Messines Model, Cannock Chase Staffordshire: Excavation and Survey 2013

By

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MESSINES MODEL. CANNOCK CHASE STAFFORDSHIRE

EXCAVATION AND SURVEY 2013

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SUMMARY

It has long been known that there was a Great War terrain model on Cannock Chase, indeed there are documents, photographic records, and oral histories to prove it existed. However, it was not until a small-scale investigation on the site in the summer of 2007 was undertaken by local enthusiasts that it was established just how well preserved the remains of it were. In 2013 Staffordshire County Council were successful in gaining financial support from Natural England as part of a Higher Level Scheme (HLS) to undertake an open area excavation and laser scan of the site. No Man's Land was commissioned to undertake the excavation and oversee the scanning element. The excavation was undertaken between 2nd-September and 2nd October followed by laser scanning and then a programme of full reinstatement.

The Messines terrain model lies approximately 1km to the southeast of Brocton and 400m to the southwest of Brocton Coppice in the heart of what was, during the Great War, Brocton Camp. The model also lay within the NZRB area of Brocton Camp and was situated immediately to the southwest of the Brigade HQ on the camp.

The monument itself is a three dimensional representation of the town of Messines and its surrounds, depicting the situation at around the end of May 1917, before the final bombardment of the town in advance of its storming. The topographic or, more properly in military parlance, terrain model includes a range of features intended to represent the Messines battlefield.

The model includes a sub-base sculpted from the natural sandy-gravel sub-soil. This was overlain by two layers of cement, a make-up layer and a finer top surface. The other features, including buildings, roads, defence works and railways are also established on this sub-base. It appears that the principal features were located first onto the sandy base and then the cement surfaces laid between them to create a hard surface. Elements of the pre-war landscape that survived are also shown; these include roads and tracks around the town, as well as buildings, in the town and farmhouses in the wider landscape. During excavation significant areas of road and track were identified. These routeways were shown by pebbles inserted in wet cement. The principal roads were some four to five inches (10-12cm) wide.

The town was surrounded by trenches which were depicted on the model using concrete gullies with a u-shaped section. The trench lines included Greek Key fire trenches with right-angle traces forming fire bays. These fire trenches were connected by communication trenches, which tended to be curvilinear or at more obtuse angles. The trenches depicted are almost entirely from the German defensive scheme; only one area of Allied line was identified. This was located at the south-west corner of the model and comparison with contemporary trench mapping shows it to be the trenches occupied the New Zealanders at the outset of the battle.

Over 130 individual volunteers took part in the excavation and reburial of the monument in addition to nearly 100 individuals from Jaguar Landrover as part of their corporate volunteer scheme, and regular volunteers from the Cannock Chase Warden Team. Over 7000 person hours were volunteered throughout the course of project. Regular specialist tours were given to groups including several local Western Front Associations as well as Friends of the Chase and members of the AONB partnership. Several local schools groups also visited, as well as the Cannock Young Archaeologists Club.

MESSINES MODEL, CANNOCK CHASE, STAFFORDSHIRE:

EXCAVATION AND SURVEY 2013

1 INTRODUCTION

During the Great War significant training camps and attendant facilities were established on Cannock Chase. These included two Divisional training camps, roads, railways, power station, rifle ranges, practice trenches and instructional trench models as well as the Messines terrain model.

One of the more unusual Great War features identified on the Chase is a scale model of a sector of the Western Front. Such models are known from Allied Reserve areas in Theatre where they were used for instructional purposes ahead of an offensive. A well known example was created south of Ypres in advance of the 1917 Battle of Messines, and the Australian War Memorial holds a number of photographs of troops inspecting the model (Plate 1). A second example is said to have been created ahead of the Battle of Cambrai (Peter Simkins, pers. comm.) also from 1917. However, neither model is believed to have survived and, perhaps more significantly, no other examples are known from the UK.

The Cannock model was constructed by members of the New Zealand Rifle Brigade (NZRB) who captured the town of Messines during the battle. The NZRB also used German PoWs, held in a nearby camp in Brocton Coppice, as labour. The model is known to have survived into the inter-war years when it became a tourist attraction with an attendant, Mr Ernest Groucott who acted as guide to the site.

Plate 1 Australian Troops viewing the instructional model at Petit Pont prior to the battle of Messines, Belgium (1917) Australian War Memorial EOO632

2 SITE LOCATION

The site is located on Cannock Chase, Staffordshire, close to Coppice Hill, and centred on NGR SJ 98049 19102 (Fig. 1). The underlying geology consists of Bunter Pebble Beds, and the present character of the site is open heath. The model was built on land held by the Earl of Lichfield. Its return to his land holding after the Great War and its continued use as a hunting estate may have influenced its continued survival into the 21st century.

Fig. 1 Site Location Plan

3 BACKGROUND TO THE PROJECT

It has long been known that there was a Great War terrain model on Cannock Chase, indeed there are documents, photographic records, and oral histories to prove it existed. However, it was not until a small-scale investigation on the site in the summer of 2007 was undertaken by local enthusiasts that it was established just how well preserved the remains of it were. Following discussions between English Heritage and the Landowners (Staffordshire County Council), Birmingham Archaeology in partnership with No Man's Land (the European Study Group for Great War Archaeology) were commissioned to undertake the re-excavation and recording of the area affected by the earlier dig. The combined team were also asked to prepare an intensive landscape survey of the immediate area to put the site in its localised context (Brown and Nichol 2007). This was followed up by an evaluation by Northamptonshire Archaeology in February 2012 (Simmonds, C. 2012).

In 2013 Staffordshire County Council were successful in gaining financial support from Natural England as part of a Higher Level Scheme (HLS) to undertake an open area excavation and laser scan of the site. No Man's Land was successful in the tender process and was commissioned to undertake the excavation and oversee the scanning element. The excavation was undertaken between 2nd-September and 2nd October followed by laser scanning and a programme of reinstatement of the site to natural heath.

3.1 Research Aims and Objectives

The purpose of the archaeological works was to:

- Confirm the interpretation of the site as being a representation of the Messines Ridge.
- Excavate and record the extent and layout of the terrain model and attendant features.
- Identify the range of building materials employed and the uses to which they were put.
- Gain a greater understanding of the Messines Terrain Model in order to interpret the site to the public.

Further objectives were to:

- Inform the future management of the site.
- Involve local interested parties to participate in the unearthing of the model.
- Involve stakeholders in the investigation and presentation of the site.
- Contribute to the future interpretation and dissemination of the site.

4 METHODOLOGY

4.1 Excavation

All topsoil was removed by hand and stored adjacent to the site for use in reinstatement following the excavation, this was followed by hand cleaning across all areas. Fragile areas were covered by tarpaulins to help protect the structure from adverse weather during the period between excavation and scanning. The whole model was cleaned prior to it being photographed by grid; subsequently the site was laser scanned.

