

CRANFIELD UNIVERSITY

VICTORIA MARTIN

FIRST WORLD WAR GRAVE CONCENTRATION ON THE
WESTERN FRONT: HOOGE CRATER CEMETERY, BELGIUM

CRANFIELD FORENSIC INSTITUTE

PhD

Academic Year: 2021

Supervisor: Professor Andrew Shortland
Associate Supervisor: Dr Karl Harrison
Associate Supervisor: Dr Dennis Braekmans

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ABSTRACT

The First World War took place between 1914 and 1918, with conflict occurring in Europe and across the globe. By the end of the War, the bodies of the British and Commonwealth dead were scattered across France and Belgium. It was decided to move single graves or small cemeteries into bigger cemeteries that were being built by the Imperial War Graves Commission. This process was called “concentration”, and involved searching the battlefields for graves, then excavating and attempting to identify the bodies present, prior to their reburial in a concentration cemetery. This thesis focuses on the concentration process and specifically examines a sample of graves from Hooze Crater Cemetery, Belgium. The main research aim is to understand the range of errors that occurred during concentration and identification, and how prolific they were.

A historical and literature review was completed, followed by the analysis of data from 109 graves from Hooze Crater Cemetery that were re-exhumed in 1920. This proved that within the sample, a high number of errors occurred in the original concentration work. Following this, 163 burial returns containing the details of 1013 graves from Hooze Crater Cemetery were selected for detailed analysis. The information from these burial returns was gathered and reviewed, and where possible was plotted onto First World War trench maps. This data provides new insights into where and when bodies were concentrated, the type of methods used for identification and how these methods changed over time.

The research presented here demonstrates that identification rates varied, and were influenced by several factors including burial location, quantity of body present, time of concentration and primary identification method used.

Overall, this thesis expands our knowledge of First World War grave concentration, including how the battlefields were searched and how bodies were identified.

Keywords:

Grave location; exhumation; identification methods; DGRE; IWGC;

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I would like to dedicate this work to my parents Jen and Chris Martin. As a small child they would take me to visit war cemeteries on our family holidays in France. Those trips planted the seed that would eventually lead to this thesis. I know mum is so proud, and I think dad would be too.

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LIST OF ABBREVIATIONS

BEF	British Expeditionary Force
BRC	British Red Cross
CPK	Communist Party of Kampuchea
CWGC	Commonwealth War Graves Commission
DGRE	Directorate of Graves Registration and Enquiries
DNA	Deoxyribonucleic acid
EAAF	Argentine Forensic Anthropology Team
EAFG	Guatemalan Team of Forensic Anthropology
GAF	Group of Forensic Anthropologists
GRC	Graves Registration Commission
GRU	Graves Registration Units
GUARD	Glasgow University Archaeology Research Division
ICMP	International Commission on Missing Persons
ICTY	International Criminal Tribunal for the Former Yugoslavia
IWGC	Imperial War Graves Commission
POW	Prisoner of War
PPE	Personal protective equipment
UK	United Kingdom
UN	United Nations

1 INTRODUCTION

The First World War took place between 1914 and 1918. While most of the fighting took place in Europe, nations from across the globe were involved and the war impacted all parts of life in a way never seen previously. For the first time in Britain, a huge civilian army was mobilised through volunteering and conscription. The numbers killed were substantial and higher than any side could have predicted at the start of the war. In Britain and the Commonwealth, these large numbers provoked a new response to commemoration of the war dead and prompted the creation of war cemeteries on a scale not seen in previous conflicts. These war cemeteries were created to be permanent memorials to the dead, with each soldier memorialised as an individual.

The creation of these war cemeteries was a substantial task, requiring organisational and cultural change in the military, as well as a significant logistical effort. This logistical work took place after the war and included the collection and consolidation of thousands of burials and cemeteries from across the battlefields. Due to the conditions of the battlefields this work was not easy or pleasant to conduct. The process was referred to as concentration and is the subject of this thesis.

1.1 The First World War 1914 to 1918

The catalyst for the First World War, also referred to as the Great War in this thesis, was the assassination of Archduke Franz Ferdinand, the heir to the throne of Austria-Hungary. On the 28th June 1914, while visiting Sarajevo, the Archduke was shot and killed. The assassination had been carried out by an Austrian group but it was believed the arms used had come from Serbia (Keegan, 2014, p.56), while the assassin Gavrilo Princip was a Bosnian Serb. Austria-Hungary wished to retaliate but knew that this could provoke a response from Russia, so Germany agreed to support Austria-Hungary. Austria-Hungary issued an ultimatum to Serbia, and when they refused to accept all points, declared war in July 1914. As expected, Russia prepared to defend Serbia, and called on its ally France for support. Germany declared war on Russia, and France declared war on

Germany. Germany decided to action the Schlieffen Plan, sometimes called the Schlieffen-Moltke Plan, which called for an all-out offensive against France (Gray, 2007, p.79). The plan involved a fast mobilisation of German troops through Belgium and across France from the North.

On the 3rd August 1914, Germany invaded Belgium; Britain issued an ultimatum to Germany telling them to withdraw their troops by midday on 4th August, or war would be declared. No such withdrawal took place, and war was officially declared (Butler, 2006, p.9). Some have argued that the real reason behind the drive to war was the shifting power in Europe which led to a need to stop Germany from getting too powerful (Gray, 2007), the desire of different countries to build and maintain their empires (Strachan, 2010) or an arms race (Herrmann, 1996). Either way, all parties were looking for a fast-paced war of manoeuvre to quickly gain advantage and move to a conclusion (Black, 2006, p.73). The conflict was expected to be brief and mobile, which is why it is often said that it was expected to be over by Christmas (Hallifax, 2010). This was not to be.

In France, Germany pushed forward until reaching the Marne river, where the Battle of the Marne took place in September and the German advance was finally stopped (Gray, 2007, p.86). This led to a rapid movement of both sides to the north, where the opposing forces tried to out flank each other through France and Belgium, until they had reached the coast (Fraser and Brown, 2007). This movement created lines of trenches 700 kilometres long, stretching from the Swiss border to the Channel (Stichelbaut and Cowley, 2016). This was where the lines would stay for most of the war, creating static and immobile warfare. Having expected a short conflict, no one was prepared for this type of siege warfare. As Butler (2006, p.14) stated “When the race was over, the result was two sets of opposing armies, organized, trained, and equipped to fight wars of maneuver, deprived of any opportunity to do anything but bludgeon away at each other in an endless series of bloody frontal assaults.”

The British Expeditionary Force (BEF) were initially placed near Ieper, Belgium (Wilson, 2011). In this thesis the Flemish spelling of Ieper is used, unless referring

to one of the specific Ypres battles, the area identified as the Ypres Salient or quoting from a historical record, where Ypres is used instead.

The BEF were involved in repeated attacks in the Ypres Salient, the area of land between Ieper city and the Passchendaele Ridge (Doyle, Barton and Vandewalle, 2005). These attacks saw little ground gained or lost. October and November 1914 saw the First Battle of Ypres, the first major offensive on the newly created Western Front. Stories from the battle of young German soldiers advancing towards the British lines singing patriotic songs were probably false (Mosse, 1990, p.71), but the heavy casualties suffered were not. For example, one German division is known to have lost 9,300 of their 12,000 men in just one morning (Butler, 2006, pp.12–13).

The initial BEF force sent to Europe in 1914 was approximately 125,000. Over time these numbers greatly increased; over 250,000 men had volunteered in Britain between August 1914 and September 1915 (Gray, 2007, p.88), who were soon arriving in 1915, followed by conscripts from 1916 (Wilson, 2011, p.339). The conflict quickly moved from being a European to a world war, as the countries of Germany, France, Britain and Russia all held empires which meant that much of Africa, Asia, Australasia and some of the Americas became involved, contributing valuable men and resources (Strachan, 2010). These men were soon present in the trenches and across Europe.

As the war progressed, the trenches became more developed and sophisticated, and soon included dugouts, underground rooms and tunnels (Doyle et al., 2002). Technology developed to try and end the stalemate; the First World War saw the development of larger calibre artillery (Gray, 2007, p.91), better infantry weapons such as the Stokes light infantry mortar (Black, 2006, p.78), development and use of poison gas in 1915 (Hanson, 2005, p.19), tanks (Stichelbaut, Bourgeois and Meirvenne, 2019), flame projectors (Banks and Pollard, 2014), tunnelling and mines (Banks, 2014). These developments contributed to “industrialised” warfare, which resulted in extensive destruction of the local landscape as well as the men who were fighting there.

To try and overcome the stagnant, trench warfare, offensives would be launched by both sides. The problem faced by both forces was trying to penetrate the elaborate defences of the other, which could be several miles deep and stretched for hundreds of miles in both directions (Gray, 2007, p.80). In addition, the Germans during their 1914 retreat had tried wherever possible to take the high ground, giving them a tactical advantage (Butler, 2006, p.12). This led to the BEF launching nearly all attacks in the same, two stage approach; first a heavy artillery bombardment that could last for days, then several waves of land attack (Zambernardi, 2020). This method was used repeatedly along the front line with limited success.

The following four years saw numerous attacks along the Western Front, which resulted in small movements of the front line. The Second Battle of Ypres and the Battle of Loos, both in 1915 saw coordinated attacks which ended with high casualty rates, but limited land gains. As Arthur (2002, p.61) states “The story of 1915 is of progressively larger Allied assaults failing with ever-lengthening casualty lists”. 1916 saw the Battle of the Somme take place in Northern France. Between June and November the British and French forces repeatedly attacked the German lines, which resulted in the deaths of 420,000 men of the BEF, 195,000 French and 650,000 Germans (Gray, 2007, p.88). The British forces had 60,000 men killed or wounded on the first day alone (Butler, 2006, p.13).

1917 saw the first real movement of the front line around Ieper. By this time the Germans had taken up position along the Hindenburg Line, to shorten their front line and allow a more efficient use of the available men (Gray, 2007, p.88). This meant abandoning some ground to the allied forces. In June, the Battle of Messines took place, which saw the detonation of 19 mines, buried deep under the German front lines (Stichelbaut, Bourgeois and Meirvenne, 2019). This allowed for the Messines-Wytschaete ridge to be taken by Allied forces. This was followed by Third Battle of Ypres, between July and November 1917. This was a British offensive to push the Germans back and move the BEF outside the area of the Ypres Salient (Doyle, Barton and Vandewalle, 2005). Due to unprecedented rain and poor drainage, the battlefield became like a swamp

(Arthur, 2002, p.196), creating the long enduring and iconic stories of men and animals fighting and dying in the mud. During the battle, there were 240,000 casualties from the BEF (Gray, 2007, p.89). Overall, these numerous offensives saw little ground gained but did gather notoriety for the high loss of life on both sides.

In spring 1918, the Germans had launched a final offensive which saw them gain considerable ground and break through Allied defences in France and Belgium. However, having lost nearly one million men between March and June, the German attack was unsustainable and the BEF counter attack pushed the German forces back, eventually pushing through the Hindenburg line and beyond (Gray, 2007, p.90). On the 3 November, Germany requested an armistice (Arthur, 2002, p.258), which was signed and came into effect on the 11 November 1918, at 11.00 in the morning. Despite knowing the armistice was coming, the 11 November still saw an additional 11,000 casualties (Hanson, 2005, p.280).

By the end of the First World War, the Allied forces had mobilised 42,188,810 people (Gray, 2007, p.83) and nearly a million British and Commonwealth service men and women had died (Macleod and Inall, 2020, p.51).

1.2 The management of British and Commonwealth war dead

As described above, at the outbreak of war the conflict was expected to be over swiftly, and therefore the Army were unprepared for the thousands of deaths that would occur over the following four years. In 1914, the British Red Cross (BRC) were key in starting the process of keeping detailed records of the deceased and grave location (British Red Cross, 1914). This was mainly due to the work of Fabian Ware, who had volunteered with the BRC mobile unit at the outbreak of the war. Ware had realised that graves of British soldiers were not being recorded and were at risk of being lost. Ware pushed for the BRC to start recording the locations of graves alongside their normal activities, which was approved (Longworth, 1985). The importance of this work soon became apparent and gained military support. The service changed to become a standalone body, the Graves Registration Commission (GRC) in March 1915, and was eventually incorporated into the British Army in October 1915 (Ware, 1915). The GRC

became responsible for gathering information on grave locations from padres and military officers, searching the landscape to record them and placing a cross with description on the grave (Bryan, 1919). For the first time they started to plan for long term protection of the deceased, and implemented several important rules, such as the ban on exhumations and the return of bodies from France and Belgium (Macready, 1915).

This organisation changed in 1916 to become the Directorate of Graves Registration and Enquiries (DGRE), which remained the lead organisation for recording British war graves (Directorate of Graves Registration and Enquiries, 1918a).

The other key organisation in the care of the war dead was the Imperial War Graves Commission (IWGC), set up in 1917 to be responsible for the long-term care of war graves and cemeteries. The founding principles of the IWGC included that all soldiers should be commemorated equally, with graves marked uniformly (Longworth, 1985). It was also the IWGC who decided that at the end of the war, large cemeteries would need to be established to hold the British and Imperial war dead, and this would involve locating and moving the deceased from small cemeteries or individual burials (Crane, 2013, p.129). By the time of the armistice there were thousands of individual graves located across the conflict zone, as well as thousands of men who had died and never been buried. It was decided that the DGRE would be responsible for locating and moving these graves (Imperial War Graves Commission, 1918). This process was referred to as “concentration”.

The DGRE started the work of concentration in January 1919 in the area around leper (War Office, 1921). The task consisted of searching an area of land to look for indications of burials or decomposition, excavating the area to locate any bodies which may have been present, examining them for any indications of identity before removing and transporting them to a concentration cemetery for reburial. This process was challenging on many levels, and recruiting men to complete concentration work was difficult (Imperial War Graves Commission, 1919a).



Figure 1-1 A grave uncovered and excavated by the DGRE, ready for exhumation and concentration © IWM Q 100630 (Imperial War Museum, 2021a)

The DGRE continued this work until they were closed and disbanded in September 1921. By this time they had recovered and moved over 204,000

bodies (Imperial War Graves Commission, 1931a) and searched areas of the old battlefields at least six times (Kendall, 2016, p.147).

As early as 1920, it had started to become apparent that there were duplications and errors in some of the concentration and identification work, specifically that which had taken place around Ieper (War Office, 1921). This showed that some of the identifications given were incorrect, while other identifications had been missed. These inconsistencies have never been explored. This thesis aims to explore these errors, how they came about and how prevalent they were.

1.3 Hoge Crater Cemetery



Figure 1-2: A modern photograph of Hoge Crater Cemetery looking North (Author's collection)

This thesis will focus on the graves concentrated into Hoge Crater Cemetery, which was one of the first concentration cemeteries to be created. Hoge Crater Cemetery is located in Belgium, approximately four kilometres from the city of

leper (Figure 1-3). The cemetery was started in 1917 and at the time of the armistice contained less than one hundred graves (Commonwealth War Graves Commission, 2016). Concentration into Hooge Crater Cemetery started in January 1919 and continued until September 1919, by which stage the cemetery had been expanded to hold over 5,000 graves. Concentration into Hooge Crater Cemetery was the responsibility of the 68th Labour Corps. They were the first unit to start the work of exhumation, and it was suggested as early as 1920 that this was done with very little guidance, infrastructure, facilities and experience (War Office, 1921).

By the end of 1920, various duplications of internments had been identified at Hooge Crater Cemetery and elsewhere. While trying to resolve a duplication, it was discovered that a series of errors had been made during the concentrations at Hooge. This led to 135 graves being exhumed in October 1920; these bodies were mostly from plots I and II, and were the earliest graves concentrated into the cemetery. They showed numerous mistakes including incorrect identifications, missed identifications and empty graves.

For the 135 graves that were exhumed, detailed notes were taken regarding the human remains that were present. This provides a unique sample which is examined in this thesis, and can provide new information on the quantity of body that was buried in a single grave, levels of destruction seen and the link between body destruction and identification rates.

1.4 Hooge Crater Committee, 1921

In 1920, a committee was held to investigate the early concentration work which had taken place at Hooge Crater Cemetery (see chapter 4).

This committee reviewed the details of the concentration work and investigated the errors which had taken place around identification. The following statement was made during committee proceedings;

“At that time [early 1919] the speedy clearing of the battlefields was probably of higher importance, from sanitary and other considerations, than minute accuracy in establishing the identity of the bodies that were found” (War Office, 1921, p.2).

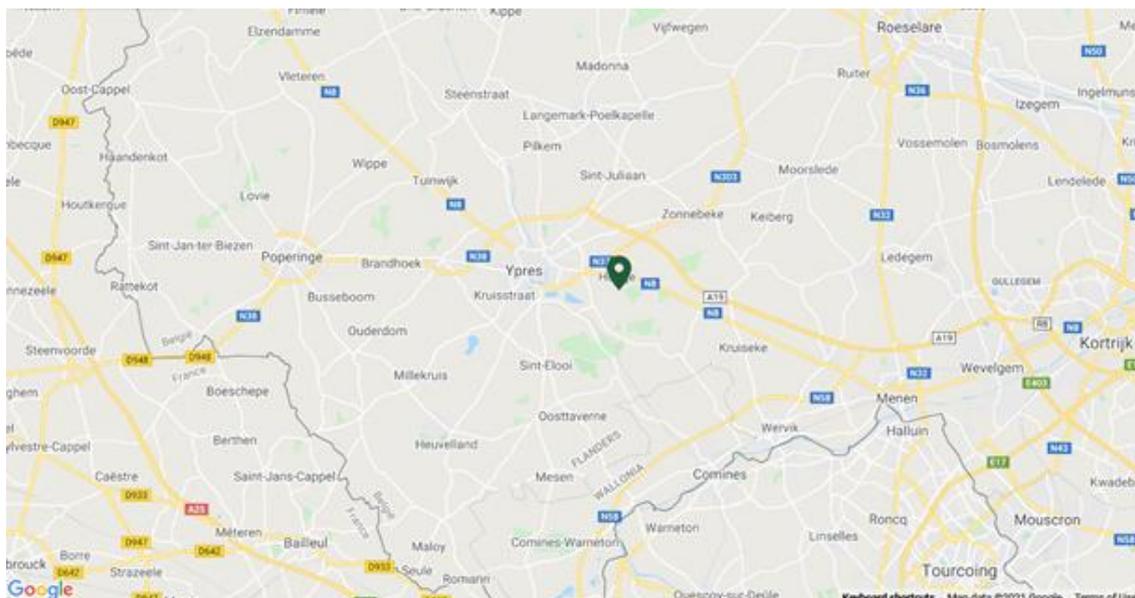


Figure 1-3 A modern map showing the location of Hoge Crater Cemetery, Belgium

By looking at the early records of burial from Hoge Crater Cemetery, this thesis will aim to explore this claim, and see if the concentration records support this assessment.

“After the lapse of twenty months from the date of concentration and very nearly two years from the day that the last shot was fired, the further decomposition of the remains may not only have made a more careful examination less disagreeable but also have revealed clues to identity that was buried in the flesh by the wounds that caused death” (War Office, 1921, p.4).

This statement assumes that decomposition had an impact on identification rates, primarily that bodies in a higher state of decomposition were less likely to be fully examined and identified. By examining the data collected during the investigation at Hoge Crater Cemetery, this thesis will explore if this could be correct.

Finally, the committee report stated that at the start of January 1919, there were no detailed instructions given to staff involved in exhumations and it was the introduction of instructions in July 1919 “which are acknowledged to have led to an efficient service of identification and reburial” (War Office, 1921, p.2). The instructions were written by Captain Crawford of the 68th Labour Corps and were based on the experience of the 68th Labour Corps during the early period of

concentration. Over the nine months that the 68th Labour Corps were exhuming and searching bodies, it is assumed that the quality of their work improved, so much so that their experience was captured in the instructions issued to all other exhumation companies. This thesis will look to review the rates of identifications and errors to establish if the work did improve over time.

The errors in concentration and identification seen at Hooze Crater Cemetery have rarely been discussed publicly. The Commonwealth War Graves Commission (CWGC) makes no mention of the investigation or concentration errors on the Hooze Crater Cemetery webpage (Commonwealth War Graves Commission, 2016) or anywhere on their website, and have not made the Committee hearing documents available to the public through their online archive portal. Very limited research and discussion of the errors has taken place within academic literature, but this has not been extensive or anymore than a superficial review. It appears that the CWGC, while acknowledging that mistakes occurred, have chosen not to advertise this, potentially due to the wide ranging implications on identification and commemoration, as well as their reputation. This area therefore holds research potential for both academia, historical literature and the CWGC themselves.

1.5 Research aims

This thesis is not a summary of the First World War and does not aim to review the great movements and battles that took place between 1914 and 1918. Instead, this thesis will use historical data to support the available literature and provide additional insights into how the work of concentration was completed and the levels of efficiency seen.

The thesis will be exploiting the records held within the archives of the CWGC. The archive records cover the history of the CWGC and its previous iterations, therefore incorporating letters, reports and files of the BRC, GRC and DGRE. The majority of original records from these early organisations were destroyed during the Second World War, but those that survive provide a unique historical insight into the work of grave concentration during and after the Great War. As these resources on concentration have not been extensively explored or written about

previously, this research will be novel and provide new information on body recovery and identification after the First World War.

There are four main research aims in this thesis. The first is to understand how prolific mistakes were, and what kind of mistakes were made. By examining the detailed records from the 1920 exhumations at Hooge Crater Cemetery, we can learn if errors occurred and the frequency of those errors. It may also be possible to identify how identifications and errors may have been linked to other aspects, such as proportion of each body present at the time of concentration.

The second research aim is to investigate and understand if identification rates changed over time, and why this did or did not happen. At Hooge Crater Cemetery, half the graves present remain unidentified today (Commonwealth War Graves Commission, 2016). As all soldiers would have had an identification disc with them when they died, and from 1916 they should have had an identification disc when they were buried (Ashbridge, 2020), it would be expected that identification rates should be high and consistent, particularly for 1916 onwards. The different identification methods used and how frequently they were employed has not been examined previously. Using the sample from Hooge Crater Cemetery, we can identify the different identification methods used, see if this changed over time and if this is linked to identification rates.

The third research aim is to understand if external factors effected identification rates, and what these could have been. To examine this, the original location of bodies prior to concentration will be plotted on trench maps and studied to identify any patterns and trends that could indicate why some bodies were identified and others were not.

The final research aim is to provide new insight into the work of body concentration and identification along the Western Front, but specifically to provide information and knowledge that is not held within the written records. This will include the information from the first three research aims, as well as evidence of how the landscape was searched, the identification of bodies which had been buried versus bodies which had not, and the problems which stopped bodies from being identified. This will be completed using a combination of written

contemporary records and analysis of concentration records from Hooze Crater Cemetery.

While not a research aim, this thesis will also explore some of the wider issues of commemoration, identify, memory and memorialisation, which are all directly relevant to our understanding and interpretation of Hooze Crater Cemetery.

1.6 Thesis structure

This thesis will start with a historical section in Chapter 2, exploring the history of British war graves during the eighteenth and nineteenth century, the appearance of war graves during the First World War and the reasons for this. It will provide an overview of the establishment of the DGRE and IWGC, and the work of concentration, which links to the second, third and fourth research aims. It will discuss how attitudes to commemoration of the war dead changed before and during the Great War, and how this contributed to the need for war cemeteries, and therefore concentration.

Chapter 3 is a literature review, discussing battlefield and First World War archaeology, international forensic archaeology, and how these areas overlap. A detailed review on the excavations at Fromelles is included here. This will explore the themes of identify and identification of the deceased, which links to concentration and commemoration, and is particularly useful to highlight the changing attitudes towards the recovery and identification of the dead. This chapter will also introduce the subjects of memory and memorialisation, and how these contribute to our understanding of First World War commemoration.

In Chapter 4 an overview is given into Hooze Crater Cemetery. The minutes from the enquiry into Hooze Crater are discussed and reviewed, before going on to look at the data recorded during the investigation work at Hooze Crater Cemetery. This data is analysed and the outcomes are presented, which will contribute to the first research aim on errors that occurred.

The methods used to gather and assess Hooze Crater casualty data are discussed in Chapter 5 with the results presented. This is followed by an overall

discussion of the results and wider implication in the discussion section, in Chapter 6.

Finally, Chapter 7 will provide an overall conclusion to the thesis and review how each research aim has been met.

1.7 Relevance to First World War studies

Having recently had the 100 year anniversary of the end of the First World War, there has been a resurgence of interest in the conflict, and the long-term impact and memorialisation of the First World War. This combined with a greater awareness of the modern day military due to recent and current conflicts (Macleod and Inall, 2020), has increased awareness in British military history, including treatment of the war dead.

Another reason that better understanding of concentration and identification is relevant is due to the impact it has on current research. Bodies of First World War soldiers are still regularly found across France and Belgium. When British and Commonwealth soldiers are found, multi-agency research is carried out to try and provide an identification. Information is taken on the location the body was found, any personal effects, if regiment can be identified, and this is cross checked with the list of soldiers with no known grave (Bowers, 2021). However, if graves were misidentified during concentration, this leaves an incorrect list of potential candidates. Therefore, the long-term implications of poor concentration are still having an impact today.

Finally, this thesis sets to highlight the important role of archaeology, science and data analysis in First World War studies. As so much literature was created during and after the war, it is sometimes suggested that there is no need for scientific analysis as it cannot add anything new (Banks, 2014). However, this thesis will demonstrate the potential for data analysis to add to First World War studies and help to fill the gaps when original records are lacking or inconsistent.

2 HISTORICAL BACKGROUND

This chapter will explore the commemorative heritage that led to the creation of war cemeteries on a scale not seen in Europe previously. It is crucial to understand the changing attitude within society towards the war dead and death during the eighteenth and nineteenth century, and how this impacts the actions of the British military and government when managing war graves. This change directly raises the topics of identity and individual commemoration, both of which are central to the work of concentration and identification of the dead, and therefore our interpretation of the activities which took place at Hooze Crater Cemetery.

2.1 A History of War Graves

2.1.1 British War Graves abroad in the eighteenth and nineteenth century

Within the UK and abroad, British military cemeteries of the First and Second World War are commonplace. They are well maintained and cared for by the Commonwealth War Graves Commission (CWGC), an organisation established in 1917 as the Imperial War Graves Commission (IWGC) to preserve the war graves of the Great War dead. Prior to the IWGC's foundation, the treatment of British war dead had been very different. Soldiers were rarely memorialised and were often swiftly buried and then forgotten. This dramatic shift from non-memorialised to individual marked graves happened in just over 100 years, starting with Waterloo in 1815 and ending with the Great War.

During the early nineteenth century, there was very little commemoration of British war dead. At the Battle of Waterloo, the war dead were buried in hastily dug mass graves with few individual graves or memorials, as was the norm at the time (Heffernan, 1995, p.294). There have even been reports that after the battle, the bones of soldiers were collected, and were then shipped to Britain to be turned into fertilizer (Ignatieff, 1998, p.113). There was little commemoration seen at home or overseas; until recently the battlefield at Waterloo had no monument to the thousands of men who died in the fighting (British Broadcasting

Corporation, 2015). This happened for a variety of reasons but it is commonly agreed that European armies were perceived as being filled with undesirable individuals, such as drunks and thieves, and were therefore not trusted (Brereton, 1986). Additionally, with battles taking place in foreign countries, there was a lack of connection between the fighting men and the public at home, which caused alienation. Laqueur (2015) has argued that after the Battle of Waterloo signs of change could be seen, as poetry and art were used to reflect the state of the battlefields and remains of the dead in a negative way.

Crane (2013) argued that attitudes towards British war dead first changed during the later conflict in Crimea. However, while attitudes may have changed, this was not reflected in practice. The Crimean War 1853 to 1856 saw Britain, France, Sardinia and The Ottoman Empire battle with Russia, and was caused by imperial rivalries and religious tensions in the region surrounding Turkey. During the three year conflict there were approximately 20,000 British casualties, many from illness or disease rather than conflict wounds (Figes, 2010). As with earlier conflicts most of these soldiers were buried in unmarked mass graves; during this time it was normal practice that the bodies of those who died on the battlefield would be left and eventually buried by the side that had won the land. At the 1854 Battle of Balaclava, it has been stated that the bodies were stripped of their valuables and kit, then buried in pit graves (Hughes and Trigg, 2008). At Balaclava and other battlefield sites from the Crimean War, the bodies of officers may have been removed from the battlefield and buried elsewhere, but otherwise the remains would have been buried close to where they fell in unmarked mass graves. Some small regimental cemeteries were established by the British during the Crimean War, although they were not officially sanctioned or controlled. It appears that a few British officers took the initiative and built walls to enclose burial grounds and create cemeteries (Lloyd, 1998). When the military left the area, the cemetery was locked or the entrance blocked, and it was left. These cemeteries quickly fell into disrepair, and reports of the dilapidated cemeteries in the Crimea caused unprecedented outrage in the UK (Laqueur, 2015, p.457). At the end of the Crimean War there were 139 cemeteries of various sizes (Laqueur, 2015, p.456) but within twenty years this had dropped to just eleven, due to grave-

robbers, vandals and climate conditions (Crane, 2013, p.8). In 1880 a committee was established to investigate the condition of these cemeteries, and it was agreed that the maintenance of those that remained would be passed to the Office of Works. This happened 25 years after the conflict, and this retrospective interest in war graves could have been caused by the burial reforms taking place at the time (Tarlow, 1997).

Haidar Pasha is a large cemetery in Istanbul that contains approximately 6000 graves from the Crimean War, which are mainly unmarked graves of victims of a Cholera epidemic (Commonwealth War Graves Commission, 2015). The cemetery contains a large obelisk memorial which commemorates the British soldiers who died during the conflict, however the majority of the marked graves are for either officers or medical staff, and not the average soldier. The fact that the number of Crimean War dead buried here is unknown is representative of the attitudes to the average soldier.

With bodies being buried near the site of death far from home, memorials started to appear in Britain as a focus for grief, however these were small in number and were mainly for the officers who had died. The common soldier was again rarely commemorated.

While it appears that the bodies of common soldiers were generally being buried anonymously, and that there was a stark difference between the treatment of officers and soldiers, we do see a change in attitude taking place. The attitude towards the army was changing and this, combined with an increase of national pride caused by the success of the British Empire, created a stronger sense of obligation to the national forces and their deceased (Crane, 2013). Additionally, the Crimean War was the first conflict to be reported by war correspondents, and captured by official war artists and photographers (Löndahl, Price and Robins, 2001). This allowed for the conflict to be captured in a new way, and due to new technology, passed on to the public immediately.

2.1.2 The American Civil War

The first obvious change occurs during the American Civil War, when the first specially constructed military cemeteries came into existence (Popa, 2013). The American Civil War was fought between 1861 and 1865. Due to geographic location and technology, communication between soldiers and civilians took place more easily and relatively quickly, as seen during the Crimean War. This allowed a greater connection between soldiers and their families at home, creating higher awareness of soldiers and their remains (Renshaw, 2013).

One of the significant reasons this conflict was different to earlier conflicts was that it was fought by a high number of drafted civilians as opposed to a professional army. Grant argued that the move towards identifying, burying and marking graves of the war dead during the American Civil War was in part due to maintaining morale in an army of volunteers, but was “a coming to terms with a scale of death entirely unanticipated at the war’s outset” (Grant, 2004, p.93). She explained that the treatment of the dead at the start of the Civil War was the same as in previous conflicts; many soldiers were buried on the battlefield, sometimes by the victorious side due to fast troop movements and a lack of time and manpower. However, we can see that attitudes and actions quickly changed; by the end of 1861 the war department for the Union had instructed that hospitals needed supplies to ensure they could preserve accurate mortuary records and make headstones (Grant, 2004, p. 83).

The Civil War also saw the first unofficial use of identity tags, as some soldiers were given parchments with their name to aid identification if they were killed, reflecting the desire to identify the war dead for the first time (Renshaw, 2013). As early as 1862 Union armies were being instructed to mark areas of ground near battlefields so the dead could be buried as soon as practicable after the conflict, each in a grave with a headstone recording their name when known. This created 41 burial grounds of Union soldiers by 1866 (Longworth, 1985). These burial grounds were considered to be sacred, and the battlefields were often referred to as hallowed ground. When Lincoln made the Gettysburg Address in 1863, he said “We have come to dedicate a portion of that field, as a final resting

place for those who here gave their lives that the nation might live” (Lincoln 1863 as cited in Wolffe, 2015, p.26). In his speech Lincoln was specific about highlighting how all men had given equal sacrifice, and not distinguishing between soldiers and officers (Wolffe, 2015). This was the first occasion where we can see totally equal commemoration of officers and soldiers.

With the first modern war cemeteries appearing, there are still questions over the contemporary attitudes towards the war dead. Lees (2001) stated that both the public and soldiers visited the battlefields, sometimes before the deceased were even buried, to collect souvenirs. While Lees does not provide any evidence to support this statement, it may well be correct, as similar practice was seen in earlier conflicts. This collection of souvenirs could have been due to a lack of respect for the deceased and the desire to find valuables which could be sold. Alternatively, it may have been a method of memorialisation at a time when commemoration of the war dead was rare.

The changes that were seen in America were slow to be reflected in Britain, although there is evidence to suggest that attitudes at this time were changing; in 1889 a mausoleum was created in the Evere Cemetery in Belgium to hold the British remains recovered following the battle of Waterloo (Vanderstraeten, 2014, p.461), which was carried out nearly 75 years after the battle itself. This reflects a change in attitude within society towards the war dead; even if they were still anonymous, the idea of having a permanent and locatable burial or place of commemoration was rising.

2.1.3 The Second Anglo Boer War, 1899 to 1902

This change continued into the Second Anglo Boer War, which was fought between 1899 and 1902 in South Africa. It was caused by tensions between the British and two Boer factions in the region, and resulted in thousands of British war dead, although exact estimates of numbers vary (Laqueur, 1994). Evidence of changing ideas towards the war dead can be seen during the conflict; as well as seeing mass graves, there were an increasing number of individual graves and memorials (Figure 2-1).

Some of these memorials and graves were funded privately, but for the first time the government was also involved in marking war graves. For example, steel crosses were provided by the Government for graves not privately commemorated (Laqueur, 2015). In the UK there were 1,876 memorials built for the Boer War, a major increase from the 379 built following the Crimean war (Wolffe, 2015). However, there was still a lack of recording of graves, few formal military cemeteries and a lack of cemetery maintenance, now reflected in the extensive conservation work that has recently been carried out by the CWGC (Ross, 2011).



Figure 2-1 A photograph of Waterval Cemetery, South Africa © IWM Q 72400 (Imperial War Museum, 2021b)

Spark (2012) argues that there was no improvement from earlier conflicts, and it was still more common for deceased British servicemen to be left in a mass grave rather than an individual one. However, there do appear to have been some changes, and some improvement from earlier conflict, but this change came from the desires of the population rather than the will of the British Army or Government. The main force behind the maintenance of Boer War graves were local groups such as *The Guild of Loyal Women*, who took on the responsibility

for grave maintenance, recording and communication with next of kin (Laqueur, 2015, p.458). Attitudes were changing, and for the general population the idea of having an unmarked grave was no longer acceptable.

2.1.4 Changes in the twentieth century

In 1909 the War Office produced regulations regarding the treatment of the dead in a war zone. This was prompted by Britain signing the 1906 Geneva Convention, which stated that after a battle, the victor would search the land to locate and protect the deceased, they should be carefully examined before they were buried and when identification of the dead was possible, this should be recorded and passed to the host nation as soon as practical (Sperry, 1906). This not only shows the importance of recording the dead, but the importance of protecting the dead from violation and ill treatment.



Figure 2-2 A photograph taken on the *Mackay Bennett* showing the disposal into the sea of bodies recovered following the sinking of the Titanic (Mail Online, 2013)

It was during the early twentieth century that we start to see examples of body identification for British civilians taking place following mass disasters, albeit in a civilian context. After the sinking of the Titanic in 1912, several ships were sent to the scene to recover and identify the remains. The bodies were recovered by the *CS Mackay Bennett*, which had been sent to the scene with a team of undertakers on board (Howells, 2012). The bodies recovered by the *CS Mackay Bennett* were recorded with their number, a physical description, clothing, personal effects and identification if known (Encyclopedia Titanica, 2016). Bodies that were identified were taken back to land for formal burial in Halifax, while some bodies which could not be identified were buried at sea. Bier (2018, p.645) states that due to a lack of adequate embalming supplies, it was decided that only the bodies of the third-class ticket holders were buried at sea, and that the bodies of the first and second class passengers were returned for land burial.

This process demonstrates that for the general population, individual identification in death was considered to be important. The *CS Mackay Bennett* was dispatched with stacks of coffins ready to collect the dead and an embalmer onboard to carry out this work (Bier, 2008), which indicates that the known dead were to be respectfully cared for. On the other hand, the choice to bury some of the unknown dead at sea reflects the traditional attitudes seen previously. A recently auctioned photograph (Figure 2-2) taken onboard the *CS Mackay Bennett* shows a funeral taking place, with a priest present and multiple bodies in body bags lining the deck while crewmen drop them one by one into the sea (Mail Online, 2013). This process suggests that the body is only considered to be important if an identification can be attached to it.

This brief summary of military burial shows that at the start of the nineteenth century, marked burial and memorialisation took place rarely and then only for officers rather than ordinary soldiers. These attitudes began to change in the later nineteenth century, with greater importance placed on burial and memorialisation of the individual. The inclusion in the Geneva Convention 1906 of the need to record and protect the dead shows this change, and this fed directly into the actions of the British during the First World War.

2.2 The British Red Cross and establishment of the Directorate of Graves Registration and Enquiries

Having explored the history of commemoration of war dead in the eighteenth and nineteenth century, we can see that opinions were changing during this time. Section 2.2 will now explore how this change impacted and altered treatment of the dead throughout the First World War, and eventually led to the work of concentration and commemoration, which is explored later in this thesis.

2.2.1 British Red Cross Mobile Unit

“Received a chit from B.H.Q to go up and bury a man who had just been killed. Found that he was a boy of 19 named Gore. I buried him in a little Anglo French cemetery on the side of the communication trench at Road Wood... He was buried just as he fell, in his uniform, with no coffin and not even wrapped in his blankets” (Tanner, 1917).

At the start of the First World War, the burial of deceased servicemen was a responsibility placed firmly with the fighting soldiers (Wilson, 2012). Chaplains would oversee ceremonies when possible, which could take place in fields or woodlands close to where death had occurred, or in local village cemeteries (Heffernan, 1995, p.296). At the outbreak of war, there was no prior thought about how to manage or record the war dead, and no organisation to take on the responsibility (Laqueur, 2015). It was the British Red Cross (BRC) rather than the British Army that first showed an interest in war graves.

When war broke out in 1914, the BRC had set up a Wounded and Missing Department to try and keep track of the wounded and killed, but being understaffed and with few systems in place, it had little impact (Crane, 2013, p.38). The BRC Mobile Unit was made up of cars and vans donated by the British public and was under the command of Fabian Ware. The Mobile Unit was charged with searching the French countryside for missing and wounded British servicemen and relaying them back to the British lines (Longworth, 1985). This work often led them to the graves of British casualties. The volunteers of the Mobile Unit began to collect information on British graves and their locations, and

pass them back to their office in Paris. The BRC issued instructions to aid with this work; when officers were checking with local hospitals if any British wounded had been received, they should also check if any had died. If so, they should record where they were buried and “careful note taken of the exact place”, such as the distance from the nearest station (British Red Cross, 1914). This demonstrates that early in the war, the BRC were already concerned with grave registration, while the response from the Army was largely absent.

In October 1914, Red Cross Medical Assessor Lieutenant-Colonel Stewart, visited Fabian Ware in France. It is stated that as they observed the graves of Béthune Cemetery in Northern France, they realised that while the graves of British servicemen had been marked with crosses, there was no evidence that they had been recorded and no one to maintain them in the future. It was agreed then the Mobile Unit would take on the responsibility of marking graves, registering them, and placing durable crosses and inscriptions, while the BRC would provide the funding. This was to be done on top of their normal duties (Longworth, 1985, p.3).

For the next six months the Mobile Unit worked in Northern France recording and marking British graves. As one volunteer described, “It was really melancholy work and a rather sad task, but it was a necessary one, as apart from it’s sentimental value, it was necessary from a sanitary point of view” (Bryan, 1919, p.13). One unit volunteer named Broadley described how he would locate and record graves; some in local French and Belgium cemeteries but also in fields, gardens and by the side of the road (Broadley, 1914). Makeshift crosses were frequent, often made from soap box with a pencil inscription. When he found makeshift crosses he would replace them with a more durable one, with the name of the deceased carefully inscribed. During this early period the work was being carried out in isolation from the military, with little organisational liaison. Heddy (1914) explained that the only way to locate graves was go to an area where fighting had recently occurred and make enquiries locally rather than relying solely on information from Padres and Army chaplains.

2.2.2 Graves Registration Commission

On 2nd March 1915, it was confirmed that Ware's Mobile Unit was to be the only organisation to deal with the locating, marking and registration of graves in France, and would be known as the Graves Registration Commission (GRC) (Ware, 1915). Once the GRC was established, proper administration could be put in place for the recording of graves. Prior to this, it was the responsibility of the Padre to note grave locations and oversee the care of cemeteries (Crosse, 1916). With the movement of Padres with their units, this often meant that after a Padre left an area, information on graves would quickly become lost. The establishment of the GRC allowed for a centralised location for information on all graves for the first time.

It is known that the area of the front line that required searching for graves was divided into sections, but sources differ on how many sections this included. "The Care of the Dead" (1916) states that there were four Grave Registration Units (GRU) working in France and Belgium, each with two or three sections, implying at least eight sections, possibly more. Longworth (1985, p.8) states that in 1915 the Allied front line was divided into four sections, and after the summer of 1915 was redivided into eight sections, while Wilson (2012, p.28) and Crane (2013, p.54) both talk about the area around the front line being divided into seven sections for examination.

According to Longworth (1985, p.3), burial officers or chaplains would complete a burial return form and give this to the GRC. The GRC would then use this information to make a cross with an accurate description and would then go and place the cross on the grave. In the diary of R.H Bryan, a graves registration officer between 1915 and 1919, he confirms that it was his responsibility to search for graves, obtain details of the buried soldier, and to then mark it with a cross and register its position (Bryan, 1919). The GRC also started photographing graves of soldiers, which would be sent to their relatives (see Figure 2-3 as an example).

A contemporary letter from the GRC provides additional information on this process; it states a list of all registered graves were sent from the GRC to the

Adjutant General's office once a week, where a representative of each regiment was based. The names would be checked by the regiment, corrections made, and then returned to the GRC for the creation of crosses with accurate cross inscriptions (Graves Registration Commission, 1915).

However, Canon E.C. Crosse (in his diary of 1916) talks of completing burial return forms and then erecting the crosses himself (Crosse, 1916). He does not clarify if these crosses were later replaced or not, so may have been temporary. A contemporary government pamphlet "Care of the Dead" (The Care of the Dead, 1916) states that after a burial returns form was completed by the chaplain or burial officer, a member of the GRC would visit the site to confirm it was there and then add a cross if required.

It is clear that the work of finding and marking graves was not a straightforward process due to the constantly changing army and chaplain staff, the makeshift burials and graves, and the dangers of being near the front line. After the death of a graves registration officer in Ypres it was decided the GRC would only work in safe areas away from the front line (Longworth, 1985, p.9).

Between May and October 1915, the GRC had registered nearly 27,000 graves (Longworth, 1985, p.8), but on 16th October of 1915, the GRC separated from the BRC and came under the control of the British Army. This was the first time that war burials were officially under the care of the British Armed Forces, and it happened for a variety of reasons. Firstly, the resources that were required to run the GRC were more than the BRC could provide, both in terms of men and equipment. Secondly, the move to being controlled by the army allowed the GRC to stop the additional BRC work they were still required to undertake, so they could just focus on the work of graves registration. Finally, by the middle of 1915 it had been recognised that while graves registration did not actively contribute towards the war effort, it was considered to be an important aspect of keeping morale high amongst the troops (The Care of the Dead, 1916). With the death toll increasing, it was equally important for the British public to feel the bodies of their friends or relatives were being cared for.

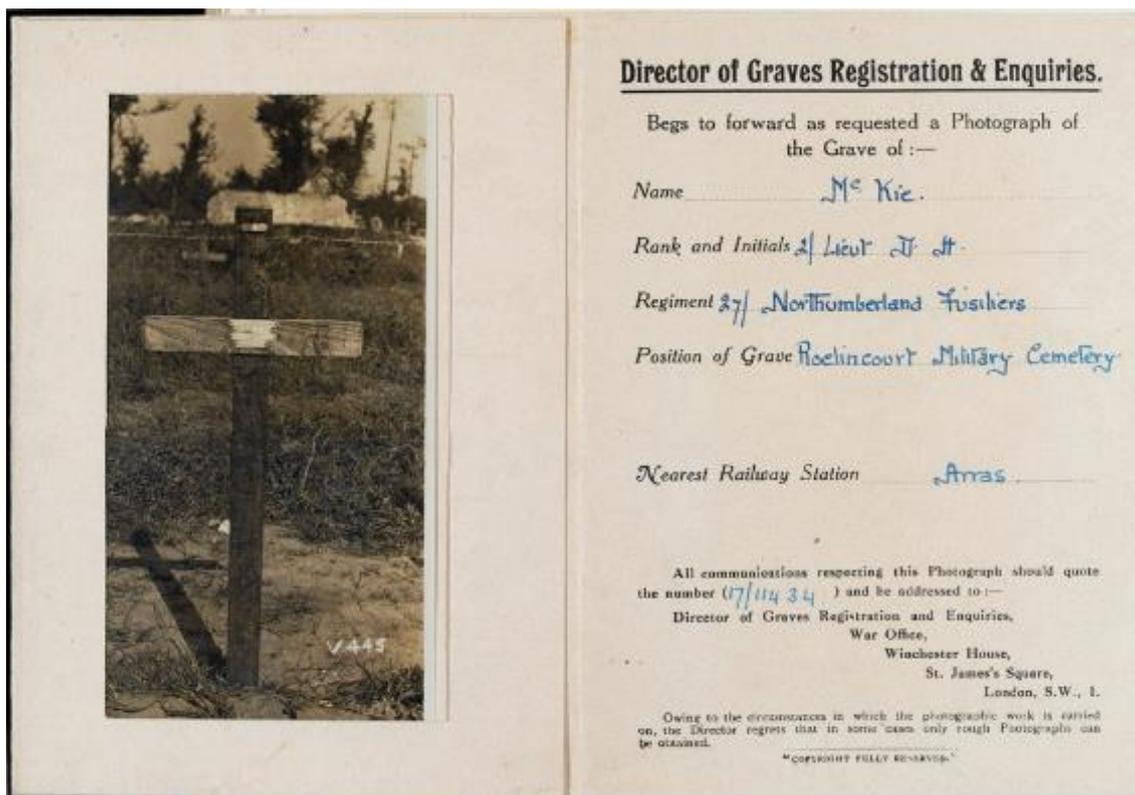


Figure 2-3 A photograph of a grave provided by the DGRE to next of kin (National Army Museum, 2021a)

Under the command of the army, the GRC were quick to implement and enforce several changes. Firstly, as space in French cemeteries was running out, in 1915 it was agreed with the French that land would be given in perpetuity for the burial of British and Commonwealth servicemen (Heffernan, 1995, p.296). This allowed the GRC in 1916 to start to identify and procure areas of land for permanent cemeteries, and by March 1916 two hundred military sites had been chosen, with plans for up to three thousand more if required (Laqueur, 1994, p.153). This was the first time in British military history that British military graves would be individually buried and marked in every case where possible.

Secondly, a ban was placed on the exhumation of remains and placement of private memorials on the battlefield (Macready, 1915); earlier in the war, private exhumations had been carried out, generally by the wealthy, who wished to have the remains of their friends or relatives returned home. In April 1915, this practice was banned, partly because of the hygiene issues surrounding body recovery,

but also to ensure “equality of treatment after equality of sacrifice” (Gibson and Ward, 1995, p.45). It has been suggested that as well as being for reasons of equality, it was also due to the potential expense if the British Government had been responsible for repatriating all deceased British soldiers (Winter, 2014, p.27). Hanson (2005, p.289) claims an additional reason for the ban was to maintain morale at home; watching thousands of bodies being returned to the UK during wartime would have caused low morale among the population, and support for the war dropping. Historians have argued that these restrictions were only supposed to be temporary, and that with the end of the conflict they would be lifted (Heffernan, 1995, p.296). However, as it was strongly felt within the GRC that soldiers from all social classes were fighting and dying, all should be treated equally in death, so it seems unlikely that this restriction ever would have been retracted. Despite the ban, illicit exhumations did continue both during and after the conflict; once the GRC came under the control of the British Army, this became easier to stop.

Additionally, it was the GRC that pushed for a new double identity disc to be worn by soldiers on the front line. At the start of the war, British soldiers were given single aluminium identity discs to wear. Frequently when a soldier was killed, this tag was removed to prove the individual had died. If the body was then not buried until later on, or was disturbed and had to be reburied, it meant that in most cases their identity was lost (Robertshaw and Kenyon, 2008, p.154). In 1916, these identity tags for British soldiers were replaced with a new system; two tags made of compressed fibre were worn, one green and one red. If the individual was killed, the red tag would be removed and the green tag left in place. This increased the chances of identifying the remains in the future (Ashbridge, 2020).

2.2.3 Directorate of Graves Registration and Enquiries

In February 1916, the GRC became the Directorate of Graves Registration and Enquiries (DGRE). The DGRE were to continue the grave registration work of the GRC in France and also Belgium, as well as other areas of the world that were seeing British and Commonwealth casualties. At the same time, the National Committee for the Care of Soldiers Graves was established; it was created at the

request of the French Government to manage and ensure the upkeep of British cemeteries and memorials overseas after the war (Longworth, 1985, p. 16). It was to be a government sanctioned body and had the Prince of Wales as President. Arguably, it actually did very little during the war itself, as its main function was to complete work after the war.

During 1916, some of the worst battles of the First World War were taking place and causing huge difficulties in grave registration. Robertshaw and Kenyon (2008) classify the three types of death seen in the First World War at this time; death in a position held by friendly troops, death away from the front line, and death in no man's land or on the battlefield.

Death in an area held by friendly troops, such as in the trenches, could not be dealt with immediately, and would often involve burial in disused trenches or shell holes if bodies could not be moved back to a safer area for burial (Desfosses, Jacques and Prilaux, 2009, pp.71–72). Reverend Walker (1916) describes presiding over a burial at the front line trenches; he explains how the bodies were wrapped in “bloodstained ground sheets” and that the burial took place with shells passing overhead. He does not describe if the grave was prepared or makeshift, but it must have been considered important to give these individuals a “proper” burial despite the dangers involved. It is often stated how important burial of the dead was, whether it was a “strong obligation to bury comrades” (Holmes, 2004, p.298), or because “witnessing the inhumation of a friend provided a sense of stability within the tumult of war” (Wilson, 2012, p.29).

Deaths away from the front line were the easiest for the DGRE as these bodies could be identified and buried in an established cemetery. These burials generally took place near casualty clearing stations or field hospitals (Wilson, 2012). Aid posts and dressing stations would be located closest to the front line and would issue immediate first aid to the wounded. The injured would then move back to a casualty clearing station, which was essentially a field hospital, for further treatment before being taken to a base hospital or evacuated back to Britain (Holmes, 2004, pp.476–479).

For the aid posts and dressing stations, burial could be haphazard; Tyne Cot Cemetery was established as it was next to an aid post. The original burials were conducted in improvised graves and are in various orientations, unlike the additional post war graves (Robertshaw and Kenyon, 2008, p.151). Essex Farm Cemetery was started as it was located near a dressing station, and expanded after the armistice (Holmes, 2004, p.477). The larger casualty clearing stations and field hospitals had bigger cemeteries which used trenches for burials (Morris, 1997, p.413). Walker (1916, p.10) described conducting a burial near a clearing station, "No firing party for any of these funerals, but the distant rrrrrr of the machine guns and the full roar of the heavier guns play the real music".

Lastly, deaths on the battlefield were the most distressing, as these bodies could often not be recovered for some time if at all, so could be left to decompose in the open (Robertshaw and Kenyon, 2008, p.150). The treatment and eventual outcome of these deceased varied, and there are contemporary reports of soldiers living in trenches with the dead decomposing on the sides or even in the trenches with them (Tanner, 1917). This lack of burial caused suffering not just for front line soldiers, but for the families at home, and these bodies would be the most difficult to identify after the war. Canon Crosse talks of sweeping the battlefield a few days after the start of the Battle of the Somme, collecting injured soldiers on the way forward, and the dead on the way back (Crosse, 1916). Wilson (2012, p.35) talks of GRU being responsible for burials in the front line, however there does not appear to be any evidence to support this. Instead, the role of collecting and burying the dead was completed by Army burial parties and was not the responsibility of the DGRE.

