A MODERN MUSEUM CONTEXT

PIET CHIELENS

Remy Siding 1917 – 1915 – 2008

My first introduction to military aerial photography was through a series of 60 German, Belgian and British aerial photos published in 1987 by Roeselare collector Geert Lepez, under the title *Een bijdrage tot "De 3e slag om Ieper"*(A contribution to the Third Battle of Ypres) (Lepez 1987).

I was a child of the front region, having been raised on stories about the First World War, and had been reading and learning about that war for a number of years. Yet the sight of some of these pictures gave me goose bumps.

A British oblique photo (Fig. 2-1) showed the sector of Oosttaveerne Wood near Wijtschate during the Battle of the Messines Ridge, 7 June 1917. Whereas in the foreground next to the wood small black dots suggested advancing British troops, at least ten projectiles were exploding in the background – within the shutter time of one photo. This was undoubtedly the barrage of the British artillery intended to prevent the German reserves from assisting their besieged comrades. This was the war live, in a 70 year deferred relay transmission!

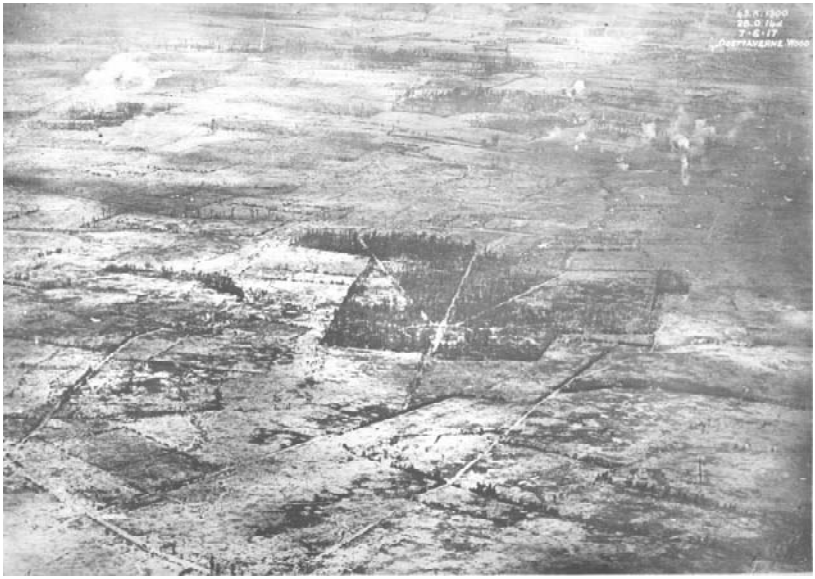

Fig. 2-1: Oosttaveerne Wood 1917 (Source: In Flanders Fields Museum)

Photo 17 of the book (Lepez 1987) (Fig. 2-2) showed the open and still worked land to the South West of Poperinge. The photo was taken by a German observer at 10.30 a.m. on 4 September 1917. Bottom right, on both sides of the Poperinge/Hazebrouck railway and the road to Boeschepe, there was the gigantic complex of tents and wooden huts of four or five Casualty Clearing Stations of the British Second Army, next to a laboratory and other auxiliary installations. Right at the bottom, disappearing in the photo's identification slip, stood (and still stands today) the Remy Quaghebeur Farm that gave its name to the complex: Remy Siding, with next to it the cemetery, which after the war was called Lijssenthoek Military Cemetery. On the track I could surmise a couple of trains, and some fifty trucks were driving along the Boescheepseweg.

Fig. 2-2: German aerial photograph near Poperinge
(Source: In Flanders Fields Museum)

Gradually taking in the details and hence the content of this picture with a magnifying glass, that each time led me to the frustration of the print grid, gave me an even greater shock.

These trains and trucks carried the wounded to the Casualty Clearing Stations where they received medical care. Some of them could be helped and would continue their trips to the base hospitals and convalescent

homes in Northern France. Others would not make it in spite of all medical efforts, and would be buried on the same day or on the following day. When I visited Lijssenthoek MC, I was able to read their names. In Plot XVIII in rows F and H, I counted 12 casualties of 4 September 1917, and 13 of the following day. An overview showed me that only 12 of the 25 dead belonged to the infantry and originated from six different divisions. The others belonged to the artillery, Army Service Corps, and even included a pilot of the Royal Flying Corps. I had to conclude that these troops were dispersed throughout the Ypres Salient, and so that this was definitely not a large convoy of wounded soldiers.

A closer examination showed that the trucks were also driving away from the scene and they were probably double-decker trucks. In the top right corner of the photo the Boescheepseweg intersects with the Singel. In those days that was the Southern ring road, which the troops followed to avoid the centre of Poperinge. What the photo in fact showed was a division arriving from France and driving along Remy Siding en route to the front near Ypres. On the open top decks troops were undoubtedly waving to medical orderlies and nurses who were briefly stretching their legs or smoking a cigarette outside the hutments and tents of their CCS. Maybe just a few days later some of these troops would be returning there, wounded, and some of these injured soldiers would be buried in Lijssenthoek Military Cemetery.

Even though I had been mistaken, or rather, even though I was a few days too early to find the names of people "present" on this photo at the cemetery[1], the initial shock remained the same. The photo of this motionless landscape in the beautiful morning sun, 5800 metres under the cameraman flying above, was buzzing with life (and death). More than any close-up of the war, it seemed as if this life could start again at any moment and allow the growing tragedy of this place to unfold. If only I could get close enough ... if only I could zoom in beyond the grid... then I would be able to see.

18 years later, while preparing the temporary exhibition "The Last Witness" in the In Flanders Fields Museum, I was able to see it, without

[1] The war diary of a division or of the town major of Poperinge could indicate which division passed there on 4/9/1917, after which the cemetery immediately would disclose its secrets. I have not as yet completed this research; indeed, the diary of the town major of Poperinge held in the National Archives ends on 4 January 1917.