Detailed field notes and sketch plans were made where necessary, and a single context recording scheme implemented. Due to the nature of the type of artefacts recovered from across the site 3D plotting was deemed unnecessary. A representative sample of

finds were chosen on a weekly basis. Archaeological works were undertaken to Institute for Archaeologists (IfA) Standards and Guidance for 'Archaeological Excavations' (2008).

4.2 Laser Scan

Once fully exposed the terrain model was scanned, the survey being conducted in accordance with current industry standards and guidance (EH 2011). A total of 20 scan positions were set out taking into account the topography of the area and the individual features of the Messines model in order to capture the highest amount of detail during data collection. Detailed laser scanning survey was carried out using the Faro Focus 3D Laser Scanner. Readings were taken at +/- 5mm accuracy across the site with data collected on the internal hard drive of the Scanner before being backed up on a SD Card.

The Faro Laser Scanner records a geo referenced 360degree panoramic image at each scan position, which was then used to 'colour map' the relevant laser scans. These provide the scans with a textured and photorealistic look after post-processing with the relevant software.

Plate 2 Laser Scan

4.3 Reinstatement

Following excavation and scanning a programme of full reinstatement was undertaken, which involved a series of protective layers being laid down across the site which was finally reseeded. Prior to reburial the model buildings were cushioned using bags of soil to help support the membrane and protect the walls.

The reinstatement process was detailed in the initial Project Design and was instigated following the agreement of the SCC Biodiversity Officer and colleagues at Natural England. The first layer was a Weedban 90 Landscape Fabric membrane which was laid over the model. The membrane is designed to allow air, nutrients and liquids to pass through to the soil, whilst restricting further root damage. This membrane was then covered by a layer of sharp sand (minimum c.50mm deep), which was donated by Cemex, Rugeley.

The sand was then covered with a galvanised rabbit proof hexagonal mesh, and the topsoil reinstated. The site was then re-seeded with a native heather and grass seed mix of native Calluna vulgaris (heather) seed to 3kg/ha and 2g/m2 of 50:50 50:50 Deschampsia flexuosa (wavy hair grass) and Agrostis capillaries (common bent).

5 HISTORICAL BACKGROUND

Prior to the excavation, it was widely believed that the Great War terrain model on Cannock Chase was a representation of the town of Messines (Mesen) and its environs. In modern Belgium, place names in West Flanders are given in Flemish, the official language of the Region, but during the Great War (1914 to 1918) they were officially known by their French names. They appear in their French spellings in British military documents and histories and are referred to according to this convention in this report. Flemish names in use today are given, where appropriate, in brackets.

Messines is one of the smallest towns in Belgium, hardly more than a village today. Its status as a town dates to the Medieval Period when an abbey was founded which meant that the settlement became a religious centre, as well as a focus for the local economy. The Abbey became the Institution Royale de Messines, with a charter from Marie Therese d'Autriche.

5.1 Army Training on Cannock Chase

Following the rapid expansion of the British Army after the outbreak of war in August 1914, there was insufficient accommodation for recruits and a lack of training areas for the transformation of civilians into soldiers (Simkin 2007, 231-244). The Army approached private landowners, including those on whose land manoeuvres had previously taken place, to host training for the New Armies. One such individual was the Earl of Lichfield, landowner of Cannock Chase (Whitehouse & Whitehouse 1996, 3).

Two camps capable of holding up to two divisions were constructed on the Chase. Brocton Camp was constructed around the Old Acre Valley, and Rugeley (or Penkridge Camp) was built in the vicinity of the White House and Penkridge Bank. Both camps were designed to house 20,000 men in each and comprised wooden barrack huts, workshops and stores, served by a purpose-built infrastructure of roads, light railway, power station and sewerage systems. The camps also contained shops, a theatre and YMCA huts. Recent research at the Staffordshire Record Office (SRO) has also revealed plans (dated 1915) for a 1,000 seat cinema near Brocton although it is not known if these were ever realised (Dean pers comm. March 2014). A hospital was also constructed on Brindley Heath to treat both the men training on the Chase as well as casualties evacuated from the continent (Op. cit. 4-5).

These works represent the largest development on the Chase, before or since, with troops beginning to occupy the camps from spring 1915 onwards. In addition to these works a series of training facilities were also created, including rifle and bombing ranges and, during the lifespan of the camps, networks of practice trenches that replicated the field fortifications that characterised the conflict (War Office 1921).

Both camps continued in use throughout the war and were still occupied into 1919 by troops awaiting demobilisation, including New Zealanders, before their passage home. Part of Brocton Camp was also used for the internment of German Prisoners of War from 1917 onwards (Whitehouse & Whitehouse Op. Cit. 10-11).

5.2 The Battle of Messines

The town of Messines (Mesen) is situated on the Messines Ridge in the south of the Belgian region of West Flanders, to the south of Ypres (Ieper). During the Great War it formed a strongpoint in the German defences in Belgium and was the scene of fierce fighting in 1917 during the Battle of Messines, which was a prelude to Third Ypres, more commonly known as the Battle of Passchendaele. The town was occupied by the Germans in autumn 1914, following its defence and loss by British troops (Oldham 1998, 18). The ridge afforded the Germans a strong defensive position and provided a good vantage point for observation into the British sector around Ypres, which sat at the centre of a British occupied salient (projecting feature) in the battlefield. The Ridge overlooked the southern portion of the Salient. Any attempt to enlarge the Salient would have required the capture of the Ridge as a precursor to a wider offensive in front, and to the north, of Ypres.

Plate 3 Trench Map showing details of the town of Messines and the surrounding fortifications (From Map 28 SW4, Edition 4B, 01/04/1917)

The town of Messines and the ridge on which it sits were in Allied hands until the end of October 1914. From October 21st concerted German efforts began to drive British troops from the high ground to the south of Ypres (Oldham 2003: 13). British troops were reinforced by a formation of Indian Army troops, including the 129th Baluchis and 9th Bhopal Infantry. Concerted efforts were resisted until the 30th October when a major offensive was launched against the ridge, between Hollebeke and Wytschaete. Messines was held by elements of the British cavalry and the 2nd Battalion (Bn) Inniskilling Fusiliers, as attack faltered and defence weakened both sides brought up reinforcements, including Territorials from the London Scottish, and regulars from 2nd Bn Kings Own Scottish Borderers and 2nd Bn King's Own Yorkshire Light Infantry. Desperate fighting by the London Scottish ensured Messines remained in British hands but the loss of Wytschaete and ground to the north of Messines resulted in a withdrawal to Wulverghem at the foot of the ridge (op. cit: 15-18). The German forces now controlled the Messines ridge, with the Allies holding the ground beneath it. Only Hill 63, above Ploegsteert (Plugstreet) Wood gave any high ground to dominate the Douve River and restrict

German activity towards the river and the British trenches. By Christmas 1914 the line had settled and solidified and both sides took time to regroup and retrench, sometimes literally, allowing the opportunity for the famous truces to occur. Men of 6th Bn The Cheshire Regiment were initially suspicious of German advances toward their position at Stinking Farm but eventually a short truce ensued, including recovery and burial of the dead, swapping of souvenirs and a football match. The truce lasted a matter of hours (Oldham op. cit: 23-24). This section of line saw a number of other documented cessations of hostilities, such as cartoonist and officer Bruce Bairnsfather's strange meeting in a turnip field at St Yvon (Brown & Osgood 2010: 23) or 2nd Lt Holroyd's meeting with the enemy at Ploegsteert/Plugstreet (Brown 2004: 264-265).