The work of the burial parties themselves appears to have been rarely examined or documented, and most available information on their work comes from contemporary letters and diaries. The Reverend E.V.Tanner gives one such example of the work and organisation of the burial party in his war diary, written while acting as Padre on the front line. He states that the burial party was made up of 100 men, 25 from each battalion, acting under the supervision of the Divisional Burial Officer. On the 26th May 1917, these men went to the site of the

latest battle and identified an area suitable for use as a cemetery. 24 men were left to dig grave trenches while the others went out to search the battlefields, collecting and returning with any remains they found, ready to be buried. On this occasion, the burial party came under attack, causing many of the recovered bodies to remain exposed (Tanner, 1917).

The task faced by burial parties could be exceptionally unpleasant. One member of a burial party describes it as a ghastly job and recalled trying to search bodies which were “just a little heap of bones and maggots” (McCauley, no date, p.90). Tanner gives a first hand account of locating a body in a stream; “It was a gruesome sight. The skull was in the middle of the water. The trunk was a mass of soft clay and bones. The legs still in top boots were also in the stream a few yards away. Closer investigation resulted in the production of the mans knife and pocket-book, and also his identity disc tied to a mills bomb” (Tanner, 1917).

It was nearly impossible for the DGRE to register the graves on and around the battlefield. Unfortunately, for many graves at or near the front line, the chances of being disturbed by later activity was high. As the lines moved, fighting and shelling could destroy graves and in some cases obliterate entire cemeteries (Hanson, 2005, p.311), as seen for two of the original cemeteries at Sanctuary Wood, Belgium (Commonwealth War Graves Commission, 2020). The accurate recording of graves and cemeteries became crucial on these occasions; prior to the German advance in 1918, nearly all cemeteries that were lost had been accurately surveyed and recorded, allowing for reconstruction to take place where required (Directorate of Graves Registration and Enquiries, 1918b).

2.2.4 Imperial War Graves Commission

By 1917, Fabian Ware had started to work towards creating a new organisation to maintain and preserve the war graves and cemeteries of the Great War. He was clear that this body should be international and include representation from all the Commonwealth nations that had fought in the conflict (Heffernan, 1995, p.297). He was also clear that it should have experience of recording graves and cemeteries, and should not be completed by the Office of Works, who had let the graves of the Crimean War fall into disrepair (Longworth, 1985, p.25). Ware was

clearly aware of the desire to commemorate soldiers and their final resting place, and did not want this job to fall to an organisation that had, in his opinion, already failed in this task. Additionally, by creating a new organisation, he could remain in control of its work and progress.

The IWGC came into existence on the 21st May 1917, with the Prince of Wales as President and representation from all fighting countries of the Empire and colonies. The role of the IWGC was to care for the graves of Imperial soldiers killed during war and obtain land for the construction and maintenance of permanent cemeteries and memorials, and from the first meeting 20th November 1917, it was agreed that all soldiers and graves would be treated equally (Imperial War Graves Commission, 1917). Fabian Ware was later elected as Vice-Chairman, with the Secretary of State for War, Lord Derby, elected as Chair. As well as members of the Commonwealth countries other members of the IWGC included writer Rudyard Kipling, Admiral Poe of the Royal Navy, Sir William Garstin of the Red Cross and Harry Gosling from the Transport and General Workers Union (Crane, 2013, p.99). Lacking in representation were women; the entire panel of the IWGC were male.

By the end of 1917, Sir Frederic Kenyon had been assigned as the architectural advisor for the IWGC, and Sir Edwin Lutyens, Reginald Blomfield, and Herbert Baker were identified as the principal architects for the cemeteries and monuments in France and Belgium. Lutyens and Baker were encouraged to visit the battlefields and cemeteries of France in the summer of 1917, a trip which highlighted to Lutyens the importance of the landscape of burial and the connection to the modern English garden cemeteries (Barlow, 2013, p.319).

In February 1918, the IWGC accepted the following recommendations from Kenyon on the forms of all future cemeteries;

- each soldier will have a headstone of uniform dimensions;
- each regiment will have its own patterned headstone;
- each headstone will include rank, name, regiment and date of death;
- each cemetery will have a cross and a large memorial stone;
- each cemetery will have some kind of shelter;

- cemeteries will be planted with flowers and shrubs;
- each cemetery will be fenced in;
- each cemetery will contain a register of burials;
- isolated or small groups of graves will be concentrated into selected cemeteries (Crane, 2013, pp.128–129).

This demonstrates the commitment to equality in burial first introduced by the GRC, and the desire to provide memorials and cemeteries without distinction based on social status, religion or race. For the first time it shows real equality, in terms of remembrance, between officers and soldiers. During the war, life was different for officers and soldiers. While officers would take part in offensives with their troops, they would live separately, eat separately and sleep separately. Even the travel to and from France and Belgium would separate officers from men (Hanson, 2005, p.169). And yet, these groups who had limited contact in life were to be buried equally in death.

It also shows that before the end of the war there was already the thought that single graves should not be left scattered across the landscape, but should be concentrated. Also key was the desire for soldiers to be buried close to where they had died, and therefore cemeteries should remain close to the battlefields.

While the IWGC was starting to think about cemetery building, the DGRE work of recording graves continued. During 1918 124,371 graves were registered, identified and marked, with an additional 74,024 graves registered but not verified (Directorate of Graves Registration and Enquiries, 1918b). During this time, some graves and cemeteries were in territory taken by the Germans, and with the fighting taking place around them, many graves and cemeteries were destroyed. Conversely, other areas were accessible for the first time, which allowed for some graves dating from 1914 to be recorded for the first time.

2.2.5 After the armistice, 11th November 1918

“Our task was first of all to make the many war cemeteries and remove the known dead from small communal French and Belgian cemeteries and isolated graves and also, a much more difficult task, to make a systematic search for and

identification of the unknown dead; but not even we who were engaged in this task could estimate, at first, what it meant. Not only had many thousand been buried where they fell in the confusions of no man's land; in wrecked trenches and dugouts; beneath the debris of villages and towns; in unsuspected fields, gardens and woods – but some earlier cemeteries had come into the battle line again, when our armies fell back, and had been shelled out or fought over for months or years” (Kendall, 2016, p.146)

By the end of the war, the IWGC was ready to start work in establishing permanent war cemeteries. It was in November 1918 that the plans were put in place to start construction on the first of the IWGC cemeteries. Le Treport was the first of the experimental cemeteries designed by Blomfield, and completed in line with IWGC specifications (Crane, 2013, p.143). However, the creation of war cemeteries would not be a straightforward task. After four years of war, the landscape in France and Belgium was unrecognisable and many graves and cemeteries had been damaged or destroyed (Figure 2-4). Some human remains were exposed and there were many scattered graves, particularly at the sites of the bigger battles. It had been agreed during the war that any cemeteries containing less than 40 graves would be concentrated into bigger cemeteries (Hanson, 2005, p.318), along with any isolated or lost graves and any unburied remains, and this work fell to the DGRE.

Different nations managed their war dead differently; for the French, the named dead were repatriated and allowed permanent burial in a military cemetery, while the unnamed were placed in ossuaries (Verna et al., 2020). The Germans were well known for burying their dead after the battles, keeping accurate records and even creating concentration cemeteries to contain single burials. However, after the war many of the German cemeteries fell into disrepair or were destroyed (Vancoillie, 2021). Meanwhile, the Americans chose to repatriate all of their deceased, which involved exhuming the remains of American soldiers, including those that had been concentrated (Tradii, 2019, p.254). This was not a problem free exercise, as there were occasions where the bodies of British soldiers were

exhumed and transported in error due to burials taking place in trench graves (Burbery, 1921).

During the 6th meeting of the IWGC on 19th November 1918, it was agreed that the work of concentration of British and Commonwealth burials would start immediately. It was agreed that the men completing the concentration work must volunteer for it, and in return would receive a higher wage. This higher wage was supposedly a reflection of the distressing nature of the work (Imperial War Graves Commission, 1918). This urge that men partaking in exhumation work must be volunteers should have meant that no one was being forced to do it and that those involved were committed to the work they were undertaking, therefore providing a better service. However, the offer of a higher wage may have had the opposite effect, and attracted those who were simply completing the work for the additional money. Soldiers returning to the UK having been demobilised sometimes found it difficult to find work at home (Holmes, 2004, p.622) and the offer of well-paid employment must have seemed attractive despite the gruesome work involved. However, even with the extra pay, recruitment was difficult and in December 1918 it was noted by the IWGC that there was a significant lack of labour (Imperial War Graves Commission, 1919b, p.2). It was months before sufficient numbers of men could be found to complete the work; in May 1919 the Secretary of State approved an Army order to recruit an additional 5000 men to assist with concentration (Imperial War Graves Commission, 1919a). Australian and Canadian units were formed to help fill the labour gap (Fathi, 2018, p.3).

A lack of staff was not the only obstacle; four years of fighting had destroyed many of the buildings around the battlefields, which meant accommodating exhumation staff was problematic (Burnett Stuart, 1919). Additional to this, there was a lack of transport available, meaning exhumation staff were limited in how far they could travel and if they did recover human remains, they could not transport them anywhere (Longworth, 1985, p.58). Pressure on the transport system caused by the mass demobilisation of troops meant that it was difficult to get supplies and equipment needed to complete exhumation work (Laqueur, 2015, p.467).



Figure 2-4 A battlefield cemetery at the end of the war © IWM Q 100917 (Imperial War Museum, 2021c)

These delays meant that concentration work did not start until 12th January 1919, and when it did, it was taking 5 or 6 men approximately a day to exhume, transport and reinter a body. Work was then stopped in January for a month due to the cold weather and frozen ground, and did not restart until February (Burnett Stuart, 1919).

Sources that detail the processes followed during the first few months are minimal, but it appears the DGRE would provide data on registered graves for one square of a trench map chosen for examination. This data would then be given to an exhumation unit who would use it to search the map square, and identify any recorded and unrecorded graves. Some of these graves may have been marked and remained visible, but many would not. In areas that had seen heavy fighting, trying to locate recorded graves in the damaged landscape was particularly difficult.

“The work is of necessity slow; the shell craters full of water, mud and tangled belts of barbed wire render it difficult to find graves which are known to exist, and the ground has to be carefully searched to discover others which have not been registered” (Burnett Stuart, 1919).

Following the search of the landscape, there are no contemporary records about how exhumation, examination and reburial were carried out for the earliest concentrations, which took place before July 1919.

Various problems were experienced during this time by staff carrying out the search and exhumations, such as multiple graves being present where they were not expected and crosses being found with no body buried underneath them (Burnett Stuart, 1919). At this early stage, if bodies were recovered from under a cross, it was common practice to accept the name on the cross as being the identity of the body recovered underneath, and therefore the bodies were not fully examined (War Office, 1921). As we know that exhumation teams were using pre-existing information of grave registration to direct their work, it is quite possible that when bodies were found where graves had previously been registered, the information of the registered grave would be given to that body rather than a full examination be carried out.

Searching for burials was difficult due to the conditions; much of the land was littered with the remnants of four of years of fighting and the landscape had changed vastly during that time. This meant that even if a precise burial location was known, the destruction of all corresponding geographic features and reference points made it nearly impossible to find (Hanson, 2005, p.293). It was also dangerous for exhumation units, with men being injured through unexploded ordnance and exposed to leaking poison gas shells (Canadian War Graves Detachment, 1919).

It is clear that this early work was not straight forward and there were concerns over its standard; discussing this during a review into the work undertaken at Hooge Crater, it was stated *“At that time the speedy clearing of the battlefields was probably of higher importance, from sanitary and other considerations, than minute accuracy in establishing the identity of the bodies that were found. The*

lack of experience.... in this kind of work, the want of detailed instructions, difficulties of housing and administration, the quality of the personnel engaged, were further factors that contributed to a system under which mistakes were apt to occur” (War Office, 1921).

In July 1919, new guidelines were issued to burial and exhumation staff entitled “Instructions as to concentration of isolated graves and groups in cemeteries”. These very comprehensive instructions were issued to all parties involved in grave exhumation and appear to be the first written instructions available. It is thought that prior to this, burial parties were working without clear instruction, which would have caused disparity between the work of exhumation companies and would have made the success of the work very reliant on the competence and experience of the man in charge.

The new instructions give clear detail on the methods that should be followed by the exhumation and cemetery staff. Firstly, the DGRE would mark up the area of a 500 yard map square to be searched. The area should be searched and cleared in small sections, with a stake being planted at any potential graves. During this process staff were to be particularly vigilant for rifles, stakes or other equipment which may have been placed at the head of a grave, equipment or remains which may be semi buried but visible, “rat holes” where small mammals may have brought small pieces of bone to the surface, and discolouration of grass, earth and water. It states that “grass is often a vivid bluish-green colour where bodies are buried, while earth and water turn a greenish black or grey” (Crawford 1919 cited in War Office, 1921). These instructions show a clear understanding of how decomposition impacts the appearance of soil and water, and the methods followed for searching and exhuming a body were very similar to those seen in modern forensic archaeology (Martin, 2020).

Following the searching, exhumation began at each area which had been staked, with digging starting beyond the area believed to contain the body and working inwards (War Office, 1921). If a body was found, it would be exhumed (as shown in Figure 2-5) and placed on a canvas sheet ready to be searched for any

indicators of identity, such as an identity disc, personal effects or letters (Figure 2-6).



Figure 2-5 An exhumation party recovering a body © IWM Q 100914 (Imperial War Museum, 2021d)

Following examination, the body was wrapped in the canvas and an officer completed a label containing information including the map reference where the body was found, if a cross was present, the name and rank if known, the unit if known, any personal effects which may provide an identification and if a committal service was required. Personal effects were placed in a bag and travelled with the body to the cemetery selected for reburial, along with a battlefield cross if present. If more than one body was found in a grave, or where bodies were buried next to each other, this would be marked on the labels of both bodies, so the remains could be reburied next to each other in the new cemetery.

When the body arrived at the cemetery, the personal effects would be examined and compared to the label attached to the body. The bag of personal effects was then labelled and removed from the body and the body was reburied. At this stage an "A" form was completed, containing all the information from the label that came with the body, which gave details of where in the cemetery the body had been reburied (Figure 2-7 gives a summary of the records process).

Bodies were placed within a pre-dug trench, 4 foot and 6 inches deep, with each body having 2 foot of grave space. Prisoners of War may have been utilised to dig the trenches but were not allowed to be present during the reburial and committal process. How often Prisoners of War were used is unclear. Once the trench was filled and committal had taken place if needed, either a stake with the details of the deceased was placed at the head of the grave or the battlefield cross if provided. These stakes and battlefield crosses would remain in place until GRU would replace them with crosses (War Office, 1921).

While the DGRE were working on exhumation and identification on the front line, their office in London was trying to assist with this process. Their role was to coordinate information from the ground, to cross check it with details already held of grave location, carry out additional research to help identify individuals and investigate duplications. This work could be quite extensive and time consuming; as one observer explained "I have been shown an identity established from two initials on a shirt, after a correspondence involving 40 letters" (Imperial War Graves Commission, 1920a).

The successful identification of bodies in the field relied on a thorough check for personal effects and identity discs, which was not problem free. Most of the bodies being exhumed were several months or years old, meaning that decomposition would have been very advanced and handling these remains would have been a particularly difficult task. By 1920, bodies from 1918 were reported to already be in an advanced state of decomposition (Hanson, 2005, p.356). Combined with the difficulties of trying to examine decaying remains, the identity discs were not always easy to find. The identity discs made from compressed fibre were subject to taphonomic processes when buried, for example damage due to soil chemistry and water, so did not always survive and could be illegible when they did (Directorate of Graves Registration and Enquiries, 1920a)



Figure 2-6 A body being examined after exhumation © IWM Q 100915 (Imperial War Museum, 2021e)

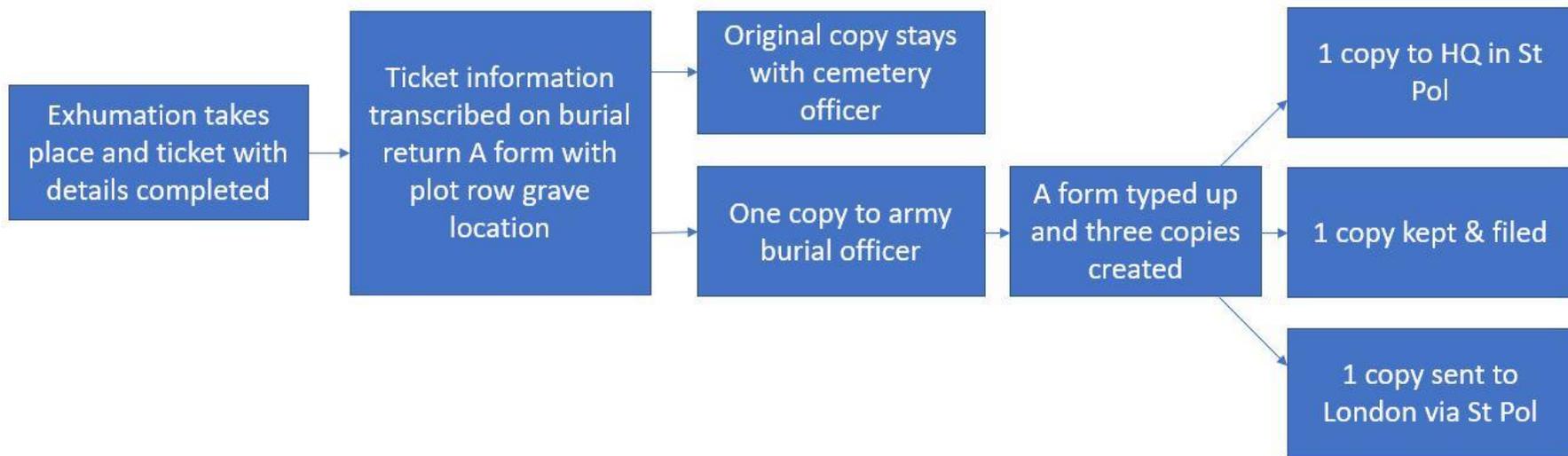


Figure 2-7 Flowchart showing the information relay from exhumation through to IWGC Office, London

Not all identity discs were recovered at the time of exhumation; there are stories of identity tags being pushed into the flesh by bullets or sinking into the chest cavity during decomposition, therefore causing them to be missed (War Office, 1921). Finally, discs were not always worn as expected; many of the miners chose to wear their identify tags fixed to their braces rather than around their necks, therefore examination of these individuals could have easily led to a missed identification (Hanson, 2005, p.319).

Another difficulty faced was the stripping of bodies by soldiers during the war (Saunders, 2010, p.36) and after the armistice (Hanson, 2005, p.318; Orpen, 2010, p.32). Disturbance of bodies and the removal of personal effects by soldiers or the public reduced the chances of bodies being identified.

2.2.6 Opposition to the IWGC

Despite the work being carried out in France, Belgium and across the world, there was growing unrest at home surrounding the policy of equality and uniformity in burial, and the ban on repatriations. Prior to this ban, bodies which had been brought back to Great Britain had been buried with a memorial or headstone of their family's choice. The IWGC had no authority to have these changed to the standard headstones agreed for IWGC cemeteries, which led to the argument of relatives that if equality could not be enforced at home, it should not be enforced for burials abroad (Longworth, 1985, p.45). This unrest became so strong that on 4th May 1920, a debate was held in the House of Commons about the decision of the IWGC to deny relatives the choice of headstone and their policy of uniformity. The debate concluded in favour of the IWGC policy, despite opposition, and the work of the IWGC was allowed to continue (Crane, 2013, p.164).

Both the IWGC and the War Office (in the form of the GRC and later the DGRE) had made decisions regarding burials and monuments that would normally be made by the bereaved. These organisations, which had been set up without consultation with the public, were denying the bereaved the opportunity to choose what should happen to the remains of their friends or relatives. It was inevitable that at some point a discussion would need to be held to address if this was

acceptable. This debate was important because it validated the existence and work of the IWGC in a way which had not happened previously.

2.2.7 Closing the DGRE

“I certify that the whole of the battlefield areas in France and Belgium have been cleared of such isolated British and German graves... as were marked in any way above ground which was accessible or could have been found by reasonably careful search. Graves so found have been concentrated, and all available particulars of identity and full information of the places original burial and reburial have been furnished to the IWGC” (Directorate of Graves Registration and Enquiries, 1921).

It was agreed in December 1920 that the DGRE would start to hand over their various responsibilities, with the exception of exhumation, to the IWGC, with the aim of closing the DGRE (Imperial War Graves Commission, 1921a). This decision was taken because the IWGC had discovered that the DGRE were behind in all areas of their work (Imperial War Graves Commission, 1920b), and due to lack of funding, they had not completed the work satisfactorily (Imperial War Graves Commission, 1920c). It was agreed that exhumation would continue to be carried out by the DGRE, but be confined to specific areas where records stated that bodies were buried but had not yet been found.

In February 1921, it was confirmed that the work of exhumation was taking considerably longer than expected, and that due to “the reconstruction of the devastated area, the removal of debris and the drainage of the land, it has now been possible to carry out work which could not possibly have been foreseen. Bodies are still being discovered at the rate of over 800 a week, and while this continues the Council, although anxious to terminate this expenditure at the earliest possible date, feel that they would be unable to maintain that they had discharged their obligations fully in the matter if the work were suddenly curtailed” (Cubitt, 1921, p.2). It is clear that the cost of concentration was mounting and becoming difficult to justify. The DGRE and IWGC found themselves under pressure to get the work wrapped up as soon as possible, despite the continuing efforts to find bodies and confirm identifications. This included dramatically

reducing the instances where the excavation of already concentrated unknown burials had taken place, to try and confirm an identity (Imperial War Graves Commission, 1921b).

Officially the decision to close the DGRE and move to passive recovery of bodies rather than active searching was taken because the work had to come to an end at some point (Ware, 1921), and that as long as bodies were being searched for, they would continue to be found (Longworth, 1985, p.64). However it is also clear that there was considerable expenditure involved in concentration (Imperial War Graves Commission, 1921c) and this was a contributing factor. As detailed in the IWGC minutes from October 1921 “the Government would not be justified in continuing longer this very expensive military operation in France and Belgium” (Imperial War Graves Commission, 1921c, p.2).

In August of that year, a letter from the DGRE to the War Office explained that the battlefields of France and Flanders had been searched for isolated graves multiple times and that all single graves and small cemeteries that could be located had been moved. It also said that despite this, it was inevitable that further human remains would be discovered during the reconstruction work (Dick-Cunyngham, 1921). In fact during August 1921, bodies were still being found at a rate of 600 a week (Imperial War Graves Commission, 1921b). However, as one report stated “Until the reduction in strength of the D.G.R & E the remains of about 600 men were being recovered per week, since the reduction in strength this has fallen to about 200” (Imperial War Graves Commission, 1921b, p.2). This shows that the reduction in the number of bodies being found was closely linked to the number of men available for exhumation work, rather than concentration being completed.

On the 10th September 1921, the DGRE was closed and all grave registration and body recovery work was passed to the IWGC (Directorate of Graves Registration and Enquiries, 1921). This took place while there was still work to be done on clearing the battlefields and reburying the dead, with hundreds of bodies still being recovered every week (Imperial War Graves Commission, 1921b). By this time, all areas of the battlefield had been searched at least six times (Kendall,

2016, p.147) and the DGRE had exhumed and reburied approximately 204,000 burials (Imperial War Graves Commission, 1931a)

2.2.8 Grave recovery from September 1921 onwards

The IWGC recognised that stopping the search activities could cause major discontent amongst the public, and that “from the public point of view there would be cause for complaint if any relaxation was made in reasonable efforts to bring into the cemeteries bodies still undiscovered” (Imperial War Graves Commission, 1921c, p.2). They knew that they did not want to continue the exhumation work previously carried out by the Army due to the cost and logistical demands. However, they also realised that if people knew the service was being stopped while approximately 200 bodies a week were still being recovered, there would be uproar. It was therefore felt that by having staff available to respond to reports of new graves, and investigating evidenced requests from the public of grave locations, then this would demonstrate that the work was continuing and had not simply been abandoned (Imperial War Graves Commission, 1921c). This enabled the IWGC to avoid public upset while being able to significantly scale back the concentration work being carried out. The cessation of active searching was reported by the press, and articles on the subject were published in *The Daily Mail* (1921) and *Evening Standard* (1921). No letters of complaint survive in the archives of the CWGC, so it is difficult to gauge the public response to this change, although the minutes of the 37th meeting state that there had been a “certain amount of pressure from the public, both in the press and in private correspondence” (Imperial War Graves Commission, 1921c, p.1).

As stated in the IWGC Annual Report for 1921-22, “It was realised that in the course of reconstruction, drainage operations and the clearing of debris, bodies hitherto unsuspected would be found, and that this might continue for some years. Agreements were therefore made with the French and Belgian Authorities that any remains discovered by inhabitants or by the reconstruction gangs should be reported to local representations of the Imperial War Graves Commission, by whom arrangements are made for the re-internment of the bodies in existing military cemeteries” (Imperial War Graves Commission, 1922a, p.4).

Despite the awareness that bodies would continue to be discovered, the IWGC were slow to implement a new system for body recovery and reburial. In August 1921, the Australian High Commission wrote to the IWGC asking for information on concentration following the demobilisation of the DGRE, and received a response stating “that the question of arrangements for the carrying on of necessary exhumation work after the withdrawal of the DGR&E, is engaging their [IWGC] attention” (Imperial War Graves Commission, 1921d). Shortly after, another letter was sent by the Australian High Commission stating that a large number of isolated graves had been found and needed to be concentrated, but due to the demobilisation of the DGRE, there was no one available to carry out the work (Australian High Commission, 1921a). A further letter was sent in October 1921 asking for an update as it was “presumed that some definite policy has been decided upon” (Australian High Commission, 1921b).

It was suggested that IWGC cemetery gardeners could be used for the exhumation and reburial of soldiers’ remains when found, but it was eventually decided against this. Instead, gardeners should only be responsible for recovering and reburying human remains when their existence was reported directly to them. It was expected that this would be a rare occurrence, so on these occasions gardeners would be given extra pay (Imperial War Graves Commission, 1921e). Instead, any new bodies would be reported to the IWGC representative for the area, who would then arrange for the collection and reburial at an IWGC cemetery, using a combination of IWGC staff and civilian labour. Ideally this civilian labour would have been British, but due to the unpredictable nature of when and where bodies may be located, mostly local labour was used instead. The IWGC felt it was not “practicable” to maintain an exhumation service as the Army had (Ware, 1921). In 1921 the French already had a contract in place to use local labour to recover and relocate French bodies for a fixed price of 52 francs, and it was recommended that the IWGC should contract this service for their future use (Ingpen, 1921a). The Belgians did not have a similar system so it was suggested and agreed that Belgian local labour should be employed when needed (Ingpen, 1921b). This will have been primarily for reasons of economy,

in that it would have been cheaper to employ local labour on an ad hoc basis rather than employing British workers full time, that may not have been needed.

In an effort to encourage local farmers and reconstruction parties to report British and Commonwealth bodies to IWGC staff when they were located, it was agreed that a fee of 2 francs would be paid for each reported body (Imperial War Graves Commission, 1923a). While this may have encouraged wider reporting of bodies, it undoubtedly also led to cases of fraud, where any bodies located were reported as British, even if this meant disturbing them and stripping away evidence to the contrary (Vancoillie, 2021). There were also occasions where located bodies were stripped of identifying personal effects before being reported; as described at the time, “A man finds a body, he comes & reports & I pay him (after I have ascertained the truth) but frequently he finds some little thing of value & puts it in his pocket” (Chapman, 1922), although it is difficult to know how common this was.

While not actively looking for bodies, as predicted large numbers continued to be found. By March 1923, in a period of approximately 18 months, 6107 new bodies were found and reburied in France and Belgium (Imperial War Graves Commission, 1923b, p.7). While this number is tiny compared to the numbers previously being recovered by the DGRE, this was still a lot of additional work for the IWGC.

2.2.9 IWGC policy around exhumation of concentrated graves

The IWGC policy had always been that once a body was buried in an IWGC cemetery, it should remain there in perpetuity and therefore not be disturbed unless for very specific reasons. When discussing the desire to move graves within cemeteries to allow better use of available land, it was stated “The policy of the Commission has always been not to assent to any disturbance of graves except for reasons of sanitation or where absolutely necessary to preserve the remains from violation” (Ellissen, 1922). Any requests for exhumation had to be filed in writing to the vice-chairman and were generally only approved when resolving duplications or confirming a suggested and evidenced identification.

As shown in Chapter 4, the IWGC knew of errors in concentration and continued to find evidence of these errors. However, in early 1922, the position of the IWGC was that the records of the DGRE were assumed to be correct unless they disagreed with other DGRE records, or questions were raised by the public that could suggest they were incorrect (Chettle, 1922). This is significant because despite the IWGC being aware of the errors made by the DGRE regarding identification and reburial, and understanding the scale of those errors, they were choosing to trust these records unless evidence was provided to suggest they should not. It is not clear if this was because they felt that the majority of records were correct, or if it was because they did not want to explore how bad things could be. It is also highly likely that they did not want the public to know the extent of mistakes. A letter from 1922 survives in the CWGC archives regarding the correction of error in Ypres Town Cemetery Extension and demonstrates this desire to hide the problems seen. In this particular instance a group of individuals were buried together, and the crosses may have been incorrectly placed over their graves. One suggestion is to put the crosses up in the “best order possible” based on records available, with the response that this option “is fairly sound... it would be fairly satisfactory from a records point of view. If, however, it is considered that the relatives are likely to ask awkward questions, which the Commission are not prepared to explain, this must be abandoned” (Imperial War Graves Commission, 1922b, pp.1–2).

The IWGC had inherited the problems from the DGRE but knew that they would be held responsible for this early, poor quality work, and they did not want that to become public knowledge. They had to decide how to manage this, and their approach was to avoid doing exhumation as much as possible (Burbery, 1921). This worked twofold, in that it conformed to their policy of not disturbing graves, and it avoided further confusion. As discussed in Section 6.5, this has a significant impact on the modern-day identification of First World War bodies.

2.2.10 Bodies recovered from 1921 to 1939

“As time goes on the number of these discoveries will grow less, but bodies are still being found in the Ypres Salient, on Vimy Ridge and on the Somme,

particularly in the regions of Thiepval, Mouquet Farm, Delville and Hangard Woods. It is expected that more will be found when the French authorities begin to clear Courlon, Trones and High Woods, which at present are impenetrable on account of the thickness of the undergrowth and the presence of considerable quantities of unexploded ammunition” (Imperial War Graves Commission, 1923b, p.7).

As predicted, bodies continued to be located, and the number of bodies found during the 1920s and 1930s was well into the thousands, although the exact numbers are difficult to calculate. In 1931, the IWGC stated in a letter that the number of bodies discovered and moved in France and Belgium between October 1921 and September 1931 was 32,711 (Imperial War Graves Commission, 1931b). However, those numbers do not correspond with the figures given in the annual reports for the same period; these figures claim that between November 1921 and March 1931 30,242 bodies were moved (Table 2-1). The discrepancy could be due to the additional six months of reporting given in the letter, but it seems more likely that the numbers given in the annual reports were subject to later change.

Despite the differences in the total number, both sets of figures show a similar pattern; several thousand bodies were found in the first 15 to 18 months (either 6107 according to the annual report or 6625 according to the IWGC in their letter), with the numbers recovered per year slowly falling after this, but staying in the thousands. According to the annual reports, the numbers do not drop to less than a thousand bodies a year until 1932-33, when 917 were recovered. These bodies were being found primarily by IWGC staff, farmers and reconstruction workers, and the majority were found in France, from areas around the Somme battlefields (Imperial War Graves Commission, 1933a, p.27).

During the 1930s the initial work of completing cemeteries and marking graves came to an end. By 1933, the IWGC were caring for 2,308 cemeteries containing 563,638 graves in France and Belgium (Imperial War Graves Commission, 1933a). They had also built and unveiled the series of memorials to missing soldiers including the Menin Gate and Thiepval. The numbers of bodies found

per year gradually decreases, eventually falling to 532 in the year 1938/39 (Imperial War Graves Commission, 1939a). With the outbreak of the Second World War, the IWGC work of maintaining cemeteries and memorials was stopped and most staff were evacuated when it became unsafe for work to continue (Imperial War Graves Commission, 1940).

Table 2-1 Table showing the number of bodies recovered from France and Belgium between 1921 and 1931. Taken from the IWGC annual reports number 3 to 13 and Imperial War Graves Commission, 1931b

Year covered from annual reports (given as financial year)	Number of bodies according to annual reports	Year covered from IWGC letter (given as calendar year)	Number of bodies according to IWGC letter
-	-	October to December 1921	1083
November 1921 to March 1923	6107	1922	5542
1923/24	4074	1923	4933
1924/25	4100	1924	3765
1925/26	3842	1925	3939
1926/27	3200	1926	3039
1927/28	3361	1927	3601
1928/29	2341	1928	2712
1929/30	1884	1929	1709
1930/31	1333	1930	1645
1931/32	1221	January to September 1931	743

Bodies continued to be found during the war years, often by soldiers digging trenches in areas which had seen fighting during the First World War (Imperial War Graves Commission, 1939b).

In summary, it has been demonstrated here that at the start of the war, the British Army were unprepared for dealing with their war dead, with care of the dead being the responsibility of individual units. The establishment of the GRC and DGRE saw the formalised recording and management of the war dead, and the IWGC was set up to ensure this management and preservation in perpetuity. The task of concentration was a challenging one but was completed in less than three years of the war ending. This task, along with the creation of new war cemeteries, was a huge undertaking and was unprecedented in terms of scale and numbers. The creation of the vast war cemeteries we see today was unexpected at the start of the war, and the reasons they came about are vast and complex.

2.3 The Creation of War Cemeteries

The previous sections have demonstrated how identification became so central to the commemoration of the war dead and the important role of concentration. This section will now explore why war cemeteries and memorialisation became so important at this time. Exploring the motivations behind creating war cemeteries will assist in understanding why so much effort was put into concentration, and why therefore the errors at Hooze Crater Cemetery were such a problem.

2.3.1 Introduction

“In all wars it has been one of the fears haunting a soldiers’ friends that his body may be utterly lost. Even in this war there have been such irretrievable losses. But in no great war has so much been done as in this, to prevent the addition of that special torment to the pains of anxiety and of bereavement” (The Care of the Dead, 1916).

As discussed previously, in conflicts prior to the First World War there had been little interest within Britain of commemorating the war dead and virtually no attention to the creation and maintenance of war graves. And yet, by 1938 when

the last Great War cemetery was finished, there were 1,850 British and Commonwealth Great War cemeteries in existence, mainly in France and Belgium, but also in Eastern Europe, Africa and the Middle East (Laqueur, 1994). There are many arguments about what may have caused this dramatic change and why it happened during the First World War.

Rugg defines a war cemetery as being a place for “the burial of military dead during or following a period of conflict” (Rugg, 2000, p.270). They have site boundaries and internal architecture, as with a civil cemetery, but a key difference is that the deceased buried within are unlikely to be from that area. The cemeteries of the CWGC are clearly identifiable, in that each has the same characteristic main features; single graves, identical headstones with individual markers, laid out in a series of rows. While they mainly hold individual graves, Rugg argues their power comes not from their memorialisation of the individuals contained within them, but for their presentation of the vast loss of life.

2.3.2 The scale of loss

The most common argument for the appearance of war graves and cemeteries is that it was a functional necessity due to the sheer volume of war dead (Fuchs, 2004; Mosse, 1990; Tarlow, 1997). With large numbers of people dying so quickly, cemeteries needed to be created to ensure the quick and safe disposal of human remains. Some have even argued that because of the high numbers of war dead, a government response was “inevitable” (Heffernan, 1995, p.298). It is true that the number of deceased from the Great War far exceeded any previous conflict, however it is far from proved that the creation and maintenance of so many war graves and cemeteries would be inevitable.

Firstly, the initial action of identifying and recording graves was already being carried out shortly after the war broke out, long before the very high losses seen later in the war; in 1914 as discussed previously, the BRC Mobile Unit were already recording and marking graves. By the end of 1914, there had been approximately 16,000 British and Commonwealth soldiers killed (Crane, 2013, p.39). This was a huge number of deaths in such a short period of time, considerably more than during the Second Anglo Boer War, and would have been

enough to overwhelm an unprepared organisation. The very fact that cemeteries and graves were being prepared and created in 1914 suggests that the work was being considered right from the start of the war, and not in response to the eventual large numbers of deceased servicemen.

Secondly, this work was being carried out by a group of volunteers working for the BRC, not the British Army or Government. In fact, it was not until 1915 that the importance of grave registration work was recognised by the British Army and moved into Army control. As it was a non-government organisation that developed and evolved the work of graves registration, it suggests that the British Government and armed forces were not concerned with commemoration of the deceased until much later in the conflict, and that the interest in war graves reflected the attitude of the general public.

Finally, small war cemeteries for British dead had been created during the Second Boer War conflict, but had quickly fallen into disrepair once the conflict was over (Laqueur, 1994). While the numbers of deceased in the Boer conflict were considerably smaller than the First World War, there was still a clear lack of long-term interest in the care of these graves from the British Army and Government. Considering all of this, it seems highly unlikely that the state sanctioned creation and maintenance of war graves was “inevitable”.

2.3.3 Changing views of the military

Before and during the nineteenth century rank-and-file soldiers in the British Army were not, in general, well respected or liked. At this time there was little value placed on the lives of common soldiers, and sacrificing human life during conflict was considered very normal (Zambernardi, 2017, p.297). Discipline and drunkenness were believed to be common place, and the general public were often only aware of the work of the common soldiers when they were assisting with civil disobedience and oppression (Crane, 2013, p.4). It was not until the conflict in Crimea, where the treatment of soldiers was documented in the media for the first time, that attitudes began to change (Laqueur, 2015, p.456). By the end of the nineteenth century, common soldiers were seen as members of society for the first time. This changing attitude and interest in the military and treatment

of soldiers may have contributed to war cemeteries, however this change in attitude was not limited to the public and was in fact taking place within the Army itself. Before 1856, there were no permanent military hospitals (although there were naval hospitals) and looking after sick or wounded soldiers was the job of a doctor hired by the regiment. If a soldier was wounded so badly they could no longer stay in the army they would be discharged and may have received a small allowance if available, but not guaranteed (Brereton, 1986). The Medical Staff Corps was established in 1855, which later led to the establishment of the Royal Army Medical Corps in 1898 (The Museum of Military Medicine, 2016). It may be that this effort to treat soldiers for the first time reflects the new attitude that was growing outside the military. With this new concern within the Army for trying to save the lives of soldiers came a new interest in trying to commemorate their deaths. However, even this is not straight forward; as Zambarnardi (2020, p.8) explains, during periods of heavy fighting the priority for transport in the trenches was ammunition and reinforcements, and not the wounded. So while there may have been an increase in the desire to treat and save soldiers, they were still seen as less important than the overall war effort.

2.3.4 Volunteers and conscripts

During and after the First World War, the creation of war cemeteries and individual war graves on such a vast scale in Europe was unprecedented. A common argument for this was that so many of the deceased had not been professional soldiers, but had in fact been civilians who volunteered or were conscripted (Tradii, 2019). The presence of large numbers of volunteer and conscript soldiers in the British Army meant that for the first time, there was little distinction between the soldier and the civilian, blurring the civilian-combatant line (Jones, 2014). Both Renshaw (2013) and Grant (2004) have argued that the cemeteries of the American Civil War were created because so much of the fighting population were not professionally trained soldiers, and that this can also be seen in the cemeteries and memorials of the Great War. Heffernan (1995) agrees with this, pointing out that as of 1915 the British trenches contained a large number of volunteer soldiers, and that these soldiers and their relatives

would not accept the unknown grave associated with professional soldiers of previous conflicts, although he fails to explain why (Heffernan, 1995, p.295). King (2010, p.14) agreed with this and stated that war cemeteries were created in response to bereaved families who wanted their loss to be publicly acknowledged. Ware himself cites this as being a major factor for the development of First World war cemeteries, stating that relatives of non-professional soldiers wanted to ensure the care of the deceased after the war (Ware, 1937, p.25).

Combined with this idea that the general public expected more than an unnamed grave for their war dead, Laqueur (2015) argued that caring for the deceased had become a national responsibility because of the presence of conscripted men. This national responsibility meant the state had to take control of the dead, and how and where they should be memorialised. Laqueur also argued it had to be the responsibility of the state because only they had the resources and information available to ensure memorialisation of every soldier equally (Laqueur, 2015, p.463).

Alongside the volunteers were the conscripted soldiers; the UK brought in conscription in 1916, bringing more civilians into the military. For these soldiers and their families, military service was not voluntary but forced. It is argued that this left the British Government “morally obliged” to provide an appropriate burial for every deceased British soldier (Fuchs, 2004, p.645).

2.3.5 Underage soldiers

Among the British Army’s volunteer soldiers, a significant proportion were underage; it is unknown exactly how many soldiers were underage when they volunteered, but Van Emden (2012, p.365) has calculated that it is was at least 250,000 and may have been significantly higher. This figure was reached by using the records of the CWGC to identify every recorded death of a soldier under 18 (14,108), and doubling it to allow for the high number of war graves that do not have an age at death recorded (28,216). Van Emden then says the ratio of war dead to wounded was 1:2.4, which gives a number just short of 100,000 underage soldiers having been killed or injured during the Great War. As

approximately 55% of soldiers who fought on the Western Front were killed or wounded, this number is doubled to give 200,000. Finally, this number does not include all the underage soldiers that were discharged before having the opportunity to fight, which is how the figure of 250,000 is reached (Van Emden, 2012). This calculation is questionable, particularly as the ratio of dead to wounded soldiers and the percentage of those killed or injured on the Western Front is given with no information on source or reliability. However, there has been very little research undertaken in this area so there is no evidence to contradict it. Whether this number is accurate or not, it does highlight the potentially high number of underage soldiers that were killed during the conflict. Death rates were also high within other young soldiers; of those soldiers aged 13 to 19 in 1914, 28% would be killed, while for those aged 20 to 24 the death rate was 30% (Cannadine, 1981, p.197).

This was happening at a time when death in young people had become less common for the first time. Cannadine (1981) demonstrated that during the Victorian times and earlier, it was common for parents to outlive their children, with infant mortality being high due to a lack of medical care, poor housing and bad diet. By the Edwardian times, infant mortality rates had dropped significantly while life expectancy had increased, and for the first time parents could expect their children to outlive them (Cannadine, 1981, p.193). With the loss of so many young men and children in the First World War being at odds with this new social norm, this may have contributed to strong personal and national feelings of grief.

2.3.6 Battle conditions

As well as having a different kind of soldier, the First World War had a different type of battle, which may have contributed to the creation of war graves. During most conflicts during the seventeenth, eighteenth and nineteenth century, battles were fought quickly in one place, and troops would then move on to a new location; bodies of the dead would be left because there was little time to provide burial. In comparison the First World War saw trench warfare on an unprecedented scale, with long periods of very little movement (Laqueur, 1994,

p.159). This provided the time and opportunity to establish and prepare cemeteries, bury the war dead and record their location.

However, this can-not be the only reason for the emergence of war graves and cemeteries, as trench warfare had occurred during previous conflicts, particularly during the Crimean war, without the same result of individual war graves and cemeteries.

2.3.7 Soldier morale

The creation and maintenance of cemeteries was very important to serving soldiers during and after the conflict. Giving a burial to a fallen soldier offers reassurance to serving soldiers about their own deaths. Ensuring that soldiers are buried individually with a marked grave provides hope that should they die in battle, they too will be treated respectfully (Beaumont, 2015; Brown, 2011). It was therefore recognised that burying the dead was good for soldier morale (Barlow, 2013, p.313).

Cannadine (1981) explained that for soldiers it was important to provide a proper burial for a friend because while soldiers were almost immune to death on mass, personal losses were taken much more seriously. Being able to provide a “proper” burial for the dead gave the living a focus for their grief, which they were unable to openly express at the time (Jalland, 2006, p.59). Wilson (2012) added that burial was so important because the nature of the conflict meant a body could be completely destroyed, sometimes after burial. Wilson claimed “witnessing the inhumation of a friend provided a sense of stability within the tumult of war” (Wilson, 2012, p.29).

It is understood that the bereaved continue to care for the deceased after death (Fisher, 2001; McCarthy, 2012), and this would have been true of soldiers on the front line. Many societies have strong feelings towards how the dead should be respected and treated. It is therefore understandable that ensuring the care and burial of a friend was not just an obligation, but a desire (Holmes, 2004, p.298). A padre writing in 1917 tells of having completed a funeral service for a man killed by a delayed action bomb, and even though the body was so mutilated the

remains filled only a sandbag, the funeral was carried out and the remains buried with reverence (Tanner, 1917). This demonstrates that having a funeral and being buried in a grave must have been important. For survivors, there is a strong urge to do right for the deceased, and this may well have been the driving force behind the creation of First World War cemeteries.

2.3.8 A focus for memorialisation and a distraction from loss

Tarlow (1997) argued that the emergence of war graves and cemeteries was caused by the vast numbers as discussed above, combined with the lack of physical remains and the traumatic nature of death on the battlefield. With bodies being destroyed in a way not seen in previous conflicts, the lack of a grave as the focus for mourning increased the need for memorialisation, for both survivors and the bereaved. Tarlow stated that the war deaths of the Great War were unlike any other, and that a new response was required to war death and burial.

Further to this argument is the idea that war cemeteries were built to hide and distract from the true horror of the conflict. During and after the First World War, the IWGC carefully designed and managed each cemetery to create a beautiful and well-presented space. These spaces allowed the simultaneous remembrance of the deceased, but offered a distraction from the true horror of the conflict (Morris, 1997, p.411). The carefully maintained lawns and flowerbeds acted to hide and sanitise the often traumatic deaths that occurred in such large numbers. They offered the bereaved a calm and well presented place as a focus for their mourning, so they did not have to think about the true situation surrounding the death of their loved one. Zambenardi (2017, p.301) argued that these cemeteries were constructed with strong political connotations to express a particular interpretation of the war; namely that the death of a soldier was a sacrifice for the nation, and not a meaningless loss. He claims that war cemeteries encouraged the view that the death of the individual was for the common good.

Tarlow also highlighted another interesting fact when studying the cemeteries of the First World War; with uniform graves set in straight, parallel rows, the deceased are in death still arranged as if they are on parade (Tarlow, 1997,

p.111). This demonstrates that in death, the deceased were shown and remembered as soldiers, and separate to civilians. Headstone for the deceased always show the regiment and rank of the individual, with the regimental badge taking pride of place in the headstone. In comparison, the family inscription known as the epitaph was placed at the bottom of the headstone, almost hidden (Barlow, 2013, p.316). Therefore, war cemeteries were specifically created to display the deceased as fighting soldiers rather than civilians; it highlights that even though many soldiers were volunteers or conscripts, and not from a military background, they died as soldiers and should be remembered as such. It gives the impression of their military role coming first and their civilian life coming second despite their short time in military service. This may have been particularly important for the bereaved relatives of civilian soldiers, as these civilians probably would not have been killed if they had not volunteered or been conscripted to fight. It therefore demonstrates that society considered the death of a civilian soldier to be on a par with that of a professional soldier.

War cemeteries were simultaneously a location of individual and national mourning (Barlow, 2013, p.311). Having an individual grave for a loved one was a focus for private grief, however having that grave in a large cemetery full of identical matching graves gives it an additional significance. It links that moment of private grief to the grief of others. It simultaneously highlights that the individual loss was also part of a much bigger and public national loss, reinforcing the idea of national sacrifice.

2.3.9 Garden cemeteries and changing burial practice

The presence for the first time of military cemeteries with ordered and individual graves may have been caused by the changing attitudes towards death and burial in the nineteenth and twentieth century. In Britain at the beginning of the nineteenth century, inner city cemeteries were very unpleasant, overcrowded and unhygienic, with growing concern about the sanitary conditions for local inhabitants (Rugg, 2013). This caused a move towards garden cemeteries; cemeteries that were landscaped and vast, with trees and plants, which were part cemetery and part garden (Morris, 1997; Mosse, 1990). Contained within the new

garden cemeteries were permanent, individual graves and markers, reflecting the growing rise in the unique remembrance of the individual (Vanderstraeten, 2014). While burial in this new type of cemetery was still reserved for the middle and upper classes in Britain, it reflected a change in attitude to the burial of the deceased, namely that of individuality beyond death, and it was this type of cemetery that was copied when designing the military cemeteries of the First World War. As garden cemeteries had become more mainstream in Britain and Europe, these ideals of open plan cemeteries and individual graves would have become more of the social norm.

Within nineteenth century society, there were many changes which effected the idea of social status, individuality and ownership, all of which have played a part in the attitudes towards death and burial. These included the newly found importance attached to the body and its significance in mourning, the right to a permanent grave without the fear of it being disturbed and the concept of private ownership of property; in this case a burial plot (Tarlow, 2000). The individual was being recognised in death far more frequently; it has been argued this was due to either the emergence and growth of democracy (Inglis, 1993, p.9) or the growth of capitalist ideals (Laqueur, 1993). Regardless of what caused this change, the individual in death became more important, and therefore so did the location of their remains. These ideas would have applied when considering war burials, and will have influenced the desire for individual war graves and cemeteries.

2.3.10 National sacrifice

Adrian Gregory (1994) has examined in detail the importance of Armistice day within Britain; he argues that remembrance and memorialisation was so important because it focused on the sacrifice of the bereaved rather than the deceased. As with other authors, he agrees that post war memorialisation was one way to give meaning to the vast losses, but he argues that its main focus was to aid the bereaved. For the bereaved it was a reassurance that their loss had been for a purpose, and therefore gave meaning on a personal and social level to both the bereaved and the survivors (Gregory, 1994, p.226). The desire for state created war graves was fuelled by the feelings of the bereaved at home; it

was considered important for morale at home and at the front to ensure the effective management of the burial and care of the dead (Fuchs, 2004, p.645). Bereaved family and friends wanted to know their deceased relatives would have a grave that could be visited after the war and be sure it would not be neglected. Unlike earlier conflicts of the nineteenth century, the burial of dead soldiers was not taking place in a foreign land on the other side of the world but much closer to home. With travel between Britain and the rest of Europe being relatively easy in peace time, this allowed people the freedom to visit war graves, which many bereaved wished to do. It was therefore important for them to ensure that there would be a grave and a cemetery to visit. For families in commonwealth countries, with travel to cemeteries being difficult, it was even more important for the deceased to have a known grave. They “assumed a symbolic significance because they could be idealised by families and made to represent some sort of normality in their manner of dying” (Jalland, 2006, p.69).

2.3.11 Communication

Filippucci (2010) described how after the war, Great War battlefields became tourist destinations, often visited by the bereaved, to try and gain some understanding of the conflict. In this way, battlefield visits allowed the sharing of knowledge and the forming of experience and understanding. Visiting war cemeteries completed a similar function, both immediately after the conflict and in modern day. Lloyd (1998) explained that for many visiting the war cemeteries, it was an opportunity to experience the war, and feel closer to the memory of the deceased. The experience of visiting the cemeteries helped to provide a link between the bereaved and their lost relative, but also with the survivors. In this respect, cemeteries took on a secondary role, to bridge the gap between people who had fought and people who had not. Lloyd also stated that the urge to visit cemeteries reflected the “desire felt by many people that their grief and the achievements of the fallen should not be trivialised” (Lloyd, 1998, p.7).

However, this cannot be the main force behind the war graves of the First World War; it was not known at the outbreak of war how long the conflict would last and how difficult the major battles would become. So while this may have been a

driving force for the creation of war graves and cemeteries later in the war, it seems unlikely to have been the primary cause.

Barlow (2013) explained that cemeteries had multiple roles including asserting heroism and sacrifice of the dead which helps to give meaning to their deaths, preserving national and regimental identity in death, encouraging the open discussion of how death on such a large scale could have occurred and finally, by standing as a lesson for the future. This argument reflects that cemeteries were, and still are, the outcome of a complex social and political situation.

Overall, this section has shown that cemeteries had an important role for the British and Commonwealth citizens in commemorating their dead. This has provided a greater understanding of why the work of concentration was so crucial and completing the work correctly was so important. Concentration was part of the overall act of commemoration after the war, and understanding its significance can aid our interpretation of Hooge Crater Cemetery and the importance surrounding its creation and completion. It has also started to demonstrate why errors would be so controversial at the time, and potentially in the modern day.

3 LITERATURE REVIEW

This thesis will be exploring the process of grave location and concentration on the Western Front between 1919 and 1921. This area of study is cross-disciplinary, with roots in Great War history, archaeological research, mass grave excavation, memory, and memorialisation. The following chapter will review the key literature in these subject areas, starting with forensic archaeology.

3.1 Forensic archaeology and mass grave excavation

As discussed in section 2.2.5, in 1919 instructions were issued to assist with locating and recovering human remains from the battlefield. These instructions show an awareness of the effects of burial and decomposition on the surrounding environment. This, combined with the concentration work that was completed, could be considered an early example of forensic archaeology or mass disaster recovery, following the same basic principles that are used in modern day forensic ground search (Martin, 2020).