The stalemate that had developed left two large salient in a long, sweeping reverse S curve: the Ypres Salient bulged eastwards around the medieval city before curving back to Mount Sorrell and Hill 60. From Hill 60 the trenches swept south-west to Wytschaete and south around Messines and then down the forward slopes of the Messines Ridge toward Plugstreet Wood. The Germans occupied high ground on three sides around Ypres. Their command of the Messines Ridge ensured that the southern arm of the salient could not be flanked from the south. Messines itself acted as an anchor, dominating ground to south and south-east. The Wijtschatebogen (Wytschaete Salient) allowed the Germans to enfilade the Ypres Salient and overlook its southern salient. The Germans were aware of the potential for Allied assault (Sheldon 2007:1). As a result they took great pains to fortify the ridge. At Messines the Germans prepared to defend the town by digging trenches and erecting barbed wire entanglements, but also by erecting concrete bunkers and strengthening both cellars and standing buildings to create shell-proof troop shelters and blockhouses. They also sought to create a wider fortified landscape, with successive lines of defences according to a doctrine of Defence in Depth (Griffith 2004: 15-17, 49-54; Turner 2010: 20-21, Passingham 2000: 75).

In order to take pressure off Ypres, plans were formulated to recapture the Messines Ridge and then push out from the city to take the Pilkem Ridge and Passchendaele, from where a breakout could be made. The original plans also included an amphibious landing on the Belgian coast to further pressure the Germans and to neutralise U-Boat bases in the Belgian ports (Passingham op. cit: 16-17). However, the ambitious plans relied entirely on breaching the German defences and successfully assaulting the slopes of the Ridge. Without effective neutralisation of the German defences, the carefully prepared positions and trenches, with their interlocking fields of fire would decimate the attackers (Turner op. cit: 36-37). In order to achieve the effective breach of the German lines a formidable array of weaponry was assembled including artillery working in close concert with infantry, an air arm and, most famously, the mines that had been laid beneath the enemy trenches after months of tunnelling (Griffith 1998: 85-86, 199). Meanwhile, tanks were also available in significant numbers (Passingham op. cit: 52-53). The technological arsenal was designed to enable and support the infantry to remove and pierce the German lines, as was a significant training programme that included extensive rehearsals and the use of the tactical models of the battlefield such as that created at Petit Pont and viewed by all ranks (Passingham op. cit: 29-34; Brown & Osgood op. cit: 49-51).

The soldiers facing the Ridge were integrated into Second Army under General Plumer and they included troops from Ireland, New Zealand and Australia, as well as England (Passingham op. cit: 27-39). The troops were arranged in Corps – from north to south of the Salient X, IX and II Anzac, although II Anzac included 25th North Western Division, who were mostly Cheshire and Lancashire men (Turner op. cit: 33-34). The New Zealanders were composed of three Brigades, 3rd NZ Bde being made up of 1st, 2nd, 3rd and 4th Battalions, New Zealand Rifle Brigade (Ibid.). Facing them was the German Fourth Army commanded by Sixt von Arnim. This formation was referred to as Army Group Wytschaete (Turner op. cit: 35) and the defenders of Messines were composed of men from the 3rd Bavarian Infantry Division with 1st Guards Division in support (Sheldon op. cit: 2).

The long-expected and long-planned attack began on 20th May 1917 when Allied guns began to bombard the Front in earnest until eventually some three million shells had fallen on the Ridge (Sheldon op. cit: 1, 3). German eye-witness accounts attest to the effectiveness of the fire, telling how blockhouses and other positions had been identified and were targets for accurate fire and how the intensity of fire increased in crescendo (Sheldon op. cit: 3-7). Finally, the mines were detonated at 03.10 hours, being fired from north (Hill 60) to south (Factory Farm) at short intervals (Brown & Osgood op cit: 57-60). Numerous German accounts describe the power of the blasts and the ensuing confusion (e.g. Sheldon op. cit: 5-6, 8, 11-19). This shock and awe provided the Allied troops with the wherewithal to storm the ridge – wire had been broken, trenches smashed and concrete emplacements battered, while the effect of mines, even where huge breaches had not been smashed though the line, killing thousands, was to psychologically and emotionally overwhelm significant number of German defenders, weakening, if not destroying their will to fight. This shock and awe, taken with the extensive training in Britain and in theatre carried the infantry forward (Brown & Osgood op. cit: 31-49). Meanwhile, the close support of air power and armour enabled the troops to maintain tempo (Passingham op. cit: 119).

Despite the mines and barrage, the Germans of 18th Regiment put up a spirited defence of Messines itself (Sheldon op. cit: 11-12). New Zealand 1st Brigade assaulted the centre of the town with 2nd and 3rd Brigades flanking to left and right respectively. It was on the southern side of the town that Lance Corporal Sam Frickleton won his VC when his section overcame two active machine gun positions that had been inflicting heavy casualties on the attackers. Within the town, the defended cellars, often linked by connecting tunnels, and defensive positions in doorways and rubble demonstrated the German skill in defence but they were systematically bombed out of the cellars and ejected from the town (Passingham op. cit: 112, 114, 117). The final coup for the New Zealanders in the town was the capture of the Commandant of Messines (Orstkommandant) and his Staff in a large bunker beneath the Institution Royale (Oldham op. cit: 85). Moving eastwards from the town centre the Blauwen Molen was stormed. This windmill complex was a fortified position in use as an artillery headquarters, which swiftly became a Regimental Aid Post (Ibid.). Fanny's Farm was identified as the final objective for the day for the New Zealanders and this was subdued and captured after some resistance that required the attackers to bring up a tank, whose appearance led to the surrender of 100 defending Germans (Passingham op. cit: 124). The success across the Front was remarkable. The "Black Line" objective, intended to be the objective at the end of Day 1 was in Allied hands by 11.30 hours. While the advance then moved forward to the German defences of the Oostraverne Line (Passingham op. cit: Map 20) the gains were fortified against German counter-attack, with trenches, observation posts and emplacements erected by Divisional Pioneers (Passingham op. cit: 128; Brown & Osgood op. cit: 91-94).