Forensic archaeology has many definitions; Robert Dilley (2005) described it as being “concerned with the presentation of archaeological evidence in a court of law in instances where such evidence may be relevant to issues arising in litigation in criminal or civil cases” (Dilley, 2005, p.177). Groen, Marquez-Grant & Janaway (2015) described forensic archaeology within the United Kingdom and North West Europe as “the application of archaeological (and taphonomic) theories and methodology – mostly related to buried or otherwise concealed human remains – in criminal or medico-legal casework” (Groen, Márquez-Grant and Janaway, 2015, p.519). Both descriptions explain the key aspect of forensic archaeology is its application in a criminal or legal setting. Forensic archaeology can be concerned with the recording and recovery of any kind of material, including human remains, weapons, contraband or any other type of evidence which has been concealed. When human remains are found in a traditional archaeological setting they inform us about mortuary practice and society, however in a forensic setting human remains are used solely to inform about the individual and their situation. Within forensic archaeology, human remains can be

found in a variety of situations. They may be complete, dismembered, wrapped or uncovered, in single or mass graves (Hunter et al., 2001). Forensic archaeology developed both internationally and domestically during the 1980s; prior to this, and around the time of the First World War, there was little consideration of archaeological principles during the excavation of human remains.

The role of forensic archaeology internationally when dealing with mass disasters or post conflict conditions is reasonably well presented within the literature. Most of this work has involved the excavation of human remains from mass graves. Mass graves are often used to hide human rights abuses and war crimes, and tend to contain the remains of non-combatants or civilians (Jessee and Skinner, 2005). They are also sometimes used following mass disasters, where there can be an urgency to bury the deceased, as seen following the 2004 Tsunami in Asia (Rohan et al., 2009). Mass graves vary in terms of size and structure; they can be in the form of trenches or pits in the ground, or have utilised geographical features such as mines and caves (Cox et al., 2008). They may hold bodies spaced out and barely in contact, or they may be densely packed into a small area, known as a body mass (Haglund, 2002). A body mass can be difficult to excavate and interpret due to the intermingling of remains present.

Haglund (2002, p.245) gave five reasons for the excavation of contemporary mass graves; to collect evidence for prosecution, to allow identification and repatriation, to create an accurate historical picture of events, to bring global attention to atrocities and finally, for the dignity of the deceased and their loved ones. Juhl and Olsen (2006, p 422) argued that mass grave excavation has three purposes; humanitarian, legal and historical. The historical objective is to use the evidence to establish a historical record of what actually happened, which can try to counter the political influences.

One of the earliest examples of mass grave excavation for medico-legal purposes took place in Russia during the Second World War. Soviet forces had executed Polish prisoners of war in the Katyn Forest following the Nazi invasion in 1939. The Germans carried out extensive excavations of the burial site to gather

evidence against the Soviet forces (Haglund, Connor and Scott, 2001). Following the Second World War, numerous excavations took place in Europe to identify the war dead (Mant, 1987), as they had following the Great War. This work was not carried out by archaeologists and contained little archaeological theory.

During the 1980's mass grave recovery work became more archaeological and forensic. The first example of modern mass grave excavation took place in Argentina following the creation of the Argentine Forensic Anthropology Team (EAAF). The EAAF was set up in 1986 to locate, exhume and identify the thousands of individuals who had disappeared during the Argentinian military regime, and to document this evidence for use in court (Steele, 2008). For the first time, the EAAF included archaeologists and anthropologists within their exhumation teams. Other South American countries followed closely behind, with Chile creating the Group of Forensic Anthropologists (GAF) in 1989 and Guatemala establishing the Guatemalan Team of Forensic Anthropology (EAFG) in 1991, both based on the Argentinian model (Groen, Márquez-Grant and Janaway, 2015).

Since the 1980s mass grave investigations and excavations have taken place across the world. This included mass grave excavations in Rwanda in 1995, to investigate suspected genocide. A mass grave was excavated at the site of Kibuye Catholic Church which revealed human remains, some disarticulated, many intermingled, in various stages of decomposition. A minimum of 493 individuals were recovered, based on the number of crania present (Haglund, Connor and Scott, 2001). Multiple mass grave excavations took place in the Balkan states following the conflicts in the 1990's. At the time, it was the largest forensic investigation of its type to have taken place anywhere in the world, and it was with the sole purpose of recovering evidence which could then be used in court, with the secondary aim of ensuring excavations were dignified and respectful (Stereberg, 2009, pp.417–418).

More recently archaeologists have been involved in the excavation of mass graves from the Spanish civil war. Executions were carried out by both sides throughout the conflict, and there are at least 2000 known mass graves

(Fernandez-Alvarez et al., 2016). The Asociación para la Recuperación de la Memoria Histórica and the El Foro por la Memoria are two social organisations that have been involved with the excavation of mass graves, with the aim of creating an accurate historical memory through forensic science and archaeology (Gassiot Ballbé and Steadman, 2008).

Not all mass graves are excavated forensically or archaeologically, and in some cases they are not investigated at all. For example half of the mass graves at Phnom Penh, Cambodia (created between 1975 – 1979) (Ta'ala, Berg and Haden, 2006) and most of the mass graves in Iraq (attributed to the Ba'ath regime following aggression seen throughout the 1980's and 1990's) (Steele, 2008) have been left unexplored, with no excavation planned at this time. This lack of investigation is due to a variety of social and political factors, but it is clear that mass grave excavation can definitely be a political subject; if excavation is taking place in a state where conflict has only recently finished, then many parties may try to use the excavations for their own political aims (Juhl and Einar Olsen, 2006). Even if conflict has been in the more distant past, whoever is funding the excavation may have their own agenda to push.

As discussed here, forensic archaeology is a relatively new discipline which is still developing. It has had success internationally in locating and excavating grave sites of various sizes. There are many reasons for the excavation of mass graves, normally dependant on the social and political situation surrounding their existence and recovery. While techniques have advanced and changed, the perceived purposes for excavation have stayed broadly the same: gathering evidence, establishing an accurate historical record and identifying the deceased. This drive to identify the deceased is similar to that seen after the First World War and is still seen now in First World War archaeology, where the primary purpose for the excavation of graves is to identify the deceased rather than gather any kind of evidence for prosecution.

Recently there has been an increase in the number of historical archaeological grave sites being excavated using mass grave and some forensic techniques. This is true of First World War sites in France and Belgium. This may be due to

the perceived humanitarian aspect of the work, and the parallels in research and examination used within forensic and archaeological investigation, despite the time period being historical rather than forensic (Márquez-Grant and Errickson, 2021). One example of this was the excavation in Fromelles, which will be discussed now.

3.2 Fromelles; a case study

“In many ways, this was a traditional archaeological project, based on the usual principles, employing the usual methods, and aiming to inform today’s public about events in the past. However, unlike traditional archaeology where the focus is by and large on populations and what we can learn about how they lived and died, the focus here was on individual soldiers who died as a result of a terrible battle. Thus we prioritised evidence that might help with the identification of individuals” (Summers, 2010a, p.31)

3.2.1 Background

In 2009, for the first time, forensic mass grave investigation techniques were applied to a First World War site in Pheasant Woods, near Fromelles in Northern France.

The battle of Fromelles took place on the 19th and 20th July 1916. At the time Fromelles was the location of the Australian 5th division and British 61st division, who were tasked with stopping the German army from heading south to the Somme. The battle was a failure and resulted in the death of over 2,000 Australian and British soldiers (Scully and Woodward, 2012). After the battle the Germans collected the Australian and British dead and transferred them by push railways to the south of Pheasant Woods, where German soldiers had dug eight grave pits. Prior to burial, identity tags and other personal effects were removed from the deceased and returned to the Red Cross to confirm the identities of those who had died (Whitford and Pollard, 2009). After the armistice the area around Fromelles was searched as part of the concentration work, but the mass graves were missed.

The graves were left undiscovered until 2002, when an amateur historian in Australia started to investigate the missing Australian soldiers, and found written records and aerial photography that suggested the presence of graves near Pheasant Woods (Bhattacharya, 2014). In 2007, initial examination of the site took place, with further investigation in 2008 and full excavation in 2009. The aim of the investigation was to “recover the skeletons and examine them in order to obtain, where possible, evidence to assist in their identification” (Loe et al., 2014, p.3). 250 sets of human remains were recovered.

3.2.2 Excavation methods

In 2007, Glasgow University Archaeology Research Division (GUARD) were commissioned by the Australian Army to carry out a site survey of the area south of Pheasant Woods, with the aim of establishing if graves were still present. A variety of non-invasive techniques were used to survey the area, including geophysical survey, ground penetrating radar and metal detector survey. Survey identified potential grave sites and metal detector work identified numerous metal objects suggesting Australians soldiers had been present at the site (Whitford and Pollard, 2009, p.209).

Further work was carried out by GUARD during 2008, with some hand excavation taking place (Steel, 2010, p.25). This confirmed the presence of human remains in six of the eight graves, and that the remains of both Australian and British servicemen were present (Whitford and Pollard, 2009, p.224). Full excavation was carried out between May and September 2009 by a multidisciplinary team of archaeological and forensic staff from Oxford Archaeology (Cox and Jones, 2014, p.297). The excavation was conducted following forensic protocols rather than a traditional archaeological format.

Each grave was approximately 10 meters long, 1.5 meters wide and 1 meter deep. The graves were excavated in pairs, and excavation was done by machine and by hand. Machine removed the top level of turf, topsoil and upper levels of soil. The graves were excavated through the pedestal technique, and bodies were exposed, recorded and removed a layer at a time. The procedure followed during excavation was;

- i. Removal of topsoil and overburden
- ii. Excavation, cleaning and identification
- iii. Recording I (recording numbers issued)
- iv. Photography and drawn record
- v. Recording II (logs, forms, planning, survey)
- vi. Excavation
- vii. Recording III (as appropriate)
- viii. Recovery and removal
- ix. Sampling and sieving
- x. Excavation and cleaning
- xi. Recording IV (completion of all logs and forms relating to the feature)
- xii. Repeat of ii to ix as appropriate

(Loe *et al.*, 2014, pp. 30)

When bodies were removed, chain of custody procedures were followed, as per evidence from crime scenes. Bodies were transferred to the temporary mortuary, where they were then subjected to radiography, processing (including cleaning and drying), and anthropological examination. Samples were taken for DNA analysis. The remains were then placed in storage until reburial in the new cemetery could take place. Artefacts were recorded, recovered and processed; the primary function of the finds processing was to identify artefacts which may be able to assist with the identification of an individual (Loe *et al.*, 2014, p.54).

3.2.3 Identifications and outcomes

The Germans were known to be very efficient with treating and burying the dead servicemen of either side (Fraser and Brown, 2007, p.148) and mass graves were used frequently (Vancoillie, 2021). They were keen to collect identity discs and keep records of the dead, if known. As many of the identity tags and personal effects had been removed from the deceased at the time of burial, it was known that identifying all the bodies at Fromelles would be challenging.

Traditional anthropological techniques were of limited use as all of the soldiers were known to be male and aged between approximately 18 and 45. Dental evidence was of limited use; while there were no radiographs for comparison, some written records of dental condition on joining the army were available. Artefacts were examined, and where they may have assisted with identification, were used alongside the anthropological information available. However due to

the nature of a mass grave it was not always possible to associate an artefact with an individual (Scully and Woodward, 2012, p.62).

Stature and ethnic ancestry estimates, along with evidence of disease or trauma, were more useful. Ethnicity assessment was successful for 223 remains; 222 were identified as being Caucasoid and one was of mixed ancestry. The ancestry of the other 27 sets of remains could not be determined. Age assessment of the remains found that all individuals were between 13 and 45, with most individuals fitting in the 18 to 25 age group. Stature was estimated for 237 individuals, with stature being between 1.6 and 1.84 meters (Loe *et al.*, 2014). These characteristics on their own support the assumption that they represent a fighting group of men, and combined with unique dental, disease and trauma features were used as supporting evidence for the identification of individuals.

The primary method of identification used was mitochondrial and Y-chromosome DNA analysis. DNA is the most accurate method for establishing identification in historical cases such as Fromelles, but relies upon remains being preserved well enough to give a good DNA sample, the identification of a surviving genetic relative and their willingness to provide a sample (Cox and Jones, 2014).

Identification was carried out by comparing the antemortem data of potential victims of the Fromelles battle with post-mortem data of the 250 remains. This antemortem data included DNA samples from over 2000 individuals, recruited from Australia and Britain (Scully, 2014).

To provide a positive identification there had to be clear evidence, ideally including a DNA match, that was not contradicted by any of the supporting evidence. If there was any contradictory evidence that could not be resolved, identification was not issued. Currently 166 bodies of the 250 bodies have been identified (Commonwealth War Graves Commission, 2021a).

3.2.4 Discussion

All newly recovered remains of First World War Commonwealth soldiers are buried with full military honours in a CWGC cemetery. The cemetery at Fromelles was the first Great War cemetery to be constructed since the 1960s, and was

built strictly in line with criteria for all CWGC cemeteries (Summers, 2010b). During the interment of the last soldiers in the new cemetery, a public service was held, with dignitaries from Britain, France and Australia all being in attendance. The excavation and identification of the remains was not just of historical, but cultural and political significance.

As this excavation was conducted as forensic rather than traditionally archaeological, some archaeological data was lost during excavation. For example, as in forensic mass grave excavation, the sides of the grave were destroyed to allow easier access to the bodies (Loe et al., 2014, p.27). In traditional battlefield or mortuary archaeology, these features would be recorded as this may provide information on the grave creation. Additionally, as the backfill of the grave was considered to have no benefit to the overall aim of identifying remains, it was excavated as a whole with no section recording taking place. This limits any information that could be gained about the backfilling process.

Unlike most mass grave excavation but in line with a modern forensic crime scene, all staff working in or around the graves were required to wear full personal protective equipment (PPE) at all times, including face masks, hair nets, overshoes, gloves and Tyvek suits (Loe et al., 2014, p.24). However, as this excavation was not being used to gather evidence for a judicial case, much of this appears to have been unnecessary, and potentially expensive and time consuming.

As Edkins (2011, p.137) highlighted, while the excavations were successful in providing over 150 identifications, it was not wholly positive; many families that volunteered DNA samples were disappointed to have not found their lost family member, while nearly 100 bodies were not identified despite available post mortem data due to a lack of comparison ante mortem data. There were 1600 missing soldiers following the battle of Fromelles, and with only 250 human remains recovered during excavation, it would never have been possible to provide an identity to every family (Cox and Jones, 2014).

It is clear that the emphasis of this excavation was the identification of individuals rather than the examination of an archaeological site; artefacts were recovered

in the hope that they would aid identification rather than to inform about the actions and activities taking place at the time. Interestingly, not all recovered artefacts were kept, but some were reburied with the bodies (Loe et al., 2014). Again, this is contrary to a traditional or a forensic archaeological dig, where normally all artefacts are recorded and kept.

On the first page of the first chapter of “Remember me to all” it refers to

“project specific aims and objectives which concern buried soldiers as individuals, unlike most conventional archaeological cemetery excavations where the focus is on groups of people” (Loe et al., 2014, p.1)

This sentence demonstrates that Fromelles was never to be treated as a normal battlefield or mortuary archaeological site. It does not explain if this was because the deceased were soldiers, if it was because of the relatively recent date of the site, or whether it was a reflection of the strong views within society towards the Great War and its deceased. As Scully and Woodward (2012, pp.61–62) explained, there was no legal or emotional reason to identify and name every recovered body, however it is argued the remains were too recent to be treated as simply archaeological. Scully (2014) stated that it would have been inappropriate to treat the remains as archaeological as some families would have still been waiting for the confirmation that their relative had been recovered, even if there was a generation gap. Renshaw (2017, p.328) highlighted that some relatives had inherited a sense of loss from older family members, and while pleased to have their lost ancestor identified, struggled with their feelings of mourning for someone they had not known. This demonstrates the importance of this identification for some families, despite the passage of time.

Additionally, it is common for the remains of soldiers to be treated differently to the remains of civilians in archaeology; soldiers are seen as part of a kin group, in this case the military (Brown, 2011). They are therefore treated as soldiers who have fought and died for their country despite the majority of First World War soldiers being volunteers or conscripted. They are seen as being particularly important for serving military personnel, where they are viewed as being part of the same kin group despite the passage of time. However, for the families of

missing combatants, they are not just soldiers but people who deserve an identity beyond that of their military status (Edkins, 2011, p.132).

To date, all of the positive identifications were established through DNA. As discussed above, an identification was only given if “clear and convincing evidence indicates that an ID is substantially more likely than not” (Loe et al., 2014, p.197). This meant that if a DNA match was found for a set of remains, all of the anthropological data recorded must also support this match. If there was anything that contradicted the match than the identification would not be granted until this was resolved. It is unclear how often this happened, or if there were any instances where remains were identified without having a DNA match, but this could mean that there are possible identifications made but not yet given. For remains that gave a DNA sample but have no surviving relatives for DNA comparison, these remains will never be identified unless anthropological data and personal effects are used. Equally, when relying on mitochondrial or Y-chromosome DNA, there is the possibility that two sets of remains may have been unknown distant relations, and will therefore have the same DNA profile, and will need additional evidence if they are to be identified (Cox and Jones, 2014).

The reluctance seen here to provide an identity unless certain is contrary to the original excavation and identification work carried out between 1919 to 1921. During this time emphasis was placed on how important it was to try and provide an identification for the sake of the bereaved. In 1919 identification of the deceased was carried out primarily through the examination of identity discs when present, personal effects and papers found with bodies or by the presence of a named cross or marker being on a grave. At the time this was the strongest evidence available to support identification. During the excavation in Fromelles, personal effects and identity discs were not considered to be strong enough indicators of identity due to them being portable. This demonstrates that the original methods followed, compared to modern methods, are not considered to be strong enough to support an identification. This opens up an ethical discussion surrounding the reliability of the identifications that already exist; if we do not consider the original methods used to be reliable by modern standards, and we

now have the technology in DNA testing to provide incredibly accurate results, is there an argument that all buried unknown First World War soldiers should be DNA tested to prove or aid identification? It raises moral questions about how important having an individual identification really is.

Overall, it appears that the excavations at Fromelles were more an exercise in forensic body recovery rather than archaeological excavation, and should be referred to as such. While some archaeological techniques were followed, preserving and recording archaeology was not the primary focus of the work being carried out, and instead recovering and identifying bodies was the main goal. This belief that identification of the deceased was the most important outcome is a continuation of that seen post the First World War, and in the work of grave concentration and commemoration of the individual. However, the cautious approach regarding the level of evidence needed to identify someone, and the desire to only provide an identification if it was 100% certain, is different. This demonstrates that as a society we still desire for our war dead to be identified, despite the time that has passed, and if anything Great War archaeology places even more importance on individual identification than the original concentration effort.

3.3 Battlefield and Great War archaeology

While Fromelles is probably the most well known Great War excavation to have taken place, Great War archaeology has been active and developing for several decades, as a sub-discipline of battlefield and conflict archaeology.

3.3.1 The origins and development of battlefield archaeology

“Conflict archaeology is a rapidly growing field which shares thematic and theoretical approaches across temporal boundaries to produce new understandings of warfare in both the distant and recent past” (Renshaw, 2013, p.763). For prehistorians this includes indirect evidence of warfare, such as human remains and weapons, but for historical archaeologists with documentary records it includes the area of battle, technology and strategy (Gilchrist, 2003). Battlefield archaeology sits within this field, as it focuses on the specific place of

conflict and combat (Scott and McFeaters, 2011, p.104). It has been of growing interest since the start of the twenty first century, due to the rise in interest in military history, increased battlefield tourism and the loss of first hand battlefield experience in the form of war veterans. It reflects the “recognition that military heritage is important and that society places a value on remembrance” (Dore, 2001, p.283).

Battlefields are complex places in modern day society and can play several roles. Banks and Pollard (2011) argued that a battlefield is an important place for two reasons; firstly they can be perceived as a significant location in a nation’s history and therefore may be commemorated for this reason. Secondly, they may be places where many individuals have died during the course of a battle, and therefore they come to be seen as sacred spaces. Similarly Dore (2001) suggested that battlefields should be understood through the importance placed on them by a nation combined with their archaeology, as this gives a battlefield meaning. Alternatively, Carman & Carman (2001) argued that a battlefield should be viewed as a cultural place within the wider landscape, and not just defined as the site of a battle.

3.3.2 The history of battlefield archaeology

Battlefield archaeology has advanced mainly through its use in America, where it has been used successfully at sites of the American Civil War and the American Indian Wars. One of the most well known, well documented and successful examples of battlefield archaeology was the 1984 and 1985 investigation of the battlefield of the Battle of Little Bighorn in America. The battlefield was systematically searched by metal detectorists and archaeologists to locate and recover artefacts from the battle, and particular interest was taken in the recording of projectiles to include their depth and direction (Scott et al., 1989, p.31). This example is of great importance for several reasons; firstly, it was understood that it was not only the artefacts themselves that were important, but their context with each other. This led to the location of each artefact being accurately plotted, which could then provide additional historical data. Secondly, the analysis of projectiles using forensic ballistic techniques allowed detailed reconstruction and

interpretation of the battle itself and the movement of troops. This investigation showed that Battlefield archaeology is more than weapons and dead bodies, and can provide insight into human behaviour on the battlefield (Scott and McFeaters, 2011, p.109). Not everyone supports this method of analysis however; Foard (2001) while writing about using similar methodology at English Civil War sites stated that while artefact survey can give useful independent data, there are problems with interpretation, identifying fired versus non fired projectiles, the effect of multiple actions (such as a line moving backwards and forwards) and the unrecorded removal of artefacts post battle.

While Battlefield archaeology in America has been well established for several decades, it has been slower to develop within the UK. Pollard & Banks (2005) argued this is due in part to the relatively short archaeological history of America and the importance of the American Civil War in the nation's past. Lees (2001, p.143) stated that archaeology at these sites connects the present day to the "hallowed ground" of the American Civil War, implying that these battlefields are sacred spaces. In contrast, battle sites in the UK cover a much longer time period and are not considered to be as significant to the nation's history, so do not appear to have the same emotional link. It was only in 1995 that English Heritage created a register of English Battlefields, reflecting their cultural and historical relevance for the first time (Banks and Pollard, 2011, p.124).

Archaeological investigation at the battlefield site of Towton, North Yorkshire, is one example of recent battlefield archaeology within the UK. After the discovery of a mass grave in Towton in 1996, the excavation and analysis of the remains took place. They were found to be victims of the Battle of Towton, fought in 1461 AD, one of the major battles during the War of the Roses. Examination of the human remains not only provided insight into the army of the time, but also provided information on weaponry and armour (Fiorato, 2007). For example, the remains recovered consistently showed signs of trauma to the head and neck, normally from blunt force or bladed weapons, but no trauma to the torso area. This suggests that soldiers must have had efficient body armour to protect them in close fighting, but not for the head and neck. Also, there was no evidence to

that the trauma caused by arrows, therefore suggesting that archery played a minimal role in the fighting at Towton, while fighting at close quarters appears to have been prevalent (Knusel and Boylston, 2007).

The mass grave excavation led to further investigation into the battlefield. However this highlighted some of the problems experienced with battlefield archaeology; geophysical survey proved to be of limited use due to the lack of ferrous metals present at medieval battle sites, and the high levels of modern contamination and ploughing in agricultural areas (Sutherland, 2007). Following the use of metal detecting the previously unknown battlefield location was discovered, and with it a variety of small domestic objects, such as brooches, but very few artefacts with military association.

Battlefield archaeology has started to spread beyond the initial battle site to include military bases and support camps, as well as prisoner of war and concentration camps (Scott and McFeaters, 2011, p.104). One example of this can be seen in the archaeological excavation of a First World War Prisoner of War (POW) camp in Quedlinburg, Germany (Demuth, 2009). In 2004, 5 to 10% of the Quedlinburg POW camp was subject to excavation as part of a rescue archaeology programme. Prior to this, there was very little written about First World War POW camps including this one, so it was an excellent opportunity to gain new information. Excavation revealed various post holes from living barracks, drainage ditches and refuse pits. Overall the excavations have enabled archaeologists and historians to reconstruct the internal structure of this camp, as well as provide insight into the everyday life of the inmates, which is not available in the historical literature (Demuth, 2009, p. 180).

3.3.3 The strengths and weaknesses of battlefield archaeology

Battlefield archaeology has several strengths, as a discipline. It can provide an unbiased view of battlefield events, as often surviving written records are the product of the victorious winner (Knusel and Boylston, 2007). As Scott and McFeaters (2011, p.121) have reminded us "*historical documents and oral testimony are accounts derived from human memory and can contain intentional or unintentional bias. The archaeological record has its own bias, one of*

preservation, not one of intent". Archaeology can be used to corroborate or contradict written records in a way that nothing else can. For example, the investigation of artefacts at the battlefield of Little Bighorn showed that the archaeology supported the Native American accounts of the battle rather than that of the Americans (Scott *et al.*, 1989 p. 130). Foard (2001) stated that archaeology should be used to complement documentary study, rather than act as an alternative to it.

The most significant problem faced by battlefield archaeologists is that battles tended to cover a short time period and therefore leave little in the archaeological record. "A battle... is a snapshot of time of perhaps a few hours or, at most, a day" (Fiorato, 2007, p.3). Due to the short time frame of most battles, permanent features are rarely created and therefore there is little physical evidence of battle that survives. There are exceptions to this, such as sites that have seen siege warfare, long term battle camps or modern day trench warfare, especially the Great War.

Despite this, battle sites can still provide us with insight into the social history of the military and wider community; Scott and McFeaters (2011, p.105) stated that a battlefield or military base is a small community with the same cultural ideals and thoughts as the larger population they are part of. Therefore, cultural information on society can be obtained through battlefield archaeological investigation.

Another problem faced when studying the archaeology of battlefields is that a battlefield site can be spread over a very large area, which may not be easily identifiable in modern day, as contemporary reference points within the landscape may have disappeared or be difficult to locate. Similarly, with the passage of time known battle locations can become lost. This happened for the site of the Battle of Bosworth, fought in 1485. There were four potential sites where the battle was believed to have taken place, and it was only in 2009 that the correct site was identified (Foard and Curry, 2013).

Metal detecting was used at the Bosworth battle site, as is often the case when trying to identify battle sites, but for battles fought before the introduction of

firearms and before metal projectiles became commonplace this is of limited assistance. At Bosworth just 33 or 34 lead projectiles were recovered in total, more than all other European battle sites of the fifteenth century (Foard and Curry, 2013, p.xix).

3.3.4 Great War archaeology

Great War archaeology is a relatively new discipline, started by amateur archaeologist and history groups. Great War battlefield archaeology developed during the 1980's in France and Belgium, before becoming more accepted and mainstream during the late twentieth and early twenty first century (Saunders, 2010). These amateur groups played an important role, as they would often work on sites under threat of development and assisted to raise the profile and potential of Great War archaeology (Hollebeeke, Stichelbaut and Bourgeois, 2014). Prior to this, First World War archaeology was viewed with little importance, and occasionally as being simple interference with earlier archaeological features. Recently, it has been described as "a field of practice developing rapidly, drawing on diverse perspectives and source material, in a cross-cutting, interdisciplinary approach that has the materiality of war at its core" (Stichelbaut and Cowley, 2016, p.7). This reflects its status as a multidiscipline subject, covering not just archaeology but history, science and material culture.

One of the first articles on Great War archaeology was written by Saunders in 2001. In it, he explained that reconstruction of towns and cities in France and Belgium happened so quickly following 1918 that numerous features had survived archaeologically, creating a vital but largely unexplored resource (Saunders, 2001, p.101). Recent aerial scanning of a small area of First World War battlefield in Belgium has shown that features of the Great War above and below ground are well preserved but often hidden within the landscape. This research shows that despite the work after the war to reconstruct the landscape, features such as shell craters, trenches, dugouts and other military infrastructure are still present (Dewilde, Verboven and Wyffels, 2016; Gheyle et al., 2014, Gheyle et al., 2018). In fact, excavations across the Western Front have demonstrated that even in areas subjected to heavy artillery fire and repeated

fighting, archaeological deposits can survive well (Fraser and Brown, 2007, p.169).

Unlike battlefield archaeology, which tends to have relatively few archaeological features surviving, there are numerous Great War features that may survive; this could be because of the “dug in” nature of the fighting during the Great War (Robertshaw and Kenyon, 2008, p.35). It may also be due to the material being used, such as concrete and metal, which survives well when buried. Also, mining became a common part of warfare during the First World War, which has left tunnels, dugouts, sub surface trenches and a variety of underground chambers across Northern France and Belgium (Doyle et al., 2002).

3.3.5 Previous excavations

It is claimed there are three clear strands within Great War archaeology; archaeological fieldwork of Great War sites, studies surrounding material culture such as trench art, and the study of military sites from a cultural resource management perspective (Moshenska, 2008). In terms of archaeological fieldwork, there has been considerable development in this area since the millennium, however there is surprisingly little documented.

Some of the most well known excavations of Great War archaeology have taken place at Boezinge, near Ieper. Carried out by an amateur group named “The Diggers”, excavations took place at the site over several years from 1992, starting with a British dugout discovered during construction work (Price, 2005, p.191). At Boezinge, entrenchments features consist of trenches of various depths and complexity, and deep mined dugouts (Doyle et al., 2002, p.65). Some of these features were excavated by The Diggers in 1998, including a large section of trench, dugouts and galleries (Saunders, 2010, p.141). The work of The Diggers raised awareness of the presence of Great War archaeology, however due to their lack of publication, their use of metal detectors and their amateur status, they were subject to criticism for their work (Saunders, 2010, p.13).

Another well-known amateur excavation took place at Beecham Farm, Belgium by the Association for Battlefield Archaeology in Flanders (ABAF). In 1999 a

dugout was discovered beneath a farm building following a partial collapse of the ground above. As the dugout was threatening the building above, it was agreed to complete the investigation in five phases; stabilising the hole and initial investigation; survey of the dugout including mapping any surviving artefacts; recording and removing materials and artefacts; remedial work for under the house; archival and historical research (Doyle, Barton and Vandewalle, 2005, p.53). Archival research combined with excavation and artefact analysis showed that this was a German built dugout, probably built in 1915 or 1916, which had been captured and occupied by the British in October 1917. The artefacts recovered were predominantly British and found in excellent condition (Saunders, 2010, p.153). The Beecham dugout is particularly important as it is one of very few German dugouts to have been discovered and investigated archaeologically (Doyle, Barton and Vandewalle, 2005, p.65). This excavation demonstrated the potential for archaeology to aid the interpretation of recent military sites.

The A19 project in Belgium was one of the first examples where professional archaeologists were employed to investigate Great War archaeology. The A19 motorway was due to be extended across several Great War battlefields near Ieper, and the Belgium government were concerned about the impact on the archaeology, as well as the potential for finding human remains (Hollebeeke, Stichelbaut and Bourgeois, 2014, p.705). Following desk-based assessment using documentary records, the study of aerial photography and fieldwalking, several sites were identified for excavation (Saunders, 2010, p.156). Between 2002 and 2005 excavations took place, and revealed a variety of features including trenches, pillboxes and dugouts, as well as a variety of artefacts and thirteen sets of human remains (Saunders, 2010, p.157 - 160). The excavations allowed for the development of methodology to be used for Great War archaeology and improved the image of Great War archaeology as a legitimate field of study.

Recently, professional excavations in the Western Front have taken place for reasons other than rescue archaeology. This reflects the changing attitude

towards Great War archaeology as an accepted archaeological discipline and the increased interest it is subject to.

One such excavation took place at Serre in France for part of a BBC TV programme. The excavations revealed three sets of human remains; two were German and were successfully identified. The third was British and could not be identified. Both Germans were identified using a combination of personal effects and archive research (Fraser and Brown, 2007). This excavation was funded and carried out at the request of the media. Saunders (2010, p.123) claims that this excavation highlighted how successful Great War archaeology can be when completed by professionals following established procedure. However, the excavators (who are also the authors of a published paper on the excavation) themselves felt differently, and vocally criticised the BBC for not allowing the use of geophysical survey and for placing pressure on the excavation team (Fraser and Brown, 2007, p.154). In their paper the authors focus very heavily on the history of the battle and the identification of the soldiers, and only briefly discusses the archaeological excavation.

A more detailed example of Great War archaeological fieldwork can be found in Pollard (2014), a summary of the excavations at Mont St Quentin. In 2011, the woods at Mont St Quentin, France, were subject to topographic survey, excavation and metal detector survey of communication trenches and other First World War features. The survey and excavation revealed two communication trenches, despite only one being present on trench maps of the time. Excavation showed the trenches were built at separate times, with the second trench being shallower and of a zigzag shape, possibly built as a response to artillery bombardment on the original trench. This excavation shows the ability of archaeology to shed light on activity that has not been documented.

Great War archaeology is continuing to develop with a greater emphasis on the use of new and non-invasive technologies. Recent work has included the use of airborne laser scanning (Gheyle et al., 2018), aerial photography (Winton, 2016), geophysical survey (Note et al., 2019; Stichelbaut, Bourgeois and Meirvenne, 2019) and geospatial information systems mapping (Stichelbaut, 2005) to provide

archaeological and heritage information. There has also been a greater use of traditionally forensic skills, such as forensic entomology (Vanin et al., 2009), and the very successful use of DNA, as seen at Fromelles.

While focusing here on Great War archaeology in France and Belgium, the First World War was fought across the globe and history of the conflict can be found in many places. Research into the First World War and its impact has been undertaken around Italy (Piccinini et al., 2010), Egypt (Nicholson and Mills, 2017), Palestine (Ross and Midford, 2020), Lebanon (Tanielian, 2014) and the countries which formed French Indochina (Krause, 2020). However, there has been little archaeological excavation undertaken outside Europe.

3.3.6 Problems faced in Great War archaeology

Within all modern conflict archaeology, it is easy for archaeological work to be seen as promoting the ends of one group or organisation. The perception of archaeologist neutrality can become difficult to maintain (Stone, 2009). Perring & van der Linde (2009, p.201) argued that archaeologists in conflict are never neutral observers, and that involvement of archaeologists demonstrates a political affiliation. Archaeological work can quickly become political, and this is the same for Great War archaeology. As stated, “the cultural landscape... invites manipulation, in defence or disruption of perceived ties between people and place” (Perring and van der Linde, 2009, p.119).

As discussed previously, there are many archaeological features of the Great War that may have survived, however it is often unclear how well features are preserved prior to excavation. Post-depositional processes that will affect the survival of features include heavy shelling, post-war reconstruction and agricultural work, and later scavenging for war relics and scrap metal (Dewilde, Verboven and Wyffels, 2016, p.31). As much of this later interference is unrecorded, this means that lengthy and expensive excavations can take place with little reward.

Great War archaeology can be the cause of discord at a local level. Price (2005) explained that normally local archaeology and heritage is relevant to local

inhabitants, but in instances where the archaeology and the affected population are geographically separated, this can create a level of disharmony between those locally and populations further afield. This could be seen on the battlefields of the First and Second World Wars, as so many of the people who fought and died there were from foreign countries. Examples of this can be seen in land owners destroying archaeological features as they feel no cultural attachment to them (Price, 2005, p.182).

However, there are also examples of local populations destroying or refusing to acknowledge features because they are directly relevant to their history. One such example can be seen in Mogily, Poland, which saw the local population being forced to dig graves for the dead German and Russian soldiers during the Second World War (Zalewska, 2016, p.160). This had a lasting negative effect on the population present, but also their descendants. In this instance the archaeology is a constant reminder to the location population of their suffering, and while the site is unacknowledged by the local population, it has been subject to vandalism.

Human remains from all nations continue to be discovered, either by accident or through archaeological work, across the area of the Western Front. As was demonstrated at Fromelles, the recovery and identification of these remains raises ethical and political questions. Moshenska (2008, p.168) raised the ethical issue of whether human remains should be left in place or recovered; as sunken warships, submarines and crashed aircraft are defined as mass graves and protected from disturbance, should the same be applied to battlefield graves? The recovery of human remains is made more complicated by the possibility that they may still have direct relatives alive, and whether this should impact on the way the remains are treated. Some Great War archaeologists believe it should, and that excavating remains from recent conflicts is different to excavating remains from Roman or Prehistoric times (Brown and Osgood, 2009, p.165). It has been suggested that as there may be living descendants alive, "these remains must be treated with more respect" (De Meyer, 2010, p.147). This desire to treat Great War remains differently to earlier periods is either due to their status

as soldiers and the nature of their death, or due to the recent time period and the chance of relatives being alive (Desfosses, Jacques and Prilaux, 2009, pp.41–42). This demonstrates that there are unresolved ethical questions that surround excavation of Great War remains which are not seen elsewhere.

A further complication for Great War archaeology is where archaeological excavation and evidence fits within the culture and politics of First World War history and myth. There are many commonly accepted ideas of what life was like in the trenches and how the war was fought, which has changed over time to promote a certain narrative (Bingham, 2016). While archaeology can independently tell a story, it is still influenced by and contributes to, these preconceived ideas (Wilson, 2007). All conflict archaeology is political to some extent, with Great War archaeology being no different. Archaeologists become part of the politics of conflict by being involved, defining what is and is not important, and especially if they are working with or funded by the government or military (Perring and van der Linde, 2009, p.201).

3.3.7 The similarities and difference between battlefield and Great War archaeology

Great War archaeology sits apart from traditional Battlefield archaeology for many reasons. Traditionally, battles were fought on relatively flat, feature less ground, and would last for a day or other short period of time. In contrast, battles during the Great War took place at locations with specific features, such as high ground or wooded areas, as these could provide an advantage. Fighting could take place in the same small locations for months or years at a time (Carman, 2002). Also, because of the development of technology, battles during the twentieth century took place in the air and the sea, and were no longer limited to land. The material remains of the Great War are different to that of earlier conflicts; *“The material record of warfare of the twentieth century sets it apart from earlier times; it has a distinctive material culture comprising the development of science and technology (including flight and the increasing sophistication and accuracy of weapons systems), the emergence of “total war”, the global scale of*

conflict, and the acceleration of the process of war" (Schofield, Johnson and Beck, 2002, p.2).

De Meyer agreed with this, and explains that one of the reasons Great War archaeology is different to other archaeologies is the unique materials often recovered, such as bullets and ordnance (De Meyer, 2010, p.147). He stated that other reasons include the danger faced by archaeologists during excavation, the higher level of attention that Great War excavations are given in the media, and the relationship between amateur and professional archaeology groups.

One of the longest running debates over the archaeology of the Great War is how useful it can really be when there are so many contemporary written records, diaries and photographs available. In historical Battlefield archaeology, written records tend to be few and are sometimes written from the point of view of the victor, leaving archaeology to fill the gaps that literature has not covered. In Great War archaeology, numerous records survive from all sides. Banks (2014) raised this question when writing about the use of archaeology and geophysical survey when trying to locate a tunnel of the Great War in France. He states this particular research *"does raise the issue of whether archaeology adds anything to the understanding of the First World War. Much of this account has relied on documents, so there is a question of whether there is anything extra that can be added to that historical information. Undoubtedly, excavation would add a great deal"* (Banks, 2014, p.173). As Saunders (2001, p.106) explained, there was so much written during the First World War that it must be the most heavily documented time period to have ever been subjected to archaeological investigation. He stated that modern archaeology and excavation can provide a different perspective to that of the written records (Saunders, 2010, p.137). De Meyer (2010) agreed with this statement and explained that written sources can often be different to the reality. He argued that archaeology should be used in combination with other sources to provide a full picture, rather than working against it.

In Great War archaeology, until recently there were still a handful of witnesses alive who could give first-hand information on sites and battles, which does not

exist for earlier conflicts. This can be a help and a hinderance, as it can greatly aid site and material interpretation, but can also provide a biased view (Moshenska, 2008).

Finally, Great War and Battlefield archaeology seem to take place for different reasons. Within the UK Battlefield archaeology aims to gain knowledge about a historical event, rather than because of a national emotional attachment to the events that took place. This is not the same with Great War archaeology; despite the distance in geography between the UK and Northern France and Belgium, the battlefields of the Western Front conjure up many emotions and are often seen as sacred places belonging to the British (Robertshaw and Kenyon, 2008). In this respect, Great War sites are viewed in the same way as the American Civil War sites.

3.3.8 Great War archaeology beyond France and Belgium

While Great War archaeology has proved to be very popular in Flanders and France, relatively little has taken place elsewhere. Minimal research or excavation has taken place in Germany, with Demuth (2009, p.163) claiming that this lack of interest in Germany was due to the conflict taking place away from German soil, therefore leaving few sites within Germany that could be investigated. However Britain similarly had no conflict within British soil, and yet has many recorded First World War archaeological sites; in England several of these have been identified and categorised as either training features, defensive features or features created for specific functions such as public information (Brown, 2017a).

One example of this is the First World War test trenches at Walney Island, a remote island off the coast of Cumbria. Excavation of the site in 2014 identified several military structures including a partially back filled practice trench system, which had been dated to the early part of the war, and two raised platforms which may have been observation posts (Nash, Nicholson and Wellicome, 2015).

Other recent First World War excavations have included archaeological work at Larkhill, Wiltshire, which has uncovered practice trenches, dug-outs and practice



Figure 3-1: Part of the outer ring of the gas trench at Porton Down (Authors collection)

underground tunnels, which are believed to be the first of their kind found in England (Brown, 2017b).

Not all known Great War archaeological sites have been actively investigated. For example, on the ranges of Porton Down, Salisbury, there are many recorded military features, including an experimental gas trench built in 1916. When built, it consisted of two concentric ring trenches; gas canisters would be placed in the centre and opened, and could be measured from the outer trench, which had a diameter of approximately 365 metres (Ride, 2006). It was abandoned after little use and has never been actively preserved. Now only a small section of the outer ring is visible (Figure 3-1) although it is recorded as a scheduled monument due to it being a unique feature.

These examples are features which have not been actively preserved in the past, but have been protected by their remote or difficult to reach location, with the preservation of archaeology on Salisbury Plain being “incidental” (Coe, 1997, p.171). Therefore these features, as with many other Great War sites in the UK,

have only survived because of where they are located, rather than because of what they are. This supports the argument that the UK has been slow to recognise the archaeology of war as a legitimate area of investigation. It also links to wider discussions regarding when a feature becomes archaeology and which modern-day features should be preserved for the future.

In summary, Battlefield and Great War archaeology have both developed during the last few decades. It has been demonstrated that both disciplines can be used to successfully provide insight into historical events. The archaeology of conflict can be used as an independent source of information, which can support or contradict other historical records. It can also be used to shed light on areas and events which have been undocumented, such as the everyday lives of soldiers living on or near the battlefield. Battlefield archaeology provides information and insight into culture and society, and is more than just weapons and dead bodies.

While there are many similarities between Battlefield and Great War archaeology, the biggest difference lies in the motives and emotional link behind them. Working on Great War sites has been described as being “an emotionally fraught experience” (Brown and Osgood, 2009, p.175). This emotional link is rarely seen in other forms of archaeology, even when they involve the deceased, such as mortuary archaeology.

3.4 Great War and Mortuary Archaeology

This previous section demonstrated that while Great War archaeology has developed and expanded in popularity, it has been predominantly focused around material culture. While Great War history and archaeological theory have engaged with Great War funeral practice and commemoration, Great War archaeology has not. When using archaeology to explore the concepts of commemoration, particularly when understanding the importance of war cemeteries such as Hooze Crater Cemetery, it's important to understand how mortuary archaeology could contribute.

Mortuary archaeology and Great War archaeology are two different archaeological disciplines, but with some interesting similarities. As human

remains are often found in Great War archaeological excavations, it is important to look at how they are viewed and treated, and how this compares to human remains in mortuary archaeology. It is also important to look at why these differences exist and how common ground can be found between the two disciplines.

3.4.1 Mortuary archaeology

Mortuary archaeology is the study of the deceased and mortuary practice in the past, and what this can tell us about society at the time of death. Mortuary practice is described as “the total range of cultural practices relating to an individual, from the moment of death until some weeks, months and years afterwards” (Chapman, 1987, p.198). It covers both analysis of the physical human remains, grave deposition and also the interpretation of the social context surrounding burials. It includes the study of grave goods and what they can tell us about individuals and society (Härke, 2014). Mortuary findings have played a strong role in the development of archaeology, with burial data being the most prolific during the nineteenth century. In fact, it has been suggested that early archaeology was the study of burials with little or no social inference (Chapman and Randsborg, 1981). Mortuary archaeology really developed through the work of Carr (1995) who highlighted that religion and philosophy, social organisation, circumstance and other physical factors should all be considered when studying mortuary practice. The processes that are in play between the death of an individual and their recovery by an archaeologist are varied and complex. They include death, treatment of the corpse, any culture practices such as removal of body parts or disarticulation, burial or cremation, and any post funerary processes, such as disturbance or exhumation (Weiss-Krejci, 2011). All of these processes can provide an insight into the society this person belonged to.

During Great War excavations on the Western Front, it is common to come across human remains; this is not surprising considering the thousands of servicemen that were killed and have no known grave. In many aspects, these remains from a modern conflict are treated very differently to human remains recovered from other archaeological contexts. Within mortuary archaeology, human remains are

generally treated objectively, and the focus is on what a grave, burial or cemetery can tell us about an individual and their society. They are almost treated as part of the material culture, as a type of evidence along with the grave goods they are found with. Comparatively, human remains from the Great War are seen in a much more emotional light. In fact Desfossés, Jacques & Prilaux (2009) have discussed how the excavation of a First World War grave is fundamentally different from the excavation of any other archaeological grave. While they acknowledged the potential burial information that a Great War grave can provide, they describe the excavation as being “an act of respect” (Desfosses, Jacques and Prilaux, 2009, p.41). They argued that the archaeologist forms a social bond with the soldier and that the excavation is carried out as an act of remembrance rather than to gain archaeological knowledge.

3.4.2 Bodies and graves from the First World War

When human remains are discovered in First World War battlefields, it is common practice to try and establish the identity of the individual. In 2008, during excavations at St Yvon, Belgium, the remains of a First World War soldier were found (Brown and Osgood, 2009). Examination of the uniform and equipment indicated they belonged to an Australian soldier. Eventually, following the use of isotope analysis and DNA testing, he was identified as Private Alan James Mather (Brown and Osgood, 2010).

An example of identifying First World War remains on a larger scale can be seen in the recent excavations in Fromelles, Northern France (see section 3.2). Fromelles was the first time that scientific analysis of First World War remains had been undertaken on such a large scale and at such a high cost.

These examples demonstrate how important it is considered to be to try and identify Great War soldiers. Scientific analysis on the scale shown above is very rare with most archaeological burials. Despite the development of new technologies such as DNA and isotope analysis, when human remains are found in a mortuary archaeology setting, it is unusual for more than basic anthropological analysis to take place. One of the reasons for this difference could be that anthropological analysis of soldiers' remains are difficult, as they

are all male, with standard clothing and of similar age, therefore leaving no option but to use expensive scientific techniques (Renshaw, 2013). However, it is more likely to be because of the emotional connection felt with the human remains of modern conflict. White and Folkens (2005) described how the aim of osteological analysis is different depending on the time period being studied; historical human remains are analysed to try and provide cultural information and support the archaeological record. In comparison analysis of recent human remains is done to try and provide identification (White and Folkens, 2005, p.1). While this is not specific to soldiers of the Great War, and in fact covers remains from all recent conflicts and forensic cases, it does demonstrate how the attitude towards more modern human remains is different to those found in traditional mortuary archaeology.

3.4.3 Artefacts

Grave goods are a particular focus in mortuary studies. There are many potential reasons for grave goods being present at burials. Parker Pearson (1999) stated they could be possessions from someone's life or gifts to them after they have died, objects for use during the afterlife or goods to represent their life or their character. He also stated the most common grave goods found are clothing, containers, and remains of food and drink (Parker Pearson, 1999, p.7). A recent study examining the grave goods placed in modern burials in the USA and UK showed that clothes, glasses, jewellery, photographs and letters were the most frequently seen grave goods, and were included to reflect the identity of the deceased, but also as tools for the afterlife (Harper, 2012, p.47). Whatever the reason for goods being buried with human remains in the past, the potential for what they can tell us about a past society is very important within mortuary archaeology.

Artefacts recovered from Great War graves are treated with importance but are not treated in the same way as they would be in mortuary archaeology. Grave goods from Great War burials are rarely used to try and establish information about the society the individual came from, or their social status, but rather as evidence for who they might be. An interesting example of this occurred in 2003,

with the discovery of an unknown German soldier at Thélus near Arras. The soldier was recovered with many personal effects, including a silver medal in the shape of a Swastika surrounded by sun rays (Desfosses, Jacques and Prilaux, 2009, p.63). Archaeologists were concerned about this object being completely out of historical context, until it was discovered that during the late nineteenth century, the Swastika was used as a symbol for the Carlsberg brewery. Apart from being confusing to the archaeologists during excavation, the examination and initial interpretation of this medal reflects how society was not considered when the grave was excavated and the artefact was recovered, but rather how this individual could have, impossibly, been linked to the Nazi party that had not yet formed.

It is worth remembering that the knowledge that can be gained from grave goods of the First World War is limited, which could help to explain the differences in approach. Not only were many personal possessions removed from soldiers prior to burials, but there was also a problem with souvenir collectors stripping bodies during the war and sadly, in more recent times also (Desfosses, Jacques and Prilaux, 2009). When high numbers of grave goods are found, they are often with soldiers who either had a swift burial or no burial at all, so their kit and personal effects were not removed. These graves can still provide funeral information when compared to contemporaneous graves, in this case, other battlefield graves (Parker Pearson, 1999). The equipment, personal effects and clothing found with soldiers who were not buried can be compared to that of their comrades who received a formal burial, which may provide useful funerary information.

3.4.4 Funeral studies

There are some similarities to be found when looking at mortuary archaeology and Great War archaeology in terms of funeral studies. We know that individual graves were the preferred method of body disposal during the Great War, reflecting the need for dignity in death. However, on occasions where a quick burial for an individual was required, shell craters, disused trenches or other features were utilised for this purpose (Desfosses, Jacques and Prilaux, 2009, pp.71–72). This could indicate that soldiers would often have to be resourceful

and use whatever was available when having to dispose of human remains quickly. There are many examples of large mass graves being discovered, with bodies having been placed carefully next to one another. In 2001 a grave measuring fifteen metres by two metres was uncovered near Arras. This grave contained the remains of twenty soldiers, each laid on a north-south alignment, with their arms touching those of their neighbour (Saunders, 2010). This shows the respect given to the fallen by taking care to place the bodies in the grave in this way, and yet paradoxically, the urgency in having to use a mass grave rather than individual burials. This shows that similarly to mortuary archaeology, the choice of grave for body disposal can provide an insight into culture and society.

In mortuary archaeology human remains and graves are used as direct evidence to inform us about past societies. However, in Great War archaeology, human remains, graves and artefacts are used more as supporting evidence for the wider literary and historical record. The common view of many is observed by Brown & Osgood (2009) "Doesn't the paper – the endless reams of war diaries, reports, maps, soldiers letters and diaries and oral history – tell us all we need to, and indeed, can possibly hope to know about the past?" (Brown and Osgood, 2009, p.15). This indeed appeared to be the attitude towards Great War archaeology until quite recently. Brown and Osgood go on to tell us that the archaeology is far more than just supporting evidence, however the written records can affect the interpretation of Great War archaeology, as archaeologists try and make the archaeology conform with the records. However it has been argued that the written record has not been used enough when planning archaeological excavation, and this needs to be increased in the future (Hollebeeke, Stichelbaut and Bourgeois, 2014).

3.4.5 The presence of trauma

One of the similarities between mortuary archaeology and Great War archaeology is the presence of trauma on the human skeleton being used to provide information on weapons. This was recently demonstrated when the skeletal remains believed to belong to King Richard III were found. The skeleton was examined and subject to CT scanning to identify any unhealed traumas, of

which eleven were identified (Brough et al., 2016). One of the injuries to the jaw was caused by a late medieval dagger or knife, a hole in the maxilla and a hole in the skull were caused by a dagger with a square section blade, three shallow wounds on the skull were thought to have been caused by the same sharp bladed implement, and a large penetrating wound that went through the base of the skull and through the skull cavity was caused by a sword or top spike. There was also a sword injury to the 10th right rib and a penetrating wound through the right side of the pelvis caused by a fine-bladed weapon (Appleby et al., 2015). All of these injuries are consistent with trauma caused by fifteenth century weapons.

Similarly, Great War archaeologists will try to use trauma on bones to identify wounds, normally to try and discover cause of death. It has been noted that the majority of remains recovered from the battlefields of the Somme have more bullet wounds than in earlier conflicts due to the development of the machine gun (Hill & Wileman, 2002). There are examples of fragments of human bones being discovered during the excavation of shell holes, or skeletons found with shrapnel wounds, an example of how destructive artillery fire was (Desfosses, Jacques and Prilaux, 2009). There are also bodies with no obvious signs of trauma. These deaths could have been caused by disease, soft tissue injury, the changing air pressure from shells exploding close by (Laqueur, 2015, p.466) or other types of shock (Geroulanos and Meyers, 2018). This can provide an insight into the changing technology during the Great War and the conditions on the front line.

As has been demonstrated here, there are many differences between Great War archaeology and mortuary archaeology. While mortuary archaeology is predominantly concerned about what human remains and burial practices can tell us about a past society, human remains in Great War archaeology are primarily used to tell us about the individual. The concept of individual identity is central to Great War archaeology but is often absent from mortuary archaeology. Both disciplines share an interest in material culture and artefacts. They are both concerned with burial practices and body deposition, both in themselves and as a reflection of their society. It does appear that Great War archaeologists could learn from mortuary archaeology, which would provide more valuable information

for the future. Arnold & Jeske (2014) highlighted that the study of Great War archaeology often involves the archaeology of commemoration and memory, and therefore Great War archaeological theory overlaps with mortuary archaeology theory.