The nature and success of the action of 7th June 1917 was the product of precise and careful planning by Plumer and his Staff that was communicated down to the troops involved in the assault. It was also the result of effective training that allowed troops to simulate and rehearse the attack. For the New Zealanders the attack included three separate phases of combat: trench warfare; Fighting in Built-Up Areas (FIBUA or Urban Ops in modern military doctrine) and finally mobile warfare from the town to the Black Line. Within one morning the New Zealanders had experienced a concentrated combat experience unfamiliar to the majority of troops on either side in the Great War to that point. The success of the soldiers (exemplified by Frickleton), the unique character of the action, the relative inexperience of the troops and formations that had only been raised after the outbreak of war, may well have provided the impetus to use the action as an exemplar in training. It would also have led to a desire to commemorate the achievement of those involved.

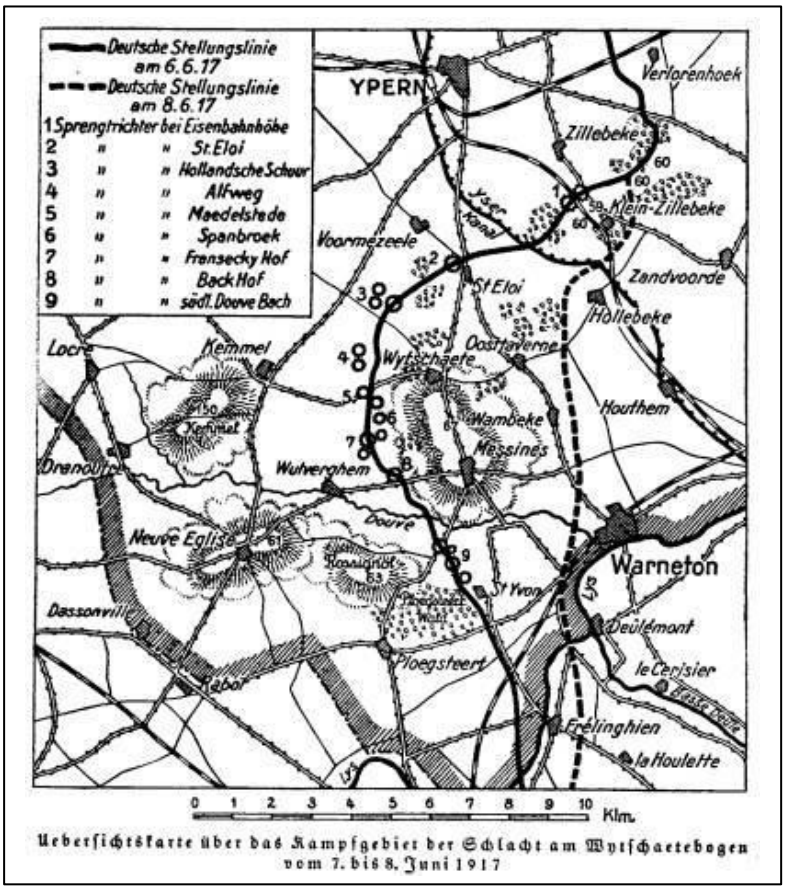


Fig. 2 The Battle of Messines, showing mine craters, villages and the trench lines (solid black)

5.3 New Zealanders on Cannock Chase

In September 1917 5th Battalion NZRB were based at Cannock to train drafts before their departure for the Front (Whitehouse and Whitehouse op. cit., 26). During this time and until their departure for home in May 1919 (Ibid.) they were based at Brocton Camp on Cannock Chase.

5.4 Brief History of Terrain Models

Terrain models were, and remain, an important tool for the preparation of military operations, particularly in respect of the briefing of troops before an action. They take many forms, including small wooden and clay scale models of the theatre of operations but larger scale models created by landscaping ground to resemble the battlefield are less common, though not unknown. They are an idea as old as organised warfare, allowing the principal agents in military planning and action to achieve an overview of the theatre of operations. They allow the officer corps, and sometimes troops (as at Petit Pont) to pick out landmarks and salient features, to identify objectives and to demonstrate movement. The 21st century soldier may have access to 3D modelling based on GIS, satellite imagery and LiDAR but where and when computers have not and are not available; the terrain model remains the most effective briefing tool available. Indeed, in an age before the aeroplane these models afford otherwise impossible views and as Susan Stewart has observed, the model or miniature offer a complete view in contrast to the partial, enclosed view that one might otherwise experience within the landscape being depicted. This sort of miniature includes the architects' models created to render proposed development in three dimensions, as well as the military terrain model.

The Musée des Plans-Relief in Paris currently holds one hundred models of fortified towns located along historic French borders; these highly accurate models depicted not only the town but the landscape in which it sat (Pearson 2002, 227). The level of detail contained within these models was exceptional but the type of information portrayed was influenced by the models purpose (amongst a variety of factors) and model makers and those who commissioned them were often under pressure regarding the reality that their models portrayed. However, terrain models need not be so grand and, indeed the Plans Reliefs are an unusual anomaly, created not only in preparation for operations around each town, but also as a symbol of power by the regime of Louis XIV. More frequently terrain models are rendered close to the point of action as briefing tools. They may be created from materials to hand, including rubble, dirt and elements of personal equipment: the author has seem British troops in training use rucksacks, orange mine tape and brick ends to render a depiction of the training environment. Other, more formal models may be created using sand, modelling clay and afford a more accurate depiction. Nevertheless, these models are temporary creations, made with a specific operational objective. While these may depict limited objective, the identified 1917 examples from Messines, Arras and Cambrai create landscape scale miniatures used for widespread dissemination of information (Brown 2012). A such, these models should be regarded as part of the evolution and continuous improvement of military training and operations within the British Army during the Great War, sometimes referred to as "The Learning Curve". They were a new creation during 1917 and demonstrate a new confidence in the ability of soldiers to understand and act upon information not imparted to the New Armies before the Somme.

In addition to the operational character of these models there may also be a wider didactic purpose beyond those military personnel engaged in operations. In addition to the Plans Reliefs mentioned above, Captain William Siborne's Waterloo Model - today displayed in the National Army Museum at Chelsea - is perhaps the most famous example (Hofschroer 2005) which depicted the 1815 Battle of Waterloo at the moment of Crisis. Famously, Wellington refused to engage with Siborne and then criticised him for including more Prussian troops on the field than he felt necessary. His objection was that too many Prussians reduced his claim to have been Victor of Waterloo alone and, as the model was to be publicly displayed, his own reputation as a general could be damaged, as his political reputation had similarly suffered. Wellington ruined Siborne's career, but not before two models had been created, one more to the Duke's liking, and both based on a detailed topographic survey of the battlefield. Importantly, Siborne's survey and models were undertaken before the construction of the Prince of Orange memorial mound and they depict the battlefield more closely to its 1815 appearance than any subsequent survey. Siborne's model had dual purpose: it was originally designed to be used by the Royal united Services Institute for military instruction; its subsequent public display made it a tool for wider understanding and, at the same time, an entertainment too.