3.5 Memory and Memorialisation within Great War archaeology

Memory and memorialisation play a significant role in Great War history and its interpretation. How we perceive and understand activities such as concentration are directly influenced by the personal and state memorialisation seen during and after the First World War. Memorialisation and commemoration are linked directly to the motivations behind concentration and the creation of war cemeteries, such as Hooze Crater Cemetery.

3.5.1 Memory and collective memory

Beaumont (2015, p.530) stated that memory is “a dynamic, interactive and often contested dialogue between the state and its citizens”. Collective memory is agreed to be the memory of a group of individuals; Williams (2013, p.195) described collective memory as a social phenomenon created from a combination of performance, material culture, place and landscape.

Collective memory has the capacity to unite social groups and provide a shared identity (Kalinowska, 2012). Weedon and Jordan (2012) described collective memory as being “narratives of past experience constituted by and on behalf of specific groups within which they find meaningful forms of identification that may empower” (Weedon and Jordan, 2012, p.143). Collective memory is a social product created from remembered experiences, along with literary and visual sources. In many instances collective memory does not always coincide with documented history, but instead is a reflection of the relationships in play between different parties in society (Weedon and Jordan, 2012). It is therefore important to remember that collective memory is not history, but it provides historical representation of a past event in a contemporary light (Kansteiner, 2002).

One of the biggest criticisms of collective memory is how it can relate to personal memory. While there are clearly areas of overlap and interaction between

individual memory and collective memory, they are two separate processes. As a collective memory is built and manipulated, there is the opportunity that it can become almost fictional, and potentially false. This means the commonly held views and opinions of the recent past can become flawed.

Memory and collective memory are closely linked to memorialisation and commemoration, both on a personal and national level. It has long played a role in archaeological studies, particularly in historical archaeology. It has recently reemerged as a topic for discussion within archaeology, and how it can work alongside the written records of historical archaeology, and post-colonial archaeology (Jones and Russell, 2012). It is now important to consider how this idea of collective memory can be interpreted when looking at Great War history, commemoration and memorialisation.

Memory can take on many roles within archaeology. Williams (2013) explained that the cadaver of the deceased can be a focus for memory. He argued that funerals and funerary practice are forms of remembrance and in particular, he used case studies to argue that the treatment of the dead and grave goods were crucial in creating a new social memory of the deceased. This view of funerary practice being a form of remembrance is common within archaeology. It is however important to remember that funeral practice does not necessarily mean burial, but that other treatments of the deceased should also be considered funerary behaviours (Weiss-Krejci, 2013). This is important when studying Great War archaeology, as so many of the burials uncovered at First World War battle sites were not intended to be permanent, or were accidental burials.

3.5.2 Memory in Great War archaeology

Remembrance and commemoration of the deceased can take many forms within Great War archaeology. In recent years there has been a surge in battlefield tourism, with battlefield archaeology becoming a common tourist attraction (Saunders, 2010). There are several common factors that attract visitors to battlefield attractions. Scates (2002) carried out a detailed survey of 200 Australians who visited First World War cemeteries to gain insight into why they attended. The answers included reconciliation, education, commemoration and

many more, but the overall feeling was one of pilgrimage. This pilgrimage is an example of both private and collective memory; private pilgrimage for the individual but part of a collective movement fuelled by shared memory (Scates, 2002, p.5). Alternative studies have argued that in recent times, visitors can more often be described as tourists rather than pilgrims; Miles (2014, p.143) looked at tourist experiences at battlefield sites in the UK and found that very few visitors were present to understand about the hardships of battle and were more interested in education. At Great War sites, these visitors may not be directly linked to the graves of the dead, but are still attracted to visit (Winter, 2010). The differing views of the studies from Winters and Scates could be based around the populations in questions; Winter's study was solely based on visitors to the war sites around Ieper, an area which saw much fighting during the Great War and soldiers from all over the world taking part. The nationalities of those interviewed in the study reflect this, with the British and Belgium being the largest demographic in the study, and Australians only making up 6% of the study. As it is commonly believed that the First World War and in particular the 1915 battle at Gallipoli are defining moments in the history of the Australian Nation (Jalland, 2014, p.70) it would be understandable for Australians to see battlefield visits as more of a pilgrimage.

Battlefields and other war-torn landscapes can transfer collective memory. Visits to the battlefields of the First World War affect people and what they know and understand of the conflict, projecting a certain collective and socially accepted memory. However, as Carman (2002) explains, war landscapes such as trenches can be preserved to encourage remembrance and understanding, but with the changes that take place at these sites over time (such as the reestablishment of grass and trees), the landscape will change and the original meaning will become distorted to visitors. Destroyed and reconstructed French and Belgian villages are also used to form a collective, if not accurate memory; in many places the loss of civilian life was high, but this is not frequently recorded or memorialised due to the overwhelming mourning of lost military lives (Filippucci, 2010, p.171). Saunders described it as being "a multi-vocal landscape; an industrialised slaughter house, a vast tomb for "The Missing", a landscape of memorialization

and pilgrimage, a location for archaeological investigation, cultural heritage development and tourism” (Saunders, 2001, p.106). In fact, the entire area known as the Western Front is seen as a place of mourning and remembrance, despite the fact that it has a long and varied history prior to the First World War. This landscape is both a victim of, and encouragement of, the social memory regarding this particular area.

3.5.3 State sanctioned commemoration

As discussed, collective memory can be open to manipulation, and this manipulation can be seen in war commemoration in Britain. State sanctioned war commemoration can be interpreted as a method to control formal and informal memories and histories. At the end of the First World War, the British government were keen to mediate official and unofficial collective memories to shape commemoration (Mycock, 2014). These commemorative actions have changed over time due to the changing attitudes towards the Great War. Commemoration now is much more sombre than pre Second World War, with commemoration now being focused on the loss of life rather than celebration of the war ending (Auchter, 2017, p.346). However, it is not clear if state commemoration has changed because of changes in public interpretation of the Great War, or if state commemoration is responsible for this change in attitude.

Another example of state sanctioned commemoration can be seen in France. French authorities support and encourage the private and public memorialisation that surrounds former Great War battlefields, as this helps to preserve the interpretation of “heroic sacrifice” and not pointless loss of life (Filippucci, 2010, p.175). It is worth remembering that as battlefield tourism contributes much to the local economy, this encouragement of collective memory could be caused by economic concerns rather than historical ones.

It is argued that this manipulation of collective memory is a two way street; while looking at the commemorations in 2014 of the start of the Great War, Beaumont (2015) noted that in Great Britain and Australia commemoration was government-led, with support from the public. In contrast, commemoration in France, Germany and the USA was fuelled at a more local and individual level, with the state playing

much less of a role in commemorations. Winter (2017, p.241) argued that most current First World War commemoration happens at sub-national and local level, so is not an assertion of nationalism, but rather an assertion of localism.

Various authors have argued against the idea of the state controlling commemoration. Edkins claimed that the way society views wars and other trauma is dominated but not dictated by the views of the state, and that these are questioned and contested (Edkins, 2003). Others have argued that it is only recently that state views of collective memory have started to be challenged, mainly by interest groups who feel unrepresented (Weedon and Jordan, 2012).

While it may be unclear how much the state controls memory in terms of commemoration, it is clear that state monuments of the Great War can have a major impact on national mourning, grief and help to shape collective memory. In England, the Cenotaph in London is one example of this; originally designed to be a temporary structure built in 1919 from wood and plaster, the monument became the focal point for national grief. This happened because there was an “overwhelming need to find *some* centre in Britain for a communal act of remembrance and mourning” (Crane, 2013, p.203).

3.5.4 Great War memorials and monument

Remembrance has been described as being crucial “for managing the legacy of conflict – in acknowledging sacrifice, in hoping to learn from the past for the future, and in passing memory and knowledge to future generations” (Stichelbaut and Cowley, 2016, p.3). War memorials are formal structures that are a focus for this remembrance, as are established practices such as Armistice Day. Public memorials can have many different purposes. They have been described as collective symbols, speaking to and for a community (Winter, 2014, p.51). They can be a focus for grief, or they can have cathartic properties. They can represent “closure” in permanently marking the loss of a loved one, or as a reminder that someone important existed and has now gone. They can also act as a physical location for the deceased to be remembered (Maddrell, 2013). This is of particular importance if the physical remains of the deceased are not present, as the absence of a body can greatly inhibit grieving (Weiss-Krejci, 2013).

Monuments have been described as being memory carriers, as they offer an experience of an event that may not have been experienced first-hand (Kalinowska, 2012). Memorials can therefore be used to encourage a certain social memory. Public memorials do not provide historical facts but give a representation of a specific view of an event (Pinkerton, 2012). Great War memorials are an example of this, as they tend to memorialise a lost individual or group, and are therefore passing on the collective memory surrounding loss and sacrifice. These memorials do not give a historical account of the war or its events, just a small glimpse into a single event. Therefore the memory it portrays is a representative one.

Monuments and memorials do not always serve to aid individual or collective mourning, but could instead prolong the trauma and suffering of selected groups. Monuments that are built to memorialise great loss in a society can serve as a reminder of that trauma, which then inhibits social mourning. This trauma can then become part of social and collective memory, causing it to be passed to future generations and therefore continuing the mourning process for a prolonged period of time (Kalinowska, 2012). This can be seen in memorialisation of the Great War; as Scates (2002) highlighted in his study, personal grief does not end with the death of those directly affected, but is passed on to future generations.

As has been discussed above, memory and collective memory have various roles to play within commemoration and memorialisation of the Great War. Visits to battlefields and war memorials can all impart an experience which encourages a selected collective memory, although as highlighted, this collective memory is not necessarily accurate. It is often used and can be exploited for political reasons and can change over time. While war memorials serve many purposes, it is clear that they encourage collective memory, as well as mourning and grief.

3.5.5 Relevance of memorialisation to concentration and Hooge Crater Cemetery

Memorialisation and commemoration were central to the establishment of war cemeteries after the Great War. While concentration had to take place for practical and hygiene reasons, the decision to concentrate bodies into big

cemeteries was to ensure individual commemoration for the deceased could take place. This was driven by the desire within the general population to ensure the war dead were remembered. When examining identification methods and identification practices, this was being driven by the need to commemorate each individual, which will have impacted how soldiers were identified. This desire to commemorate all individually help us to understand why the errors uncovered at Hooze Crater Cemetery were so significant.

4 HOOGE CRATER CASE STUDY

As discussed in section 2.2, grave concentration started in early 1919 around the area of Ieper, in Belgium. A small battlefield cemetery near Hoge Crater was chosen to be one of the first concentration cemeteries and in the space of a few months was rapidly expanded. This cemetery was the subject of close examination by the War Office in 1920 and 1921 to review the concentration work which had taken place, which is discussed in detail in this chapter.

Hoge Crater Cemetery is located in Belgium, approximately four kilometres from Ieper (Figure 4-1). It was first used in October 1917 and originally contained 76 graves. Following the armistice, the cemetery was used for the concentration of multiple smaller cemeteries and single graves from the surrounding area. The cemetery has 23 plots and there are currently 5916 Commonwealth servicemen buried or commemorated there, of which 3570 are unknown (Commonwealth War Graves Commission, 2016).



Figure 4-1: A photo of Hoge Crater Cemetery taken in 1920, looking North © IWM Q 100373 (Imperial War Museum, 2021f)

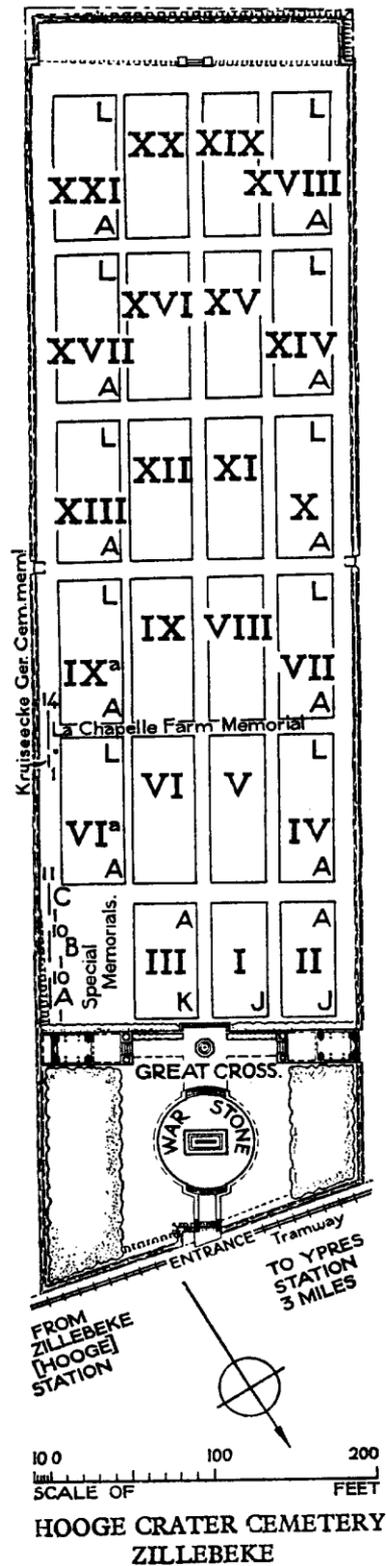


Figure 4-2 Cemetery plan for Hooge Crater Cemetery (Commonwealth War Graves Commission, 2021e)

4.1 Hooge Crater and Hooge Crater Cemetery within historical literature

There has been limited discussion of Hooge Crater Cemetery and the surrounding landscape in previous literature, and very little exploration of its significance regarding grave concentration and commemoration.

Cave (1993) in his book “Sanctuary Wood & Hooge” gave a comprehensive review of the fighting activity around Hooge from 1914 to 1918. He discussed the mine blast in 1915 which created the Crater at Hooge, the various attacks that led to Hooge Crater changing hands before moving on to discuss Hooge Crater Cemetery. Cave’s limited historical discussion of the cemetery simply stated that the original cemetery was started in 1917, expanded dramatically during post war concentration and that the majority of graves present are unidentified (Cave, 1993, p.110). Similarly, Gibson and Ward (1995, p.119) also discussed Hooge Crater Cemetery in brief terms, giving first an overview of the conflict seen around Hooge, before again stating the cemetery was started in 1917 and expanded after the war. As both of the texts discussed here are primarily designed for battlefield visitors, they have chosen to focus on the fighting and creation of the current landscape rather than discussing the cemetery or commemoration in detail.

In his recent PhD these, Godden (2020) briefly discussed the creation of Hooge Crater Cemetery and its expansion during concentration. He highlighted that the ground around Hooge contained multiple craters and how the cemetery now covers ground which was fought over on several occasions. Godden went on to focus on the architectural design of the cemetery and its incorporation into the surrounding landscape (Godden, 2020, pp.182–184). As Godden’s thesis was focused on the architectural creation of war cemeteries and memorial spaces, he failed to discuss the historical significance of Hooge Crater Cemetery in regard to grave concentration.

Tradii (2019, p.249) in her article exploring the role of the body and burial after the First World War briefly mentioned Hooge Crater Cemetery. Specifically, while reviewing exhumation and the problems which occurred, she discussed the reopening of graves and listed some of the errors reported. Tradii is one of the

only authors to mention the known concentration problem at Hooge Crater Cemetery and the Committee that was formed to review it. However, she does not discuss how or why these errors may have occurred or the implications for grave concentration at Hooge Crater Cemetery or the Western Front more widely.

Van Emden (2019) is one of the few authors to explore the concentration errors seen at Hooge Crater Cemetery at length. While discussing the role and process of exhumation generally, he has devoted several pages to the Committee hearing and outcomes. He described in detail the duplication in records which eventually led to the exhumations taking place, the outcome of the exhumations (three new identifications for Unidentified soldiers and five disproved identifications for Identified soldiers) and some of the factors listed in the Committee report which contributed to errors occurring (Van Emden, 2019, pp.85–88). Generally, Van Emden has given an oversimplistic review of the Committee hearing and eventual decisions made, failing to really explore the political and social pressures which affected the outcome of the Committee (and are discussed in section 4.3.1).

As highlighted here, the previous literature which discusses Hooge Crater and Hooge Crater Cemetery has focused primarily on the conflict which took place in the region rather than any detailed considerations of the Cemetery itself. The literature which has mentioned the Cemetery has done so in a generally superficial manner. What follows here will be the first comprehensive review of the concentration data, the Committee hearing report and how this information can contribute to our understanding of Hooge Crater Cemetery and concentration more generally.

4.2 Hooge Crater Review Committee document

This review concerns document CWGC/1/1/7/B/48, which is part of the CWGC archives. This document contains the proceedings of a committee held during January and February 1921, and the summarising report of these proceedings, regarding excavation work carried out at the Hooge Crater Cemetery, Belgium (War Office, 1921).

The document explains that in October 1920, the grave registered as being Private Williams in Hooge Crater Cemetery was excavated; this individual appeared to have another grave elsewhere, and the exhumation was carried out to resolve this duplication. Upon excavation, the body was examined and through the presence of an identity disc was found to be that of a different individual; Private Hamilton. The neighbouring grave, labelled as belonging to an “Unknown Australian Soldier” was excavated and was again identified through an identity disc as being “T. Dodd”. This prompted further investigation and the eventual excavation and examination of 135 of the concentrated graves from the earliest part of the cemetery, with the aim of establishing if these identification errors were commonplace.

The committee to examine the findings of the investigation was called by Major-General Burdott-Hitchcock, the Director General of Mobilisation and Recruiting. It was presided over by Colonel Darell, also of Mobilisation and Recruiting. The members were Lieutenant Colonel Hogben, Secretary to the High Commissioner for the Commonwealth of Australia, Lieutenant Colonel Dick-Cunyngham from the DGRE and Major Phillips, a land and legal advisor to the IWGC. Witnesses called were Lieutenant Colonel Sutton, Major Williams and Major Gardiner, all of the DGRE, Captain Coghlan, Lieutenant Cleeves and Lieutenant Henshaw of the 126th Labour Company responsible for the recent exhumation work, and Mr Crawford and Mr Shaylor, previously of the 68th Labour Company, who carried out the original concentration work.

The excavation of 135 graves in plots I, II, and III revealed a series of errors which are described in great detail in the report, and are summarised as follows;

- new identifications were established for six individuals
- seventeen graves were found to be empty
- four graves were found to contain sandbags or equipment
- nine graves containing the remains of a dominion soldier but marked as a British soldier, or vice versa
- there were eight examples of a partial identification not recorded on a cross

- there were twelve incidences where the identification was incorrect or doubtful (War Office, 1921, p.19)

Some graves fell into more than one of the above criteria so are counted twice. It also gave one example where an opened grave contained the remains of a German soldier. Of the eighty graves of unknown soldiers that were excavated, identification was established for three of them, and of the fifty five known graves identity was disproved for five of them. The report and the reinternment paperwork for the 135 remains also recorded that identification discs were found on bodies that were excavated, indicating they were not sufficiently checked prior to concentration, and that many graves were not dug to the required depth; for example in plot I, row I the graves were only eighteen inches deep (Directorate of Graves Registration and Enquiries, 1920b).

The eventual outcome of the committee was that the work carried out by 68th Labour Company during the first half of 1919 was sub-standard and mistakes were made. However for the 3.75% of new identifications that may be established if all unknown graves were exhumed, it was decided “the percentage is certainly too small to make it worthwhile to exhume further unknowns” (War Office, 1921, p.6). Instead, the cemetery records would be updated to reflect the new work carried out. The 3.75% is based on the three of the eighty unknown graves that had an identity established following excavation, however the percentage of graves with an error was much higher than this but is not mentioned. It could be that this was to make the situation appear better than it actually was.

For example, the report states that a new identity was established for six individuals but only three previously unknown soldiers were identified for the first time; this means a new identification was given to three individuals who already had an identification. This would account for three of the twelve instances where identification was incorrect, leaving nine bodies found to have an incorrect or doubtful identification. These nine doubtful identifications, combined with the six new identifications, give fifteen known instances where original identification was thought or proved to be incorrect.

Of the 135 graves exhumed, at least 17 were found to be empty, leaving a maximum of 118 bodies. If 15 of the 118 bodies were known to be incorrectly identified, that is 12.7% overall.

4.3 Hooge Crater Cemetery concentrations and burial returns

A burial return, also known as an “A” form or concentration form, was the form containing details of a concentrated body, and was completed at the time of reburial. Forms included details of where the body was removed from, if there was a cross present, how the body was identified and where it was reburied (see Figure 4-3 for an example of a burial return form).

Burial returns were completed for the 135 exhumations carried out in 1920, and of these, 115 still survive. The burial returns show that some of the statistics provided to the committee in 1921 were incorrect. For example, the committee stated that six new identifications were obtained, however the burial returns show there were seven new identifications. While these numbers do not cause a significant change to the error rate above, it does demonstrate that even at the time of the committee hearing, incorrect information was being reported.

These burial returns also give great detail about the bodies excavated, including the conditions of the remains and any personal effects or equipment recovered. These records show us that in seventeen of the graves with human remains at least one identity disc was found. During the committee proceedings, Colonel Sutton explained that there should be no identity discs left on the remains at the time of concentration, as the first disc should be sent to base when the soldier had died, and the second was removed at concentration and sent to Effects branch (War Office, 1921, p.13). That seventeen bodies were recovered with an identity disc still present could show that remains were not being sufficiently examined, whether that was due to the decomposed state of the remains, the lack of interest from examining staff or a lack of awareness that thorough searching should be taking place.

While the report repeatedly stated that the errors were a sign of bad work and carelessness, it included several reasons why these mistakes could have

occurred. The 68th Labour Corps was the first unit responsible for excavating and concentrating graves and they were working with little supervision and no instruction in very difficult conditions. One reason given is that in 1919 clearing the battlefield was considered to be more important than establishing the identities of bodies (War Office, 1921, p.4); this seems unusual as there was so much emphasis being placed on the creation and expansion of cemeteries at this time. A more interesting and probable argument presented is that the “deplorable” conditions they were working in during in the first few months of 1919 led to “indifferent work” (War Office, 1921, p.20). Evidence from Colonel Sutton stated that when bodies were originally exhumed and examined, in the early stages of decomposition they were unpleasant to touch, which may have led to insufficient examination. As the Colonel was directly involved with the work of the DGRE, it is unlikely he would have suggested this unless he suspected that it had taken place. Colonel Sutton also explains that in the early stages of clearing the battlefield, it was accepted practice to take the details on a cross as being those of the soldier buried beneath them, without carrying out any additional checks to prove identification (War Office, 1921, pp.13–14), and that this is what had led to so many duplications. This shows that in 1921, there was already an awareness that there were multiple duplications, and that this was caused by a lack of training, lack of instruction and bad process rather than by accident.

The report also highlighted the lack of appropriate recording that was being carried out during the reinternment. While giving evidence, Captain Coghlan explains that when the body was exhumed a ticket was completed containing the details of the remains, including identification if established, which was attached to the body. On reaching the cemetery, the burial officer would take the ticket and copy the details onto “A” form and sign it. The ticket was then attached to a temporary cross placed at the head of the grave, and copies of the “A” form were sent to head office to be processed (War Office, 1921, pp.13–15). The committee reviewed several “A” forms completed by the 68th Labour Company for graves with incorrect identification, and found that they had not been signed and few had been dated (War Office, 1921, p.14). This demonstrated that forms were not

being completed correctly, therefore casting doubt on the rest of the information they contained.

Even when the "A" forms were being correctly completed, errors were then made by the GRU when placing headstones. The committee examined original burial return forms and cemetery plans and found that there were discrepancies between the two, which was caused by crosses being placed incorrectly after burial (War Office, 1921, p.28). This was the job of the GRU, and not the burial officer.

4.3.1 The scale of the errors

The committee noted that new guidelines were issued to all units involved in grave concentration in July 1919. This, combined with the excavation of four burials which were correctly identified from plot XVIII, a later part of the cemetery, led the committee to say that all work carried out after June 1919 in all cemeteries should be considered as reliable, and future excavation should only be considered in cemeteries that had concentrated remains from before this time (War Office, 1921, p.21). This was an assumption based on a little evidence, and does not appear to be an informed decision. Instead it feels much more like a political decision, choosing to avoid further problems rather than investigate the true scale.

Appendix E of the report lists the number of graves which were concentrated in all cemeteries before the 15th June 1919. According to this list there were at least fifteen cemeteries being used for concentration, and there were 23,384 bodies recorded as being concentrated during this time. Based on the sample above, if we assume that 12.7% of these remains are misidentified, that gives 2970 graves which could have been incorrect. If we follow the breakdown in errors presented at Hooze Crater, that would mean 594 graves would be given an identification for the first time, 594 graves would receive a new identification and the remaining 1782 were potentially incorrect. At the time, great importance was placed on having a grave for a lost relative, so it would have been very difficult to contact 1782 families to inform them that the grave had been recorded in error, and their relative was in fact still missing.

In the report, the committee asked whether the number of new identifications that might be found through excavating graves would outweigh the “sentimental objection” of relatives (War Office, 1921, p.22). If this were the main reason for not wishing to carry out further exhumations, this indicates that the feelings of the bereaved were considered to be more important than correctly identifying the deceased, and therefore the establishment of graves and cemeteries was not entirely about remembering the dead individual as is commonly believed. However the report also stated that for 3.75% new identifications “the percentage is certainly too small to make it worth while to exhume further unknowns” (War Office, 1921, p.6). This suggests that the objection was not in fact be due to the sentimental feelings of families, but was more likely to be because of the strain on time, resources and money that this work would entail, as well as the negative press that the War Office and IWGC would receive. The IWGC had fought hard to remain in control of the war graves and cemeteries created during and after the war; in May 1920 there was a parliamentary debate on whether the IWGC should be allowed to impose their authority or if they should be over-ruled by the families of the deceased, and allow repatriation and individual memorials (Crane, 2013). The IWGC won the debate; having to then admit less than a year later that there could be a significant number of misidentifications would have caused serious damage to their reputation and the confidence placed in them. Of course the errors in question were not the fault of the IWGC, but they realised that they would likely be held responsible for them. If it became public knowledge that misidentification rates and errors were common, that could be used to once again start a debate on the authority of the IWGC.

The fact that it was the misidentification of an Australian soldier may be significant; approximately 60,000 Australians were killed during the First World War, from a country with a population of less than 5 million people (Jalland, 2006). Australians were not conscripted, so all of the war dead had been volunteers. This, combined with the vast distance between Australia and Europe which made visiting impractical for many, meant that there was a lot of importance placed on graves by the Australians. From 1915 Red Cross workers in Australia and London had been involved with trying to locate Australian soldiers that were reported as

Killed or Missing, reflecting that right from the early days of the conflict, Australians were taking an interest in the fate of their soldiers (Scates, 2001, p.40). There may therefore have been a stronger urge by the Australians to investigate possible misidentifications of Australian dead. The original exhumation in Hooze Crater Cemetery was carried out to solve a duplication, but the Australian Graves Service took it upon themselves to investigate further when they found an error had been made, and reported it to the Australian High Commission. It could be that if the investigation had not been carried out by the Australian Graves Services, then the errors may not have been reported higher, so no further investigation or committee would have taken place. This would have suited the War Office and IWGC because, as mentioned above, they did not want or need the bad publicity that could have occurred. If this is correct, this means it is possible that the committee was assembled to pacify the Australians and perhaps less out of genuine concern.

At the very start of the report, it states that the committee was not there to place blame, but instead to find an appropriate way to fix any mistakes and to make recommendations for the future (War Office, 1921, p.9). This is particularly interesting because it shows that in late 1920, there was already an understanding that some work carried out had been deficient and that further problems may be identified in the future. In terms of making “recommendations with regard to future policy”, the outcome of the committee set a precedent for any future queries; it shows that the errors were investigated and were found to not be significant. If any similar errors were found elsewhere, it would be easy to explain that in similar cases examination had shown the errors were minimal and no further investigation was required. This is reflected in later decision making of the IWGC; at the end of 1921, it is recorded that when duplications had arisen, exhumation was avoided as it caused confusion, and instead it was assumed that the original concentration work was correct. They even went so far as to say “except in very special cases exhumation is inadvisable and would possibly, if not probably, cause confusion. We have continually before us the result of the investigations in Hooze Crater” (Burbery, 1921, p.4). This view was maintained by the IWGC, even if this meant incorrect identification of graves remained in

place. For example, in 1927, the remains of two soldiers were recovered who already had marked graves in an IWGC cemetery. The letter concerning these bodies states “although there is little doubt that these two [original] identifications were not correct, it seems undesirable at this stage to alter the headstones in Blighty Valley [cemetery]. The two men in question will therefore be described as Unknown Soldiers of the 1st Dorset in Serre Road Cemetery No. 2” (Chettle, 1927).

Overall, this report confirms that at the beginning of 1921, there was a growing awareness that the early work of body identification and grave concentration had been far from problem free. The report tells us that multiple errors were occurring at all stages of the process in early 1919; a lack of proper examination of remains during exhumation, unclear records reflecting potential carelessness during the time of reinternment at the cemetery, poor reburial at the cemetery with bodies buried upside down or lengthways in graves, and finally at the time when the GRU were erecting crosses in the cemeteries. Eventually it was found that Hooze Crater Cemetery was not an isolated case, and similar errors were eventually found in other cemeteries across Belgium. These are discussed in section 6.5.

4.4 Hooze Crater data analysis

When the 135 graves were exhumed, the conditions of the remains and clues to their identification were recorded in detail. 117 graves were uncovered from plots I and II, and detailed records are still available for 115 of these. Analysing these records can give us a unique insight into the quality of the work being undertaken by the DGRE originally, an accurate representation of the error rate and the potential improvements over a short period of time. For consistency, the following terminology has been used in this section; *excavation* refers to the original concentration work carried out in 1919 when bodies were removed from the battlefield and buried at Hooze Crater Cemetery. When discussing the investigative work carried out at Hooze Crater in 1920, this is referred to as *exhumation*. If individuals are stated as being *identified*, this indicates that they had been given a full or partial name. If it states that *information* had been obtained on an individual, this refers to details such as regiment or nationality that

were recovered during examination, but may or may not have included the name of the individual.

Table 4-11 shows a summary of the information on each grave exhumed at Hooge Crater Cemetery as part of the investigation into misidentifications. The first column gives the grave location via plot, row and grave. The second column shows the details recorded on the burial return form for each grave at the time of concentration. Some graves have multiple information; this is due to some graves having multiple, contradictory records. Where there are multiple records for a grave, the information from the first record is recorded in black text, the second record is recorded in red text and where applicable the third record is recorded in green text.

The third column gives the details that were present on the cross for the grave in 1920 at the time of the exhumation, and the fourth column gives the details recovered from the body at exhumation. The graves highlighted in orange are graves which had an error between the information on the cross and the body in the grave; either an incorrect or missed identification, an incorrect or missed nationality, incorrect or missed regimental details, or an empty grave. Those which are not highlighted are assumed to be as per the information given on the cross, as they contained no contradictory evidence. There are four graves from plot II, row C highlighted in grey; these are original burials and not concentrated graves.

4.4.1 Error rates

Overall, 113 marked graves and 2 unmarked graves were exhumed. Four were original and not concentrated graves, leaving 109 marked graves. Upon examination 68 of the 109 marked graves contained a body that did not contradict the information provided on the cross for that grave. The remaining 41 graves were empty, were missing regimental details or nationality, or contained a body or effects that contradicted the information given on the cross. This gives an initial error rate of 38%, as shown in Table 4-1.

The severity of the errors varies from minor through to significant. For the minor errors, which include not recording the regimental details or nationality, this is most likely due to a lack of information recording, a lack of understanding on the importance of these details, or the poor management of data between the initial concentration and the production of crosses.

The missed identifications are more significant errors. These demonstrate a lack of sufficient examination when initially excavated.

The graves with incorrect identifications and those with no body present are the most severe type of error seen. In these cases, this not only raises questions over the quality of the work, but also has potential legal implications. If soldiers are being recorded as deceased but their grave is empty or in fact belongs to someone else, not only is this upsetting for family members but it could result in men being recorded as deceased when they are not. This would impact on insurance and life policies, and potential cases of fraud. It could also result in men who were alive but disabled, such as those with head and facial trauma or those with brain damage, struggling to confirm their identity.

Table 4-1: Table showing error rates following exhumation in 1920

	Number of graves	Percentage
No body present	18	17%
Incorrect identification (suspected or confirmed)	7	6%
Missed identification	5	5%
Incorrect nationality	7	6%
Missed regimental details	4	4%
No apparent errors	68	62%

When the exhumation work at Hooge Crater Cemetery was first started, the instructions issued were to only exhume the Unknown Soldiers. For rows E, F

and G in plot I this appears to have happened before full exhumation started from row H onwards. 21 graves were exhumed, which leaves at least 21 graves in rows E, F and G that were not exhumed and checked. Of the 21 graves in rows E, F and G that were exhumed, errors were found in 13 of these graves, showing that at this early stage mistakes were common. It is therefore highly likely considering this, and the error rate of 38%, that some of the unexhumed graves are also incorrect.

4.4.2 The presence of empty graves

Of the 113 marked graves that were exhumed, 95 had remains present and 18 were found to have no remains. Some of the empty graves were found to contain the remains of sandbags or equipment only. Of the 18 graves which were found to be empty, the original concentration records show they were all recovered from different areas and at different times. This suggests that these errors were caused by a consistent and ongoing problem, rather than being related to bodies recovered from a particular area or in a particular situation.

The lack of body was explained in the original Hooge Crater Committee as potentially being caused by body movement once buried, as the Hooge Crater Cemetery site is on a slight incline, however if this were the case it would be expected that several of the correctly identified bodies would have also moved. It seems more likely that these errors were due to fault by the cemetery team responsible for reburial of the concentrated remains. For example, in plot I, row J, graves 5, 6 and 7 were marked as three graves of Unknown British Soldiers. When exhumed one body was found lying across all three graves. There seems to be no logical explanation for this except human error. If we assume these empty graves were not caused by body movement in the ground but were in fact human error, it then becomes important to understand the intent behind this. It may be an innocent mistake and due to a lack of instruction. Alternatively, the error could have been more malicious, and crosses were being placed over empty graves to persuade senior staff that productivity levels were higher than they actually were.

It was also suggested in the Hooze Crater review that empty graves could have been labelled as either known or unknown soldiers because memorial crosses were placed on them, due to unclear instructions at the cemetery on what should be done with memorial crosses retrieved from the battlefield. Amongst the burial returns for Hooze Crater Cemetery, there are records of memorial crosses which were sent to the cemetery, however these are not present for the early months of cemetery construction. This supports the suggestion that in the early stages of concentration memorial crosses may have been sent to the cemetery and could have been placed over empty graves rather than being recorded as memorial only.

It could be possible that the presence of empty graves was caused by only a small quantity of human remains being buried in the grave during concentration. As discussed below, three or four bones would be considered a body. In these cases, it could be possible that remains were buried but were disturbed by later taphonomic activity, such as animal disturbance. Alternatively, small bones may have been missed during the exhumation work of 1920. However, if bodies were buried in canvas as instructed, then it should not have been possible for this to happen.

Alternatively, it could have been due to the ineffective marking of graves containing multiple remains. If the remains of two soldiers were buried together due to being very fragmentary, and one cross marked both bodies, it is possible that when the bodies were transferred to the cemetery for concentration, the remains were reburied together in one grave with two crosses being placed next to each other. It would therefore appear on exhumation that one of the graves was empty. If this were the case, it should have been recorded on the concentration records, however we can see that these records were not always accurate.

Fifteen of the empty graves were for Unknown Soldiers and three were for named individuals. Two of those named individuals now have special memorials at Hooze Crater Cemetery. These are headstones which are placed in cemeteries when an individual is thought to have been buried there but their grave has

become lost or has been destroyed. They will normally have the inscription “believed to be buried in this cemetery” or “believed to be buried near this spot”.

The other named individual that had an empty grave was Captain A.H. HUDSON part of the Royal Berkshire Regiment, who in 1920 had a grave in plot II, row B, grave 12. However, this individual now has a marked grave at plot II, row B, grave 4, which was found to be a vacant grave at the time of the recorded exhumations in 1920. During the exhumations, soldiers who were unidentified would be moved and reburied in an earlier, empty grave space to economise on space. For example, the unidentified soldier recovered from plot I, row E, grave 13 was reburied in the empty grave of plot I, row E, grave 12. This happened for all soldiers who were unidentified at the time of exhumation. The only bodies left in their original grave positions were bodies that were identified prior to exhumation. Therefore, the body belonging to HUDSON must have been buried as an unidentified soldier in one of the 20 graves that are missing exhumation records, and moved into grave 4.

4.4.3 The state of remains

The records give an idea of the level of surviving material that was considered to be a body. Of the 97 remains exhumed, the amount of surviving body varied from a full set of human remains to just a small collection of bones. 41 of the remains were described as being whole, with 56 being partially present. Of these 56, 12 were noted as being whole except for the head (six bodies), the feet (three bodies) or both (three bodies). It seems unusual that just the head or feet of an individual would be damaged through injury leaving the rest of the body intact. Therefore this lack of extremities could indicate careless recovery in the original excavation work.

There are 38 records that give specific details about the body parts which had been recovered. The quality of the description given varies, with some records stating as little as “trunk only”, but others give far more detail. Table 4-2 gives a summary of each of the 38 graves and the bones or body parts recorded as being present. Overall the records show the presence of medium and large bones, but there is no mention of smaller bones such as the patella, carpals or phalanges. It

could be that these bones were included with more general terms (for example patellas may have been included with leg bones) and therefore were not recorded individually, or it could be that they were not present. It is known that small bones such as those of the hands and feet will often be the first to become disarticulated during decomposition and therefore be missed during excavation (Tuller and Durić, 2006, p.199). In addition, some of these smaller bones may have been contained within decomposing flesh or clothing, and therefore been easier to miss.

As the language used is very general and non anthropological (for example thigh bone rather than femur) this inhibits a more comprehensive understanding of what was recovered and also highlights the lack of anatomical knowledge among excavation teams. A further example of this is seen in the six records which list the “capular” as one of the recovered bones. It is unclear what body part this term is referring to, as this is not a recognised anatomical term. It is not referring to the scapula, as one record shows a capular and a shoulder blade. As these records are handwritten, by comparing the handwriting of each we can see that more than one individual was completing these burial returns, and therefore more than one person was using this term.

Based on this sample, it can be seen that as few as five bones would be considered and treated as a body. It also shows that exhumation teams were consistently recovering partial, rather than complete remains. It appears that certain areas of the body were more likely to survive than others. For example, 35 of the 38 records confirm the presence of leg or feet bones. In comparison only 10 records confirm the presence of arm or hand bones.

The surviving body material can be loosely grouped into all upper body, which includes ribs, spine, collar bones, arms and skull; all lower body, which includes pelvis, legs and feet; and combination of limbs, which would be the presence of both upper and lower body parts. This shows that there were three upper body only remains (highlighted in green in Table 4-2), six lower body only remains (highlighted in purple in Table 4-2), and the rest were all a combination of upper and lower limbs.

Within the 38 records, there are at least three graves which appear to contain the remains of more than one individual; grave 11, row G, plot I included two feet, six leg bones and three thigh bones; grave 4, row A, plot II included one field boot with leg and foot, one "I.G.S" boot with leg and foot, four leg bones and a thigh bone; grave 6, row C, plot II included two feet in boots, two thigh bones and five leg bones. This is likely due to a lack of anatomical knowledge in the men responsible for body recovery, but may also reflect a lack of sufficient examination, or worse a lack of interest in the work. It also reflects the conditions that recovery teams would have been working in, where there may have been multiple remains buried together or next to each other, making it difficult to distinguish between bodies.

It also raises questions over the number of graves present. As mentioned above, there are graves containing just the upper portion of a body, and graves containing just the lower portion of a body. If excavation was being rushed or sufficient care was not being taken, it is possible that part of a body would be recovered and concentrated, leaving the other half to be found and concentrated to a different grave later. This could potentially produce multiple graves for one individual.

Of the partial remains, three specifically mention the presence of flesh. As this is not mentioned for any other remains, this suggests that either flesh was absent from the other remains or that these three bodies had significantly more flesh present than expected. There appears to be no relation between these three bodies and nothing to indicate why they would be different. They were all unidentified, so it is not clear how long they had been deceased and therefore what level of decomposition would be expected.

Table 4-2 A summary of the 38 records which contain details of body parts recovered. For each category the number is included if available, otherwise it is marked with "P" to indicate it was present but in an unknown quantity. The rows highlighted in green show upper body only remains and purple show lower body only remains.

Grave reference (plot, row, grave)	Foot	Leg bone	Thigh bone	Pelvis	Capular	Rib	Collar bone	Arm bone	Hand	Spine/back bone	Shoulder blade	Skull	Lower jaw	Trunk
1 G 11	2	6	3		1					2				
1 H 4			2		1	6	1			1				
1 H 5		4 broken				6				6				
1 H 11		2					1	3		6				
1 H 12												1		1
1 I 2	1	2	2			P	2					1		
1 I 4	2							P				1		
1 I 8		2					2	4				1		

Grave reference (plot, row, grave)	Foot	Leg bone	Thigh bone	Pelvis	Capular	Rib	Collar bone	Arm bone	Hand	Spine/back bone	Shoulder blade	Skull	Lower jaw	Trunk
1 I 9	P	2	2			P								
1 I 11	2	P				P	1			P				
1 I 15		P	1			P						1		
1 I 16	2	P	P											
1 J 2		1				10	2	1		P				
1 J 3	P	P	P											
1 J 4		2											1	
1 J 8	1	2							1					
1 J 11			2			4	1					1		
1 J 13		P										1		
1 J 17						P				P			1	

Grave reference (plot, row, grave)	Foot	Leg bone	Thigh bone	Pelvis	Capular	Rib	Collar bone	Arm bone	Hand	Spine/back bone	Shoulder blade	Skull	Lower jaw	Trunk
2 A 1	2	1				P	2			P		1		
2 A 2	1	4	2		1	12	1			6		Piece		
2 A 3		2	2		1					P				
2 A 4	2	2 legs & 4 leg bones	1											
2 A 5														1
2 A 11		2	2			12	2	2		P		1		
2 A 13		1				P	2			P				
2 A 17	2	P					1	1						
2 B 1		1				P				2	1			
2 B 2		Partial	2		1	P		1		P	2			

Grave reference (plot, row, grave)	Foot	Leg bone	Thigh bone	Pelvis	Capular	Rib	Collar bone	Arm bone	Hand	Spine/back bone	Shoulder blade	Skull	Lower jaw	Trunk
2 B 4	2 right feet			P										
2 B 5	1	P												
2 B 6		P				P				P				
2 B 7		P	2			P						Piece		
2 B 8		P				P		P		10		Piece		
2 B 9		P			P	P						1		
2 C 5	1	3 small pieces												
2 C 6	2	5	2			5				10	1			
2 C 8		1						1						1

4.4.4 The state of remains and information rates

Of the 41 bodies that were complete on exhumation, 4 were original burials and 37 were concentrated remains. Of the 37, 21 were identified and 16 were unidentified. In comparison, of the 56 partial bodies, 17 were identified and 39 were unidentified (Table 4-3). Following exhumation and examination, these rates changed as bodies were identified or identifications were changed.

Firstly, this shows that when the original concentration work took place, complete bodies had a higher identification rate of 57% compared to incomplete bodies with an identification rate of 30%.

This could be due to burial conditions and locations. For individuals who died away from the front line, such as those who died at medical units or casualty clearing stations, they would be buried in an established cemetery where their grave would be marked and recorded (Robertshaw and Kenyon, 2008, p.150). In these graves it would be highly likely that a body would be complete or nearly complete at the time of burial, and would be less likely to be disturbed by later activity. Therefore, when these burials were concentrated, they were likely to have an identification already which was possibly not confirmed through examination, as details on a cross were excepted as proof of identification in early 1919.

In comparison, for those who died and were buried at the front line, it would be less likely that their grave could be permanently marked or recorded due to access difficulties. There was also a much higher chance of grave disturbance caused by later fighting. These bodies were more likely to have been unidentified when found and examination may have been an unattractive prospect for excavation staff due to body condition. Additionally, with these remains being disarticulated and potentially scattered, the chances of recovering evidence that could indicate identity may have been lower. For example, destruction of the upper body would reduce the chances of an identity disc surviving.

The data also suggests that complete bodies were more likely to have an incorrect identification. 19% of complete remains were either identified for the first

time or given a new identification, compared to 9% of partial remains that were either identified for the first time or suspected of not being correct. This could be because partial remains were less likely to provide new data on identification.

Table 4-3: Table showing identification rates and state of remains before and after exhumation in 1920

	Complete remains (37)		Partial remains (56)	
1919: Identified remains	21	57%	17	30%
1919: Unidentified remains	16	43%	39	70%
1920: Identified bodies	17	46%	14	25%
1920: Unidentified bodies	13	35%	37	66%
1920: Previously unidentified, now identified	3	8%	2	4%
1920: Previously identified, new identification given post exhumation	4	11%	0	0%
1920: Identified, possibly incorrect	0	0%	3	5%

4.4.5 Identification rates

Of the 109 concentrated and marked graves, 41 had crosses with the name of the soldier assumed to be buried there. Upon exhumation, 17% of these were found to be definitely incorrect, with 7% being possibly incorrect, as shown in Table 4-4.

Of the three potentially incorrect burials, one was the grave of an Australian Soldier, but the body recovered belonged to the Lincolnshire regiment. The second was identified as serving with the Royal Inniskilling Fusiliers, however the body was wearing the uniform and numerals of the Royal Army Medical Corps (numerals is the term used in the original records and includes the insignia, badges and buttons which would be attached to the uniform). The other identified

but possibly incorrect grave was found in plot I, row H, grave 12. The grave was marked for Lt Lewis, of the Essex Regiment. Upon examination, the body was recovered with an identity disc which read “-ESMAN. JEW”, with the remainder being unreadable, and a tunic for a Private rather than a Lieutenant. In these cases all original identifications were left in place. The evidence provided for these burials being incorrectly identified all came from portable items and could therefore be misleading.

Table 4-4: Table showing the number of identified graves that were correct or incorrect following 1920 exhumation

	Total	Assumed correctly identified		Proven or Probably correct		Potentially incorrect		Incorrectly identified		Empty graves	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Number of bodies	41	17	41%	14	34%	3	7%	4	10%	3	7%

4.4.6 Differences between concentration data and crosses

When the bodies were originally concentrated and reburied at the start of 1919, the information was recorded on the burial return forms, which were sent to headquarters. These were the records that were used to confirm the personal details of the deceased and it was this data that was used for official crosses.

When comparing the original data of 1919 with that of the cemetery crosses at the time of the exhumations and the data from the examination of the bodies, it can be seen that information recorded during initial body recovery was not always transferred onto the later GRU crosses.

These records show that there were four occasions where regimental details of Unknown Soldiers were recorded on the burial return forms but not on the crosses, which increases to five if the duplication below is included. There were also sixteen occasions where a grave was recorded as an Unknown Soldier and changed to an Unknown British Soldier, including the duplications below. Of these, two were in fact Commonwealth soldiers and not British soldiers. There

were nine occasions where a name given on the burial return form was not included on the cross, six of which are discussed below.

Two of these names are found in plot I, row F, graves 9 and 10. Both of these graves were recorded on the original burial return as an Unknown Soldier, then followed by a name and identity details (Figure 4-3). There is no record on how these remains were identified, but it does say that these bodies, as well as those in grave 11, were found in one bag. The crosses placed on these graves following concentration listed both as Unknown British Soldiers. Following exhumation, grave 9 was identified as being MORGAN of The London Regiment through the presence of identity discs, and grave 10 was an Unknown Australian Soldier. The two soldiers named in the burial return form, WITT and BASSETT, are currently both recorded as being buried in plot III, row G.

There are several contradictory records for graves, predominantly but not limited to plot II. Some of these are shown below (Table 4-5). This demonstrates the confusion in the contemporary records, and the differences between the information recorded and that placed on the grave marker.

Of particular interest is the history of plot II, row A, grave 6. There were three sets of records for this grave; the first gave the details of C. SPOONER, of the Machine Gun Corp. The next set of records show the above details with the grave number crossed through and changed to grave 12 of the same row and plot. The final record for this row states that E. MINCHEN is buried in grave 6. Exhumation showed that the grave actually belonged to an unknown German soldier, with SPOONER buried in plot II, row A, grave 12 and MINCHEN buried in plot II, row B, grave 17.

During the committee into the work at Hooge Crater, it was stated that the remains of this German soldier were found while digging trench graves and as there was no German cemetery available for reburial at the time, they chose to leave the body in place (War Office, 1921, p.29). This does not explain how the grave could be given three different labels, none of which reflect the actual body buried underneath it. The duplication in records reflects that errors were taking

place not just during excavation and examination of bodies, but also in the cemeteries with the recording of bodies.

Table 4-5: Table comparing the graves concentration records, the details given on GRU crosses and the body recovered from the grave

Plot, Row and Grave	First burial return record	Second burial return record	Third burial return record	Details on cross, 1920	Outcome following exhumation
I / E / 11	Unknown Soldier	6775 Gnr HAMILTON		Unknown British soldier	Unknown British soldier
II / A / 4	264120 Pte. WHITTLE L	Unknown Soldier		Unknown British soldier	Unknown British soldier
II / A / 5	Unknown Soldier	Unknown soldier - Manchesters		Unknown Australian Soldier	No. 63 Div. B.BULLOCK 6th Field Ambulance of I.A.G.H
II / A / 6	86288 L/cpl SPOONER C	MINCHIN E 170036		Unknown British soldier	Unknown German Soldier
II / A / 7	Unknown Soldier M.G.C	Unknown British Soldier		630125 Sgt J.JAMES 1/20 London Regt	630125 Sgt J.JAMES 1/20 London Regt

II / A / 8	21226 Pte REGAN W	Unknown British Soldier		Unknown British Soldier	No body recovered
II / A / 10	270543 Pte. REED A 17.9.17	21126 Pte. W. REGAN 2/East Lancs		21126 Pte W.REGAN 21 ***** Regt	21126 Pte W.REGAN 21 ***** Regt
II / A / 11	R.I.Fus 42317 WALKER Pte 2/9.9.18	630125 Sgt JONES R.J 1st 20th London Regt	630125 Sgt JAMES R.J 1/20th London Regt	Unknown British Soldier M.G.C	Unknown British Soldier

4.4.7 Methods used for gathering personal information

There were three main sources of evidence used to suggest identity or gather information during the original concentration work. Some sources would provide information on a regiment, rank or nationality, but were not able to provide a name. These individuals are not identified but some personal information is available for them.

Of the 109 marked concentrated graves, the method used for gathering personal information is recorded for 54 of them, if we remove the duplicated records discussed above. Following the exhumations at Hooze Crater Cemetery, it is possible to see how accurate each of these methods were.

As shown in Table 4-6, in the small sample size available, identity discs were the most accurate method used for gathering personal information, being correct up to 75% of the time. This success rate should be 100% as an error in the recording of graves 9 and 10 in row H, plot I caused the details of the graves to be switched at some point. Therefore the method was correct, but a later error caused this misidentification. Battlefield crosses were accurate up to 70% of the time. In

comparison, information gathered through numerals was only accurate 33% of the time.

Table 4-6: The methods used to gather personal details on deceased soldiers during concentration and their success rates

Method of gaining personal details	Number of occasions	Information thought to be correct		Information incorrect or potentially incorrect	
Battlefield Cross	44	31	70%	13	30%
Identity Disc	4	3	75%	1	25%
Numerals	6	2	33%	4	67%

Table 4-7: The original identification method used for identified remains during concentration and their success rates

Method of Identification	Number of occasions	Identification thought to be correct		Identification incorrect or potentially incorrect	
Battlefield Cross	29	21	72%	8	28%
Identity Disc	3	2	67%	1	33%

4.4.8 Methods used for establishing identity

Of the 54 soldiers that have a recorded information method, 32 of those were named and therefore identified at the time of concentration, as shown in Table 4-7. All of these bodies were identified by battlefield cross or identity disc.

4.4.9 Battlefield crosses

The primary method used for identification and information gathering was the battlefield cross, which was accurate on up to 72% of occasions. For burials concentrated from GRU cemeteries away from the front line, these graves would

have been registered close to the time of death, and were unlikely to be disturbed by later fighting.

However for battlefield burials, reliability is suspected to be much lower. It is possible that makeshift and regimental crosses were blown over, dislodged or destroyed due to later fighting, and placed back incorrectly (War Office, 1921, p.8). For makeshift crosses, they would be made from material available in the location at the time and therefore may not have been as durable, and any information inscribed on them may not have survived as well. Additionally, in areas where many soldiers were killed in a single action, they may have been buried by other soldiers who did not know them, could not visually identify them, and due to time constraints were unable to search the bodies prior to burial. Lastly, these graves were unlikely to be registered, and therefore if they were disturbed there would be no surviving record of the burial details and location, making them more likely to be “unknown” when excavated for concentration.

Of the 44 graves that used a battlefield cross to gather information, 29 were identified soldiers and 15 were unidentified soldiers.

Table 4-8: The number of soldiers identified through a battlefield cross thought to be correct or incorrect

	Total	Presumed or proven correct		Incorrect: no body		Incorrect: incorrect identification	
Identified at time of concentration	29	21	72%	3	10%	5	17%

Table 4-8 shows that 5 of the 29 bodies identified through a battlefield cross are known to be incorrect. This supports the evidence given during the Hooze Crater committee that in the early months of concentration, bodies identified from battlefield crosses were not checked to confirm their identity.

4.4.10 Discs & Numerals

While battlefield crosses could be moved or placed on the wrong grave, in comparison numerals and identity discs are found on the body itself, and should therefore be a more accurate indicator of identity.

Of the bodies identified through identify disc, three were assumed to be correct. One was incorrect but as discussed above, this error was caused by recording at the cemetery.

All the bodies with information gathered through numerals were unknown soldiers. In Table 4-6, four bodies with information gained from numerals were shown to be incorrect; three of these were due to the grave being empty and one was a missed identification. All were buried in plot I and were therefore part of the earliest concentration work.

17 of the exhumed bodies were recovered with identity discs still present; 5 of these bodies had two discs present and 1 body had three discs present. In the early years of the war, metal identity discs were given to soldiers, but later the British and Commonwealth forces moved to a fibre based double identity disc (Ashbridge, 2020). If a soldier was killed, one disc was removed after death and the other would stay with the body. Records are contradictory on whether an identity disc should have been left in place following concentration or not; the "Instructions to Exhumation Parties" (Crawford 1919 cited in War Office, 1921) stated that all personal effects including identity discs would be placed in a bag, implying that no discs should be present at the time of reburial. In the Hooze Crater report, Captain Coghlan states that no discs should be on the body when it was reburied (War Office, 1921, p.14) while Lieutenant Shaylor claims that one disc would be left with the body (War Office, 1921, p.28). This reflects the confusion experienced at the start of the concentration process. It is clear that there should not have been more than one disc left with the body upon concentration, which happened on at least six occasions. This could show that these bodies were not examined sufficiently.

Of the 17 bodies exhumed with an identity disc, none are originally listed as having been identified through an identity disc, as shown in Table 4-9. On 11 occasions, the identity or information was established from a grave marker or numerals. This supports the theory that the bodies were not being searched sufficiently. Of the six bodies with multiple discs, two were previously unknown soldiers and four had an identification which had originally been established from a cross. One unknown soldier was recovered with a disc that was unreadable. If this disc was the fibre based composition of the later discs, these were known to not survive well when buried.

Table 4-9: The original methods of identification for the 17 bodies found to have an identity disc when exhumed in 1920

Original source for gathering information	Number of occasions	Information proved to be correct
Cross	10	6
Numerals	1	0
None given (probably pre-existing records)	6	5

4.4.11 Personal effects

Other personal effects were recovered from the exhumed bodies. The exhumation records include details of a spoon, an initialled ring, a silver watch, a letter and a shaving brush with a razor. These are all objects which should have been recovered and removed during concentration. There were also 13 records that describe the bodies being recovered with either kit, equipment, a rifle or ammunition. It seems unlikely that a body would be buried with working kit, so it appears that these bodies were either battlefield burials or were not originally buried at all.

Uniform and clothing appear to have survived intermittently. 68 records stated that clothing, jackets or uniform were present. There are particular references to riding breeches, tunics, underpants and pieces of a kilt, but there are four records

which state that no uniform or clothing was present. This could be due to severe degradation of the clothing. Textiles can be degraded by various chemical, biological or physical processes (Smith and Thompson, 2017). Soil composition, acidity levels, water content, oxygen content and microbial activity will all effect the level of preservation seen in textiles (Solazzo et al., 2013, p.48). However, these remains were not recovered from the same location, and were concentrated from areas that contained human remains which did have surviving clothing at the time of exhumation. These remains were also for unknown soldiers and they were all partial remains. Therefore it appears that these bodies had been stripped of clothing and kit at some point, but it is not clear if this was before initial burial, before concentration, or if they were disturbed at another time.

4.4.12 Lack of Training and skills

The records suggest that concentration staff did not have sufficient training or instruction when undertaking the concentration work. As discussed above, 13 of the bodies were recorded as missing the head or feet or both when examined, which suggests bad recovery. Other errors can be found, such as grave 4, row A, plot II, where the exhumation found lower limb bones of a human and two bones from a horse or a mule. This shows a lack of knowledge on human anatomy. There is nothing to suggest that staff had to have any experience in anatomy, forensics or body recovery when volunteering to help with the concentration work, and the errors discussed above could reflect this. It may also reflect a lack of examination, for if a body was uncovered wrapped in a ground sheet or the remains were in a bag, they may have simply been transported without checking. It could also reflect the difficulties with commingled remains, where it can be problematic trying to separate bodies.

4.4.13 Change over time

Graves in plot I from row E onwards, and all graves in plot II were the earliest concentrated into the cemetery. The Hooze Crater report states that these plots were completed in numerical order, with plot I being completed before plot II was started (War Office, 1921, p.4). The exact dates of these concentrations are missing from the majority of the records; those that have dates show that they

were concentrated in January or February 1919. As the graves were concentrated from plot I onwards, this allows a review of the most severe types of error over time. As shown in Table 4-10, the number of empty graves and missed identifications appears to decrease in the later burials.

Table 4-10: The error rates over time. Note that as only the unknown soldiers in Plot I, Rows E, F and G were exhumed, they have been grouped together. Also, data is only available for the first eight graves in Plot II, Row C

Plot, Row and number of graves	The number of empty graves		The number of new or altered identifications	
	Count	Percentage	Count	Percentage
Plot I row E to G (21 graves)	7	33%	2	10%
Plot I row H (17 graves)	3	17%	3	17%
Plot I row I (17 graves)	3	17%	1	6%
Plot I row J (17 graves)	3	17%	1	6%
Plot II rows A (17 graves)	1	6%	1	6%
Plot II row B (18 graves)	1	6%	1	6%
Plot II row C (8 graves)	0	0%	0	0%

However, the original report from Hooze Crater stated that errors were believed to have only been in plots I, II and III so it should not be assumed from the data that no errors occurred following row C of plot II. As it was only the unidentified soldiers that were exhumed in plot I, rows E to G, the error rate given may not be accurate. Additionally, the first four graves in row C were all correct and are recorded on the burial returns forms as “original burials”. It appears that these graves were already present at the time of concentration and should therefore be excluded, which leaves data available for only four concentrated graves in row C. Therefore, if the first and last rows in Table 4-10 are excluded for not being complete, the error rate does not appear to be declining.

The contemporary records support this assumption. In 1923 the grave of Private E. Eason was opened in plot XIII, row K at Hooge Crater Cemetery. The grave was found to be empty, but it was decided that his headstone would stay in place (Chettle, 1923). The original grave had been concentrated on 28th June 1919, several months after the earlier work examined in the committee, and demonstrates that errors were still occurring.

4.4.14 Errors in records

The records demonstrate that errors were happening in cemeteries during reburial, and not just during body recovery. As discussed, the graves of a British and Australian soldier appear to have become switched during concentration; this could have been during the reburial or the recording process.

They also suggest a problem in recording body location on a large scale. For example, WITT and BASSETT were originally recorded as being consecutive graves in plot I, row F, however current records show them as being buried in plot III, row G. Similarly, one of the burial returns for plot II, row A, list MINCHEN as recorded in grave 6 with an unknown soldier from the Manchester regiment buried in grave 5. Exhumation showed that MINCHEN was actually located in plot II, row B, grave 17 with a body of an unknown soldier from the Manchester regiment in grave 16. This suggests confusion within the cemetery itself regarding the plotting of graves.

The records do also show that burial returns were being checked before crosses were being added. When comparing the concentration data with that at the time of the exhumations in 1920, it shows that some of the names on the crosses were slightly different to those on the burial return forms, which reflects a checking of details.

4.4.15 Conclusions

In 1920, 135 graves were exhumed in Hooge Crater Cemetery. Exhumation records survive for 115 of these graves, and they contain a wealth of information on the burial and concentration of British and Commonwealth soldiers.

From the analysis here, we can see that some of the oral testimony given at the Hooge Crater committee into the errors in concentration was inaccurate. The presence of personal effects and multiple identity discs proves that bodies were not being examined fully prior to concentration. This may have been due to the unpleasant nature of remains stopping a thorough examination or a lack of instruction on the level of search that should have been taking place. It supports the claims made in the report that bodies recovered from under a cross were not examined to establish identity, instead taking the details of the cross to be correct.

It is clear that the error rate in concentrated graves was high, with some kind of error being demonstrated in 32% of the bodies exhumed. In terms of missed identifications, there was an error rate of 5%. This is higher than the 3.75% that the Hooge Crater Committee give. The most common error seen was the lack of a body in a grave, which occurred in 17% of graves.

The records also show what constituted a body for reburial. 41 of the 97 bodies were described as being whole or complete, which is 42%. The remainder varied from just missing the head or feet, which suggests careless excavation, to being just a few bones. The records show a higher identification rate among complete bodies than partial remains. This again could have been due to partial remains not being examined as carefully, or it may have been that partial remains did not have enough identifiable features to allow for identification.

When bodies were identified during concentration, this was done most frequently from the cross present at the grave, which proved to be accurate on 72% of occasions. Identity discs were used least often to gather information or establish identity. This is surprising as one of the primary reasons identity discs were given to soldiers was so they could be identified easily if killed.

CONCENTRATION OF GRAVES (Exhumation and Re-burials).

BURIAL RETURN.Name of Cemetery of Re-burial HOOGH CRATER CEMETERY.

Plot	Row	Grave	Map Reference where body found.	Was Cross on Grave?	Regimental particulars.	Means of Identification.	Were any effects forwarded to Base?
1.	F.	1.	I.18.b.6.4.	Yes.	1556.T.COSTELLO, 2nd D.L.I.(R.O.)		No.
		2.	I.18.a.7.2.	Yes.	2236 L/Cpl.T.A.THORNE.		
		3.	I.18.a.8.3.	Yes.	5th Aust.Pioneer.Batt. 24.9.17. UNKNOWN SOLDIER,		No.
		4.	I.18.a.9.5.	Yes.)	UNKNOWN SOLDIER.	(Ground Sheet marked, W.J.R.Williams,A.I.F. Humeral,Australia. Remains in one bag.	No.
		5.	I.18.a.9.5.	Yes.)			No.
		6.	I.18.a.7.9.	Yes.	UNKNOWN SOLDIER, 31.10.18. X4951		No.
		7.	I.18.b.6.8.	Yes.	L/Sgt.T.KRAY, 3rd Btn.N.Z. R.3.30.11.17.		No.
		8.	I.18.a.8.9.	Yes.	Pte.E.MORGAN, 4th Suffolks. 6.10.17.		No.
		9.	I.12.a.7.9.	No.	UNKNOWN SOLDIER, 3485 Pte.T.W.WITT, A/Btn.) AIF.30.9.17.	Remains in one bag, 7.2.19.	No.
		10.	I.12.a.7.9.	No.	UNKNOWN SOLDIER, 16715 Pte.R.J.BASSETT. 3/Div.Sig. Coy.AIF.30.9.17.		No.
		11.	I.12.a.7.8.	No.	3168 Gnr.I.READ, 38- 10/A.F.K.1.10.17.		No.

Figure 4-3: Burial return record for Hooge Crater Cemetery, showing details of burials in Row F, Plot I (Directorate of Graves Registration and Enquiries, 1919a)

Table 4-11: Summary of the 115 graves exhumed at Hooge Crater Cemetery, containing the details from their original concentration in 1919, the details on the cross at the time of exhumation in 1920, and the details of the body recovered from the grave. The areas highlighted in orange are graves that were found to contain bodies that did not match details given for the original grave. The four graves highlighted in blue are original, non-concentrated graves. The graves which contain red lettering reflect the details given in multiple concentration forms from 1919.

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	E	11	Unknown Soldier 6775 Gnr HAMILTON G 52nd Bty R.F.A 9.10.17	Unknown British Soldier	Unknown British Soldier
I	E	12	Unknown Soldier	Unknown Canadian Soldier	No body
I	E	13	Unknown Soldier	Unknown British Soldier	Unknown Australian Soldier
I	E	14	Unknown Soldier	Unknown British Soldier	Unknown Australian Soldier
I	F	3	Unknown Soldiers KINGS	Unknown British Soldier KINGS	Disc reads 5451? GLENEY 25.AI RC
I	F	6	Unknown Soldier 31.10.18	Unknown British Soldier	Unknown British Soldier
I	F	9	Unknown Soldier, 3485 Pte.T.W WITT A/Btn A.I.F 30.9.17	Unknown British Soldier	Full body, 2 discs 574448 CPL MORGAN, 17/LONDON RGT C.of.E

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	F	10	Unknown Soldier, 16715 Pte. R.J. BASSETT 3/Div.Sig A.I.F 30.9.17	Unknown British Soldier 30/09/17	Unknown Australian Soldier
I	F	9&10		Part remains under crosses/3 bodies under 2 crosses	Unknown Soldier
I	F	17	Unknown British Soldier	Unknown British Soldier	No body
I	G	1	Unknown British Soldier	Unknown British Soldier	Unknown Australian Soldier
I	G	2	Unknown British Soldier KRRC	Unknown British Soldier KRRC	Unknown British Soldier
I	G	3	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	G	5	Unknown British Soldier	Unknown British Soldier	No body
I	G	6	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier T/4 Kings Own
I	G	9	Unknown British Soldier	Unknown British Soldier	No body
I	G	10	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	G	11	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	G	13	Unknown British Soldier	Unknown British Soldier	No body
I	G	14	Unknown British Soldier	Unknown British Soldier	No body
I	G	17	Unknown British Soldier	Unknown British Soldier	No body

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	H	1	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	H	2	Unknown British Soldier	Unknown British Soldier	No body
I	H	3	Unknown British Soldier	Unknown British Soldier	Unknown Australian Soldier
I	H	4	540 Pte W.H RAY	540 Pte H. Ray (Australian)	Body from Lincoln Regt (British)
I	H	5	4737 Sgt V.W.KELLY, A.I.F Killed in action 8.9.17	4737 Sgt V.W.Kelly A.I.F 8-9-17	4737 Sgt V.W.Kelly A.I.F 8-9-17
I	H	6	9112 Pte. Charles BRADLEY Died of wounds, 21.9.17 8th Aust Field Ambulance	9122 Pte C. Bradley 8th Aus Field Amb 21-9-17	No body
I	H	7	Lt.K.M.BRYDOM 14/Coy A.I.F Killed in action 12.10.17	Lieut K.M Brydon 14th Field Coy A.I.F 12-10-17	Lieut K.M Brydon 14th Field Coy A.I.F 12-10-17
I	H	8	1722 Pte G.W.L HOWIE 2/Aust Pioneers	1722 Pte G.W.L Howie 2nd Aus Pioneers 29-9-17	1722 Pte G.W.L Howie 2nd Aus Pioneers 29-9-17
I	H	9	3166 Pte G.R.PARSONS 2/Aust Pioneers. Killed in action 20.9.17	3166 Pte Parsons RA 2nd Aus Pioneers 20-9-17	(assumed) 15139 Pte R.G. Wilson 1/Notts & Derby 31-11-17
I	H	10	15139 Pte. R.G. WILSON 1/Notts & Derby	15139 Pte R.G. Wilson 1/Notts & Derby 31-11-17	(assumed) 3166 Pte Parsons RA 2nd Aus Pioneers 20-9-17

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	H	11	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	H	12	Lt LEWIS A.E.C Essex R. att 195/M.G.C	Lt A.E.C Lewis Essex Regt	MGC Soldier with partial disc and a Privates tunic
I	H	13	5059 Spr.SCOTT M.14/F.C.E A.I.F	5059 Scott 14th Field Coy A.I.F	5059 Scott 14th Field Coy A.I.F
I	H	14	Unknown Soldier	Unknown British Soldier	No body
I	H	15	29417 Pte. VAUSE A Lanc Fus	29417 Pte A. VAUSE Lancs Fus	29417 Pte A. VAUSE Lancs Fus
I	H	16	5148 Pte. FLETCHER W Lanc Fus	5148 Pte W. FLETCHER Lancs Fus	5148 Pte W. FLETCHER Lancs Fus
I	H	17	Pte. SIMPSON C Lanc Fus	Pte C. SIMPSON Lanc Fus	57249 T.B.Beasley Lancs Fus
I	I	1	907 BEECH South Lancs	907 Pte Beech S. Lancs	26722 Dunwall R.F.A
I	I	2	282522 Pte. TRUEBRIDGE Lanc Fus 29.9.18	282512 Pte. Truebridge 29/9/18	282512 Pte. Truebridge 29/9/18
I	I	3	Unknown Soldier	Unknown British Soldier	Unknown British Soldier
I	I	4	Unknown Soldier	Unknown British Soldier	Unknown British Soldier

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	I	5	Unknown Soldier, Worcester Regt	Unknown British Soldier Worcester Regt	No body
I	I	6	152800 Gnr. LARNER G.229/S.B.R.G.A 4.11.17	152800 *** LARNER 229.S.B., R.G.A 4-11-17	152800 *** LARNER 229.S.B., R.G.A 4-11-17
I	I	7	53150 Pte. HOOBERT F.C. & /L.R.B	53150 Pte F.C. HOOBERT 7/LRB	53150 Pte F.C. HOOBERT 7/LRB
I	I	8	748 Bdr SEELEY T.H. 108/How.Bty. 15/9/17	748 Bdr T.H SEELEY 103 NOW BT A.F.A 15-9-17	748 Bdr T.H SEELEY 103 NOW BT A.F.A 15-9-17
I	I	9	28179 Gnr. GIDDINGS H.C.L 103/How. Bty.A.F.A	28179 GNR H.G.I GIDDINGS 15-9-17	28179 GNR H.G.I GIDDINGS 15-9-17
I	I	10	Unknown Soldier	Unknown British Soldier	No body
I	I	11	Unknown Soldier	Unknown British Soldier	Unknown British Soldier
I	I	12	U.B.S Notts & Derby	Unknown British Soldier	No body
I	I	13	Unknown Soldier	Unknown British Soldier	Unknown British Soldier
I	I	14	270543 Pte Reed A. Royal Scots	270543 Pte A. REED R.Scots	270543 Pte A. REED R.Scots
I	I	15	Unknown Soldier	Unknown British Soldier	Unknown British Soldier
I	I	16	Unknown Soldier	Unknown British Soldier	Unknown British Soldier

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	I	17	235533 Sgt. NOON J Lancs Fus 29.9.18	235533 Sgt NOON L. F US 29-9-18	235533 Sgt NOON L. F US 29-9-18
I	J	1	14927 Pte. JONES S 3/Wors Regt K in A 26.9.15	14927 Pte S. JONES 3rd Worcester 26-9-15	14927 Pte S. JONES 3rd Worcester 26-9-15
I	J	2	Unknown	Unknown British Soldier	Unknown British Soldier
I	J	3	5959 Pte. BELL A	595 Pte A. BELL	595 Pte A. BELL
I	J	4	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	J	5	Unknown British Soldier	Unknown British Soldier	No body
I	J	6	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	J	7	Unknown British Soldier	Unknown British Soldier	No body
I	J	8	24/878 Cpl PASSELL. J 2/N.Z.R.B 5.12.17	24/878 PASSELL Cpl J. 2 N.Z.R.B 5-12-17	24/878 PASSELL Cpl J. 2 N.Z.R.B 5-12-17
I	J	9	3011.L/C BULLEN.J 1/M.G.C A.I.F	3011 L/CPL J. BULLEN 1/M.G.C A.I.F	No body
I	J	10	3/39559 A.E.DEW 9/Leicesters 5.11.17	3/39559 A.E DEW	3/39559 A.E DEW

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
I	J	11	Unknown British Soldier Surrey Regt	Unknown British Soldier	Unknown British Soldier
I	J	12	352.1/Div A.I.F	U. Australian S 352 1st Div	Unknown Australian Soldier
I	J	13	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
I	J	14	1816.Gnr C.BLAIR M.G.Corp	1816 GNR C. BLAIR M.M.G.C	1816 GNR C. BLAIR M.M.G.C
I	J	15	Unknown British Soldier	Unknown British Soldier	8877 A.E.L FLEET L/Cpl HANTS Regt
I	J	16	20936 W.CROSBY (CROSLEY) Royal Dub Fus	20936 CROSBY W R.D.F	20936 CROSBY W R.D.F
I	J	17	Unknown British Canadian	Unknown Canadian Soldier	Unknown Canadian Soldier
II	A	1	Unknown Soldier	Unknown British Soldier	Unknown British Soldier K.R.R.C
II	A	2	Unknown Soldier	Unknown British Soldier	Unknown British Soldier
II	A	3	Unknown Soldier East Lanc	Unknown British Soldier	Unknown British Soldier
II	A	4	264120 Pte. WHITTLE L Unknown	Unknown British Soldier	Unknown British Soldier

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
II	A	5	Unknown Soldier Unknown - Manchesters	Unknown Australian Soldier	No. 63 Div. B.BULLOCK 6th Field Ambulance of I.A.G.H
II	A	6	86288 L/cpl SPOONER C M.G.C 9-9-18 MINCHIN E 170036	Unknown British Soldier	Unknown German Soldier
II	A	7	Unknown Soldier M.G.C Unknown British Soldier	630125 Sgt J.JAMES 1/20 London Regt	630125 Sgt J.JAMES 1/20 London Regt
II	A	8	21226 Pte REGAN W 2nd East Lancs Unknown British Soldier R/Arty	Unknown British Soldier	No body
II	A	9	271549 Pte. HIND W 11/R.S 17/9/17	271549 Pte W.HIND 11/Royal Scots 17-9-17	271549 Pte W.HIND 11/Royal Scots 17-9-17
II	A	10	270543 Pte. REED A 17.9.17 21126 Pte. W. REGAN 2/East Lancs	21126 Pte W.REGAN 21 ***** Regt	21126 Pte W.REGAN 21 ***** Regt
II	A	11	R.I.Fus 42317 WALKER Pte 2/9.9.18 630125 Sgt JONES R.J 1st 20th London Regt 630125 Sgt JAMES R.J 1/20th London Regt	Unknown British Soldier M.G.C	Unknown British Soldier

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
II	A	12	Unknown British Soldier	86288 L/C G.SPOONER M.G.C 9-9-18	86288 L/C G.SPOONER M.G.C 9-9-18
II	A	13	Unknown Australian	Unknown British Soldier	Unknown British Soldier
II	A	14	Unknown Australian	267720 Pte L.WHITTLE	267720 Pte L.WHITTLE
II	A	15	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier East Lancs Regt
II	A	16	Unknown British Soldier	Unknown British Soldier	Unknown Australian Soldier
II	A	17	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	1	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	2	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	3	Pte K K-A-BY A.I.F 20.9.17	5533 SAXBY Pte R.R 3/A.I.F	5533 SAXBY Pte R.R 3/A.I.F
II	B	4	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	5	16022 Pte. WALMSLEY A Notts & Derby	16022 KALMSLEY Pte A NOTTS & DERBY	16022 KALMSLEY Pte A NOTTS & DERBY
II	B	6	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	7	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	8	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
II	B	9	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	10	Rifleman HOOKER W.A	HOOKE.R. RFLM W.A	HOOKE.R. RFLM W.A
II	B	11	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier
II	B	12	Capt HUDSON, A.H 6th Royal Berks Regt K.in.A 31.7.17	Capt HUDSON A.H 6/Royal Berks 31/7/17	No body
II	B	13	57809 Pte. BASHAM H.C 10/Roy. Fusiliers. Killed in Action 9.3.18	57809 BASHAM Pte H.C 9/3/18 10/Royal Fuslrs	57809 BASHAM Pte H.C 9/3/18 10/Royal Fuslrs
II	B	14	20951 Pte.McPAUL 2/Royal Insk. Fus. D.of wounds 29.9.18	20951 McFAUL Pte 2/R.I.F 29/9/18	20951 McFAUL Pte 2/R.I.F 29/9/18
II	B	15	Pte. WALKER 2/Innis.Fus.D/W 29.9.18	WALKER Pte 2/R.I.F 29/9/18	Body of R.A.M.C
II	B	16	Unknown British Soldier	Unknown British Soldier	Unknown British Soldier MANCHESTER
II	B	17	Unknown British Soldier KRRC 1918	Unknown British Soldier K.R.R.C	170036 MINCHEN. E Roy. Engrs. C of E
II	B	18 (extra)		Nil	Unknown British Soldier
II	C	1	ORIGINAL BURIALS	R/9159 GRAHAM RFLM H K.R.R.C 1918	R/9159 GRAHAM RFLM H K.R.R.C 1918

Plot/Row/Grave			Details on the burial return from original concentration (1919)	Details recorded on cross at time of exhumation (1920)	Details obtained from examination of the body at exhumation (1920)
II	C	2	ORIGINAL BURIALS	U.S K.R.R.C 1918	Unknown British Soldier K.R.R.C
II	C	3	ORIGINAL BURIALS	19518 EVANS Pte H 6/K.S.L.I 10/1/18	19518 EVANS Pte H 6/K.S.L.I 10/1/18
II	C	4	ORIGINAL BURIALS	26615 GREGORY L/CPT F.C 6/K.S.L.I 10/1/18	26615 GREGORY L/CPT F.C 6/K.S.L.I 10/1/18
II	C	5	Unknown Signaller	Unknown Soldier 13984	Unknown Soldier
II	C	6	13984 Pte J BOOTH 95th M.G.C 2.10.17	13982 BOOTH Pte. J. 95/M.G.C 2/10/17	13982 BOOTH Pte. J. 95/M.G.C 2/10/17
II	C	7	62862 Pte. T.B 95th M.G.C 2.10.17	62862 B____ Pte T. 95/M.G.C 8/10/17	62862 B____ Pte T. 95/M.G.C 8/10/17
II	C	8	Unknown British Soldier MGC	Unknown British Soldier M.G.C	Unknown British Soldier

5 METHODS AND RESULTS

Chapter 4 has used a small sample of concentration records to provide insight into the methods of identification used and the success rates seen at Hooge Crater Cemetery. This chapter will now use a different and much larger sample of concentration records from Hooge Crater Cemetery to gain a greater understanding of the concentration practices, identification methods and variations within identification rates. These are used in collaboration with contemporary trench maps and other supporting historical records. The methods used for completing this research and analysis are presented in this chapter alongside the results.

5.1 Archive Materials

The CWGC hold extensive archives in their main headquarters in Maidenhead. The archives contain historical documents regarding the formation of the IWGC, starting from the early work of the BRC overseas, through to the modern day records of the Commission.

The early records regarding the work of the BRC and DGRE are intermittent, due to many of the older documents having been destroyed during the Second World War. The majority of the surviving records are administrative papers, correspondence, and reports on the work of the commission from 1917 up to the 1960s (Commonwealth War Graves Commission, 1997). The current archive catalogue was established and made available to the public for the first time in 1997. More recently, parts of the catalogue have been digitised and are now available for viewing online.

Some of the early records that did survive the Second World War, and are now held digitally within the archive, are the concentration records from the concentration work that took place from 1919 onwards. These records, also known as burial returns, are organised by cemetery. As explained in section 4.3, they contain the details of each grave added to the cemetery after the war and were completed at the cemetery, at the time of reburial. Each grave was recorded to include the location of the grave within the cemetery, the trench map reference

for the location of the original burial, whether a cross was present at the grave, the name of the soldier if identified, the method of identification and if any personal effects were recovered. Concentration records were completed by the cemetery officer in duplicate, with one copy being retained by the officer and the other being returned to the DGRE headquarters. The majority of the records are typed rather than handwritten, which suggests that they are the transcribed version of the original records. It is not possible to say accurately when these records were transcribed, however due to the later handwritten editions, corrections and identifications added, it would appear that these were written locally prior to being sent to London Headquarters for checking.

All records should have included the date of concentration and signature of the officer in charge. These concentration records contain a wealth of data on the locations from where soldiers were recovered, how they were identified and potential variations over time.

5.2 Hooge Crater Cemetery

It was decided to focus on the concentration records for Hooge Crater Cemetery for several reasons. Firstly, Hooge Crater was one of the earliest concentration cemeteries to be started in Belgium, open from January 1919, so the concentrations records can tell us about early processes and should indicate if there were any changes in practice or trends over this time. Additionally, Hooge Crater Cemetery is one of the largest concentration cemeteries in Belgium, having been increased from 76 graves at the time of the armistice to 5,916 graves currently (Commonwealth War Graves Commission, 2016). Finally, Hooge Crater Cemetery was chosen as contemporary records show that errors in concentration had occurred there and been investigated, which included the exhumation of 115 graves, as discussed in Chapter 4. Therefore, examination of these records may give an insight into how and why some of these errors occurred.

5.3 Data Analysis of concentration records

For Hooge Crater Cemetery, there are 836 concentration records surviving, which contain the details of the 5728 graves. For each grave, the concentration record

gives details of where the body was recovered from, if there was a cross present, regimental particulars if known, method of identification and whether any personal effects were recovered.

Due to the large number of records, it was decided to work with a representative sample only. In Hooge Crater Cemetery there are 23 plots, each consisting of row's A to J, K or L (Figure 4-2). It was decided that only the graves in row A and F of each plot would be analysed, as this would give details of concentrations throughout the time the cemetery was open. Additionally, choosing one row at the start of each plot and one in the middle allowed for a regular and consistent sample across the time period. 163 concentration records survived containing the data for graves in row A and F.

To allow analysis of the data, the concentration records were manually input into an excel spreadsheet. To ensure accuracy in the transcribing, a second individual compared the data in the spreadsheet with the digital records to identify any discrepancies.

Hooge Crater Cemetery currently has 1091 graves in rows A and F. Plot I, row A consists of 21 original graves that were not concentrated, leaving 1070 concentrated graves in total.

A further 57 of these graves were excluded from analysis. 17 of these graves were excluded because the burial return form was missing from the records. There were 20 burials where the burial return form had been duplicated, and the details on the two versions did not match. As it was not possible to tell which form was correct, these 20 burials were excluded. Finally, the data was compared to the current casualty records for Hooge Crater Cemetery, and any graves found to differ from the contemporary records were also excluded, with the exception of those that had an identification switched with the grave immediately adjacent. Altered identifications were found for 20 burials, which had either an original identification which had been removed or changed, or was a burial that had been recorded as an Unknown Soldier, and had an identification added later. This left 1013 individual records remaining.

Data analysis was carried out on this sample. This provided information on fluctuations in concentration and identification rates over time, which identification methods were most common and how these may have changed over time. This can all contribute towards our understanding of body examination and concentration practices.

5.3.1 Errors in records

Due to the contemporary nature of the records, some common errors were found. It was found that for 71 graves there was no date of concentration given on the burial return. These records are included in the analysis, as the approximate date of concentration was established by examining the dates given for the surrounding graves. For example, graves 8, 9 and 10 for plot IXa, row F had no date on the concentration form, but as the other graves in the row were all concentrated on the 15th May 1919, we can assume that these three graves were concentrated at the same time.

Most of the records were typed rather handwritten. This process of transcription may have caused errors in the records, which can be seen in some of the dates given (for example the record for plot III, row K, graves 9 and 10 have the date of concentration as April 1920 rather than 1919). It was possible to identify when dates had been entered incorrectly, and for these records the approximate date was estimated using the method described above.

The second stage of analysis was to plot the locations of the original graves using the map reference included in the concentration records. 217 records were excluded from this part of the analysis due to their having an incomplete map reference, leaving 796 graves to be plotted.

5.4 Trench maps

Early in the First World War, it was realised that there was a requirement for accurate maps of enemy defences (Collier, 2002). The first British trench maps were created in October 1914, initially of Belgium and then France. Each map was created with a standard topographic map background, and features added over the top such as enemy trenches, battery positions and targets (Chasseaud,

1991). Areas were mapped at a scale of 1:40,000, and each area given a number. These areas were then divided into 1:20,000 maps which were labelled with the area number and either NW, NE, SW or SE dependant on the area covered (Figure 5-1). Each of these contained 6 lettered squares, each being sub divided into 36 smaller, numbered squares of 1000 yards by 1000 yards each. Finally, each of these numbered squares was divided into four smaller squares, a, b, c and d; a covered the north west area of the square, b the north east area, c the south west and d the south east. Each of these small squares was 500 yards by 500 yards (Figure 5-2).

When trench maps were used to indicate a location, the format would be the large area number followed by the letter square, the numbered square within and then either a, b, c or d. This would then be followed by two numbers between 0 and 10, which would indicate the location within the square. The first number would be from the scale along the bottom of the square, and the second number would be taken from the side of the square. This would indicate the specific location within the map. For example, the location of the Menin Gate, outside Ieper would be 28.I.8.b.2.1 (Figure 5-3). This gives a small square of 50 yards by 50 yards.

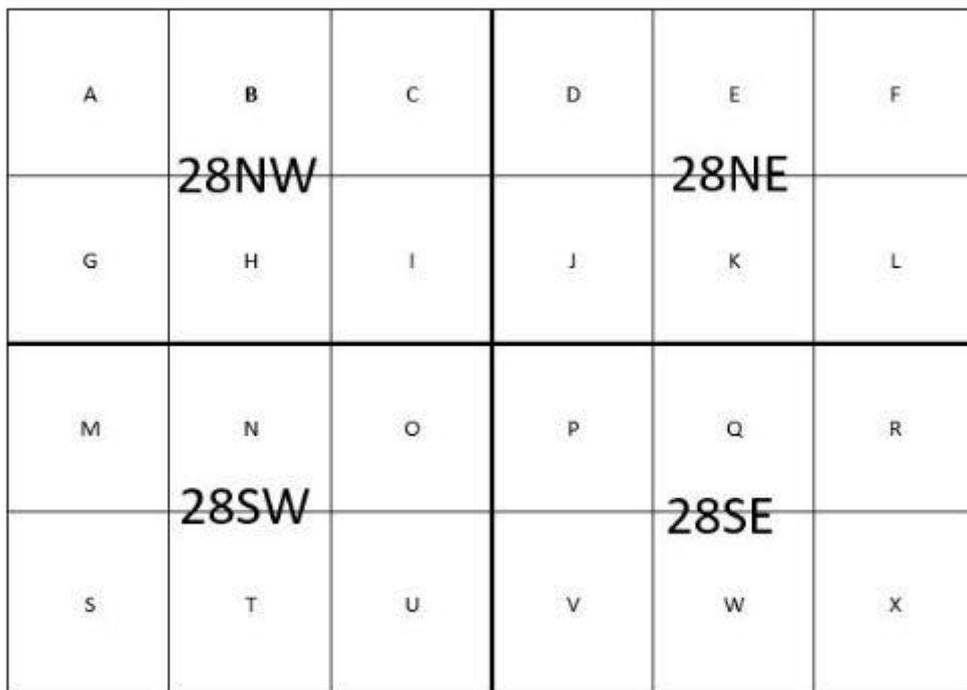


Figure 5-1 The layout of trench maps scale 1 to 20,000



Figure 5-2 A numbered square showing the subdivision into smaller areas a, b, c, d with scale markings on the side (Adapted from War Office, 1917b)

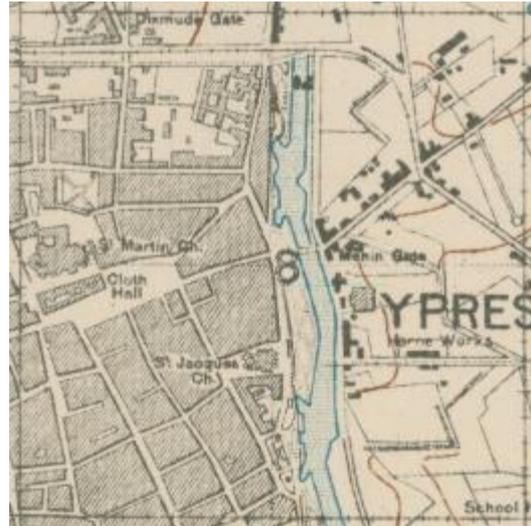


Figure 5-3 A numbered square showing the Menin Gate at reference 28.I.8.b.2.1 (Adapted from War Office, 1917a)

The trench maps used in this study were purchased from the National Library of Scotland, who have an extensive digital collection of trench maps. Three trench maps were required to cover the area of burials in Hooge Crater Cemetery; 28 North West (War Office, 1917a), 28 North East (War Office, 1917b) and 28 South East (War Office, 1918a). These trench maps were purchased in digital TIFF format and are at a scale of 1:20,000. The maps chosen were all from 1917 or 1918, which were the latest maps available in high quality.

To plot the graves, each trench map reference was converted into a grid reference. The trench map references for the sample of graves at Hooge Crater Cemetery were all from map squares I, J, K or Q. All of the references from map square I were converted and plotted first. Each reference was changed into the corresponding grid reference using the system shown in Figure 5-4, with the trench map location being converted into one number for the distance along square I and one number for the distance up square I. Therefore in example 5-4, map reference 28.I.6.c.2.4 would become 102 along and 104 up. Once all the references for map square I had been converted, the grid references were plotted

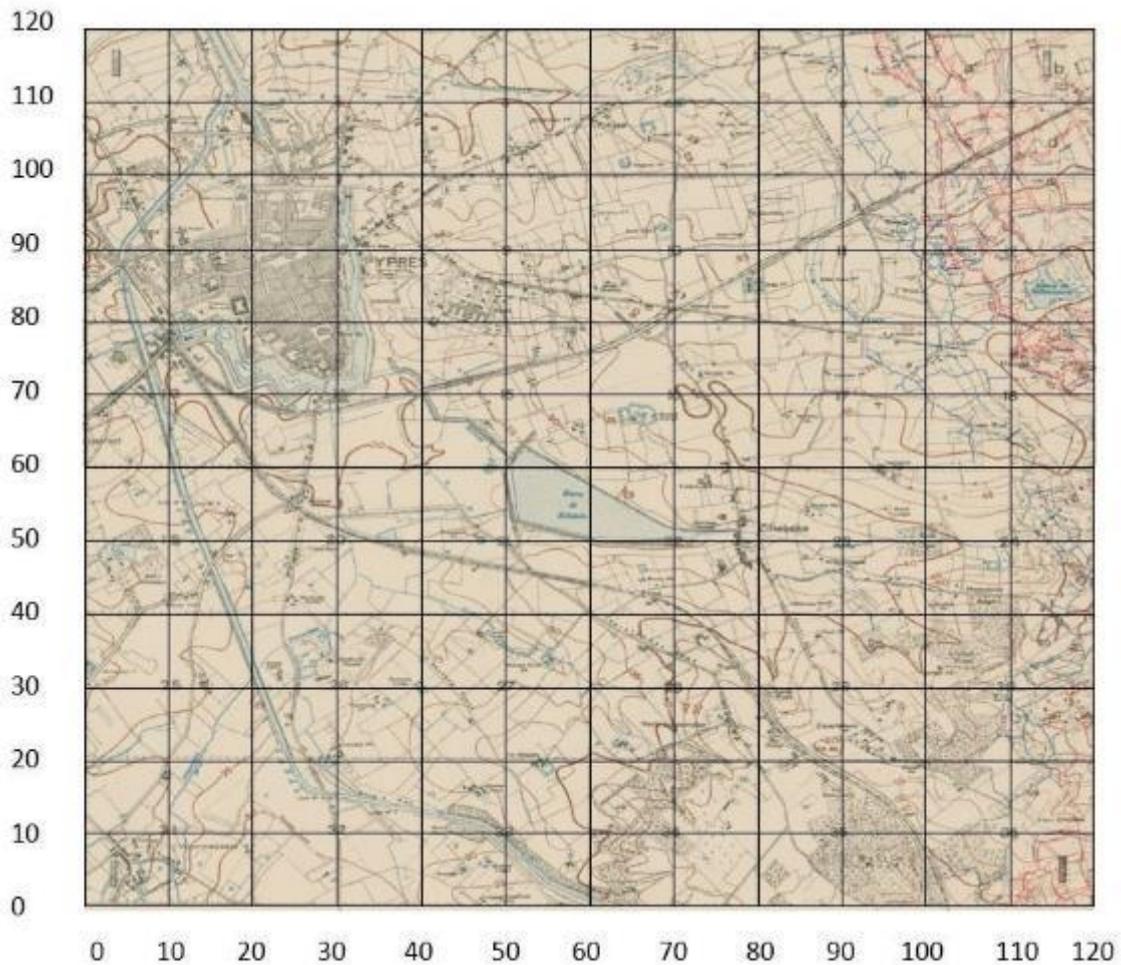


Figure 5-4 A large letter map square showing grid used for conversion of map reference into grid reference (Adapted from War Office, 1917a)

onto a grid in a Microsoft Excel spreadsheet. This process was repeated for the references from maps square J, followed by map square K and finally map square Q, with each being plotted into separate grids. These grids were then overlaid onto the corresponding trench map squares. Following this, each map was inspected visually for patterns and trends, which were then investigated.

The map squares I, J, K and Q, while being adjacent to each other, were from three different trench maps, as shown in Figure 5-1. For ease of viewing, these map squares were compiled and are presented in the remainder of this thesis as one image, with grid reference points overlaid. Every grave which could be plotted is shown on these maps.

By plotting the grave locations, this will indicate how and when the landscape was searched, and will confirm or question the report that areas were searched on multiple occasions. It will indicate the number of graves with burial markers or crosses, and how this is linked to identification rates. It will also show us where bodies were recovered from and allow us to ascertain if there was any relationship between grave location and identifications rates

5.5 Results of statistical analysis

5.5.1 Overview

Overall, 1013 graves were analysed. These were all concentrated between January and August 1919. The number of concentrations was lowest in February and highest in March and April (Table 5-1). In all months except July, the number of unidentified burials was higher than identified burials at the time of reburial. Proportionately, February had the highest number of burials that were unidentified at 89.5% and July had the lowest number of unidentified burials at 40% (Figure 5-5).

Overall, 33% of all burials within the sample were identified. Of the identified burials, the majority were individuals who has died in 1917. All years of the conflict were represented with 2 deceased from 1914, 28 in 1915, 9 in 1916, 261 in 1917 and 41 in 1918.

Identification method was divided into disc, cross, personal effects, other and unknown, which were graves that were identified with no method given. These graves were likely to have been identified through previous records, such as grave registration documents and DGRE correspondence.

The mostly commonly used method of identification was the identity disc. Second most commonly used was the cross at the grave, followed by personal effects and then other methods such as existing reports. The main recorded method of identification changes over time, with the rate of crosses being used decreasing, and the rate of identity discs increasing (Table 5-2 and Figure 5-6).

The number of burials with no clear method of identification also reduces over time. The use of personal effects alone for identification stays low throughout the time period, however there are 24 occasions where personal effects were used as supporting evidence to an identity disc. Personal effects used to establish identification included ground sheets, gas masks, letters, cigarette cases, rifle covers, paybooks, pocket books, post cards, wallets and wills.

Table 5-1 Table showing the number of concentrations per month, including identification rate in numbers and percentage

Month	Total number of Concentrations	Number of identified burials		Number of unidentified burials	
January	35	14	40%	21	60%
February	19	2	10.5%	17	89.5%
March	215	63	29%	152	71%
April	214	50	23%	164	77%
May	167	57	34%	110	66%
June	95	32	34%	63	66%
July	130	78	60%	52	40%
August	138	37	27%	101	73%
Total	1013	333	33%	680	67%

The primary method of identification also varied for each year of death (Figure 5-7). For the bodies from 1914, one was identified by disc and one was identified by cross. For 1915 bodies, the main method of identification was cross, but for 1916, 1917 and 1918 bodies the main method used was identity disc.

Of the 1013 graves, 142 were found with crosses, 839 were found without crosses and 32 records were unclear. In all months except January, most graves concentrated did not have a cross (Figure 5-8). Of the graves found without

crosses, 25% were identified, while 75% remained unidentified. Of those with crosses, 89% were identified and 11% were unidentified (Figure 5-9). However if we remove those graves which are assumed to have been identified by the cross from this sample, this changes to 40% being identified and 60% being unidentified.

The number of crosses surviving varies per year. Of the identified burials, the burials from 1915 had the highest proportion of graves recorded with crosses, while 1916 had the lowest proportion of graves recorded with crosses (Table 5-3).

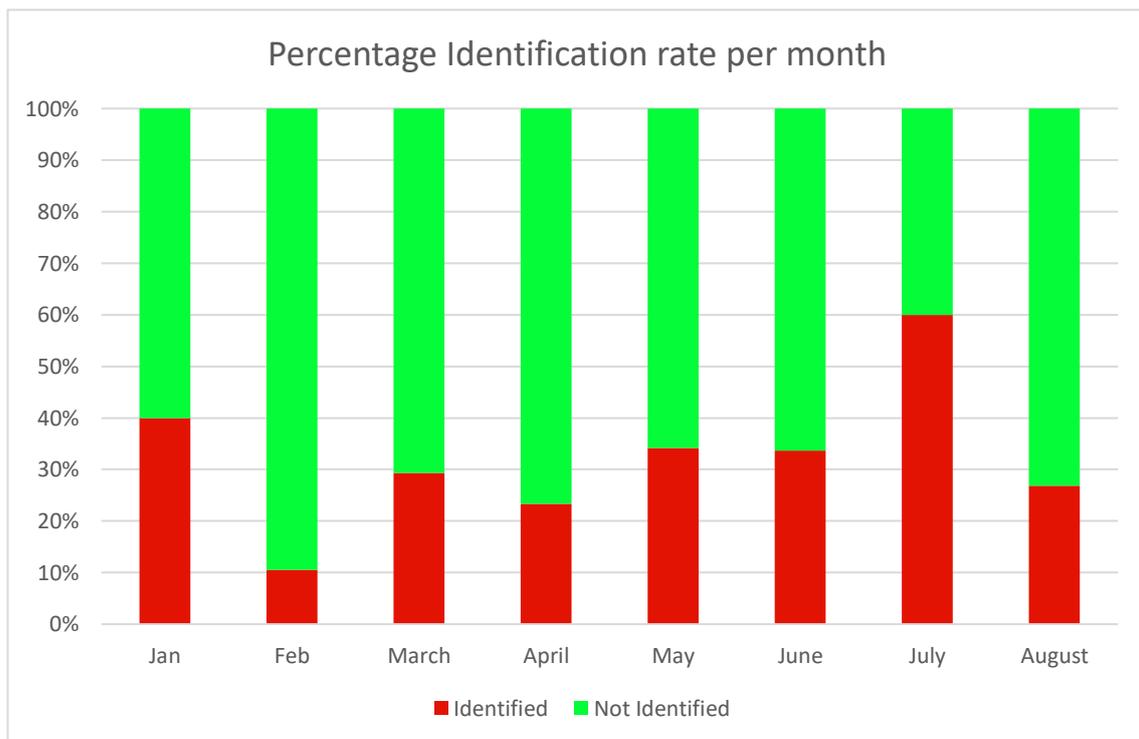
Table 5-2 Table showing the identification methods used per month for identified burials

Month	Identification method used				
	Identity disc	Cross	Personal effects	Other	Unrecorded
January	-	14	-	-	-
February	-	1	-	-	1
March	7	24	5	-	27
April	18	12	4	-	16
May	44	5	4	-	4
June	22	5	4	-	1
July	28	41	3	4	2
August	23	12	1	-	1
Total	142	114	21	4	52

Table 5-3 Table showing the number of graves found with and without crosses per year

Year of death	Number of graves with crosses		Number of graves without crosses	
1914	1	50%	1	50%
1915	20	71%	8	29%
1916	0	-	9	100%
1917	85	32%	179	68%
1918	23	56%	18	44%

Figure 5-5 Graph with the percentage of identified and unidentified, concentrated burials



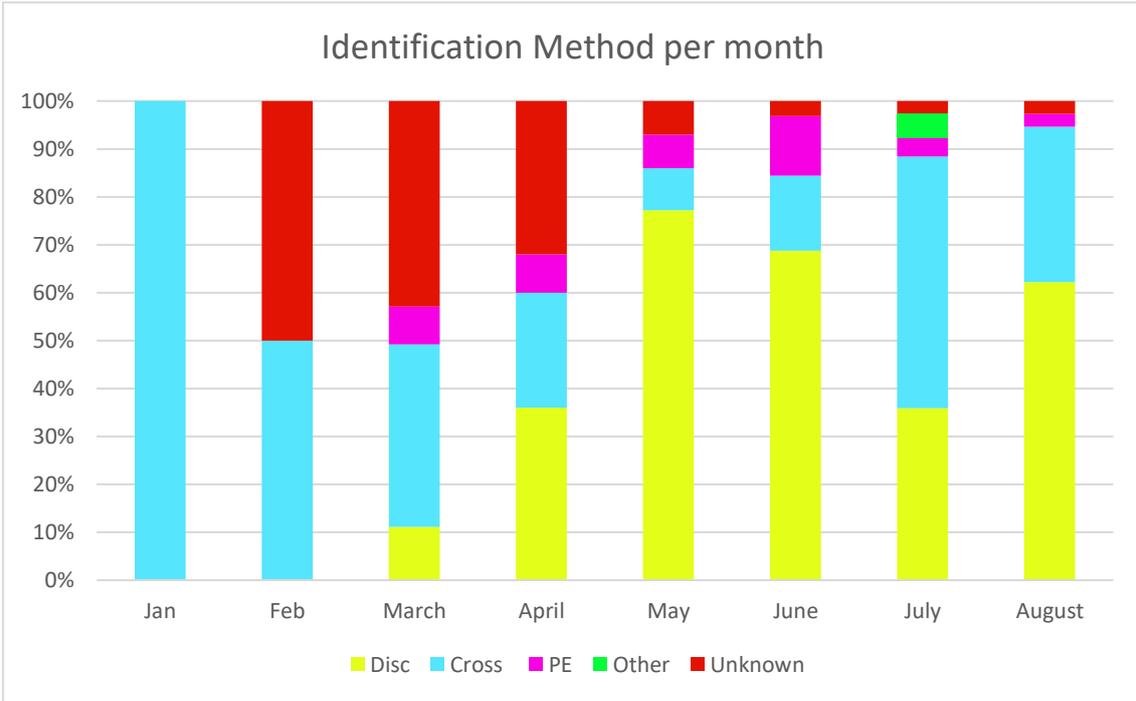


Figure 5-6 Graph with identification method per month in percentage

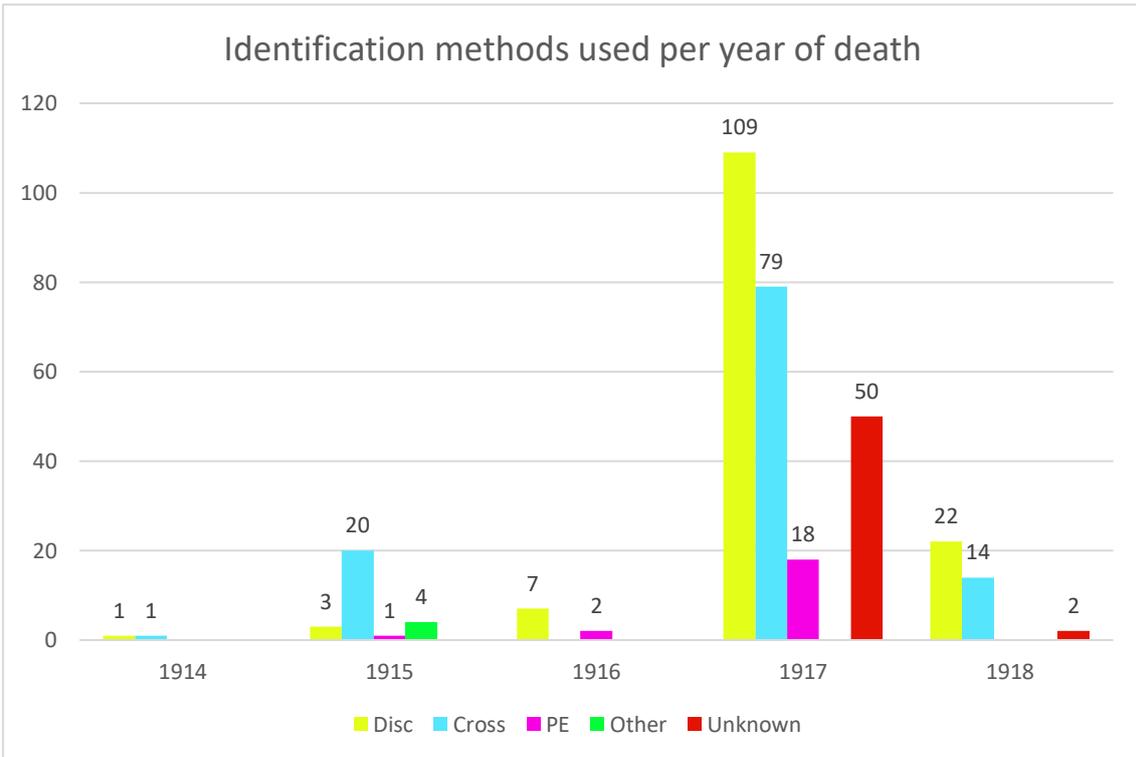


Figure 5-7 Graph showing the identification methods used for each year of death

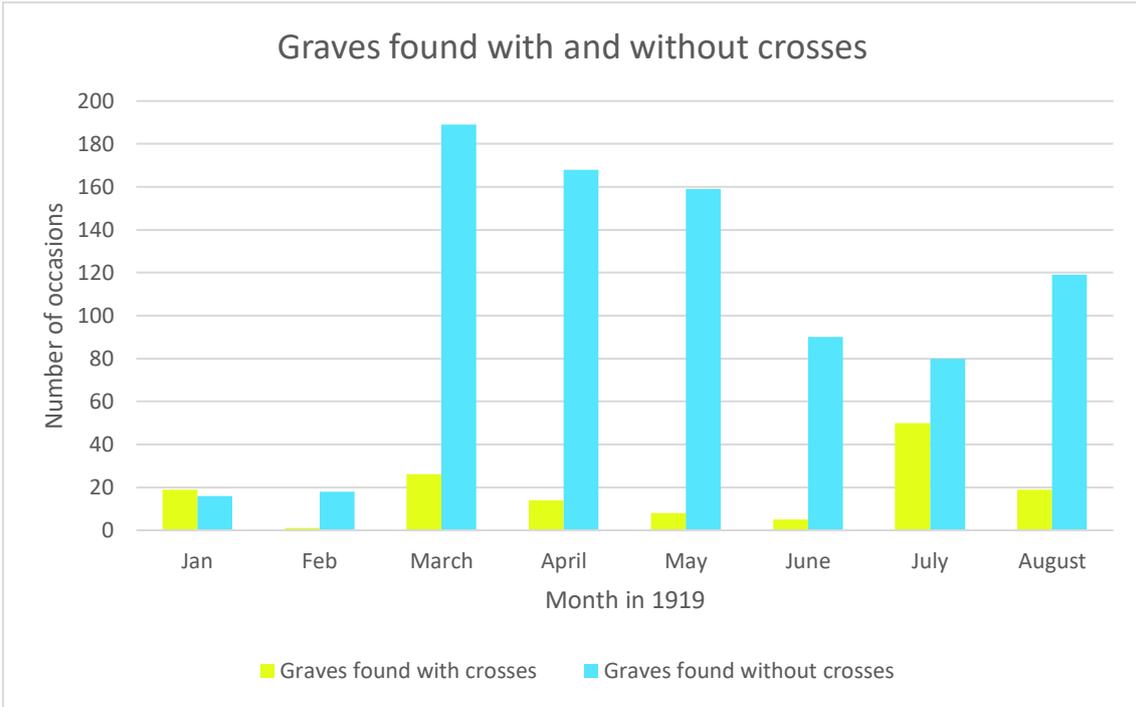


Figure 5-8 Graph showing the number of graves found with and without crosses between January and August 1919

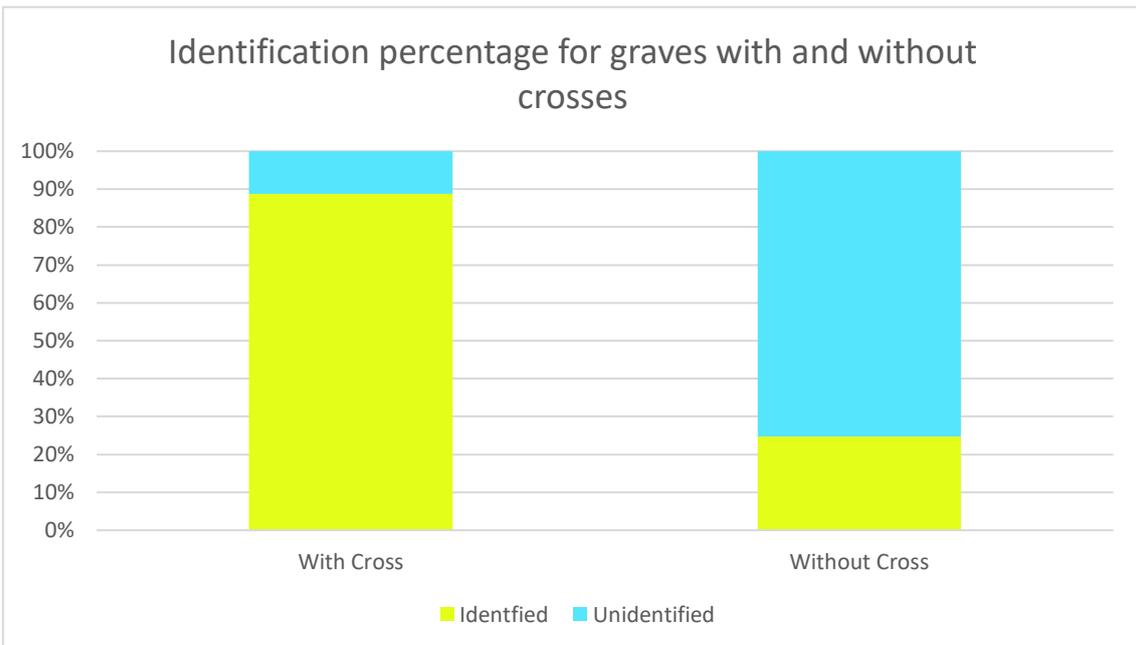


Figure 5-9 Graph with the percentage of identification rates for graves with and without crosses

5.5.2 Small cemeteries, new burials and exhumations

103 of the graves are recorded as having been moved from other cemeteries. Six of these cemeteries are named and the others are referred to as “small cemeteries”. Of these graves 77 were identified when reburied and 26 were unidentified (Table 5-4). 47 graves had a cross when they were concentrated. A cross was the most commonly used identification method for burials in small cemeteries, with identity disc being the second most commonly used method. There are six graves which have no recorded method of identification and no cross, and there are five which were identified by comprehensive report.