This process also continues today: a 2011 edition of Time Team explored a German anti-aircraft position on Jersey and landscape archaeologist Stuart Ainsworth created a military terrain model of the site and the emplacements and facilities within it, not only recreating a military briefing tool of the era but also enabling the viewer to get an overview of the site unencumbered by 70 years of vegetation growth. Similarly, in 2010 Home Guard re-enactors recreated a 1940 training school that had been extensively documented in Picture Post (Winteringham 1940). The activities included study of the model of a small English village, showing a column of enemy tanks advancing and expecting public and re-enactors alike to explore options for defence. This exercise in historical recreation and public understanding was a direct replication of a deadly serious exercise undertaken at the school in anticipation of a German invasion. Nevertheless, this 1940 model had a wider propaganda value beyond its training value. The readers of Picture Post genuinely feared German invasion and their morale had suffered a severe blow during the retreat to and evacuation from Dunkirk, the article was meant to show that the Home Guard was prepared

to fight and was taking training seriously, even if the actual situation was more desperate than the magazine was prepared to intimate.

Tactical models may come in a wide range of forms, scale and permanence and it becomes rapidly apparent that while some tactical models may have an immediate and very temporary use, others have a continued life, changing meaning and may gather a variety of uses. In the context of the Great War the value of the tactical model, as well as the techniques available to facilitate accuracy become apparent. In a landscape of trenches, where views were severely limited by traverses and trench walls and where to raise one's head was to invite death by a sniper's bullet it was impossible to gain an overview. Even OGS Crawford discovered the hazards of trying to see over the parapet before his transfer the Royal Flying Corps gave him the bird's eye view he was to value for the rest of his life (Hauser 2008:32). In contrast to the world of mud, revetting materials and the sky above, the terrain model affords the soldier something available only to pioneer airmen who created the air photographs from which highly accurate mapping and model could be created (Chasseaud 2013: 10-14).

Plate 4 View across the model looking north-west with the village of Messines visible centre right. A sign shows the model to be Out of Bounds

(National Library of New Zealand 1/2-013854-G)

6 RESULTS

6.1 Archaeology

The Messines terrain model lies approximately 1km to the southeast of Brocton and 400m to the southwest of Brocton Coppice in the heart of what was, during the Great War, Brocton Camp. The model also lay within the NZRB area of Brocton Camp and was situated immediately to the southwest of the Brigade HQ on the camp. The model was in part cut into the surrounding landscape and this excavation formed a 'raised' viewing

area along its eastern border (Plate 5) with access down to the model at this side via a series of steps. The site measured 30m by 36m (Fig. 3)

Plate 5 Aerial photograph of the excavation

The monument is a three dimensional representation of the town of Messines and its environs, depicting the situation around the end of May 1917, prior to the final pre-battle bombardment of the town (see Discussion below). The topographic or, more properly in military parlance, terrain model includes a range of features intended to represent the Messines battlefield. From the south and west, the model's sculpted base rises to a plateau on which the town is located. This is the scarp slope of the Messines Ridge and its dip slope falling gently to the east and north-east.

The Messines Ridge itself rises to the north from the Douve River and to the west by its tributary the Steenbeek. The scarp slope rises sharply from the river to the town. In the east the ground falls gradually away forming a dip slope that ultimately joins the plain of the River Lys, which forms the Franco–Belgian Border.

Fig 3: (Following Page), the Cannock Chase Tactical Model, as excavated; plan recorded and generated by CFA Archaeology.

Allied Lines
(NZRB jumping off point)

See inset

Snipers's House

Armentierssteenweg

Mesenstraat

Leperstraat

Market Square

Site of Church & Institutions

Komenstraat

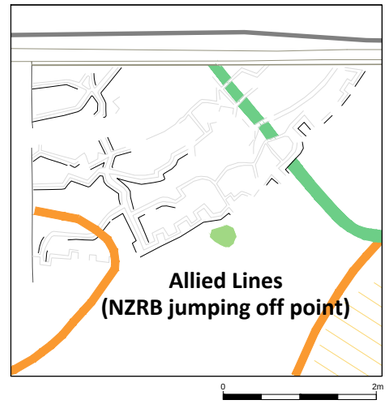
Base of Groucott's Flag Pole

Fanny's Farm

Rijselstraat

Waastenstraat

Groucott's Hut



- Road & Tracks (pebbled)
- Trenches
- Single line pebbles (Contour Lines)
- Walls
- Trench Railway
- Surviving Concrete
- Drain
- Groucott's Repair
- Extent of spread of material by Groucott outside his Hut
- Features
- Tree Stump
- Animal Burrow

0 5m

In 1917 German fortifications surrounded the town. The most significant defences were created to the west and south of the town facing the Allied trenches across the valley. There were also trenches and fortified farms to the north and east which served to protect the town from flank attacks, principally from British-held Ypres to the north, and from trench lines opposite Wytschaete to the north-west. In addition, these defences formed part of a wider system of defence-in-depth that was employed by the Germans to soak up and wear down Allied assaults (See Historical Background).

The troops employed in the fortification and garrisoning of the fortified town required regular supplies of food and materiel to sustain both body and the capacity to fight, as well as engineering supplies to create trenches and reinforced concrete shelters and bunkers. To this end, roads were maintained wherever possible but both sides also created networks of trench railways to facilitate the rapid movement of larger quantities of material than would otherwise be possible by motor lorry, horse or on the backs of soldiers.

The excavation of extensive networks of trenches, building of light railway networks and the erection of forests of barbed wire intended to disrupt attacks was visible to the enemy observing from their own lines. In previous static or siege warfare the only views of enemy preparations were available from higher ground but the advent of the aeroplane had brought about the ability for both sides to fly above the battlefield, to take high quality photographs and, from these, to create detailed maps of the Front, overlaying fieldworks onto the pre-war maps of the combat zone (Chasseaud 2013: 6-19 & 228-230) and it is from these maps and aerial photographs that the model was created. As such there are a number of features that might be expected on the model and others that might be anticipated.

6.1.1 Superstructure

The model was constructed on a sub-base sculpted from the natural sandy-gravel rich bunter bed sub-soil. This was overlain by two layers of cement, a white lime-rich make-up layer and a finer top surface with a more orange appearance (Plate 6).

Plate 6 Section of concrete super structure showing both layers

One of the more surprising features that was noted during excavation was a possible hobnail boot imprint in the upper surface of the cement finish – probably from one of Kiwis or German PoWs involved in the construction of the model (Plate 7).

Plate 7 Possible hobnail boot imprint

All other features, including buildings, roads, defence works and railways are also established on this sub-base (Plate 8). It appears that the principal features (buildings, roads etc) were built first directly onto the sandy base with the cement surface being laid between them to create a hard surface. Survival of the cement skin of the model was patchy, but it survived particularly well along the western and southern sectors of the site.

Plate 8 Showing the main components of the model: Buildings, Roads, Trenches and Contour Lines and Field Boundaries.

Excavation also revealed that the limits of the model were defined by drainage ditches on all four sides. Sampling of the drains revealed that they were contemporary with, and integral to, the model. The northern and eastern sides had bowl-shaped profiles with the natural bunter pebble beds visible in their bases (Plate 9A and B below). The southern drain was constructed completely from concrete and had straight sides and a flat base (Plate 9C). Similarly the western side had straight sides and a flat base, however, this

side had been constructed using re-used bricks and 1" thick concrete slabs (Plate 9D). All the ditches were filled with dark silt (north 1002, east 1005, south 1004 and west 1003). Artefacts recovered from the ditches included a propelling pencil from 1003 and oil can from 1004. All ditches were sampled, not fully excavated.

Plate 9 Details of the drains

6.1.2 Roads

The town of Messines grew up around the cross roads of two principal routeways. The main north-south road linked Ypres in Flanders with Le Bizet and Armentieres on the Belgian-French border, the east-west road linked Comines in the east with Wytschaete to the west.

Roads and tracks were picked out in strips of pebbles. The principal roads were generally five inches (c.15cm) wide (Plate 10) with lesser roads measuring four inches (10cm) across. There has been some discussion about whether the roads were cast off-site and had been delivered in sections, like the rails of a model railway, but inspection of broken sections that had been displaced from the monument revealed an uneven, pitted underside with small gravel fragments adhering to it, suggesting that the cement was poured into trenches excavated on the lines of the roads. The pebbles were presumably then inserted into the wet matrix.

In some areas the pebbles appeared not to have been well-set, perhaps because the cement was too dry or not well mixed. In these areas the pebbles had come away from the base, leaving the indented cement surface to indicate the former line of the road. That the work has been undertaken in sections was apparent in areas where there were clear breaks visible that did not appear to be the result of wear and tear. Although there must have been areas where the roads in the actual landscape were battered beyond recognition in the landscape, the model depicts the roads as intact, perhaps because they served as landmarks.

Plate 10 Section of road surface and underside

6.1.3 The Town and Buildings

Buildings were depicted, for the most part, as ruinous and the reasons for this are discussed in the Historical Background section below. They were constructed first directly onto the natural subsoil and then the concrete skim was laid around them. The structures were made from a range of materials which included re-used house bricks, large Bunter pebbles with mortar around them, to which smaller pebbles and brick fragments had been added (Plate 11). Some buildings were shown with smooth sides for the walls, but the extent to which these external walls were depicted varies across the monument. Buildings in the town centre are shown as surviving only to first floor level. Where buildings were depicted as ruinous brick fragments appear to have been added to the top of the building to indicate rubble.

Plate 11 Depicting the variety of building materials used in the construction of the buildings

In some cases there was a remarkable level of detail shown in individual buildings. A range of buildings fronting the road running north from the town toward Ypres included doorways moulded into the cement surface. These are not considered to be whimsy as communication trenches spring from them to connect the buildings to a trench line a little way to the west (Plate 12). A further building in the lane between the Warneton Road and the north corner of the market place also had a doorway shown. The reason for this cannot be ascertained but it may be that this particular doorway had been an important element in the fighting that the New Zealanders wanted to memorialise within the town.

Plate 12 Depicting entrances to the rear of buildings that front onto the main street of the town.

Only two buildings are known to have been originally depicted as complete structures on the model; these were the church in the town and the Blauwen Molen to the north-east. The church is visible on photographs of the site, including The New Zealand Archives image of the construction of the model and the post-war image held by Staffordshire County Council. Examination of the images suggest that the church was not an accurate representation of the Abbey Church of Messines, as it appears more like a generic English parish church with nave and offset tower, while it lacks the distinctive cap on the tower that was and is once more a feature of the church (Plate 13).

Plate 13 Messines Church today

The area where the church should have stood was completely devoid of any footings, which concurs with oral and pictorial evidence which suggested that the church was removed from the site wholesale. This was confirmed when a visitor to site showed members of the team photographs of the church in a garden in Brocton (Plate 14). The

image is courtesy of Mrs Mary Nicholls and was taken somewhere between 1980 and 1990, when they moved and the model was broken trying to move it.

Plate 14 The church from the model after it had been relocated to a back garden in Brocton

A photograph shown to the authors by Richard Pursehouse also appears to show the Blauwen Molen shown as a recognisable windmill. It is possible that these buildings were depicted intact to enable better orientation for viewers using the model for training purposes.

Two other buildings were found in-situ during the excavation, and a third out of context in the drain running along the southern extent of the site. Fanny's Farm was located in the north-eastern periphery of the site. It was shown on the model as an L-shaped structure surviving to roof height, with elements of a fragmentary pitched roof moulded in concrete surviving (Plate 15A below). What would have been the rear of the property

had been cropped so that it was in line with the northern drain of the model.

What is referred to as 'Sniper's House' on the trench maps was located on the western side of the site. It was represented by a single house brick with small fragments of broken brick mortared adhered to the top (Plate 15B below).

What is believed to have represented Douve Farm was recovered from the drain on the southern edge of the site. Its exact location on the model could not be re-established so it was removed from the site as an artefact. It was almost triangular in plan (Plate 15C below) with broken bricks on the top showing that it was roofless at the time of the battle.

Plate 15 Individual buildings

6.1.4 Associated Landscape Features

In addition to buildings and roads there were other landscape features built within the environs of the town. Yard surfaces, the market place and the square in front of the church were all picked out as cobbled areas by using pebbles in the same way as the roads.

Plate 16 Elongated pond to the southwest of the town

Within the town a number of elongated ponds are depicted. These include one at the east end of the market place, where the war memorial now stands in the modern town. Other long linear ponds were shown immediately south of the Institution Royale and to the south-west of the main cross roads (Plate 16), this pond was associated with the remains of the moat which surrounded the town in the medieval period (Plate 17 below).

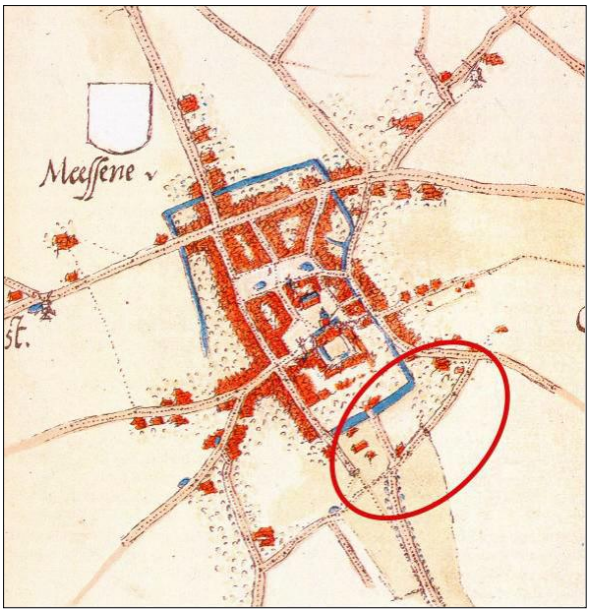


Plate 17 16th-century plan of the town of Messines showing the extent of the moat around the town with the area depicted as a pond on the model highlighted.