Several concentration records note the graves as either being “new burials” or “exhumations”. 296 burials were recorded as new burials on the concentration records. Of these 296 burials, none had crosses and only 26 of these graves were identified when reburied. 140 bodies were recorded as exhumations, and 33 were found with crosses. Of the 140 bodies, 37 were identified and 103 were unidentified when reburied (Table 5-5). 46 of the exhumations were recorded as having been concentrated from a small cemetery.

5.5.3 Concentration cemeteries

While a small number of cemeteries were concentrated into Hooge Crater Cemetery, some cemeteries were left in situ and other cemeteries were expanded for concentrations. Within the vicinity of Hooge Crater Cemetery and in the map area containing the graves in the sample, there were 22 cemeteries left in position and 23 concentration cemeteries were created or expanded (Figure 5-10). Of the 23 concentration cemeteries, 18 were original cemeteries that were expanded after the war, and five were new cemeteries created after the war. In total the 23 concentration cemeteries and Hooge Crater hold over 40,000 graves.

Table 5-4 Details of the graves moved from small cemeteries

Name of cemetery	Month of concentration	Number of graves concentrated	Number of graves found with a cross	Number of identified graves	Number of unidentified graves	Identification methods used
Small Cemetery (unknown)	March 1919	18	9	13	5	Cross (8) Disc (3) Unknown (2)
	April 1919	11	4	7	4	Cross (4) Personal effects (1) Unknown (1) Combination (1)
	May 1919	28	2	20	8	Cross (2) Disc (12) Combination (2)

						Personal effects (1) Unknown (3)
Simons Post Small Cemetery	March 1919	1	1	1	0	Cross
Bellewarde Ridge Small Cemetery	June 1919	8	3	4	4	Cross (3) Disc (1)
Tram and Railway Crossing Cemetery	July 1919	12	5	7	5	Cross (2) Comprehensive report (5)
Lock no.9 Small Cemetery	July 1919	11	11	11	0	Cross (11)
Pill Box Cty Zonnebeke Cemetery	July 1919	13	12	13	0	Cross (12) Disc (1)
Kolenberg Cemetery	August 1919	1	1	1	0	Disc

Table 5-5 Graves recorded as new burials or exhumations

Month of Concentration	New burials or Exhumations	Number of graves concentrated	Number of graves found with a cross	Number of identified graves	Number of unidentified graves	Identification method used
March	New Burials	72	0	10	62	Unknown (7) Personal effects (2) Identity Disc (1)
	Exhumations	1	1	1	0	Cross (1)
April	New Burials	90	0	5	85	Unknown (5)
	Exhumations	53	0	0	53	
May	New Burials	41	0	5	36	Disc (3) Personal effects (2)
	Exhumations	33	0	0	33	

June	New Burials	31	0	3	28	Disc (1) Personal effects (2)
	Exhumations	16	3	4	12	Cross (3) Disc (1)
July	New Burials	4	0	0	4	
	Exhumations	36	28	31	5	Comprehensive Report (5) Cross (25) Disc (1)
August	New Burials	58	0	3	55	Disc (2) Combination (1)
	Exhumations	1	1	1	0	Disc (1)

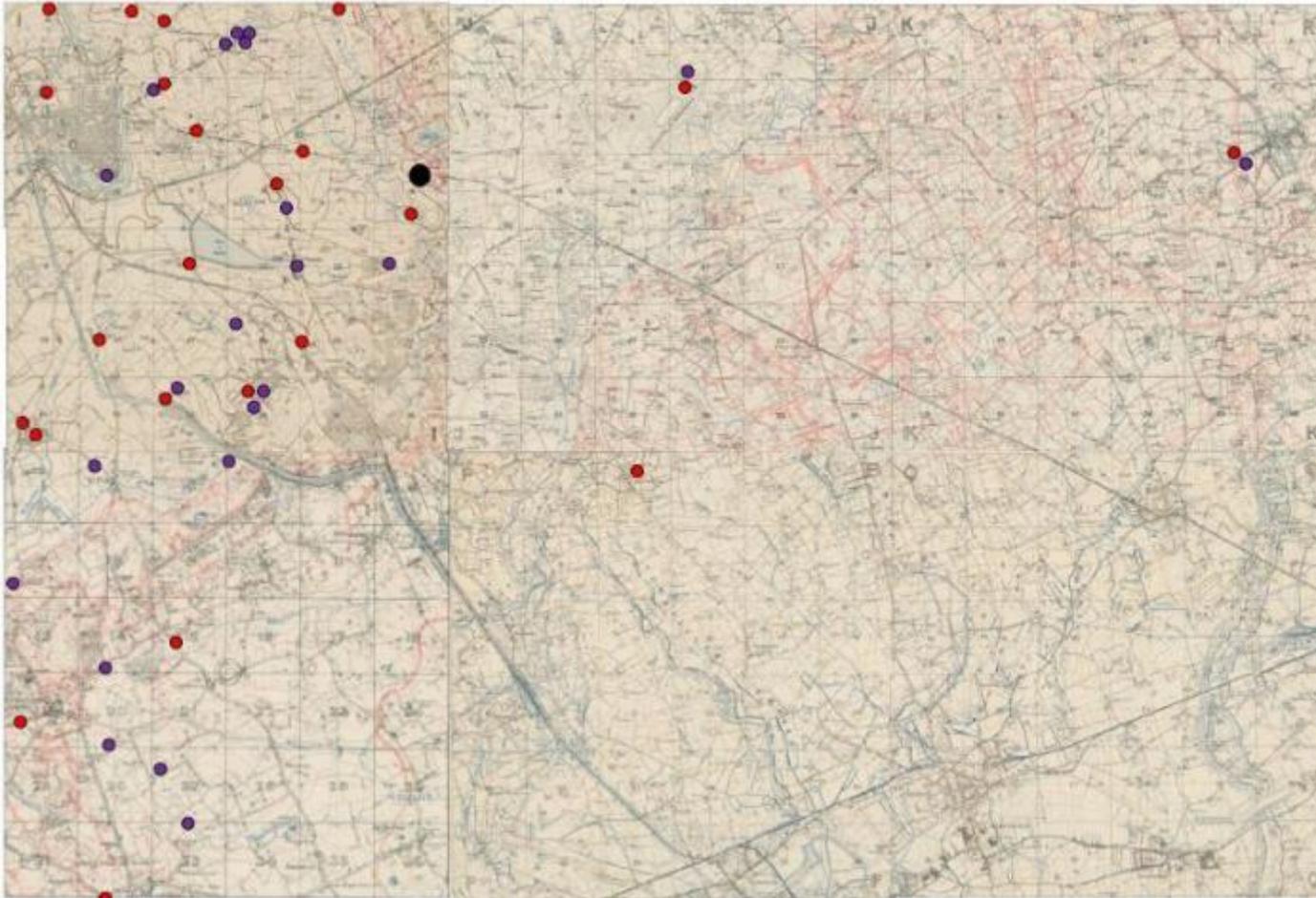


Figure 5-10 The map squares I, J, K, O, P and Q, and any cemeteries they currently contain. The red dots are cemeteries that were used for concentration, while the purple dots are original cemeteries that were not expanded. Hooge Crater is shown as the black dot (Adapted from War Office, 1917a, 1917b, 1918b, 1918a)

							13										
				1	14	57	19	21	1		3						
	6	12			24	41	66	67	98								
20					33	49	35	65	23								
			1	3		30	46		1	7							
	3		3	4			1						1				
													2				
													3	3			
													2	10	1	6	1

Figure 5-11 Grid showing the location of the plotted graves that were concentrated into Hooge Crater Cemetery. The square highlighted in red contains Hooge Crater Cemetery.

5.6 Trench map results

The original locations of 796 graves that were concentrated into Hooge Crater Cemetery were plotted onto trench maps. All of these graves were concentrated from trench map squares, I, J, K and Q (Table 5-6 and Figure 5-11). As there was only one grave recovered from map square K, in the following analysis this grave has been included in the results for map square J.

Table 5-6 Total number of bodies plotted per map square

Map Square	Total number of bodies plotted
I	124
J	643
K	1
Q	28

Visual examination shows that the majority of graves were concentrated from the land to the east of the Hooge Crater Cemetery, with a small number of outlying graves concentrated from further afield. There are clusters of graves, particularly in map square J, with many of these clusters located near the British Front line.

5.6.1 Concentrations per month

When looking at concentrations per month, all the bodies concentrated in January and February were concentrated from 5 small map squares around Hooge Crater Cemetery (Figure 5-14). This covers an area 2743 metres wide and 1828 meters up (3000 yards by 2000 yards) in the eastern area of map square I and the western area of map square J. From March to May concentration moves further from Hooge Crater, heading in a south easterly direction, and staying within the eastern area of map square I and spreading further across map square J. In June there is further concentration from within the areas already covered, all from map square J. In July further concentrations are made over a much wider area than previously, including the western area of map square I and map square Q. In

August the majority of graves are concentrated from within the south west of map square J, along with some graves from map squares I and Q, and one grave from map square K.

The graves may be spread out across multiple squares, but are frequently present in clusters or small groups rather than randomly. Additionally, there are some examples where grave concentration has followed the edge of a square, for example in map square J, square 9, where located graves are following the edges of small squares a and c.

5.6.2 Identified and unidentified graves

When comparing the locations of identified and unidentified graves, there are some differences across the map squares (Figure 5-12). Overall, in map square I there were 65 graves with identified remains and 59 graves with unidentified remains. In map square J there were 242 identified graves and 401 unidentified graves, plus one identified grave in map square K. In map square Q there were 22 identified graves and 6 unidentified graves. Visual examination shows more identified graves in the west, further from the 1917 front line (Figure 5-15 and Figure 5-16).

In map square I, eight small squares contained identified and unidentified remains; in four of these there were more identified graves and in the other four there were more unidentified graves. There were two map squares that contained only identified remains and two that contained only unidentified remains.

In map square J, graves were recovered from 19 small map squares. 13 of these squares contained identified and unidentified graves, and of these 10 squares contained more unidentified than identified remains. Of the three small squares that contained more identified than unidentified graves, two are in the north west corner of the map square, and the third is a single grave in the south east of the map square. There were two squares that just contained identified graves and four squares that contained just unidentified graves. Map square K contained one identified grave.

In map square Q, eight small map squares contained graves. Two of these squares contained identified and unidentified remains, three squares contained identified remains only and three squares contained unidentified remains only.

In map square I there are at least four locations where identified and unidentified bodies were recovered from the same map reference. Map square J also showed multiple identified and unidentified bodies being recovered from the same map references or within very close proximity.

5.6.3 Single and multiple burials

In all map squares included in this sample, the majority of bodies were recovered from a map reference shared with at least one other body. In total 581 bodies were concentrated from locations with more than one body present, either as separate graves in the same place, or as multiple burials in one grave. 215 bodies were concentrated from locations with just one body present (Figure 5-17).

In map square I, the bodies recovered from locations with multiple dead had a close ratio of identified (49%) to unidentified individuals (51%). This is not reflected in map square J where the majority of bodies recovered from sites of multiple burial were not identified, and map square Q where the majority of bodies recovered from sites of multiple burial were identified. For single graves, the majority in map square I were identified while the majority in map square Q were unidentified. In map square J the identified and unidentified rates were nearly the same (Table 5-7).

When looking at the multiple burials only, there were more locations where all were identified towards the north west of map square J, and more locations with a mixture or all unidentified towards the south and east of map square J (Figure 5-19).

In map square Q there were four locations with more than one body recovered. In map square I there were 15 locations and in map square J there were 132. These can be divided into areas where all the graves were marked with crosses, all the graves were unmarked or they consisted of marked and unmarked graves

(Table 5-8 and Figure 5-18). The majority of these areas contained burials that were all unmarked.

Table 5-7 Table showing the identification rates of bodies recovered alone versus identification rates of bodies recovered with others in the same location

Map square	Identified single grave		Unidentified single grave		Identified within a multiple grave		Unidentified within a multiple grave	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
I 26 Single 98 Multiple	17	65%	9	35%	48	49%	50	51%
J 179 Single 465 Multiple	86	48%	93	52%	157	34%	308	66%
Q 8 Single 20 Multiple	3	37.5%	5	62.5%	19	95%	1	5%

Table 5-8 The number of locations that contained marked burials, unmarked burials or a mixture for each map square

	Map Square I	Map square J	Map Square Q
All unmarked burials	8	101	2
All marked burials	4	6	-
A mixture of marked and unmarked burials	3	16	2

5.6.4 Year of death

The majority of concentrated graves contained soldiers who had died during 1917 (Figure 5-22). Both of the identified burials from 1914 were concentrated from map square J. The 28 burials from 1915 were all concentrated from six locations in map square I. The nine burials for 1916 were recovered from one location in map square I, which was also the location for two of the bodies from 1915, one body from 1917 and 21 bodies with no recorded date of death.

261 bodies were from 1917, with 24 being concentrated from map square I and the remaining from map square J. The bodies from 1918 are the only ones to be found across the map squares I, J, K and Q, with the known date of death for all the bodies from map square Q being from 1918. There are 465 graves with an unknown date of death. These graves are located in map squares I, J and Q (Figure 5-23).

5.6.5 Burials with and without crosses

141 of the plotted burials were recorded as having a cross present at the time of concentration and 625 were recorded as not having a cross (Figure 5-13). 30 records were unclear and have been discounted.

The areas with the highest number of crosses are in squares 18 and 19 in map square I, the north western areas of map square J and small square 14 in map square Q (Figure 5-20 and Figure 5-21). These areas are also the areas with the highest identification rates.

5.6.6 New burials and exhumations

In total 308 of the burials identified as new burials or exhumations were plotted (Figure 5-24). It included 30 burials from map square I, 277 burials from map square J and 1 from map square K. In total there were 153 separate locations plotted, and of these 14 contained new burials and exhumations, all in map square J.

5.6.7 Hooge Crater concentrations

Of the bodies exhumed as part of the investigation into Hooge Crater in 1921, it was possible to plot the location of 78 bodies and graves that contained no body. All 78 locations were within small squares 11, 12, 17 and 18 in map square I, or small square 7, 13 and 14 in map square J. There is overlap between the locations containing full remains, partial remains and no remains, and no obvious pattern regarding identification rates.

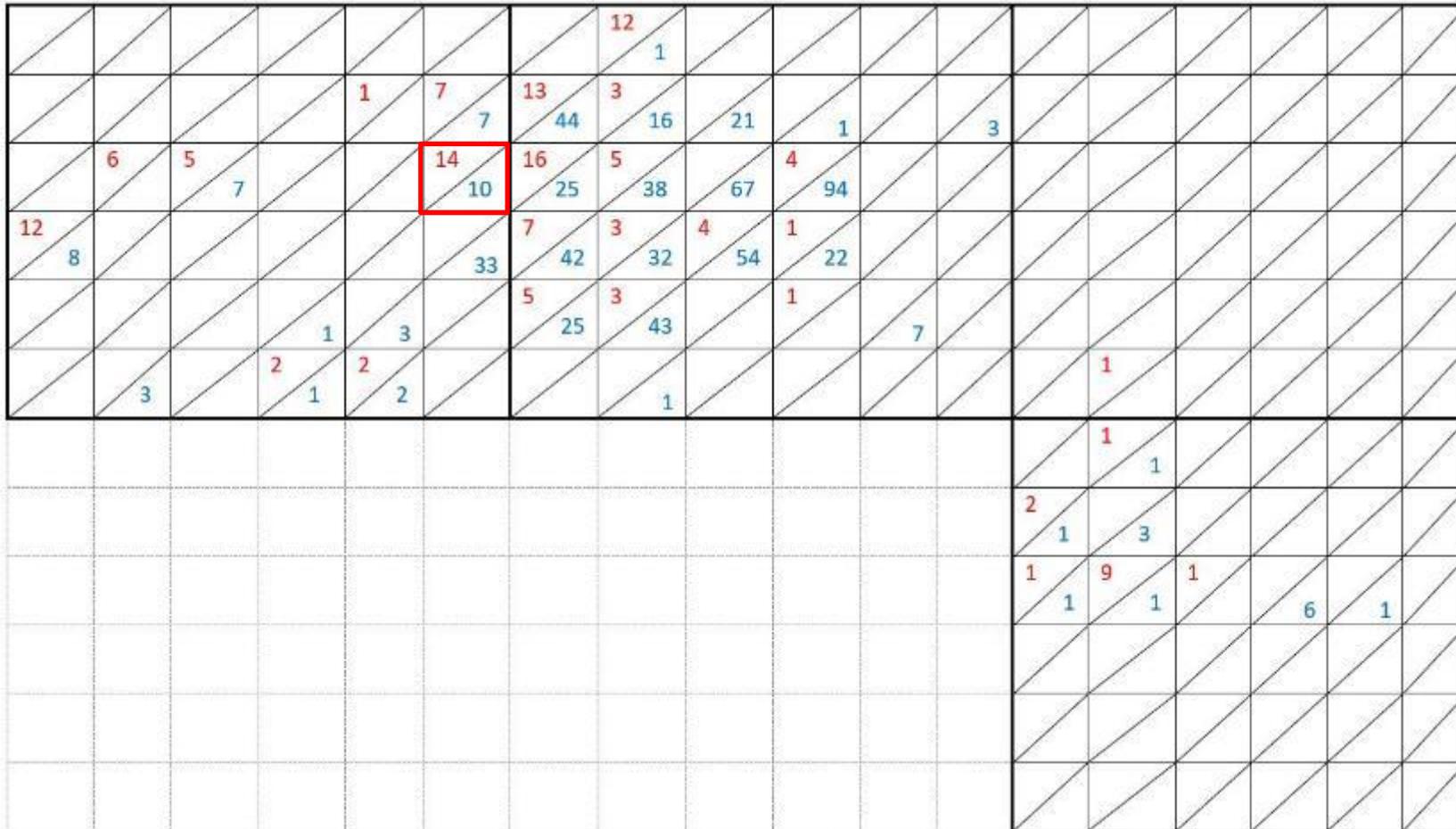


Figure 5-13 Grid showing the number of graves with and without crosses per map square, with the number of graves with crosses in the top half of the square in red, and the number of graves without crosses in the bottom half of the square in blue. The square highlighted in red contains Hooge Crater Cemetery

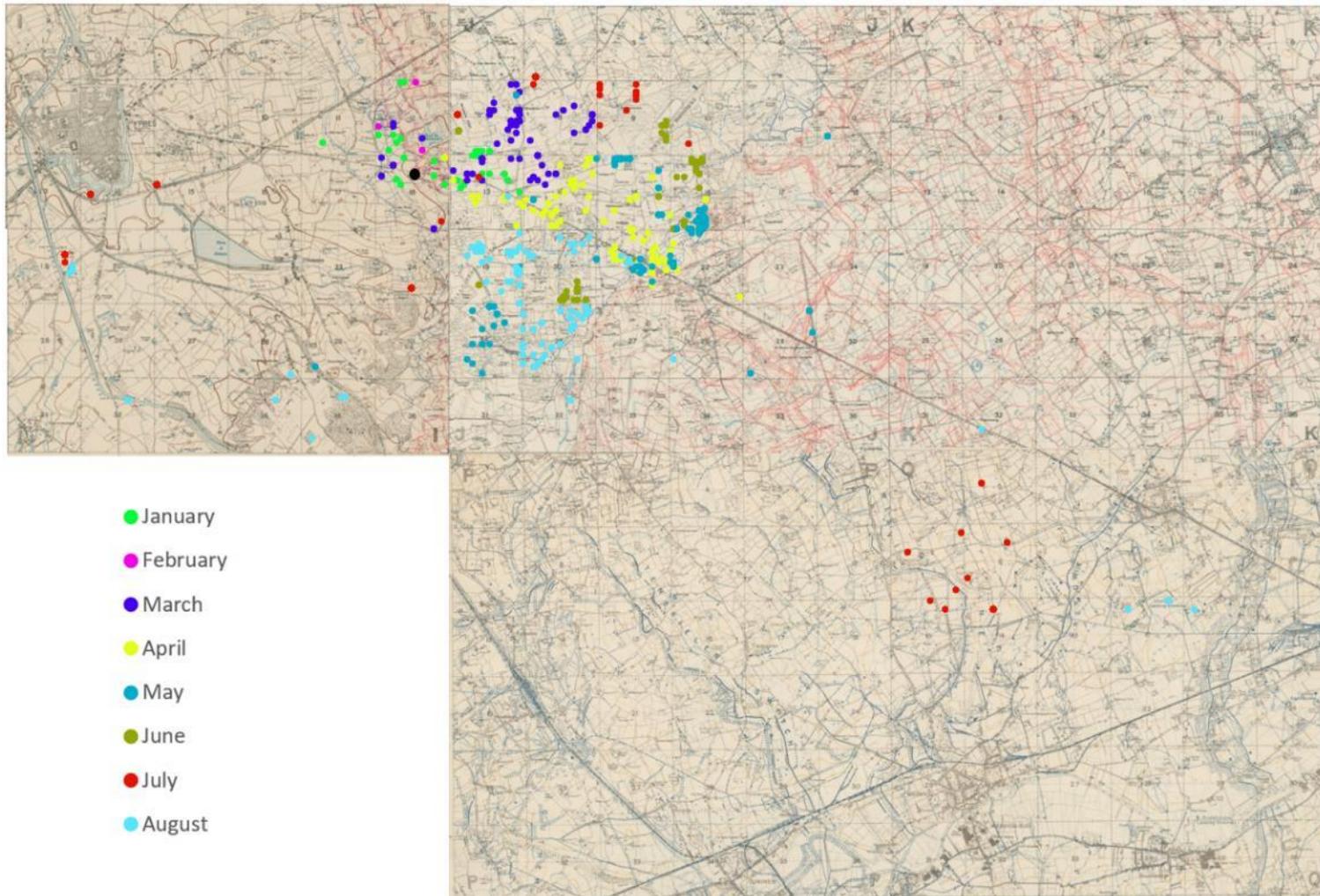


Figure 5-14 Map showing the graves concentrated into Hooge Crater Cemetery by month. The location of Hooge Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

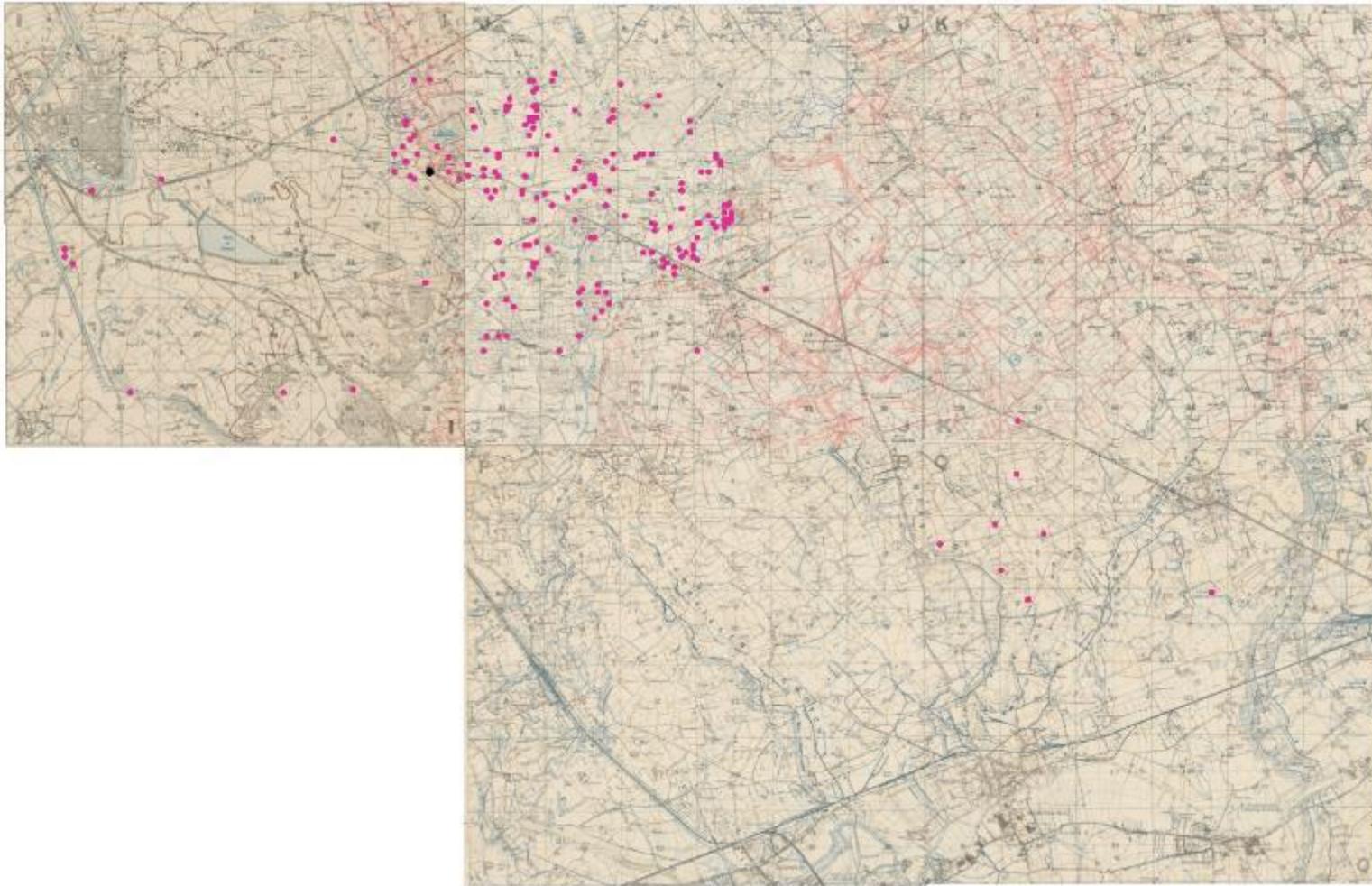


Figure 5-15 The location of all the identified bodies concentrated into Hooze Crater Cemetery. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

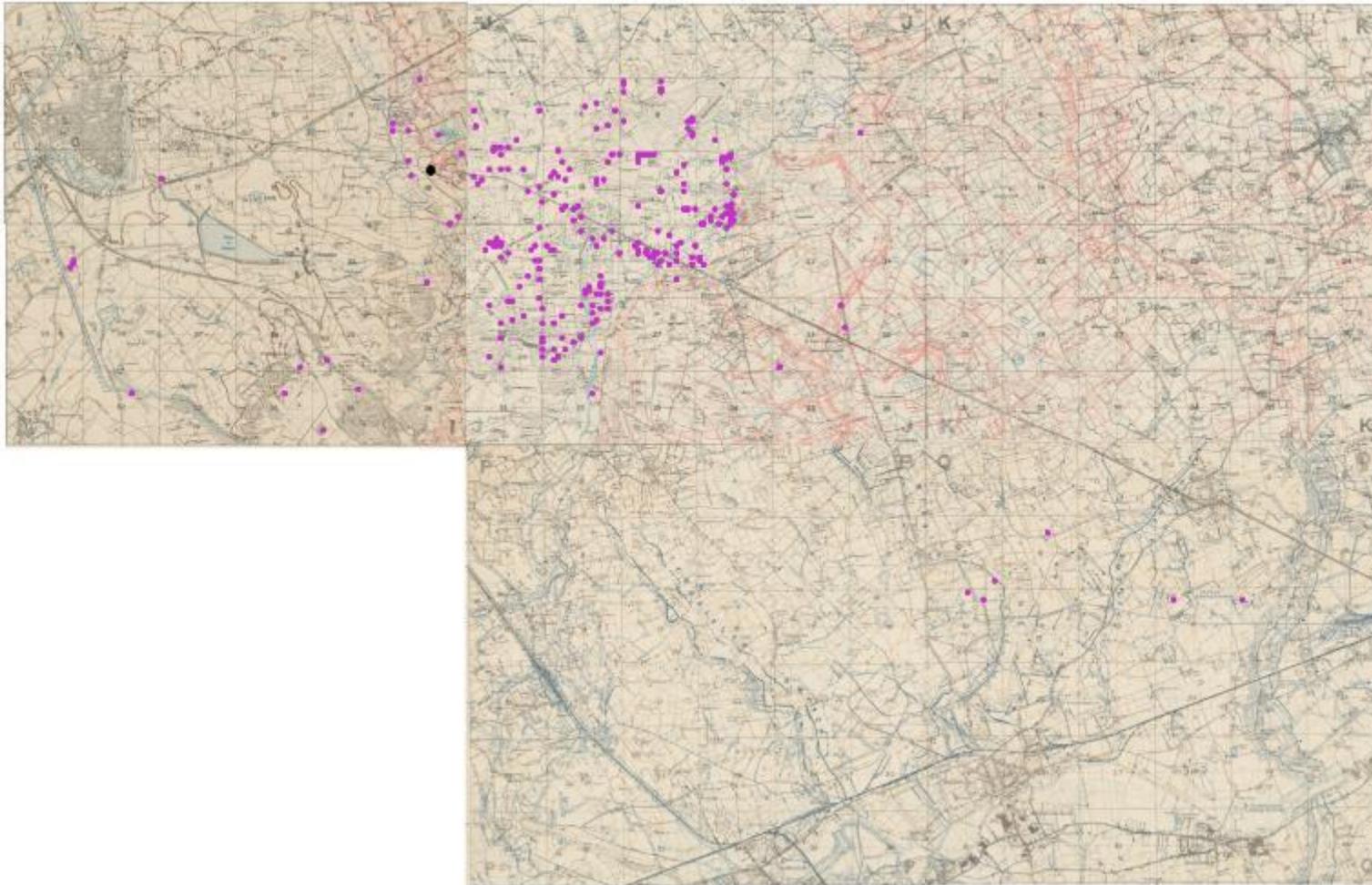


Figure 5-16 The location of all the unidentified bodies concentrated into Hooze Crater Cemetery. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

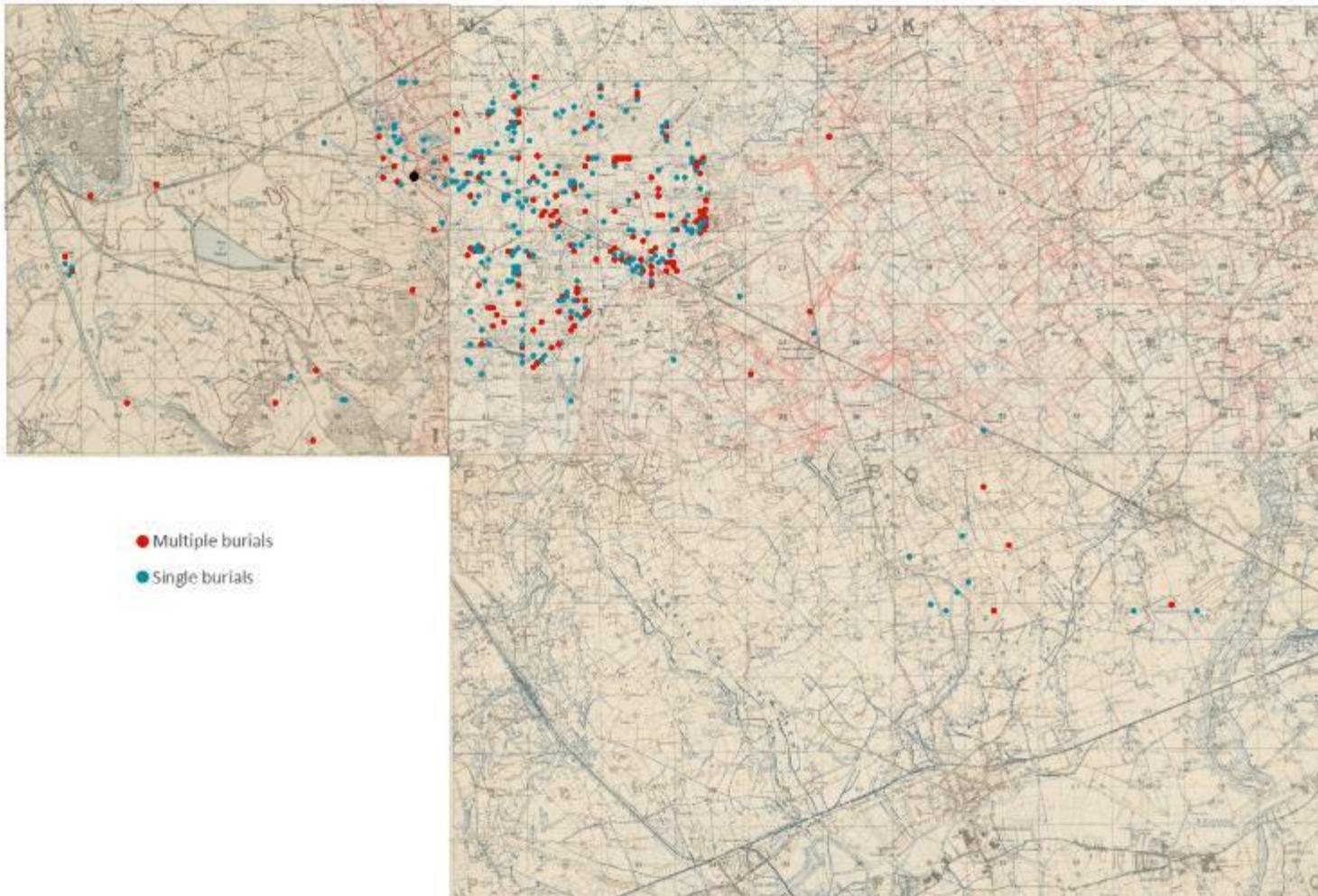


Figure 5-17 Map showing the location of single burials and multiple burials. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

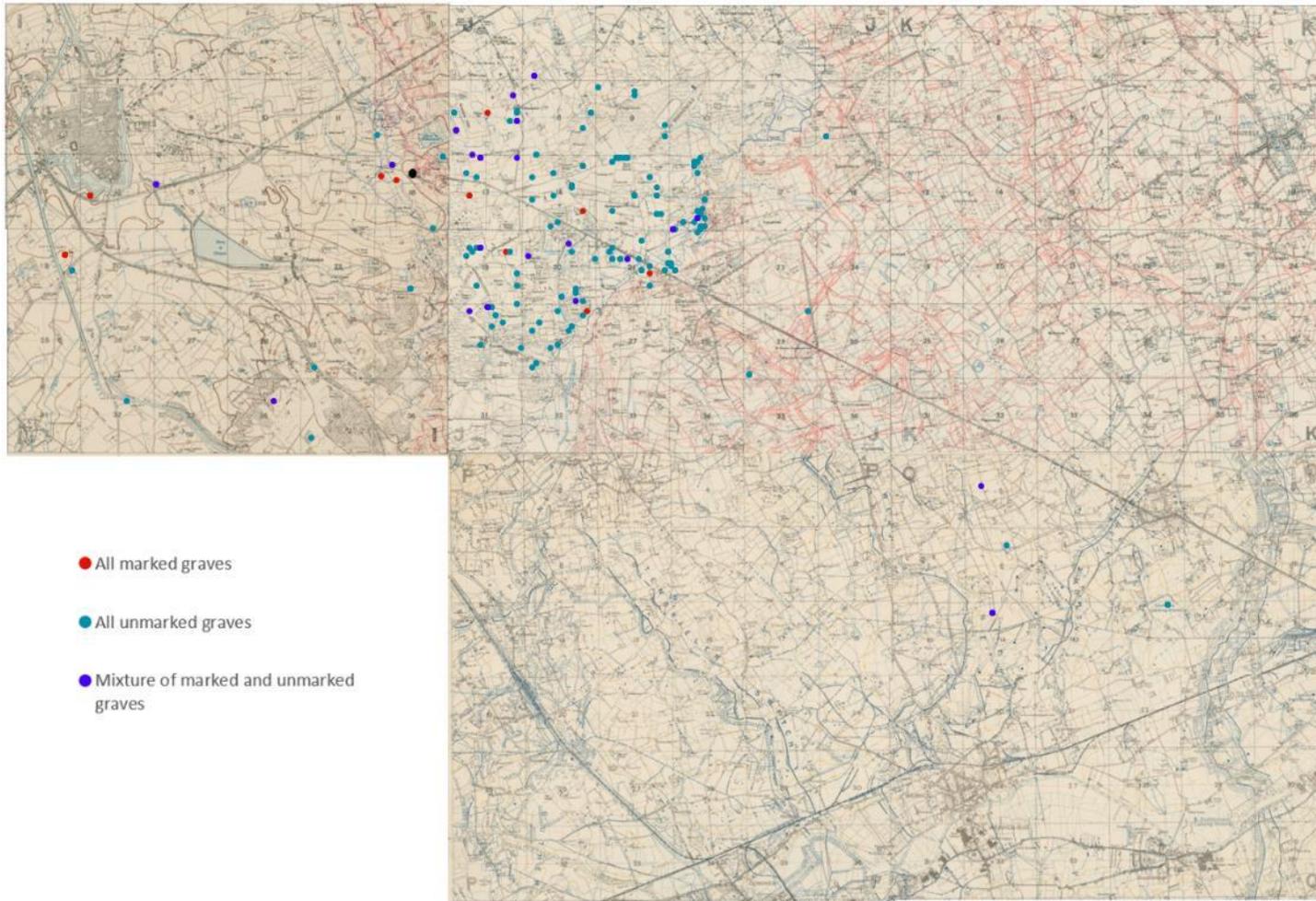


Figure 5-18 Map showing which of the locations with multiple burials had crosses and which did not. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

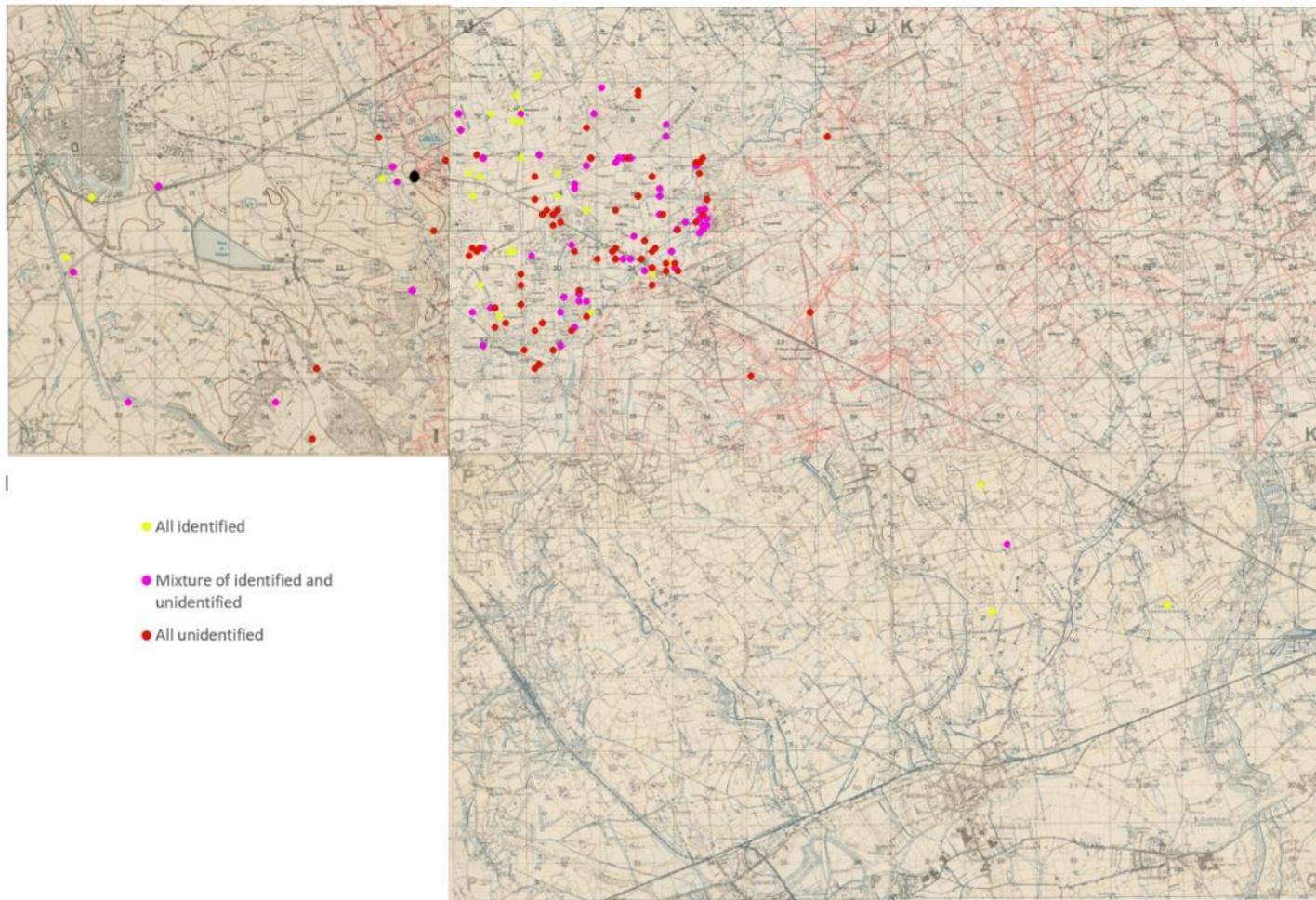


Figure 5-19 Map showing the identification rates at the locations with multiple burials. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

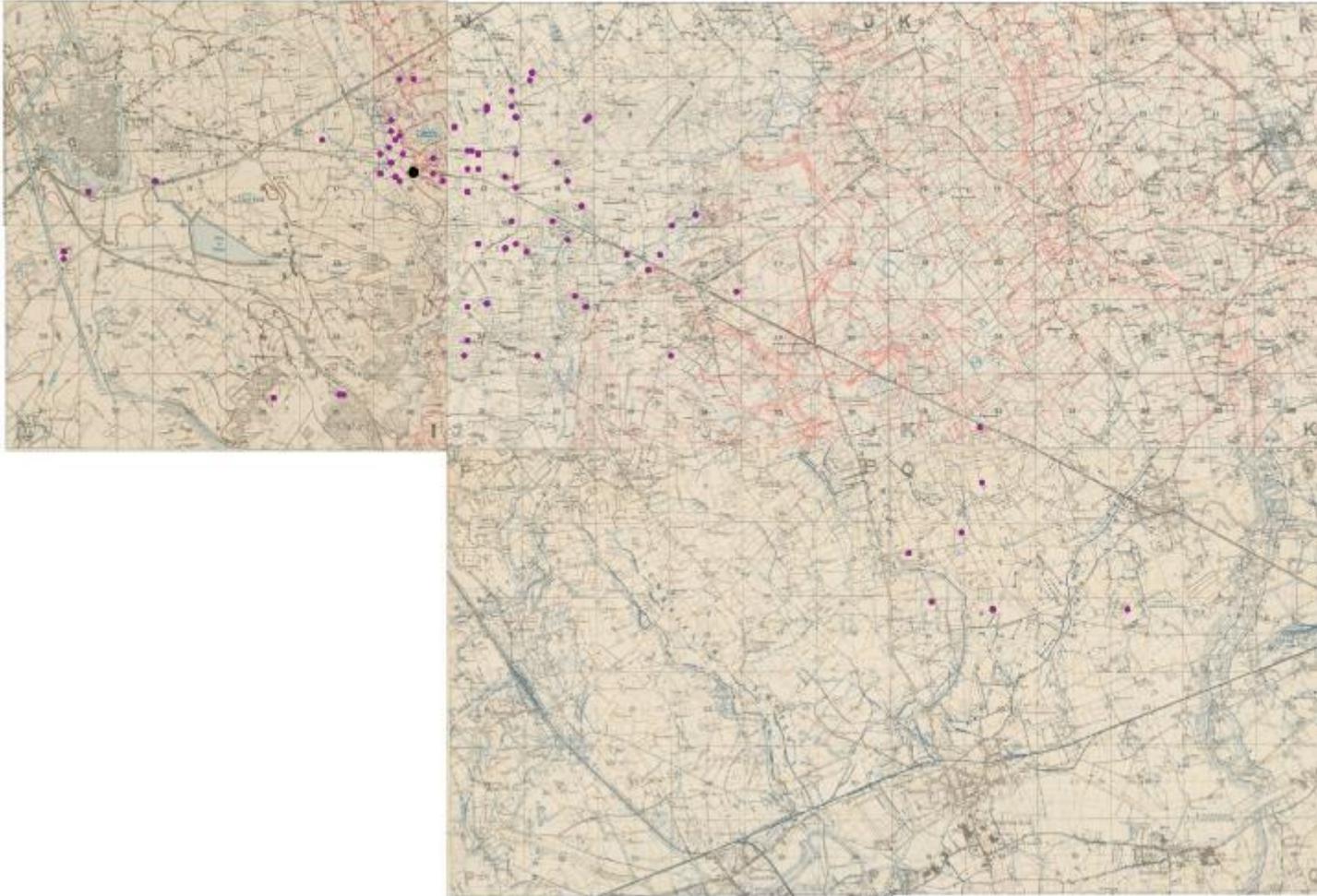


Figure 5-20 Map showing the graves found with a cross. The location of Hooge Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

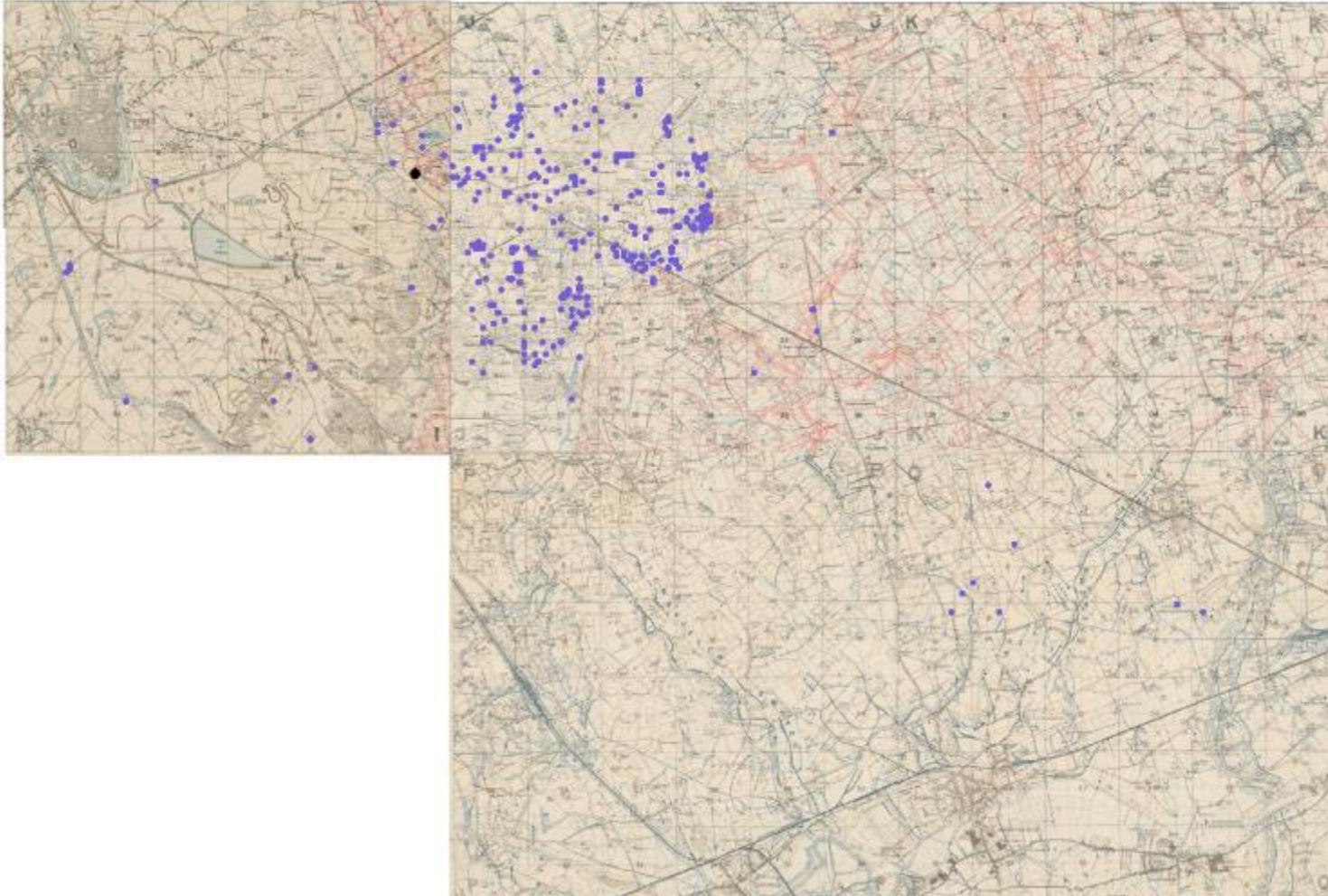


Figure 5-21 Map showing the graves found without a cross. The location of Hooge Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

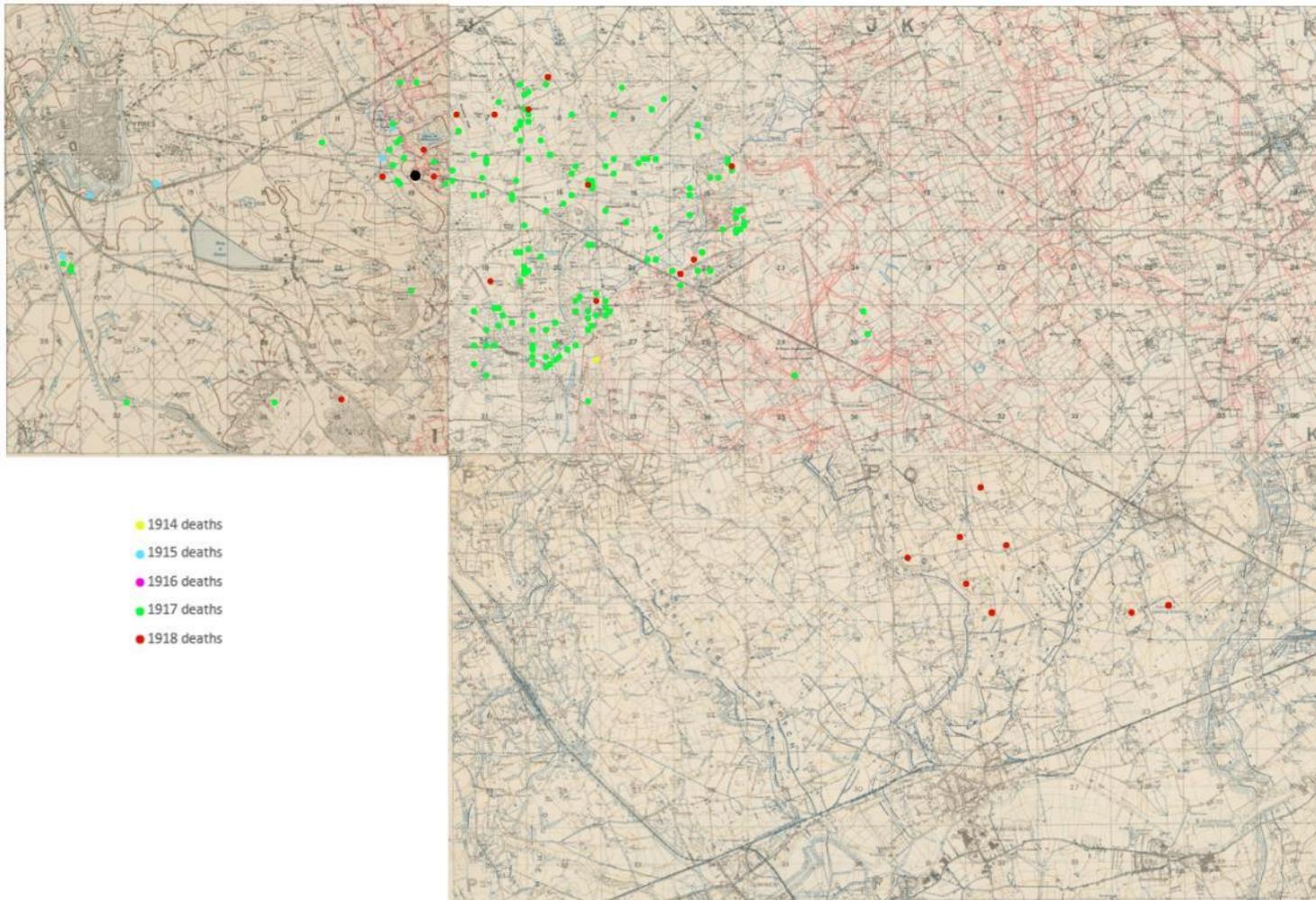


Figure 5-22 Map showing the year of death for graves concentrated into Hooze Crater Cemetery. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

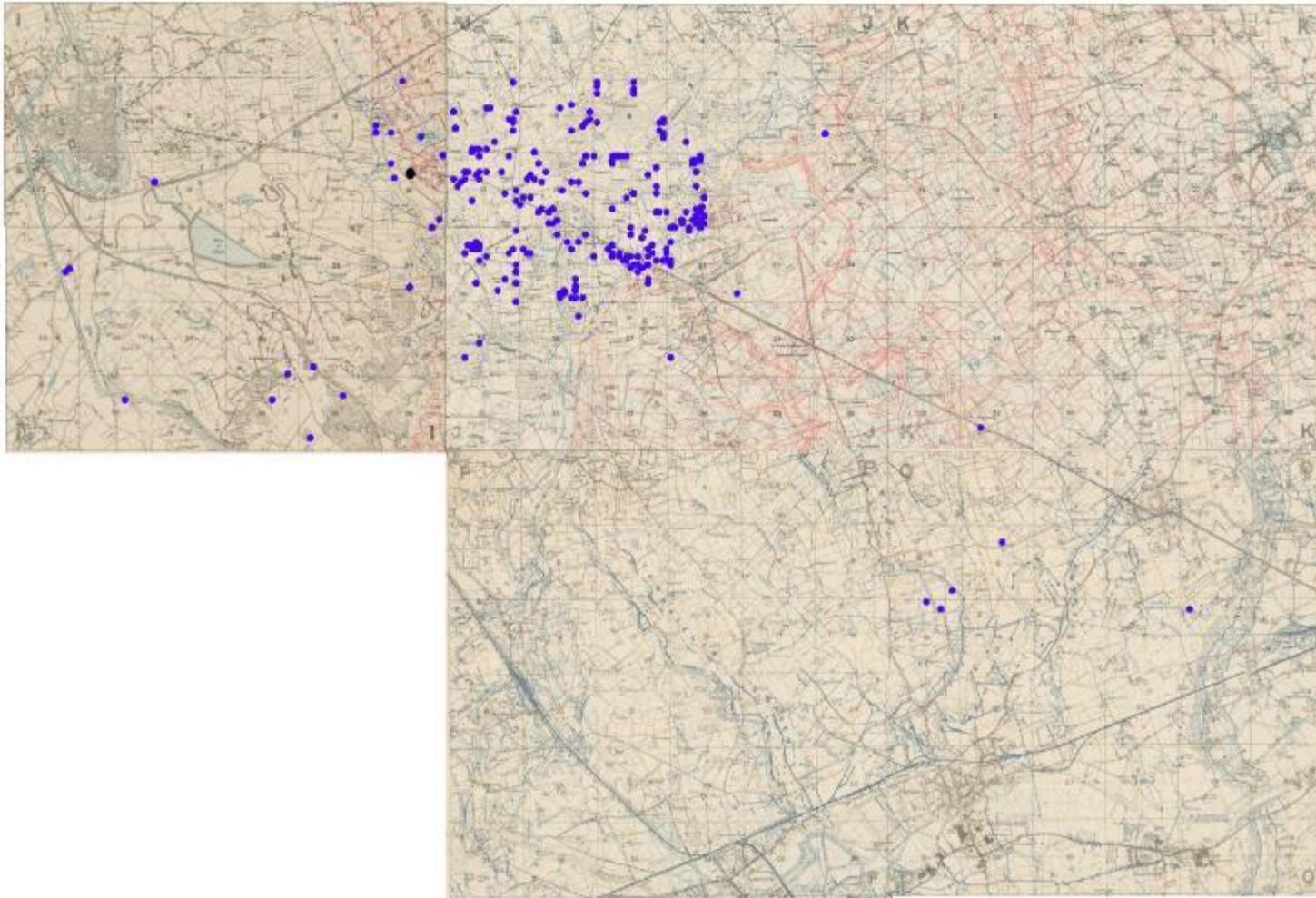


Figure 5-23 Map showing the concentrated graves with no known date of death. The location of Hooze Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

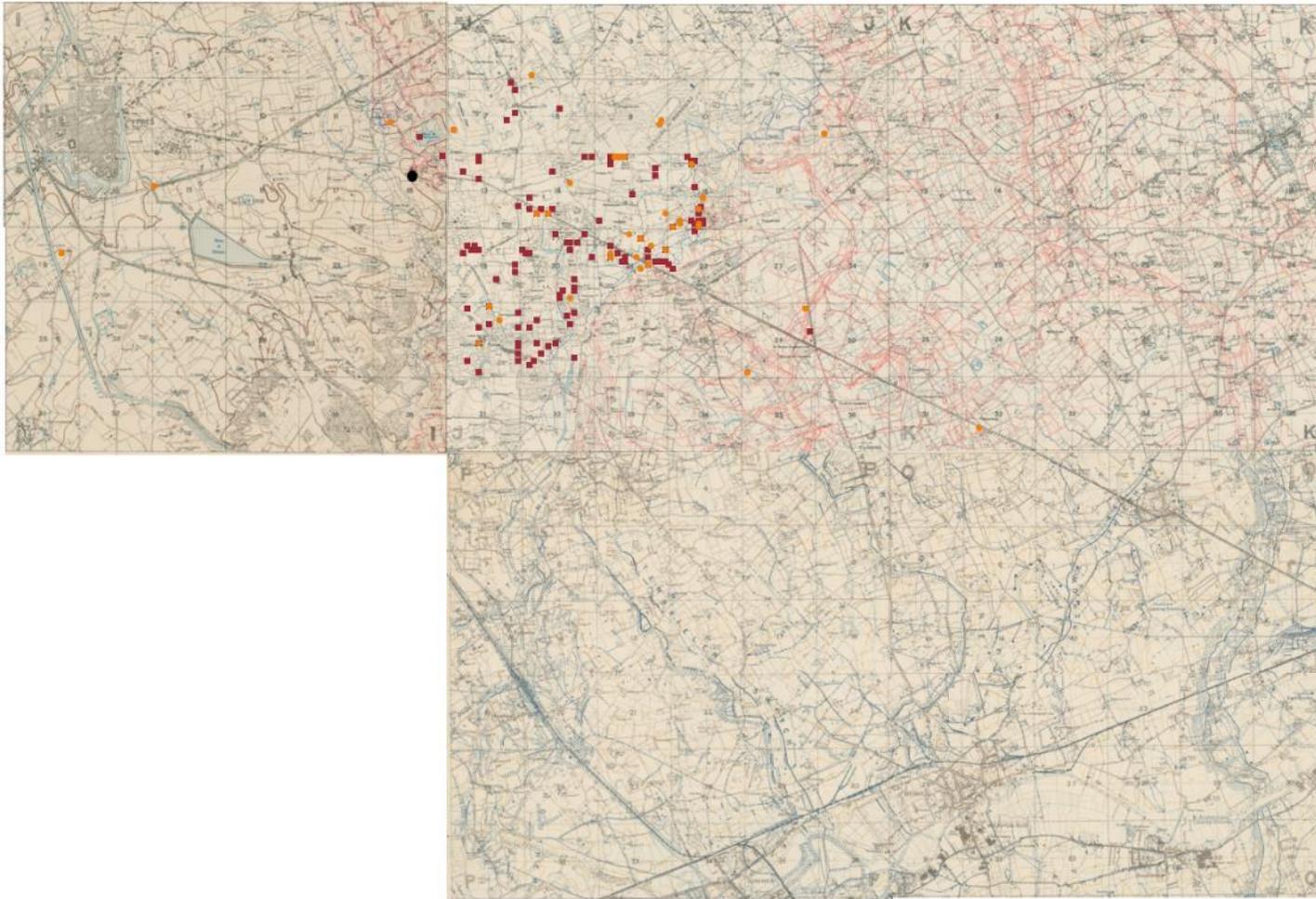


Figure 5-24 Map showing the graves recorded as new burials in red and exhumations in orange. The location of Hooge Crater Cemetery is shown by the black dot (Adapted from War Office, 1917b, 1917a, 1918b)

6 DISCUSSION

This chapter will explore the results given in Chapter 5 and what they can tell us about grave concentration. Interpretation of these results will contribute to answering the main research aims of how identification methods and rates changed over time, if there were external factors that impacted on identification rates and building a higher level of understanding of grave concentration practices.

At the start of 1919, the landscape would have appeared very much as it was at the time of the armistice, with an uneven terrain littered with debris, equipment and bodies. Battlefield clearance had not started, making grave location and exhumation difficult and dangerous. Very little written material survives to tell us about the early concentration work, particularly on a day-to-day level, and the novel research presented here can help to inform that discussion.

Section 6.1 explores the results and demonstrates what they tell us about concentration, and the methods used for searching the landscape and locating graves. Section 6.2 explores the identification rates seen and presents evidence of why these varied. It also discusses the identification methods used and how these changed over time. Section 6.3 uses the data to explain how Hooze Crater Cemetery was completed.

Section 6.4 discusses the management and organisation of the DGRE at an operational and strategic level, while section 6.5 explores the potential scale of the errors seen in concentration, and the impact that this has on modern day management of First World War dead. Section 6.6 highlights how the work of concentration links to modern day forensic archaeology, and section 6.7 demonstrates how data and scientific analysis can contribute to the field of historical study. Section 6.8 highlights the relevance of this thesis to heritage studies and finally section 6.9 covers future work which could be carried out to expand our knowledge of First World War concentration further.

6.1 Concentration and the search of the landscape

6.1.1 Concentration rate per month

The number of concentrations per month was lowest in January and February, rising significantly in March and April, as shown in Table 5-1. Contemporary records confirm that the first concentrations did not take place until 12th January 1919 and that work was then stopped from 20th January to the 17th February due to the weather conditions (Burnett Stuart, 1919). Very few concentration records from the early period of concentration include a date, however one of the records for plot II, row F gives a date of the 25th January 1919, when concentrations were supposed to have stopped. Either Burnett Stuart had got his dates wrong, the date on the concentration record is incorrect or the date given on the concentration record is the date the record was transcribed. It seems unlikely to be the date the record was transcribed as so many of the early records do not include a date. Looking at all the dates given on the concentration records, there are errors present, such as records erroneously said to date from 1920 rather than 1919, so it seems most likely that the date given is incorrect, due to a transcribing error.

The higher concentration numbers seen in March, April and May could then be explained by the better warmer weather allowing concentration to take place. We know that the work in the winter was challenging due to the ground being frozen, and this would have been less of a problem with the warmer weather of spring.

It is unclear why there is a dip in the concentration rate in June followed by a rise again in July and August, although not to the levels previously seen in March and April. This could be a reflection of the changing landscape, with the growth of vegetation during the summer months making graves more difficult to locate. As Crawford (1919, cited in War Office, 1921) wrote "Battlefields are covered with a growth of rank grass and nettles, in places almost waist high, which often conceals the more obscure traces by which bodies can be discovered, and even crosses." Within forensic archaeology, ground searches are most likely to be successful when land is clear of sparse vegetation (Killam, 2004, p.23). Vegetation build-up, especially with weeds, can make grave location more

difficult. Again, it was reported in 1921 that “remains invisible in the winter are visible in the summer because flooded shell holes become dry. On the other hand, remains invisible in the summer are occasionally visible in the winter” (Chettle, 1921). This could have been due to the vegetation changes.

The dip in concentration could also have been caused by concentration staff being demobbed or choosing to leave, slowing down the work. It was documented by the IWGC that “Progress has also been much hampered by successive schemes of demobilisation which have seriously interfered with continuity of personnel, so essential in the performance of work of this character” (Imperial War Graves Commission, 1920d, p.9). However, the written records suggest that in June 1919 that should not have been a problem. The minutes from the IWGC meeting in June state that “the 15,000 men required for the purpose had now been enlisted; no further recruiting was necessary, and the men were being sent out as quickly as possible – 4,347 of them had already gone” (Imperial War Graves Commission, 1919c, p.2). This shows that the number of staff should have been increasing rather than dropping. Therefore, this recorded dip in concentration is probably a reflection of the sample analysed.

The concentration rates in July and August are higher than that of June but lower than those seen in April and May. In Crawford’s instructions from 1919 (cited in War Office, 1921), he wrote that exhumation should take place early in the morning during the summer months. He did not clarify if that meant that parties would start earlier and finish earlier and therefore still exhume the same number of bodies, or if they would just finish earlier. The lower concentration numbers would suggest it was the second option, which would explain the lower concentration numbers.

Overall, the concentration rates do not consistently rise as would be expected, and instead vary between January and August. This suggests concentration was impacted by external factors, such as seasonal change and the number of staff available.

The concentration records from Hooze Crater Cemetery support the analysis of the sample analysed here, showing that concentration was slow to start and

increasing over time, with a peak in April when 1185 graves are recorded as being concentrated. The busiest single day recorded was the 3 April, when 115 reburials took place at Hooze Crater Cemetery. This corresponds with the sample here, which shows the highest concentration numbers during March and April.

6.1.2 Single and multiple burials

The locations of single graves are spread throughout the landscape, with no clear pattern. In comparison the multiple graves appear to be more frequent in and around map square J, with clusters of multiple burials present along the 1917 British front line, particularly in small map square 16, 21, 22 and 26 (Figure 5-17). The majority of bodies in the sample were recovered from a shared location, where more than one burial was present at the same map reference.

There were 111 locations which contained multiple burials where all the graves were unmarked. There were 10 locations where all burials were marked with a cross and 21 locations where some of the graves were marked with a cross and some were not. This included several noted small cemeteries. It is possible that some of the graves in the cemeteries were unmarked due to the dangers of trying to access them, particularly in the spring of 1918 which saw the German forces push their front line towards Ieper, and several cemeteries fell into German hands. Alternatively, these cemeteries may have been damaged by the fighting during this period, as it was documented that some cemeteries sustained damage through military action following the German advance (Directorate of Graves Registration and Enquiries, 1918b).

Evidence of this is seen at the Tram and Railway Crossing Cemetery in map square I, small square 15. It contained 12 burials that were concentrated into Hooze Crater Cemetery, with five burials having a cross and seven not. Five of these unmarked burials are noted as being identified through the comprehensive report, which demonstrates that the graves were registered however no cross was present at the time of concentration. As these burials all had a date of death in 1915, and the cemetery location was in Allied territory for the duration of the war, it seems highly likely that these graves would have been marked with a

cross. This would indicate that they were destroyed or damaged by the German advance of 1918.

In the locations with a combination of marked and unmarked graves, it is likely that locating the marked graves led concentration teams to uncover unmarked graves. However this cannot have been particularly common as the majority of sites with multiple burials contained all unmarked graves.

6.1.3 Year of death

Bodies were recovered from all years of the conflict, with 341 bodies being concentrated with a known date of death. All the bodies from 1915 and 1916 were concentrated from map square I, while the other years were dispersed over a wider area.

All of the bodies known to be from 1916 were recovered in one location in map square I, small square 24. 33 bodies were recovered from this location. Of these,

- two had a date of death of 27th June 1915,
- one had a date of 25th March 1916,
- eight had a date of 26th April 1916
- one had a date of death of 11th July 1917.

The remaining 21 were unidentified with an unknown date of death. The concentration records state “the above have been exhumed from Shell Hole in Sanctuary Wood”. As there were multiple years of death present in one mass grave, this is consistent with a small cemetery which had been destroyed by artillery fire, therefore destroying any crosses present and creating the appearance of a mass grave. We know that within the vicinity of the current Sanctuary Wood CWGC Cemetery, which is also located in map square I, there were originally three cemeteries from 1915 that were destroyed during 1916. One was later rediscovered and is now the location of the Sanctuary Wood Cemetery but the other two were not (Commonwealth War Graves Commission, 2020). Therefore, this burial site would fit as one of these missing cemeteries. Alternatively, it could be that one shell hole was reused on multiple occasions for burials, which would explain the single burial from 1917, but this seems less likely.

The lack of bodies from 1915 and 1916 in map square J, K or Q is explained by the historical records. As shown in Figure 6-2, in 1915 the British front line was to the east of Ieper, having been pushed back by the German forces, leaving map square J, K and Q in German territory. There was no major movement of the front line in this area again until the Third Battle of Ypres between July and November 1917. Therefore, there should be very few bodies from 1915 and no bodies from 1916 found to the east of the 1915 front line.

In the area between the 1915 and 1917 front line the majority of graves with a known date of death were from 1917, with only 15 being from 1914 or 1918. This corresponds with the historical records as in 1917 there was a period of very intense fighting in the area around Hooze Crater, including the battles of Passchendaele which left several thousand Commonwealth soldiers dead.

In the same area there are nearly 400 graves with no identity and no known date of death (Figure 5-23). It seems likely that the majority of these unknown graves would also have a date of death in 1917, and this information, combined with the evidence gathered through examination and personal effects, could have assisted with the identification of these deceased.

6.1.4 Searching the landscape

Plotting of the concentrated graves shows the search of the landscape for burials and graves started with areas closest to Hooze Crater, before spreading further afield to the east (Figure 5-14). Recorded accounts from Colonel Williams, an officer with the DGRE, state that the work was carried out a map square at a time, starting in the areas with the most dead, with the initial exhumations taking place near Hooze Crater Cemetery (Williams, 1990). The plotting of graves per month is broadly consistent with this statement. The "Instructions as to concentration of isolated graves and groups into cemeteries" state that a map square of 500 yards should be searched at a time, this being a small map square of a, b, c or d within a numbered square, which is reflected in the clusters seen that run along the edge of a map square.

Additionally, in May, July and August 1919, as well as the bodies concentrated from the vicinity of Hooze Crater Cemetery, there are graves concentrated from further afield. The "Instructions as to concentration of isolated graves and groups into cemeteries" included a section on flying squads. The instructions stated "bodies are continually reported as being discovered during such operations in districts which the ordinary exhumation parties have not yet had time to reach, or in places where they could not be seen earlier. As a consequence it is necessary to keep a special squad under the charge of an officer to deal with this work" (Crawford, 1919, cited in War Office, 1921). It is possible therefore that the outlying graves were recovered by a flying squad, and were concentrated into Hooze Crater Cemetery as it was the only cemetery open for concentration locally at the time.

Finally, the majority of the concentrated graves were recovered from the west of the 1917 British front line, with clusters of graves found running along the front line in map square J, squares 16, 21 and 26. The location of these graves and lack of graves to the east is consistent with the historical records of where and when fighting was taking place.

6.1.5 Locating graves

There are few contemporary records that discuss how graves were located in the landscape. In the "Instructions as to concentration of isolated graves and groups into cemeteries", it is explained that a squad of men would be given a map square of 500 yards (457 metres), which had to be searched and cleared. Each squad consisted of 32 other ranks, under the command of an officer, sergeant and non-commissioned officers.

Crawford (1919, cited in War Office, 1921) writes that ahead of searching an area each officer should be aware of burials registered and cemeteries present within the map square, which would be obtained from the Company Orderly Room. Therefore, an exhumation unit should have been aware of the number of graves already registered in the search area. Major General J. Burnett Stuart (1919) gives an example of a map square having 11 registered graves, but following a thorough search 67 graves were located. This supports the suggestion that teams

would search an area to locate registered graves and would find unregistered graves simultaneously.

Crawford's instructions stated that small sections should be searched at a time, using natural features such as roads or trenches to divide the space. The men would advance across the area about 6 yards (5.4 metres) apart and any locations suspected to be a burial should be marked with a stake. Only after a thorough search of the whole location would exhumation begin. Exhumation parties were instructed to look for rifles or posts (as seen in Figure 6-1), small stakes with the letter E (used by the Germans to identify British or Commonwealth graves), equipment protruding from the ground, rat holes and discolouration of grass, earth and water. The instructions advise that "grass is often a vivid bluish-green colour where bodies are buried, while earth and water turn a greenish black or grey" (Crawford, 1919, cited in War Office, 1921).

In modern forensic archaeology, it is understood that if a body is buried, as it decomposes and releases nutrients into the soil, this can cause colour changes in vegetation and surrounding environment (Forbes, Perrault and Comstock, 2017, p.32). This is a similar practice to that used by the exhumation parties a century ago.

It is not possible to say how effective these methods were, however the data analysed shows that there must have been some success as the majority of the graves located did not have a cross, and therefore would presumably have required thorough searching to locate them. In January 1919, more graves were found with crosses than without them, but for all other months significantly more graves were found without crosses. This suggests that when the landscape was being searched and re-searched for graves, exhumation parties did not simply go for the easily identifiable graves first and search for the more difficult graves later.

The data supports the claims made in the records that the same areas were searched on multiple occasions, and some areas up to six times (Kendall, 2016, p.147). For example, square 13 in map square J was subject to search in five separate months. This re-search of the landscape may have taken place because of the seasonal changes which could impact the ability to spot graves (Chettle,

1921). However, there was a definite need to re-search areas where the records of the DGRE indicated that bodies should be present, but nothing had been located (Cubitt, 1921, p.2).



Figure 6-1; A grave of an Unknown Soldier from the Somme, marked by kit (National Army Museum, 2021b)

This could be due the exhumation parties not looking sufficiently for burials registered as being present. It seems more likely that graves were missed due to the challenges of the landscape making graves difficult to spot, the lack of original features used for reference locations (for example, if a body was described as being buried at the end of a wall which had since been destroyed) and the problem of mines and artillery destroying whole bodies and cemeteries.

Queries would be sent from the DGRE head office in London to France and Belgium asking local staff to go to a location and confirm if a grave was still present but often the landscape had changed radically. When trying to locate the grave of Lieutenant Welch, who had been killed and buried in 1914 outside Ieper,

the response from the DGRE staff on the ground was “I searched the area between the stream and the side road yesterday with no result. There is no trace whatever of the gun pits, shelters or farm nor of the wood ever having extended East of the stream, the spot having been subjected to particularly heavy shell fire during the past four years” (Directorate of Graves Registration and Enquiries, 1919b). This damage in the landscape would have destroyed many graves but also, as stated above, many of the landmarks that would indicate a grave location. This will have caused DGRE staff to spend a lot of time trying to find grave locations with limited or no success, slowing down concentration progress.

6.1.6 Surrounding concentration cemeteries

Small cemeteries of less than 40 graves, or cemeteries that could not remain in their current location were concentrated into new, expanded cemeteries, as discussed in section 2.2.5. Within the map area explored in this thesis, there are 45 cemeteries surrounding Hooze Crater Cemetery. 40 of these were original wartime cemeteries, with the vast majority being located immediately to the east and south of Ieper (Figure 5-10). 18 wartime cemeteries were expanded after the war to include concentration burials, and were likely chosen based on their location, layout and the availability of land for expansion.

Between 1919 and 1921, any bodies recovered were concentrated into the nearest “open” concentration cemetery. There were 28 bodies recovered from map square Q and concentrated into Hooze Crater Cemetery. There are other cemeteries closer to map square Q, and it seems unusual that these graves were transported so far for reburial. The concentration cemeteries of Zantvoorde British Cemetery, Dadizeele New Cemetery, Sanctuary Wood Cemetery and Buttes New British Cemetery are all closer. However, at the time that these bodies were recovered and concentrated, Hooze Crater was the nearest open concentration cemetery; Zantvoorde British Cemetery, Dadizeele New Cemetery and Buttes New British Cemetery were all new cemeteries created for concentrations, from November 1919 for Zantvoorde (Commonwealth War Graves Commission, 2021b) and Buttes (Commonwealth War Graves Commission, 2021c), and January 1920 for Dadizeele (Commonwealth War

Graves Commission, 2021d). Sanctuary Wood Cemetery was an original war cemetery that did not start to receive concentrations until 1927 (Commonwealth War Graves Commission, 2020). This explains why the bodies from map square Q were reburied so far from their original burial location and demonstrates that bodies were transported and buried into the nearest cemetery available for concentration, rather than large cemeteries that may have been closer. This is reinforced when looking at the graves concentrated into Hooze Crater Cemetery: once the cemetery was closed in September 1919, concentration records show no further graves were added to it, despite bodies still being found around Ieper.

6.2 Identification

6.2.1 Identification rates

The number of identified burials varies over time and presents a complicated picture. The identification rate in January was 40% before dropping to just 10.5% in February (Table 5-1). Of the graves concentrated in January, all of the identified graves were found with a cross, and no other method of identification was given. It was suggested in the written records that it was standard practice to accept a cross as proof of identification in the early months of concentration (War Office, 1921, p.13) and the records for January and February support this.

Identification rates rise from March onwards, with a significant peak in July. March and April saw nearly identical numbers of graves being concentrated (215 in March and 214 in April), but the identification rate in April is slightly lower than that of March (29% identification rate in March compared to 23% in April). This drop in percentage of identification is surprising, as it would be expected that identification rates would increase as staff became more experienced. This could be a reflection of the sample analysed, or alternatively it could be explained by the landscape being covered during March and April; the graves concentrated in April were from a much wider area than those concentrated in March and were much closer to what had been the British front line (Figure 5-14). Records state that some graves and cemeteries were completely destroyed by artillery fire and other destructive action (Directorate of Graves Registration and Enquiries,

1918b), and those graves closest to the front line would be most at risk of this, so this would explain the lower identification rate seen in April.

The percentage of identifications rise in May onwards. The concentration of several small cemeteries in May, June and July would have contributed to this rise. Identification rates of graves concentrated from small cemeteries averaged 75%, which is likely to be due to these graves already being registered and some cemeteries being set further away from the fighting. If the graves from these small cemeteries are removed from the overall identification numbers, it does alter the results, with the proportion of identified graves falling. However the overall upwards trend in identification rates through the months stays the same.

The identification rate in July is the highest seen in any month at 60% of bodies being identified. As well as having three small cemeteries concentrated during this time, the area covered during this period is very wide, with graves being concentrated from around Ieper to the West, Polygon and Westhoek to the East and from the South in the map square Q. These areas were further away from the front line area, so the higher identification rate could be due to bodies being less disturbed.

Finally, in August the identification rate is lower than July. The lower identification rate could be due to the weather. With the increasing temperatures during the summer, the task of examining bodies may have been more challenging due to decomposition and the impact of the heat.

Overall, the results on identification rates demonstrate improvement over time, with rates increasing between January and August. The results indicate that concentration and identification rates were both affected by external factors, such as the climate and the burial location. Both identification and concentration rates would be expected to start at a lower level and show improvement over time as staff became more familiar with the work and the overall process improved. The identification rates do show this, but they also show that identification rates were highest when the number of small cemeteries included was high. This indicates that burial location must have affected identification rates.

6.2.2 Identification rates for single and multiple burials

As shown in Table 5-7, identification rates in single and multiple burials varied in different areas. With the bodies recovered from multiple burials or a shared location in map square Q, the identification rate was 95%. This may have been due to these casualties having been killed in 1918, and therefore being in a better state of preservation. Alternatively, it may have been that being more recent meant there were more records and people to provide information on these graves. However, of the single graves recovered in map square Q identification rate was much lower at only 37.5%.

In comparison to map square Q, the bodies from shared locations in map square I and J had a much lower identification rate, and in both squares identification rates for bodies recovered from locations with multiple burial were lower than identification rates for single burials. This is slightly unexpected as we know that the areas with multiple burials included several small cemeteries, which tended to have good records on graves and as shown in Table 5-4, had good identification rates. If we remove the graves that are recorded as being from cemeteries, identification rates drop even further to 40% in map square I and 31.5% in map square J. The low identification rates of multiple burials compared to single burials could be due to problems with commingled remains, and the difficulties in trying to separate and identify the bodies present. This would have been particularly problematic if bodies had suffered destruction from artillery, either at the time of death or after burial, as this would have left bodies disarticulated and incomplete.

Figure 5-19 also indicates that while locations of multiple graves with a mixture of identified and unidentified burials occurred in all areas, generally areas closer to the fighting contained higher numbers of all unidentified, while all identified were present in areas further away from the fighting. This is likely to be due to burial conditions further from the front line, which included safer access to graves so they could be marked and registered, and a lack of disturbance from later fighting.

6.2.3 New burials and exhumations

436 graves were labelled as either “new burial” or “exhumation” in the concentration records. As discussed in section 6.1.4, exhumation units would have known how many graves were registered in a search area, so it seems likely that the graves described as an “exhumation” are the graves that were previously registered. That would suggest that the graves recorded as “new burial” were graves or burials that were previously unrecorded or bodies which had never previously been buried. This is supported by the records which show that a third of the burials marked as “exhumation” were concentrated from cemeteries while none of the “new burials” came from cemeteries. The 436 graves identified as “new burial” or “exhumation” create a unique sample that can provide information on identification rates for graves which were known about and registered, and those which were not.

There were more locations with “new burials” than “exhumation”, and the “new burials” were dispersed across a wider area. The fewer locations seen with “exhumation” are due to a number of these graves being concentrated from cemeteries. All of these cemeteries were located in map square I or the north west of map square J, both of which were distanced from the heavy fighting. There are some graves near the front line recorded as “exhumation”, but most were “new burials”. Due to the dangers to registration staff of trying to register graves near the front, it is likely that these “exhumation” burials were graves that had been reported by padres and officers which may not been verified. In comparison, this means that the unreported graves of the “new burials” were more likely to be those soldiers who were killed and then could not be buried.

296 graves were recorded as new burials, with an identification rate of 9%, while 140 were recorded as exhumations, with an identification rate of 26%. The fact that these are different shows that identification was being affected by factors unrelated to the body itself and shows the importance and reliance of pre-existing records and crosses.

However, it was not purely about the records. In total, 308 of the burials identified as “new burials” or “exhumations” had a complete map reference that allowed

them to be plotted (Figure 5-24). It consisted of 30 burials from map square I, 277 burials from map square J and 1 from map square K, with 111 of these being “exhumation” and 197 being “new burial”. This showed that there were 15 locations where “new burial” and “exhumation” were found together.

In 13 of these locations all the bodies recovered were unidentified. In the remaining two locations, they each contained one identified body (both shown as “new burial”) and the rest were unidentified, which included graves marked as “exhumation”. This shows that despite graves being registered, they could not always be identified. It seems likely that this was due to registered graves not being distinguishable from other graves at the same location. All of these 15 locations were in map square J in areas closer to the 1917 front line. Therefore this lack of ability to distinguish the registered graves from the unregistered suggests some level of grave or landscape disturbance.

6.2.4 Identification methods

The identification methods used changed over time. While several identification methods were recorded from the data sample analysed, there were some cases where no method of identification was given, however in these cases a cross was present at the grave. For these burials it is assumed that the cross was the main method of identification used, in parallel with back office checking of records and burials in the area.

6.2.4.1 Crosses

The majority of graves examined here did not have a cross present at the time of concentration: overall 839 graves did not have a cross, while 142 had either a whole or partial cross. In January 1919, all of the concentrated graves that were identified had a cross on the grave. No bodies were recorded as being identified with personal effects or an identity disc, and there is no evidence to suggest that these bodies were searched to confirm their identity.

The danger with this approach was that crosses placed over graves could have fallen or been knocked over by later fighting, and may have been replaced later over a different grave. Even in small cemeteries further from the front line which

had not been disturbed, there was still a risk with using crosses as proof of identity. Contemporary records show that over a fortnight period an exhumation team had found 4% of crosses were in locations which examination showed did not have a grave (Burnett Stuart, 1919). In addition, an investigation into duplicate burials in 1921 showed that in the eight cases of duplication discussed, five were instances where two bodies were identified as being the same man, with one body identified by a cross and the other by an identity disc (Burbery, 1921).

Analysis of the information provided for the Committee into the errors in Hooge Crater demonstrates that using a battlefield cross for identification purposes was only correct in 72% of cases (Table 4-8). Therefore, of the 114 graves in this sample that were identified by cross, it is likely that 32 of them are incorrect.

The number of graves identified through a cross is highest in January, falling to half of all graves in February and then accounting for less than 50% of identifications in every month except July. This change suggests that as exhumation parties became more experienced, they relied on crosses less for identification purposes. This is relevant as the number of graves found with crosses increased significantly from March onwards, and therefore the decrease in the use of crosses for identification shows an active change in behaviour of exhumation parties. In addition, the lack of graves with crosses being concentrated demonstrates that exhumation parties were not locating and concentrating the visible graves first and then finding the unmarked graves during later searching. Instead, it supports the theory that exhumation units were thoroughly searching the landscape from March onwards to look for the graves which had been lost.

In July 1919, 41 of the 78 identified graves appear to have been identified by the cross over the grave. This included 36 graves concentrated from small cemeteries, which was the highest in any month, and 25 of these were identified by cross. The graves were concentrated from Lock. No 9 Cemetery and Tram and Railway Crossing Cemetery, which were both on the outskirts of Ieper, and Pillbox Cemetery. Lock. No 9 Cemetery and Tram and Railway Crossing Cemetery were both away from the front line, and stayed within the Allied territory

for the entire period of the Great War, while Pillbox Cemetery was set back from the front line for most of the conflict and only falling into German hands for a short period in 1918. Being set back from the front line, the graves in these three cemeteries would have been registered, as demonstrated by Tram and Railway Cemetery having five graves that were described as being identified through Comprehensive Report. As there were records of these graves in these cemeteries, exhumation units may have felt that the crosses combined with the records were likely to be reliable.

The majority of the graves which are now identified did not have a cross at the time of concentration (Table 5.3). The burials for 1915 had the highest percentage of cross presence with 71% of graves having a cross, followed by 1918 with 56%. This will be due to the surviving 1915 burials being behind the British front line for the duration of the war, and the 1918 burials being from the late advance in 1918, which allowed access to register graves, and no later disturbance.

Of the plotted graves, 49 of the graves with crosses came from map square I, 78 were concentrated from map square J and 14 came from map square Q. This means that 40% of graves in map square I, 12% of graves from map square J and 50% of graves from map square Q were marked with a cross.

This difference seen between map squares and years is due to a combination of ease of access, later fighting and higher numbers of unburied remains. Areas further back from the fighting were easier to access safely, and therefore more likely to have been registered and have either a DGRE or other cross placed on their grave. Also, as discussed above, graves further away from the front line were less likely to have had their crosses destroyed. However, the biggest factor may have been the number of bodies in these areas that were not buried at all. These would have been soldiers who died in no man's land, or behind enemy lines, which would have been difficult or impossible to retrieve and bury (Robertshaw and Kenyon, 2008, p.153). It would also include soldiers who were simply lost during the fighting, either drowning in the mud or being buried by explosions from mines and artillery fire, as seen in recent First World War excavations (Brown and Osgood, 2009, p.140). When plotted in map square J,

the graves that were marked are more frequent in the west of the square, away from the fighting. Comparatively, the unmarked graves are more frequent in the east of the square, closest to the 1917 front line (Figure 5-20 and Figure 5-21). This supports the theory that many of these bodies were not buried at all during the war.

Graves recovered with crosses were identified in 89% of cases (Figure 5-9). This is partially due to the use of the cross as a method of identification. By removing the graves which are known or assumed to have been identified by cross, the identification rate drops to 40%.

This correlation is likely to be due to the location of graves with crosses combined with the use of pre-existing records. As discussed above, proportionately more graves with crosses were found away from the areas of heavy fighting seen in 1917. It is likely that bodies buried further away from the fighting were more likely to be buried in a more established cemetery, and therefore have a registered grave and cross. Being away from the fighting, these graves were less likely to be disturbed, which not only preserved the cross but also preserved the grave and the body buried within. In comparison, for front line graves or bodies that were not buried, it was less likely that there would be a cross or grave marker, and due to the proximity to the front line, the grave and body were more likely to be disturbed and suffer some kind of destruction, making identification more difficult. This is supported by the bodies that were exhumed and examined at Hooge Crater Cemetery in 1920; of the human remains that were complete, identification rate was 65% in total, while for partial remains identification rate was between 23% and 29% (Table 4-3). This was following the detailed re-examination by experienced exhumation staff and demonstrates that complete remains were more likely to be identified.

6.2.4.2 Identity discs and personal effects

The fall in the use of crosses correlates with an increase in the use of identity discs and personal effects for identification. While crosses were the only identification method used every month, the identity disc was the most common

method of identification overall. In total, a disc was used as the recorded method of identification on 142 occasions, which is 43% of all the identifications.

The first identifications based on identity disc in this sample were seen in March and peaked in May. Similarly, the first identifications using personal effects took place in March and peaked in June. This change demonstrates that from March onwards, bodies were definitely being searched when they were exhumed. Prior to this time, of the 16 identified bodies, only one had personal effects retrieved. The lack of personal effects and identity discs recorded in this sample suggests that at this time bodies were not being searched. It is not clear what prompted this change, but it is stated in later reports that at the start of concentration, the emphasis was placed on clearing the battlefield quickly, rather than confirming identification (War Office, 1921, p.20).

Identification through personal effects could have been very effective but was not without challenges. While personal effects could give a clear identification, they were portable objects leaving them vulnerable to loss, trade or theft. Some of the personal effects used for identification at Hooze would appear to be more reliable, such as letters and postcards, as these would likely only be kept by the owner for sentimental purposes. However the personal effects that included weapons and equipment inscribed with names, and more high value objects such as cigarette cases and watches, should be seen as less reliable. These objects were more likely to be stripped from the deceased and the living, either as replacements for damaged kit, items that could be sold or traded, or items taken as souvenirs (Saunders, 2010, p.35). This gathering of objects can provide misleading information on identification and is seen when recovering First World War human remains today. Soldiers would collect souvenirs such as badges or buttons, and often kit from one soldier could be reissued to another, making modern identification based on these difficult (Ashbridge and Verdegem, 2020, p.12). Therefore, original identification by personal effect could have been incorrect for the same reasons.

The use of personal effects drops slightly in July and August. The use of identity discs also drops in July, which may be due to the higher number of graves

concentrated from small cemeteries as discussed above. This decrease could also be caused by bodies not being examined as thoroughly due to the higher temperatures during the summer months making the task more unpleasant.

At the start of the war single metal identity discs were given to soldiers, which would be removed from the body at the time of death, making later identification difficult. In 1916, the British Army introduced double identity discs (Ashbridge, 2020); one disc would be removed at the time of the death but the other would stay with the body. This gave a better chance of later identification. The key difference between these was the original single discs were made from metal, while the later double discs were made from a compressed fibrous material, making them less durable and more likely to break down over time. The decision to move to fibre-based discs had taken place in 1915 because of medical concerns around the injuries that could be caused by the metal discs. Specifically, concern was raised that if a disc were to be struck by a bullet and pushed into the chest, a fibre-based disc would cause less damage than a metal one. Ware states that he argued against this change taking place, claiming “At the time I drew attention to the fact that these others would not last, but for military reasons and other reasons, it was considered wiser to use the fibre” (Imperial War Graves Commission, 1920e, p.40). Despite his objections, the change from metal took place and the double identity discs were produced in compressed fibre.

At the time of concentration work, it was felt by exhumation teams that the fibre-based discs were not particularly efficient for identifying remains. As stated during exhumation work, “Generally the red and green discs are very unsatisfactory as exposure to the elements or burial, even for short periods of time, renders them unreadable. The original thin metal disc were more satisfactory” (Directorate of Graves Registration and Enquiries, 1920a). The unsatisfactory nature of the fibre-based discs is likely to be a contributing factor to the low number of identified bodies seen at Hooze Crater Cemetery and elsewhere.

However, identity discs were the most common method of identification for soldiers that died in 1916, 1917 and 1918. Of the 1914 bodies, one was identified by identity disc and one by cross, while for the 1915 bodies only three were

identified through identity disc, which was 11% of the total 1915 bodies. The higher rates in 1916, 1917 and 1918 are most likely due to the introduction of the double identity disc. This is particularly interesting as the contemporary reports complained about how badly the fibre-based discs survived in the ground. The research here shows that the positive addition of the double disc must have counteracted some of the negative impact of having a fibre-based disc.

The low number of identifications from 1914 and 1915 is likely to be due to a number of factors rather than just the introduction of double identity discs. Firstly, the majority of bodies recovered and identified were from 1917, which was a time of very heavy fighting in this area, with a high number of casualties. Due to the heavy fighting and stagnant movement in this area during 1917, it is highly likely that there were more bodies from 1917 present than from any other year.

It could be partly due to decomposition rates, as by the time of concentration any burials from 1914 will have been decomposing for at least 53 months. However, a study of non-embalmed buried bodies demonstrated that in 50 months a body could be fully skeletonised or still in advanced decay, dependent on body mass, injuries and clothing (Ferreira and Cunha, 2013). Other studies have shown that bodies buried at 0.6 meters or less can be fully skeletonised in a few months, while bodies buried at 0.9 meters or more can take years to reach the same level of decomposition (Mann, Bass and Meadows, 1990). Decomposition rates are affected by a variety of factors and the date between burial and skeletonisation is variable, but generally bodies buried in 1914 would have been in advanced decay and partially or fully skeletonised, and therefore not in a stage where examination was particularly difficult or unpleasant. Therefore the lack of identified 1914 and 1915 bodies is unlikely to be caused by decomposition. It is more likely to be due to a lack of consistent recording of graves in 1914, the lower numbers of overall deceased compared to later years and the single identity discs which was removed at the time of death.

One of the main questions asked is whether the identification rate did improve over time, as suggested in the Hooze Crater committee report (War Office, 1921). As shown in Table 5-2, we start to see personal effects and identity discs being

used for identification from March onwards in increasing numbers, while the use of crosses decreases. This is highly likely to have increased positive identifications. It would therefore appear that identification rates did improve over time, and that the attitudes and experience of the staff involved in concentration played a significant role in the successful identification of individuals.

6.2.5 Factors that effected identifications

We know that identification rates and methods used at Hooge Crater varied. One of the main questions is whether this variation in identification rates was influenced by the burial environment, the people responsible for concentration or other factors.

For this discussion the burial environment is defined as the physical properties of the area of burial, including the soil type, level of exposure and water level, which all have an impact on decomposition rates. It does not include the type of burial, for example if the body was buried in a cemetery or in a trench, which is referred to here as the grave location.

6.2.5.1 Burial environment

It seems unlikely that the burial environment was a factor in the identification of bodies.

The soil found in the Ieper Salient is clay based and relatively flat. Running from north to south, to the east of Ieper, is the Passchendaele Ridge. This ridge consists of low lying wooded hills with the soil consisting of sandy clay (Doyle and Bennett, 1997). Generally, wet soils such as clay can result in decreased decomposition (Hopkins, Wiltshire and Turner, 2000). In comparison, sandy clays will have a slightly faster decomposition rate. If the decomposition rates were affected by the soil, this may have been reflected in identification rates, with bodies which showed more advanced decomposition being identified less frequently. When comparing the graves found on and around the ridge with the graves found on the flatter plain around Ieper, there is no clear variation in identification rates, suggesting that the soil bodies were buried in did not make a difference to identification (Figure 5-15 and Figure 5-16).

This could be due to multiple factors. It may be that differences in decomposition rate between the areas were very minor or non-existent. It is notoriously difficult to predict decomposition rates of buried bodies; this is due to variations in environmental factors such as water content, oxygen levels and soil PH, as well as variations in the body size and burial (Janaway, 1996, p.68).

The presence of flora and fauna in the area will alter decomposition rates; scavenging mammals such as rats or other carrion eating animals will consume dead flesh if it is exposed, rapidly increasing decomposition (Mann, Bass and Meadows, 1990 p.106). Both flora and fauna can disturb buried remains also, with tree and plant roots interfering with burials while small mammals can be responsible for the movement of small bones (Forbes, 2008, p.218). The presence of the soil itself will impact decomposition in unpredictable ways: soils which are less compacted will allow greater airflow and increased decomposition, while bodies buried in soil with restricted oxygen flow will generally see slower decomposition (Dent, Forbes and Stuart, 2004, p.577). However, Mant (1987) stated that in the early years of burial, soil type had little impact on decomposition rates.

The levels of groundwater will affect body decomposition rates. There are various canals and tributaries running through the region with some graves located in close proximity to these. Soils with higher water content have lower oxygen levels and less microbial activity, which can slow decomposition rates (Janaway, 1996) and this should therefore impact identification rates. However the plotting of graves demonstrated no clear trends in identification in relation to proximity to water. It is likely that there was seasonal, temporary waterlogging of soils in the area due to the high clay content and high water table across the Ieper Salient (Doyle, Barton and Vandewalle, 2005). This may have had an impact on decomposition, although it is difficult to say without understanding the frequency of and extent of waterlogging in the area.

The changing and changeable nature of the environment in this area also make it difficult to say with certainty that soil did not make a difference. For example, the contamination from warfare, such as the presence of heavy metal and poison

gas could have had an impact; mustard gas has been shown to be easily absorbed into a soil matrix and can take years to break down (Jung et al., 2017). The impact of this type of contamination on decomposition and taphonomic processes has not been explored, but this could have impacted on normal decomposition rates.

Another very significant and variable factor is ambient temperature. Decomposition in warm or hot weather will be much quicker than that which takes place during the cooler, winter months; for unburied remains this could mean full skeletonisation could take place in a matter of weeks if bodies were left exposed in the summer (Mann, Bass and Meadows, 1990, p.105), while bodies buried at a cool, constant temperature may take several years to skeletonise (Breitmeier et al., 2005).

Many authors agree that probably the most significant factor to effect decomposition will always be time (Breitmeier et al., 2005; Dent, Forbes and Stuart, 2004; Janaway, 1996), and that this is more significant than any environmental factor. Due to movement of the front line in the area, we know that bodies from 1914 would have been present in the area reviewed here, but only two bodies within the sample were identified as having died in 1914. The presence of identified bodies from later years is higher, however as more men were being killed in the area in later years, it is not possible to say if the higher rate is due to better preservation or just a larger quantity of dead.

Alternatively, any variations in decomposition may have been due to burial conditions. Bodies that are clothed when buried will decompose more slowly than bodies which are not, as clothing or some kind of material cover will slow the impact of the soil environment, can stop scavenging from animals and delay insect activity (Ferreira and Cunha, 2013). Bodies which are covered or wrapped in fabric will take longer to decompose than bodies which are exposed directly to the soil, and generally clothed bodies will have better preservation than nude bodies (Forbes, 2008, p.216).

There was no clear trend in identification rates when comparing bodies found in wooded and non-wooded areas. On visual examination, there does appear to be

fewer bodies recovered from areas of higher elevation. The higher ground was in German territory until the middle of 1917, before transferring to Allied territory. It could be that the lack of Commonwealth bodies on higher ground was due to infantry fighting not reaching the high ground and remaining in the lower areas only, with artillery being used to attack the higher ground. Alternatively, it could be due to bodies on higher ground being more exposed and therefore subjected to higher levels of destruction.

Additionally, the biggest indicator that burial environment did not have an impact is the presence of identified and non-identified bodies being recovered from the same locations, sometimes in the same graves, as shown in Figure 5-19. If the burial environment made a significant difference, it would be expected that all bodies recovered from the same location at approximately the same time would be either identified or unidentified, rather than a combination of both. As shown in Table 5-7, the only area which saw a correlation with identification rates and the location of multiple bodies was in map square Q, where 95% of bodies recovered in an area with other bodies were identified. However, this was a small sample of 20 bodies, all of which were from 1918, and it could be that identification rate here was due to the surrounding events being clearer in memory as they were more recent.

6.2.5.2 Grave location

A bigger factor affecting identification was the grave location itself. As shown in Figure 5-15 and Figure 5-16, bodies buried further away from the areas of heaviest fighting had a higher rate of identification than bodies recovered closer to the front line. This is due to a higher percentage of the dead being buried, as there was the time to do so, without the threat of enemy attack. These burials were more likely to be marked and registered as access to them was easier, and registered graves had a higher identification rate. In comparison, for soldiers who died at the front or in no man's land, it would often not have been possible to bury them. These bodies stood a much higher chance of being disturbed and partially destroyed by later fighting, making them more difficult to identify, and potentially destroying all evidence of the body and grave. Meanwhile, the graves and

cemeteries away from the front line, particularly in the areas which had not experienced direct fighting, were much more likely to be preserved and maintained.

Bodies concentrated from cemeteries had a much higher chance of identification than bodies recovered from elsewhere. As discussed in section 5.5.2, 75% of graves concentrated from small cemeteries were identified, which is much higher than the average of 33% seen within the sample. This is likely due to cemeteries being further away from the areas of heaviest fighting, but also because of the records and surveys taken of cemeteries. Many of the cemeteries may have suffered damage, particularly during the German advance in the Spring 1918, however the accurate records allowed for the location of graves and reconstruction of these cemeteries (Directorate of Graves Registration and Enquiries, 1918b). This gave a better chance of graves being located and identification given, even if the cemetery had been destroyed on the surface.