A much smaller circular pond (Plate 18) was also depicted to the southwest of the town – close to the line of the Douve (the drain in the southwestern part of the model).

Plate 18 showing small circular pond in the southwestern pond of the model

6.1.5 German Defences

The town was, as has been noted, surrounded by an extensive system of German trenches. These were depicted on the model as concrete gullies with a u-shaped profile. The trenches appear to have been manufactured off site as they had smooth external

faces and bases that suggest they were moulded, unlike the road sections (above). The trench lines included Greek Key fire trenches with right-angle trenches forming fire bays. These fire trenches were connected by communication trenches, which tend to be curvilinear or at more obtuse angles.

Supporting the German trench lines were a number of trench railways. Historically these were light railways using rolling stock typical for pit heads and large factories. These railways were identified on the model as linear cement features with insets into the surface of the cement. In some places the lines are set in trenches, such as toward the southeastern corner of the model, but in other areas the railway ran at ground level (for example running westwards from the town on the plateau or to the east of the town in the area toward Bethleem Farm, where a junction is depicted (Plate 19).

Plate 19 Trench railways and road, including the railway junction circled in red.

The railways are indicated by indents in the cement that resemble piano keys. These were thought to depict the sleepers of the railway lines but close examination of the photograph depicting the construction of the model shows short pieces of wood connected by parallel wires. These are believed to replicate the rails and sleepers of the line. Neither of these elements was found in any of the railway sections identified and this is likely to reflect their fragility.

Other elements of the German defences were not depicted. Large areas of barbed wire entanglement are visible on aerial photographs and appear on the maps but evidence for these was not detected during the excavation. Depiction of such a feature would be difficult in a model open to the elements; a museum diorama might use narrow gauge wire, such as fuse or telephone wire but this option was probably not open to the terrain model makers. Wire was such a feature of the battlefield one might wonder how it was depicted, as it would be necessary on a training aide. Whether this was achieved by paint, tape or simply by the trainers' words remains unknown but no paint was identified anywhere on the model. In addition, no regular patterns of stake holes to which wire would be attached were identified, nor were traces of paint, though this would have been susceptible to wet weather.

As well as wire and trenches the German defence scheme included a series of concrete bunkers, such as those currently preserved in the New Zealand Memorial Park at Messines. No definite remains that may have served to specifically depict these bunkers was identified on the model.

The terrain model was based at least in part on maps. This is underlined by the presence of contour lines on the model which were depicted by use of single lines of pebbles that could be followed on the trench maps. The addition of contour lines to the model may have been to as an aid to train troops in map reading and in appreciating the tactical opportunities afforded by landscapes as well as enabling them to orient themselves in three dimensions.

6.1.6 Allied Lines

The trenches depicted were almost entirely from the German defensive scheme; only one area of the Allied line was identified. This was located at the south-west corner of the model and comparison with contemporary trench mapping shows it to be the trenches occupied the New Zealanders at the outset of the battle (Ploegsteert 28 S.W. 4. 1/4/1917) (Plate 20).

Plate 20 NZRB jumping off trenches in the foreground

6.1.7 Other Contemporary Features

It has been suggested by several parties that a compass point may have been incorporated into the overall design of the terrain model so that training troops could orient themselves both on the ground and on maps. Immediately to the south of the Allied line depicted above was a blank area, where the allied lines appeared to have been cut as if abutting a feature. It appears to be the most logical place to put a compass point, although unfortunately no evidence of it survives on the ground.

6.1.8 Post Great War features

Only one post-war feature was identified. This was Ernest Groucott's hut, which was constructed as a semi-sunken building inserted into the north eastern corner of the model (Plate 21). Ernest Groucott was a former guardsman who drove officers around

the Chase when the camps were operational and took an active role in the decommissioning of the Camps at the end of the war.

Plate 21 Lee Dent holding the image of Groucott's hut from The Chase Project Archive

Although the corrugated iron superstructure visible on the photograph above had gone, the foundations, floor and hearth were all identified. The use of concrete blocks seen elsewhere across the Brocton Camp area indicates that Groucott reused material from the demolished buildings (Plates 22 and 23).

Plate 22 Groucott's hut looking south-east

Plate 23 Details of re-used materials in Groucott's hut

In front of the hut an area of crushed packed material from the cement surface of the model, overlay the trenches south of Fanny's Farm. This appears to have been a yard surface associated with the hut (Plate 24a). The material may have derived from Mr

Groucott clearing areas of the model (which had presumably become badly frost damaged) in order to keep the monument looking tidy, he also appears to have used fragmentary concrete to surface the surrounding bank of the monument. We can assume perhaps that he used this 'yard' area as a place to stand whilst he gave his tour of the battlefield, as it seems that he wanted to protect the monument in this area from higher than usual footfall. The laying of the crushed material in this area meant that the trench line below had been protected and was very well preserved (Plate 24b). It was also from this area, just inside the line of the hut itself, that a sixpence dated 1922 was recovered from (Plate 25). Oral tradition recalls that people paid Groucott sixpence for a tour of the site; it is nice to think that the sixpence represents payment for a tour of the site in the early post-war period. It was also possible to identify the post hole for Groucott's flagstaff pictured in Plate 21 above (Plate 26).

Plate 24 Showing the extent of the 'yard' surface in front of Groucott's hut and the well preserved German Line during excavation

Plate 25 Showing the location of the sixpence during the excavation

Plate 26 Detail of laser scan depicting Groucott's Hut and location of flagstaff

Groucott also appears to have resurfaced areas within the town; again it may have been functional to protect areas where he stood to give tours. These areas are defined by a thick, white very granular cement. It is easy to differentiate between the original cement surface (which is more orange/pink) and the paler material which we believe to be repairs. The pond in the foreground of Plate 27 is lined by the original cement, however abutting it (and in places overlying it) is a layer of course more granular cement which was most likely to have been done under the guidance of Groucott.

Plate 27 Areas where resurfacing is evident within the town with one of the elongated ponds in the foreground (looking west across the site)

Groucott obviously allowed visitors to the site to have their photos taken standing on the terrain model (Plate 28), and this may be another reason why he chose to strengthen certain areas within the town.

Plate 28 Visitors to the site having their photos taken in the centre of the town as depicted on the model, notice the area around their feet which is appears like new

It is unclear to what extent the model was 'buried', it is likely that a humus-rich horizon developed as conditions prevented the rapid decay of plant matter across the model. Over time this plant matter formed the thin, acidic soil encountered over the 'high ground' of the monument in the area of Messines itself. Topsoil (1000) and vegetation was removed by hand across the whole area of the model to expose the underlying structure (1006) and Groucott's Hut (1002). Topsoil varied in thickness across the site from a very thin covering (less than 0.05m) to a 0.5m deep dump of sand and gravel containing large pebbles and cobbles in the north-west corner and along the western side of the model. This was material was deliberately dumped by the Ranger Service in the recent past.