6.2.5.3 Lack of guidance

Identifying all bodies consistently was always likely to be challenging due to the conditions of burial and concentration, however the lack of instruction in early 1919 led to many of the errors seen at Hooze Crater. As shown in Table 5-2, the cross was being used as the main source of identification for January and February 1919, with no evidence at this time of any bodies being searched to confirm that identity. Based on this it seems feasible that at the beginning of 1919 the Labour Corps units involved in concentration work were simply tasked with digging up bodies for reburial, with no emphasis placed on establishing or confirming the identity of the individual recovered.

At this early stage of the concentration work, errors in recording were also prolific, as discussed in section 4.4 Hooze Crater data analysis. These errors show that the record keeping for concentrated graves was lacking. Examples of this include Commonwealth soldiers being recorded as British and regimental details not being included. This will likely have been caused by a lack of guidance to Labour Corps units that they should have been distinguishing and recording these identifying features.

6.2.5.4 Staffing

Another contributing factor, both in exhumation parties and in cemetery parties, was the variation in skill and ability of the men involved. There were several thousand men working on exhumations in Belgium and France, with a total of 15,000 concentration staff having been recruited by June 1919 (Imperial War Graves Commission, 1919c, p.2). With each team working independently, especially prior to Crawford's instructions being issued, it is not possible to know how consistently the teams were working. Even after Crawford's instructions were issued, it is impossible to say if the exhumation teams followed them completely, partially or not at all. The records do not exist to say which units were working on concentration in any particular area at a given time, but it seems highly likely that the lack of training and guidance caused a variation in identification rates and the general quality of the work conducted.

A significant day to day problem experienced by the DGRE was the lack of men volunteering to stay and complete exhumation work. It had been decided during the war that the men completing exhumation work must be volunteers, and it proved to be difficult to recruit enough staff. As discussed in section 2.2.5, in May 1919 it was reported that an extra 5000 men would need to be recruited into exhumation work if the army were to complete the search and concentration of the battlefields within two years. The commission staff reported that they did not feel that this was satisfactory and that the work should be completed in less time than two years (Imperial War Graves Commission, 1919a). This will no doubt have created additional pressure for the work to be completed quickly, and if it was felt that the need to complete the work in a short time was the priority, then it is quite possible that there was less emphasis placed on identification.

Due to the desire to start concentration work as soon as possible, this led to the recruitment of staff while not having sufficient transport, accommodation, equipment, leadership or instruction (Longworth, 1985). All of this would have delayed the exhumation and movement of bodies. It is easy to understand how this would create a situation where mistakes would be made, but also where the morale of staff would be low. For the soldiers who had volunteered for

concentration work, they were trying to complete the work in the middle of winter without proper resources. These soldiers had already been in France and Belgium during the war and were now having to complete an unpleasant task in difficult conditions. It is therefore understandable that the quality of the work may have been poor due to a lack of interest or commitment from the men involved. This lack of engagement was addressed in Crawford's instructions (1919, cited in War Office, 1921), where he stated that the work of concentration was vitally important and that men showed a greater interest in their work when it was stressed how important the need for identification was.

6.2.5.5 Lack of personal effects

Currently, if there is a mass disaster or a mass grave excavation, anthropologists and medical staff will use a variety of techniques to try and identify individuals. These include methods such as DNA, fingerprints and dental records (Skinner, Alempijevic and Djuric-Srejjic, 2003), as these can give a match with nearly 100% certainty. In 1919, DNA had not yet been discovered, fingerprint records were not kept for individuals in the military and dental records were inconsistent, and if these existed, they were normally unavailable. Instead, the strongest indication of identity would be an identity disc or personal effects, both of which are portable and therefore not unique to an individual. This made the task of identification very difficult and impossible for any bodies which had been stripped of personal effects prior to burial. In these cases a cross, if present, would be the only indicator of identification.

6.2.5.6 Facilities available

Due to the numbers of dead, the time available and the facilities available, there was no option to remove bodies to a mortuary for further examination to aid identification. Instead, the identification process took place in the field, regardless of the weather conditions or the state of the body, before moving it to the cemetery for reburial. There was no secondary checking of the body itself after the initial examination, as demonstrated in section 4.4.11, where personal effects and identity discs were recovered during the exhumations at Hooge Crater Cemetery

in 1920. This lack of secondary checking of the body must have led to missed opportunities to identify some individuals.

6.2.5.7 Movement of the front line

It is suggested above that fighting, and in particular artillery action, was responsible for the disturbance and destruction of bodies and burials in the later stages of The Great War. A contemporary record from an army chaplain stated “the ground was being constantly churned up, and then to such an extent that even the bodies of the killed quickly disappeared” (Tanner, 1917). The area around Hoge Crater saw continued fighting throughout the period, and within the map area focused on in this research, there were three major shifts in the location of the British front line. Figure 6-2 shows the locations of the front line around the city of Ieper from 1914 to 1918. This shows that some areas of land changed hands three times during this time, while others stayed within the control of the respective force for the duration.

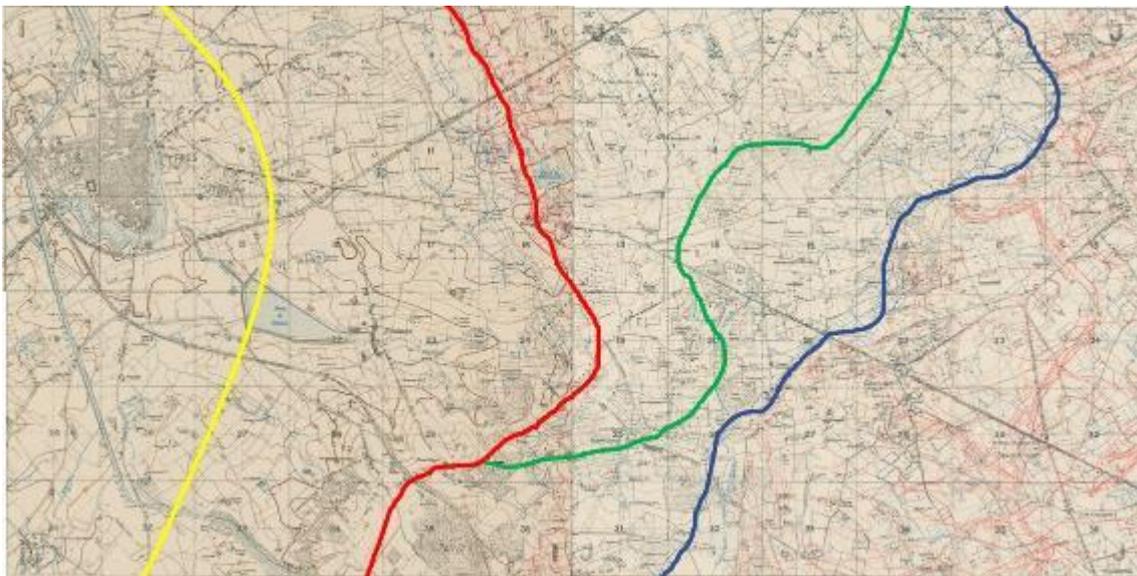


Figure 6-2: Trench map squares I and J with the approximate location of the British front line between 1914 and 1918. The green line represents the front line in November 1914, the red line in May 1915, the blue line in November 1917 and the yellow line from April 1918 (Adapted from War Office, 1917b, 1917a)

If the shifting front line and later fighting did disturb or destroy earlier burials, it would be expected that graves in areas of land which changed hands would have a higher destruction level and therefore a lower identification rate. In some areas this is accurate. Map square I contained 124 bodies that were concentrated into Hooze Crater Cemetery. 41 of these bodies came from the west of the square in an area that never passed into German hands, while 83 were recovered from an area that had passed between forces at least once. Of the 41 from the west of the square, 28 were identified and 13 were unidentified. Of the remaining 83 bodies, 37 were identified and 46 were unidentified. In comparison, there were 598 bodies recovered from map square J in the area behind the 1917 front line, an area that changed hands at least three times. Of the 598 bodies 230 were identified while 368 were not (Figure 6-3 and Figure 6-4).

This demonstrates that identification rates in the areas that did not routinely change hands were higher than areas where it did, which supports the theory that later fighting disturbed earlier graves, making identification less likely.

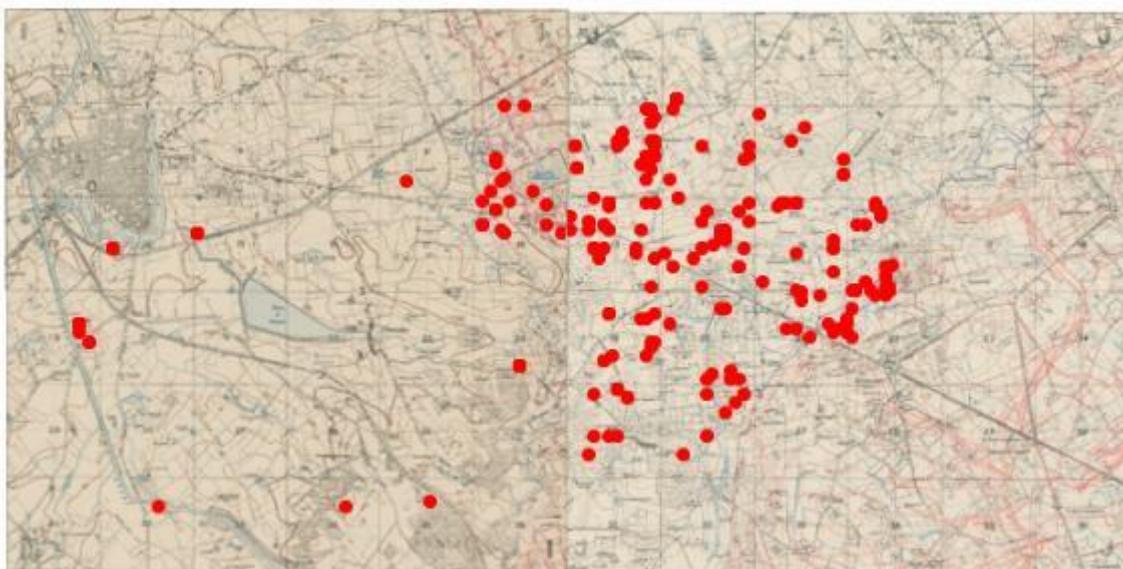


Figure 6-3 Trench maps I and J showing the locations of identified burials behind the 1917 British front line (Adapted from War Office, 1917b, 1917a)

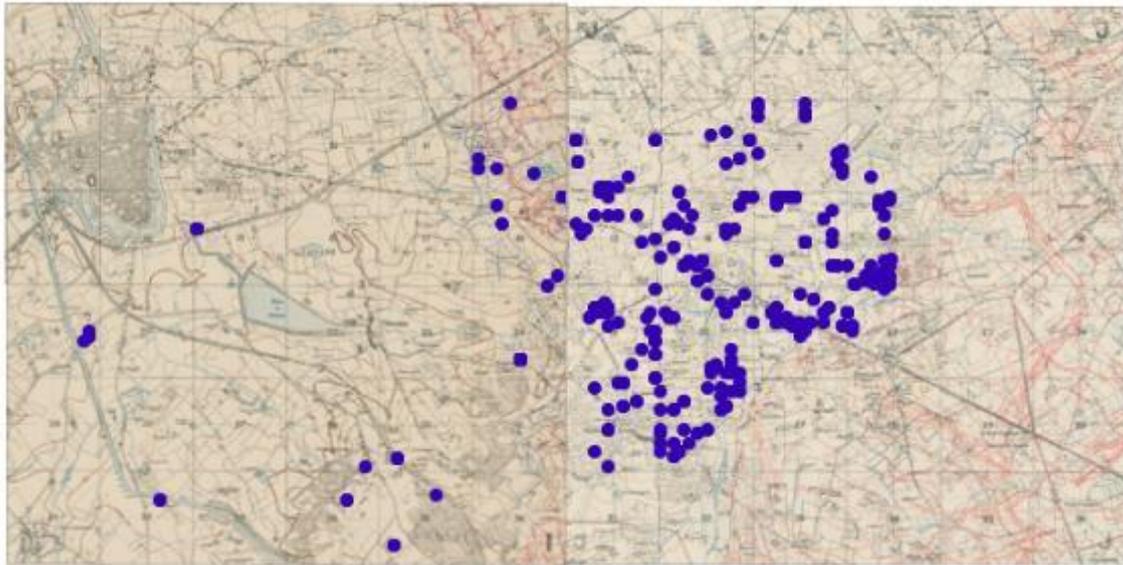


Figure 6-4 Trench maps I and J showing the locations of unidentified burials behind the 1917 British front line (Adapted from War Office, 1917b, 1917a)

6.3 Construction of Hooze Crater Cemetery

Of the 5728 concentration records that survive for Hooze Crater Cemetery, the approximate date of concentration is given for 4595 of them. Looking at these dates provides new details on how the cemetery was completed and the order that bodies were buried within it (Figure 6-5).

Cemeteries were completed by cemetery parties, which consisted of a Chaplain, Officer, clerk, non-commissioned officer and a digging party. A member of the DGRE would mark out the cemetery plots and rows, in a location communicated from DGRE head office, and the digging party would dig the trenches along those rows. Digging parties would vary in size, and POWs could be used for digging trenches, but not reburials (Crawford, 1919, cited in War Office, 1921).

The records show plot I row E to J were completed in January 1919, followed by plot II starting from row J and finishing at row A, in January and February. Plot III started from row K in February and finished at row A in March. For these graves each row was filled, starting from the northern end of the plot and working in a southerly direction. It is likely that trench graves were dug rather than individual

graves, as they would have been easier to dig and fill. In addition, it would have been easier when burying comingled remains from multiple individuals.

After the first three plots the method changed. Plots IV, V and VI were constructed next, with a long trench grave being dug across all three plots and filled, before moving to the next row. For example, all the graves in row A for plots IV, V and VI were recorded between the 14th and 17th March. All the graves in row F for plots IV, V and VI were then recorded between the 25th and 28th March. These plots all started with burials in row A and worked back to row L.

Plots VII, VIII and IX were built next, all containing burials concentrated in April, and then plots VIa and IXa were added from the end of April to the middle of May. It is unknown if these plots were added due to a recalculation of the space available, a prediction of the number of graves that would need to be concentrated or if these plots should have been constructed from the beginning but were missed due to a communication error.

From plot X onwards, each section of cemetery was created with four plots in a row, with a single grave trench being dug across all four plots. These trenches were filled with burials before moving to the next, but not necessarily moving consistently from right to left. For example, for row A in plots XIV, XV, XVI and XVII;

- plot XIV had burials from 28th June to 2nd July,
- plot XV had burials from the 2nd to 7th July,
- plot XVI had burials from 2nd to 4th July,
- plot XVII had burials from 3rd to 7th July,

This could be due to graves coming in from the battlefield that needed to be buried together, for example multiple individuals from one grave or multiple graves from one cemetery. The data supports this theory, as we can see that burials in row A of plots XV and XVI were taking place at the same time, but the burials in plot XV were all from Tram and Railway Crossing Cemetery. These bodies were being kept together as they had been buried together originally, so other bodies arriving for concentration at the same time were being buried in plot XVI.

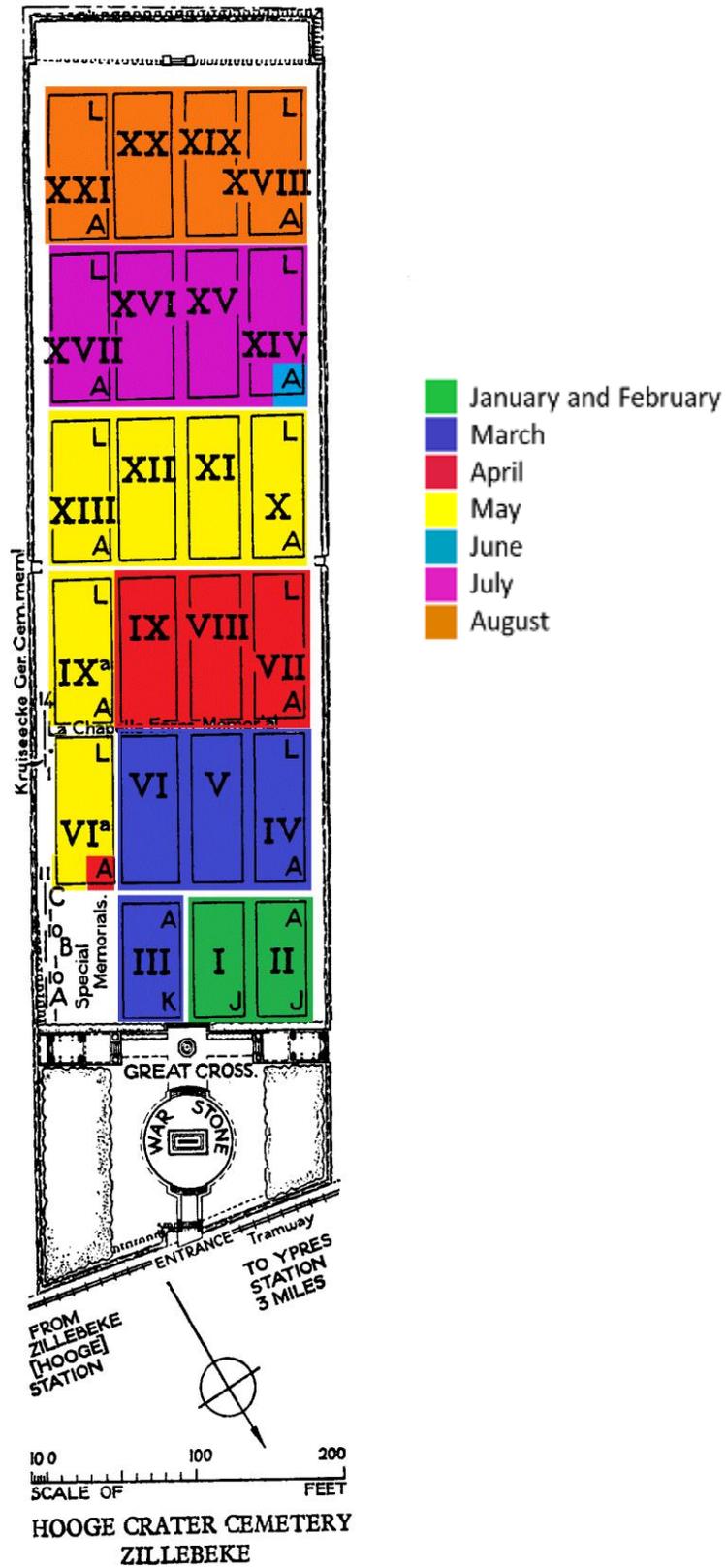


Figure 6-5 Plan of Hooge Crater Cemetery (Figure 4-2) with colour coding to indicate the months that plots were completed

This requirement to keep bodies together was due to the possibility that if a group of bodies were recovered and some were already identified, it could be possible to use pre-existing records to identify the unknown bodies, if they were recorded as being buried together (Crawford, 1919, cited in War Office, 1921). While not written, there may well have been a sentimental desire as well.

The final plots of XVIII, IXX, XX and XXI were completed in August 1919 and the cemetery was then closed for further concentrations.

The confusion with the construction of the cemetery reflects the wider problems seen with concentrations in 1919. The data on the construction of the cemetery shows a slow start to the expansion, with the late addition of plots which had been missed originally. The inclusion of empty graves during this time is also a reflection of this confusion. However, over time the errors reduce and the construction becomes more regular and orderly. This coincides with the improvement seen in the work of concentration and identification, and suggests that cemetery building was subject to the same chaotic start.

6.4 Management and organisation

Records for the early part of the concentration work are inconsistent and there are very few surviving records that address who was involved in the concentration work, where they were working and how they were working. The data analysed here can provide some insight on this.

6.4.1 Day to day work, from London to the field and to the cemetery

Supporting the exhumation and cemetery teams working in the field was the central DGRE office in London. While the exact details of how this worked are not recorded, we can piece together some information from later records and letters.

The London office was responsible for investigating all information on burials, based mainly on chaplain reports, DGRE records and letters, preparing location sheets, examining preliminary reports from exhumation teams, checking cemetery records, processing information on unregistered graves and carrying

out research into duplications, or when a name was suggested for an unknown soldier. They would also receive and respond to all next of kin queries regarding the location and condition of war graves abroad (Imperial War Graves Commission, 1920a).

This office would provide the details of areas to search with specifics of graves and burials reported to be there, as stated in section 6.1.4. Exhumation units would go to these locations and search the area for these and any other burials, with mixed success. Any burials or suspected graves would be investigated, and bodies would be exhumed and searched, before being transported to the nearest cemetery open for concentrations at the time. Following the transfer to a cemetery and reburial, a concentration form was completed in duplicate (Figure 2-7).

We can see that once the concentration form was sent to headquarters, there was some kind of checking that took place, as some of the records with a given name were changed to an unknown soldier, while others had names provided for the first time. Removed names were probably due to duplications, where the individual had a recorded grave elsewhere, or where the details on the burial return did not match any known individual. We also see the correction of details occurring; this is likely to be where a name has been transcribed from a cross or identity disc and is found to contain an error. Where names were added to burials reported as unknown soldiers, this would have been due to investigation and cross referencing of records. Once the records were complete, the cemetery records would be updated, a cross would be placed on the grave and a headstone ordered.

6.4.2 Example of errors

That instructions had to be issued in July 1919 demonstrates that there had been insufficient or incorrect direction provided before this date. The instructions were based on the experience of the 68th Labour Corps, one of the first units to volunteer for concentration work and also the primary unit responsible for the concentrations at Hooze Crater Cemetery. As far as we know, these instructions were therefore based on trial and error, and the processes that the unit found to work the best, rather than any advice from medical or forensic staff. While this

unit is described as being the pioneers of body recovery (War Office, 1921), we can also see that they made significant errors in their early work at Hooge Crater. Therefore, their instructions actually may not have been best practice and it may have beneficial to gather advice from a wider community.

When bodies were being concentrated, in some cases, identity was either provided by a cross over the grave or details provided when the grave was registered. Identification was therefore reliant on these original details being correct. During the war, if a body was buried it would normally be completed quickly; burials close to the front were dangerous due to the risk from fighting. One chaplain described such a situation;

“The chaplain had been conducting a burial party in the afternoon along with the major and a number of men when the Germans opened fire on them. The major was wounded in the head and the chaplain jumped into the grave, spraining his ankle in the process. For a long time he had to lie with the dead soldiers he had gone to bury” (Kendall, 2016, p.70).

Burials at dressing and casualty clearing stations would also have to be done quickly due to large numbers. These burials could be liable to error, particularly when multiple bodies were involved. As stated by staff of the IWGC when trying to explain how two Commonwealth soldiers were buried as unknown German soldiers in 1918, “owing to the many casualties occurring at this period, and the hurried burials resulting, mistakes in recording occurred” (Imperial War Graves Commission, 1924).

Following burial, bodies would be registered by a member of the DGRE. This would normally happen when an army chaplain would report a death to the DGRE, who would then be deployed to locate the grave, if it was safe to do so, and place a permanent memorial over the grave if there was not one present. This relied on the DGRE staff locating the correct grave, and ensuring the correct marker was placed there. This was also not always completed correctly. One example was the grave of Major Chenevix Trench, an officer killed in October 1914. When the grave had been registered, the cross placed over the grave was marked with the name “French” due to a clerical error (Directorate of Graves

Registration and Enquiries, 1917). If we consider that both of these processes, burial and grave marking, were subject to error then it is likely that some of the records of the DGRE would be inaccurate because of this.

A more frequent error was caused by the apparently common practice of moving memorial crosses into cemeteries during concentration, without recording that the cross had been moved without a body; evidence of this is seen at Hooge Crater Cemetery, Ypres Town Cemetery Extension (Imperial War Graves Commission, 1922c) and Strand Military Cemetery, Ploegsteert (Imperial War Graves Commission, 1933b). In these cases there was a failure to record on the concentration record that a cross had been found on the battlefield, but investigation had shown no remains were present. These crosses were moved to the concentration cemetery and recorded on the concentrations report despite the absence of human remains, and this may have led to some of the cases of duplication which had to be investigated later. Due to the number of burials at Hooge Crater that were identified through the presence of a cross alone, this raises the question of how many of these graves could be empty.

A final problem was with the exhumation itself. As shown by the examination of bodies at Hooge Crater Cemetery, several bodies were complete except for the head, feet or both (section 4.4.3). This would suggest that as bodies were being excavated, pieces of their extremities were being left behind. This may have been due to a lack of interest, a desire to complete exhumation as quickly as possible at the detriment of the quality of the work, or the state of the remains being so bad that it was difficult to assess when a whole body was present or not. This has an impact on modern times, as single body parts can be found during archaeological excavations or building works in areas of France and Belgium. It is not possible to identify who these body parts belonged to, but they must still be reburied appropriately.

This presents a variety of issues. If the majority of a soldier's body has been destroyed or scattered over a wide area, and only a few small bones are now left, then not identifying them would result in a soldier remaining missing forever. Anthropological analysis of these bits alone will not enable identification of an

individual. Unless these small parts are conveniently recovered with well-preserved personal effects, these parts could only be identified through DNA testing and other scientific methods, which would be costly and may not give the required results.

Additionally, if each body part was to be tested and treated as a new individual, that could result in the creation of hundreds or thousands of new graves and potentially cemeteries. But if each body part was to be treated as a single individual and reburied without testing, this could result in a dozen unidentified war graves for what is actually one person. Similarly, body parts would be buried in single graves that could belong to a soldier who has a marked grave elsewhere; there would be no way of knowing if recovered body parts actually belong with bodies in other graves.

6.4.3 High level problems that contributed to errors

Strategic level problems contributed to the confusion and problems surrounding concentration, both for the DGRE who were part of the Army, and for the IWGC.

For the Army, under resourcing was a problem in the London office as well as in the field. In December 1920, the DGRE London office was reported to be behind in all aspects of their work including investigating original burials, confirming identifications and liaising with relatives (Imperial War Graves Commission, 1920a). This was due in part to the scale of the work being carried out on war graves, but also the volume of queries from relatives, and the lack of staff to process them. This led to a multitude of problems and various errors surrounding communications and records.

At the IWGC, the problems appear to be caused by a lack of planning and appreciation of the scale of the problem. While we know that it was agreed during the war that concentration of single graves and small cemeteries would take place after the war, there is no evidence that any consideration was given to how concentration would be completed. While it was agreed that this work would be completed by the DGRE and would therefore be the responsibility of the Army, there appears to have been no awareness of how it would actually work, and no

evidence that plans were being put in place. This lack of awareness appears to have been a major oversight and meant that in November of 1918 there were no plans in place and no supporting infrastructure to start the concentration.

There also appears to have been a level of naivety or wishful thinking for the IWGC concerning the concentration work. For example, the IWGC clearly stated that all men working in concentration must be volunteers rather than prisoners of war, conscripts or local labour. There was no thought about the difficulties that would surround this recruitment and that men might not want to stay to complete exhumation work. Instead it was just assumed that thousands of men would be willing to stay.

Interestingly, it appears that the problem of not planning the operational response occurred twice for the IWGC; once at the end of the war and again when the DGRE disbanded in September 1921. Letters were sent to the IWGC enquiring who would be responsible for the removal of bodies that were being discovered, as the DGRE were no longer available and bodies were still being found (Australian High Commission, 1921a). An internal memo on the subject stated “it is not considered practicable for the commission to set up, or maintain a special exhumation staff on the lines recently maintained by the army” (Ware, 1921). The IWGC clearly did not want to be responsible for any further exhumation work, knowing that the longer they continued to look for graves and burials, the longer they would continue to find them.

6.5 The scale of the problem and the impact on modern day

As demonstrated by the investigation into Hooze Crater, the IWGC had realised by late 1920 that mistakes in concentration had been made. However, the problem of empty or poorly identified graves stretched far beyond Hooze Crater Cemetery. The errors seen elsewhere are varied and include misidentified graves, empty graves, incorrectly marked graves and bodies being misplaced within cemeteries.

For example, the grave of Private G. Sutherland was incorrectly reported as having been concentrated into Orchard Dump Cemetery. In fact, ten unidentified

bodies had been concentrated into this cemetery together, and as a makeshift cross for Private Sutherland was found in the vicinity as the bodies, it was taken to the cemetery and randomly placed over one of these unknown graves (Imperial War Graves Commission, 1957). This mistake was not discovered until 1923. Another example of error was found at Lancashire Cottage Military Cemetery, Ploegsteert, when the exhumation of 11 graves for identification purposes in 1921 revealed just one body, with the other ten graves being empty (Imperial War Graves Commission, 1921f). A further example was found in 1924, when excavations at Longeau Cemetery revealed that what should have been the graves of British soldiers actually contained the bodies of two unknown British soldiers and a group of unknown German soldiers (Imperial War Graves Commission, 1924). This group of burials had taken place close to a medical station during the war.

Finally, a multitude of errors were seen at Ypres Town Cemetery Extension, both for original graves and concentrated graves. For the original graves the errors found included crosses being placed over empty graves, crosses being placed over incorrect graves, some original graves not being marked at all, the body of a German soldier in a British grave, the body of a British soldier in a French grave and the body of a civilian found in an unmarked grave. Of the concentrated graves, row A in plot III was supposed to contain 13 British soldiers however exhumation showed that this trench grave actually contained two British soldiers, the body of a civilian, and buried underneath these the bodies of 34 French soldiers (Imperial War Graves Commission, 1922c).

The examples given above demonstrate that errors in grave marking and registration were taking place during the war as well as afterwards. Exhumation units were trying to locate and move graves, and they were relying on occasionally confusing, contradictory and sometimes incorrect data, in a landscape which had changed considerably during four years of conflict. The pressure was then on exhumation units to perform as best as possible with this information and if they were then not checking bodies, or making assumptions around burials, these errors would only be compounded.

The second important aspect to note from is that the IWGC were very aware that significant errors had occurred which effected multiple graves and cemeteries, and that this was not a small and localised problem unique to Hooge Crater Cemetery. Even though the work of grave registration, concentration and identification was carried out by the Army, the IWGC knew that they would be held responsible for any mistakes (Longworth, 1985, p.58). As the creation of war cemeteries and ban on repatriation had been so controversial, the IWGC did not want the bad publicity if it became widely known that grave concentration had gone badly wrong. Having inherited the problem of bad burials, the IWGC had to make a decision on how they would approach these, and their policy during the 1920s and 1930s appears to have been to avoid drawing attention to it, and not over-investigate the problem. As stated in 1922, "it only proves once more how very dangerous it is for any sort of digging to take place [in the cemeteries] in the Ypres Area, partly because of the many reconstructions due to shell-fire etc, and partly to a certain amount of bad work which, undoubtedly, took place at the time of general concentration in 1919" (Imperial War Graves Commission, 1922b). This shows awareness of how bad and far reaching the errors could be.

As shown here, errors were present in original and concentrated burials. Some of these errors, such as duplications, were resolved, but many errors still exist and have an impact today. Currently, when the remains of Great War soldiers are discovered, it is the responsibility of the Joint Casualty and Compassionate Centre to confirm the identity of the individual. They do this by comparing details gathered from the recovered individual with a list of potential individuals with no known grave; any soldier with a known grave is excluded from the comparison list (Bowers, 2021). If it was clear that all graves were correctly identified, this would be appropriate, however this is not the case. If soldiers have been incorrectly named on an empty grave or a grave containing the remains of someone else, then it will not always be possible to identify individuals using the current system. However, to change the system and include the names of all soldiers, regardless of whether they have a grave, would make identification a much more difficult and contentious process. It would also mean admitting that errors occurred and were known about, which could potentially cause more

confusion over burials, difficult questions from relatives and may have political implementations for the CWGC in the future.

The inaccurate marking of graves also presents problems for cemeteries. Where headstones for individuals are known to be located over the wrong body, or an empty grave, this presents an ethical issue for the CWGC. Descendants of the deceased may travel to a CWGC cemetery to visit the grave of their relative; if the CWGC know or suspect that the grave is incorrectly marked (through no fault of their own) do they have a responsibility to share this information and make it clear? With errors potentially occurring in every First World War CWGC cemetery around Ieper and beyond, what is the correct way of dealing with the known problems and errors? The archive records show occasions where a grave was marked as an Unknown Soldier even though they were identified to stop a duplication, or the order of bodies buried in a trench was unclear but headstones were erected anyway, with this not being made clear to next of kin. Is this important or due to the time that has passed, are the details no longer relevant?

Other important ethical questions are raised when we look at the policies of the IWGC in 1919 onwards. For example, where the records demonstrate a false, suspect or misleading identification, should these graves be exhumed and bodies re-examined? Should the policy of not disturbing graves persist, despite the known errors and the ability of modern technology to potentially resolve them? Or, as over a century has now passed, is the requirement for individual identification no longer valid?

As discussed in section 3.2, significant effort has been placed into identifying the First World War deceased, as demonstrated in excavations such as Fromelles, which saw extensive effort given to identifying the dead. If this belief were to be applied to every war grave for an Unknown Soldier, who could potentially be identified, the financial cost would be mammoth. The practicalities of trying to carry out the work, specifically trying to excavate bodies known to be buried in trench graves, would be difficult and problematic, while the volume of graves to be investigated means it would take years to complete. Apart from the cost and

logistics of potentially investigating all unidentified graves, the reputational impact to the CWGC would be significant.

The ethics and approach to conflict dead, whether recent or archaeological, has had some discussion in academic literature, which could assist with addressing some of the ethical questions raised here.

Moshenska (2008, p.169) suggests that we consider what the dead themselves would have wanted. Would the contents of letters and papers from the deceased give a clue to their wishes and could these be followed? This could bring every aspect of the CWGC's work into question, as the number of soldiers who wished to be buried close to their homes must have been high. Another suggestion (Loe and Clough, 2020, p.172; Moshenska, 2008, p.168) is that relatives should make the decision about treatment of graves. While this may be possible for identified graves, it would be impossible for unidentified graves. It would also be difficult for this process to set a precedent which could be followed for the future, with some families choosing excavation and others undoubtedly choosing not to. Additionally it raises the potential to create further problems; if an individual has a marked grave but is believed to be buried in a different grave marked for another individual, who decides if it should be investigated? What if one family wanted an investigation and one family did not? Finally, not all bodies will have a surviving next of kin now 100 years has passed, so how should those graves be managed? Or is it acceptable to not investigate errors if there is no surviving relative to make a choice?

Blau (2015, p.225) has argued that the needs of the local community should be the main focus of any activity which does or does not take place. Whatever choices are made regarding graves from war and conflict, they will effect a range of communities, for both good and bad (Moshenska, 2014, p.178). Technology means we can identify bodies that would previously have been impossible to identify, however it can also reveal unexpected family histories and lead to disappointment for others (Scully and Woodward, 2012). Putting the needs of the community first would become more complicated when we consider the differing approaches that each nation takes towards their war dead. Some countries, such

as America and The Netherlands, are actively searching for remains of their war dead, and will complete excavations to locate bodies and confirm identities (Robertshaw, 2020). Other nations tend to have a far more passive and responding approach, where they will investigate and identify bodies which have been discovered but refrain from active searching. Alternate views are seen within different religious groups, with some groups agreeing with exhumation but others feeling bodies should never be disturbed once buried. How could these be incorporated into policy when dealing with unknown graves, where nationality and religion are unknown?

All authors here agree that, regardless of the policy which is developed, the most important aspect is around open and honest public engagement. Squires, Errickson and Marquez-Grant (2020a) recommend that greater transparency and collaboration is crucial for deciding how conflict graves should be managed. As the living are so often engaged with the treatment of the deceased (Blau, 2015; Moshenska, 2014; Robertshaw, 2020; Squires, Errickson and Marquez-Grant, 2020b), it does appear that public opinion could be beneficial in trying to agree a practical and appropriate response to concentration errors. Instead of trying to hide the mistakes which were made, now may be the time to be more open about these problems, why they occurred, and what they can tell us about the difficulties seen in concentration after the First World War.

The cemeteries of the CWGC are distinctive and iconic, and as with all cemeteries, are places of commemoration. Rather than being seen as cemeteries containing the graves of individuals, it may be more appropriate to view them as places of remembrance for the many soldiers that died during the war rather than the few who are believed to be buried there.

6.6 Connection to modern forensic archaeology

The concentration work that took place between 1919 and 1921 could be described as forensic archaeology due to the attempts to locate and identify buried human remains. It links directly to modern forensic archaeology, sharing many practices with modern forensic work, despite lacking the legal requirement seen in modern practice. Methods for dividing and searching the area have

changed little, although now there is the use of scientific technology such as geophysics. The examination of written records and eyewitness accounts will take place to establish the presence of graves and the circumstances of burial; this happened with the DGRE confirming chaplain reports and the number of graves present prior to a search. Importance was placed on careful excavation, to ensure that the entire body was recovered, and separated from other remains if present. Importantly, emphasis was placed on trying to confirm the identification of the individuals being concentrated. This is the same for most, but not all, modern forensic archaeology excavations. Most modern excavations are more likely to happen for legal rather than moral reasons; while identifying the deceased is important for family and friends, it can be more important to gather evidence of atrocities to ensure legal action is taken against the perpetrators (Haglund, 2002). First World War concentrations were the opposite of this. Gathering evidence of how or when a person had died was not the main aim, and the expectation from the public that the bodies of soldiers would be identified and buried was the primary driver.

Despite the similarities, there appears to have been no learning from the actions of concentration following the First World War. There is no evidence that the principles and practices developed were continued and adapted for domestic use; instead it seems that the skills were forgotten, allowing for archaeologists to re-invent the wheel several decades later.

6.7 The role of archaeology and data science in documented history

Limited details of the DGRE work survive in the archive material. The majority of the materials which have survived are organisational and there is very little that survives regarding the concentration work on an operational, day to day level. The work presented here has successfully used surviving archive data and concentration records, combined with data mapping to provide insight into the operational part of the process, to allow a better understanding of the concentration work, its effectiveness and its difficulties. It has shown that the concentration and identification of soldiers remains was not straight forward, and

that identification of bodies was a very difficult task. We can now see the way teams moved across the landscape and prove that some parts of the battlefield were searched multiple times. It has also explored the potentially high error rate and some of the reasons for these. It has demonstrated that while the IWGC knew that early concentration work had been of poor quality, the analysis here has started to quantify what that actually looked like and to give an idea of the extensiveness of the errors seen. These areas are lacking comprehensive records or literature, and therefore the research presented here has shed light on these areas for the first time.

More importantly, this project has demonstrated that there is a place for scientific research and archaeology when investigating the First World War, and that it should be used in conjunction with written records. The disciplines of scientific and historical investigation can be conducted together to provide a full and complete picture of historical events, and in the future should be used collaboratively.

This research also demonstrates the potential for First World War archaeology to explore other areas; so much of current First World War studies are focused on either the individuals who lived and died, or the material culture surrounding the conflict. This work highlights that it is possible and worthwhile to look beyond this and examine the communities, organisations and actions that took place.

6.8 Connection to heritage and commemoration studies

As shown in chapters 2 and 3, this thesis not only links to history and archaeology, but also to the themes of commemoration, memorialisation and heritage studies.

Chapter 2 demonstrated that the creation of war cemeteries, such as Hooge Crater Cemetery, was a reflection of the changing attitudes towards the deceased during the nineteenth and twentieth century, particularly the military dead. These cemeteries give the opportunity to understand how individual and state memory worked to influence the commemoration of war dead, and how this has changed over the last century. Studying the work of concentration has the opportunity to inform us not just about the equal commemoration of the dead but also where

inequality was experienced. For example, concentration can therefore contribute to the ongoing discussions around the contribution of colonial forces, their memorialisation and any racial inequality they may have faced when commemorating their dead.

Chapter 3 has shown how the approach to the management and interpretation of Great War archaeological sites has changed, and how they can contribute to greater discussions around commemoration and memory. These sites of heritage can be used to communicate information to the public, as well as provide information the written records are lacking. The work carried out here on the search and recovery of the dead from the landscape can contribute to the understanding of these heritage sites.

6.9 Future work

There are many directions that this area of study could take in the future. Initially, it would be useful to test a different sample of graves concentrated into Hooge Crater Cemetery to see if the results seen in this sample do reflect the entire cemetery. It would also be informative to carry out a similar assessment to the one seen here on other early and later concentration cemeteries in France and Belgium to see if the trends are consistent with other cemeteries, or if there is variation in dates or locations, and explore what may have caused this.

It would be beneficial to explore the possibility of carrying out more detailed statistical analysis on the sample presented in this thesis. Descriptive or inferential analysis could provide further insights into the significance of the relationships identified in this thesis, and identify any new relationships which may have been missed. Similarly, full GIS mapping of the graves presented would be useful to undertake, as this could explore the impact of additional factors such as underlying geology, local water tables and elevation on body identification.

It would be informative to explore the distribution of graves across the landscape further and identify all the graves within the immediate vicinity of Hooge Crater and plot where they were eventually concentrated and when. This would provide

more information on the searching that took place between 1919 and 1921, and may provide insight into the effects of seasonal change on searching.

The exhumations that took place at Hooze Crater Cemetery as part of the investigation in 1920 revealed some unique data on the state of soldiers remains and what constituted a body that should be reburied. This was based on a limited sample, so while it provided provisional results, further research in this area is required. As more First World War bodies are recovered from France and Belgium it would be helpful to do a comparison of the state of these remains with those seen at Hooze Crater Cemetery. This would provide further insight into how much body survived following deposition, and provide greater understanding of whether the concentrated bodies at Hooze Crater Cemetery are incomplete due to poor recovery, destruction following deposition or other unknown factors.

It could also be beneficial to carry out further archive research, to build a bigger picture of how the work of search and concentration was undertaken. Both the National Archives and Imperial War Museum archives contain unit diaries and personal papers of staff working in grave registration, burial and concentration during the war and afterwards. While some of these have been included and referenced within this thesis, further systematic analysis of these resources could provide additional data. This could shed further light on the practicalities of how areas which were being searched were chosen, how they were located, resources available and difficulties faced. It could also provide further insight into some of the more personal aspects, such as how difficult the work of concentration was in practice, how the individuals involved approached this work and their unique experiences which are not captured elsewhere.

Analysis of Hooze Crater Cemetery could also contribute to far wider historical and cultural discussions. One such topic would be the changing role and expectations of the UK military forces over time. While this thesis has explored the changing thoughts towards the war dead, we can also start to see the changing opinion towards the living. For example, the expectation that soldiers, potentially volunteers and conscripts, should excavate and bury their own dead has rightly changed, with a greater understanding of how activities such as this

can be so detrimental towards mental health in the short and long term. Greater understanding of the individual experiences of those working in concentration could shed light on how the expectations of the military have changed.

The work here could add to the discussion around state responsibility for its servicemen and women, and how this has changed during the twentieth century. It can contribute to wider discussions around mortuary culture within and towards the military over the last 100 years. With military deaths abroad comparatively rare now, UK forces moved to repatriation of their dead rather than burial abroad. This also links into discussions around public perception, as the thought of mass burials abroad now would be likely to cause outrage.

The review of burial practices following concentration, and the role of colonial soldiers in this process, should be explored further. The role of different colonial forces within the concentration and burial process can contribute to discussions about racial inequalities, colonialisation and discrimination. In addition, treatment of the dead from North American and Canadian communities versus the African and Asian communities could be highly insightful in this area.

Greater understanding of the treatment of the landscapes during and following the war, especially around the excavation of bodies and removal of small cemeteries, can add to the understanding of battlefield sites and heritage locations in France and Belgium. This additional aspect of the history of the land is rarely demonstrated at heritage sites, but could be included to aid interpretation, with the data explored and presented here giving greater understanding.

Finally, understanding the attitudes and treatment towards the war dead between 1919 and 1921 will provide more information to aid the discussion around ethics. The topic of ethics towards war burials has been slow to develop: the evidence provided here for how bodies were treated, and whether they were treated appropriately by historical and modern standards, could feed into ethical discussions moving forward.

7 CONCLUSION

This thesis aimed to study the process of concentration and identification that took place in France and Belgium between 1919 and 1921, using Hooze Crater Cemetery as an example. The novel research conducted here has expanded our knowledge of the concentration and identification processes followed and provides evidence for the first time on why identification rates varied.

7.1 Errors and their frequency

Looking at the research conducted here, we can see for the first time that at Hooze Crater Cemetery, errors in early concentration were commonplace, and varied in severity. Analysis of the 109 graves that were re-exhumed in 1920 reveal that the given identification was incorrect or had been missed for 12 bodies. This included five bodies that were being identified for the first time, with all five being identified through an identity disc which should not have been present if the body had been examined sufficiently during concentration. There were also 18 examples of graves that held no body, or just equipment and sandbags. This included the graves of three named individuals. These were all serious and significant errors, which directly affected individual graves and their next of kin. These graves which were subject to the most severe errors were all concentrated from different areas, and there was no link apart from exhumation being the work of the 68th Labour Corps. These errors can therefore only be blamed on poor examination during concentration, and confusion or poor record keeping at Hooze Crater Cemetery during reburial.

Errors of lesser significance were also seen, such as a missed nationality or regimental details being recorded. These errors are most likely to have been due to a lack of accurate record keeping or awareness that these details should have been recorded. Unfortunately, we do not know what instructions were issued to exhumation parties in early 1919, however they have been described as insufficient. It is likely that guidance on what data to record was missing.

The analysis here shows errors were seen to some extent in 38% of the graves that were re-exhumed. Until this work, it was not known how prolific and severe errors were.

7.2 Identification rates and methods

Analysis of the burial returns indicated that identification rates did change during the time that Hooge Crater Cemetery was open for concentration, and that this was linked to the change in identification methods used. In January, identification rate was calculated to be 40% but bodies were only identified through a cross. As shown in section 4.4.9, bodies identified through crosses were incorrect on 27% of occasions during the early concentration work, so it is highly likely that while the identification rate for January was 40%, those identifications are unlikely to all be accurate. The identification rate drops in February and then slowly climbs upwards. The increase seen in identifications correlates with the increase in the use of identity discs and personal effects, and the decrease in the use of crosses, as primary identification method. We know from the re-exhumed sample from Hooge Crater that identifications made through identity discs were reliable, so we can assume that the increase in identification rates will include more accurate identifications. The increase in identity discs and personal effects shows an increase in body examination that was absent in January and February, and will be responsible for the overall increase in identifications.

This work also shows the importance of the skill and training of the staff undertaking concentration and identification work. The lack of examination demonstrated shows a lack of training and instruction. The increase in identification rates over time, combined with the increase in identification through discs and personal effects, shows that exhumation staff were improving with time. This shows that identification rates were impacted by the staff undertaking the work.

7.3 External factors which impacted identification rates

One of the most significant outcomes of this research is the evidence it has provided about why some bodies were identified and why others were not. There

are three main factors that have been demonstrated here as effecting identification rates. The first was burial location, the second was the quantity of body present and the third was grave registration, which are all linked.

Identified bodies were present in higher numbers in areas located away from the front line, with bodies closer to the front line being identified less frequently. This is likely to be due to a combination of factors, including the level of later disturbance. Bodies buried closer to the front line were more likely to be subject to artillery fire and mine action regularly, which could completely destroy a body or cemetery. In comparison, bodies further from the front line were much less likely to be disturbed by this type of repetitive, destructive action.

Bodies further from the front line were also much more likely to be buried in a cemetery rather than a battlefield grave and were therefore more likely to be registered. As shown in section 6.2.3, the identification rate of graves not previously registered was lower (9%) than that of graves which had been registered (26%). Again, this will be partly due to being subjected to less disturbance, but also highlights the important role of pre-existing records with helping to identify the deceased. For example, if a body had been registered and later was recovered without any identifying features, but the nationality and regiment could be confirmed, supporting registration records could be used to suggest the identity of the deceased. In comparison, an unregistered grave would not have the same chances of being identified.

Finally, within this sample, the quantity of the body present was also directly linked to identification rates. Section 4.4.3 shows that at the time of exhumation in 1920, identification rates were higher (57%) in bodies which were complete compared to bodies which were incomplete (30%). Due to a lack of comprehensive data, it is not possible to know at what stage a lack of remains started to effect identification rates (for example would a body 80% complete have the same chance of identification as a body only 20% complete).

There are several reasons why some bodies were incomplete; this may have been due to poor recovery techniques during concentration, with some human remains being left in situ, or could have been caused by destruction from activity

after deposition. In some cases, the destruction of the body will have also destroyed information needed to carry out successful identification, and it may also be the case that partial remains were more difficult to examine.

When we consider these three aspects together, it confirms that the geographic location of burial played the most significant role in identification. Bodies buried in cemeteries away from the front line were more likely to be registered and less likely to experience partial destruction, which increased the overall chances of identification. It demonstrates that in this case, geographic location was more significant than environmental factors such as soil type and water. It shows that pre-existing records were incredibly important for identifying the deceased and must have been relied upon.

7.4 The role of records and data in historical and archaeological research

The final research aim for this thesis was to provide new information on concentration that was not held in the written records.

This thesis has successfully demonstrated how the landscape was searched in 1919 and used data to better understand those search processes. It has used the burial return forms to show how Hooge Crater Cemetery was constructed and where some of those bodies were concentrated from. For the first time it has provided evidence to support the theory that body examination and identification improved over time. It has also challenged some arguments, such as the idea that the fibre-based identity discs were damaged and destroyed too quickly to be useful for identification.

Moreover, this research has demonstrated the potential for data analysis and scientific research to contribute to our understanding of recent historical events. So much information survives from the First World War, yet the detail of how concentration took place and an assessment of whether it was successful has been mainly absent. This research has contributed to this discussion and shown the potential for data to be used to support, or contradict, the written records.

7.5 Wider relevance of this thesis

As shown throughout this thesis, the impact and understanding of concentration and body identification has links to many subjects and contributes to topics beyond First World War history and archaeology.

By examining the culture around death and burial of soldiers and civilians in the late nineteenth and early twentieth century, we can see an increase in the desire to commemorate individuals. This change, combined with the move towards more pleasant and permanent burial spaces and the influx of civilians into the military ranks, created a situation where old burial practices would no longer be acceptable. Instead, a move to a new type of permanent memorial was expected, which led to the creation of war cemeteries on a scale not seen before, reflecting the social and cultural demands of the time. Understanding this motivation is crucial to understanding why the DGRE and IWGC were created, and the pressure which was put on both organisations to accomplish the work of grave concentration and cemetery construction.

Cemeteries were designed to be a focus for individual and state memory, and to reflect the grief and loss of the nation. This thesis has shown the lengths that concentration and exhumation staff went to so each individual could have an identification, which demonstrates the importance of commemoration and memorialisation to individuals, families and nations at this time. This knowledge will feed into our discussions around commemoration, which in turn can assist with discussing the bigger concepts of equal commemoration, how it came about and if it was truly achieved.

This thesis has allowed for the interpretation of Hooze Crater Cemetery and other concentration cemeteries in a new way. It has highlighted the need to view them not just as cemeteries, but as memorial spaces for the dead and as a reflection of the desires of the living. It has added another layer to the story of cemetery construction, showing that cemeteries were not simply filled in an emotionless manner, but instead with thought and care.

It has challenged some of the modern assumptions around treatment of war graves, highlighting that much of the written history around Great War cemeteries and burials has failed to engage with and discuss the errors which are known to be present. This thesis has explored what those errors may look like, how they happened and the potential impact of these on modern day archaeology and cemetery interpretation. It has reflected that the decision not to discuss mistakes was an understandable but possibly not ethical choice, showing the political and reputational concerns taking priority over sentimental objections.

When looking at the committee hearing in 1921, it has allowed for a new interpretation of the evidence provided. It has shown that the information given at this important hearing was presented in a favourable manner, with the true scale of errors not being revealed. Interrogation of the document, combined with other archive research, has shown that errors were widespread, and reached far beyond Hooze Crater Cemetery.

It has also offered a different perspective when examining and interpreting war graves: most archaeological and historical studies on the Great War dead have been focused on the individual and how they died, and rarely consider how a body may have been recovered and treated following death. This shows that Great War archaeology does not align with mortuary archaeology, where the dead and their burial practices are viewed in terms of the society around them. This thesis has demonstrated that it is possible to view First World War graves from a mortuary archaeology perspective, and assess what a battlefield burial culture can tell us about society.

The link between modern forensic archaeology and grave concentration has been explored, with a focus on the similarity of motivation and activity: forensic archaeology, while being primarily concerned with the manner of death and body deposition, will normally see efforts to identify a deceased individual, which was the sole focus of exhumation and concentration after The First World War. As discussed, many of the processes followed by exhumation units are the same as those used in modern search scenarios, such as the use of flora to identify areas of potential decomposition.

It has also shown the contradictions between original exhumations for concentration and the modern archaeological excavations of the war dead seen today: the differences in motivations are reflected in the different approaches, with original exhumation teams accepting a dubious identification to potentially provide solace to a grieving family. In comparison, modern day excavations such as that seen at Fromelles will only accept an identification if it is shown to be 100% accurate. Knowledge of these differences could aid wider discussions around the methods and effort placed in identifying the deceased, particularly now that the sentimental need for families to have a grave has passed.

Finally, this thesis has explored the range and prevalence of identification errors which are known to have taken place during exhumation. Having provided evidence that errors were frequent, particularly in the area around Ieper and for early concentrations, it is clear that these errors can have an impact on modern efforts to identify the deceased. This knowledge can contribute to future discussions around the ethics of exhumation of Great War grave sites, and the likelihood of having an accurate identification versus disturbing the final resting place of a soldier.

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