6.2 Community Engagement

Over 130 volunteers took part in the excavation and reburial of the monument in addition to nearly 100 individuals from Jaguar Landrover as part of their corporate volunteer scheme (Plate 29). Their volunteers were a rolling team from the workforce, some of whom lived locally but many of whom were from the Solihull area. The composition of the team varied by day and included a number of staff of South Asian heritage who were interested to note that the Messines Ridge had been defended in October 1914 by British troops that included Byng's Indian Corps.

Meanwhile, regular volunteers from the Cannock Chase Warden Team assisted with not only excavation, but also fencing and site clearance; some then came back to volunteer in their own time. A staggering 7500+ person hours were volunteered throughout the course of the project, with participants taking part in all aspects of excavation and life on site in all weathers. Many of the volunteers became full members of the team, attending as regularly as work and other commitments allowed, some even taking leave to participate. A particular measure of the success of the team ethos was the seemingly endless and very delicious range of cake provided for breaks by a number of local volunteers. While the majority of volunteers were local it should be noted that

participants included people who had travelled some distance to attend, including from Northumberland, Brighton, Cambridge, Sheffield, Oxfordshire, London and Ironbridge.

Meanwhile, another gentleman who volunteers with the AONB gave sterling assistance in logistics, repairing wheelbarrows and loaning planks in the very wet backfilling phase. His view was that he did not want to dig but that his belief in the project was such that he wanted to help in some other way. He also helped co-ordinate the reseeding element of the project and was instrumental in creating new habitat piles around the area as part of the backfilling process.

Plate 29 Northern area of the site being opened by Team Jaguar Landrover volunteers, members of No Man's Land and regular volunteers

Regular specialist tours were given throughout the course of the excavation; groups included several local branches of the Western Front Association, plus individual WFA members who had picked up the story from the media, the Great War Forum (online discussion group) and WFA newsfeeds. The Great War Forum included a healthy string of news from and discussion of the project, alerting members to the work. Other important visitors included the Friends of the Chase and members of the AONB partnership.

Several local schools groups visited the site for a tour, and students from Shelfield High School took part in the excavation. The recently established Cannock Young Archaeologists Club was able to join in for a morning and help with the excavation (Plate 30), and several birthday parties were given impromptu tours. Two ladies even had a tour of site from horseback, which afforded an excellent view from the crowd line.

Most poignantly, the project also received a visit from the New Zealand High Commission, whose Military Attaché made a short presentation and laid a wreath in honour of his forebears. In addition to Colonel Mike Beale, a number of other serving and retired military personnel became regular visitors to and volunteers on the site, recreating the sense of the model as a memorial space. One such volunteer was part of Operation Nightingale, a scheme designed to assist rehabilitation of wounded service personnel from recent conflicts, which Martin Brown helped establish.

Plate 30 Martin Brown (Chair of No Man's Land) giving site briefing and health and safety talk to the Cannock Young Archaeologists Club

The excavation attracted a lot of interest from local residents, as well as those from further afield, and many visited regularly to keep up to date with what was being uncovered. Regular visitors included a wide array of people from personal trainers, dog walkers, bird watchers, ramblers and walking groups, as well as families – particularly just after school and at the weekends. Lee Dent and Richard Pursehouse from The Chase Project did a huge amount of work as key team members, talking visitors through the history of the site, as well as explaining the on-site processes (Plate 31). We are indebted to them for this and other contributions, ideas and useful suggestions, including Lee's maquette of the terrain – an even smaller miniature of the Messines Ridge.

Plate 31 Lee Dent giving site tour to visitors

The site was a hugely popular destination at weekends, and we are also indebted to a retired local teacher who turned up to entertain the visitors and digging team with his accordion playing on several days, his mixture of Great War-era tunes and songs related to the conflict added a different sensory and emotional dimension to the experience on

site for all who were there. Overall, the numbers are almost impossible to gauge, but a conservative estimate would be around 7,500 over the course of the project and on one afternoon over 100 people were counted watching, asking questions and taking photographs at a single point in time.

Several local members of the volunteer team also came back after hours to ensure there was no unofficial access to the site taking place and that while there they met neighbours who, while not digging, had taken it upon themselves to also watch over "their" site. Visitor interest was such that on some evenings it was difficult to leave site because local people would come up after work, hoping to catch a glimpse of the archaeologists in action. More unusual visitors included members of the aviation community, including an Unmanned Aerial Vehicle, which its owners flew across site taking film of the project and a member of the local Flying Club who took a series of excellent aerial photographs of the site during excavation.

Some visitors had very special stories to tell. One gentleman brought a photograph of his parents on the model in the 1930s, another told of how his grandfather and great uncle had trained there, while one visitor had a connection to the German inhabitants of the POW cage adjacent to the model (Plates 32 and 33). A relative of Ernest Groucott was also a regular visitor and a local lady brought photos confirming the destination and fate of the church.

Plates 32 and **33** A visitor to the site and detail of photograph of POWs on the Chase that he is holding

In addition to on site interpretation through talks and tours, two display boards were on

show throughout the course of the excavation. Alongside the more traditional ways of dissemination the daily excavation diary was published on-line through a blog http://greatwarcannock.blogspot.co.uk/. The blog has had 8975 hits since its creation (at June 10th 2014). It will be updated as further discoveries and news are announced.
There was a huge amount of interest from the Media during the project which resulted in regional, national and international coverage of the project. The local newspapers ran a number of stories during the time of the excavation and there was national interest, including a piece on the Daily Mail website, while there was also a visit from a stringer for the Sunday Express.

There was also overseas interest from newspapers in New Zealand and pieces posted on blogs and Facebook pages by the Peace Village (Messines), the Ploegsteert information pages and from a Messines in the Great War blog. Meanwhile, local media including local radio and BBC West Midlands (Midlands Today) ran pieces on the project. On the first day of excavation BBC Radio 4 covered the story and made it an item on their main 6pm news broadcast, interviewing Kirsty Nichol. Meanwhile, national television interest included regular visits from Inside:Out and coverage on the One Show (Plate 34). Meanwhile, BBC Countryfile ran a major piece on Cannock Chase during the Great War and included a long section on the model. It should be noted that to achieve good results for Countryfile the team delayed backfilling and endured dreadful weather so work could be seen.

Plate 34 Martin Brown giving an interview for BBC TV.

6.3 Laser Scan

The output of the laser scan was used to create an overall plan of the site. In a second phase of work, the baseline survey will be used to create a 3D model fly-through of the model which will be used to interpret the site in the future.

Plate 35 Laser scan of the site viewed from the south the pale disc areas show the locations of the scan receivers

Plate 36 Detail of the laser scan showing the central area of the town

7 ARTEFACTS

Artefacts were collected from the topsoil (1000). These were differentiated with finds from the area of Groucott's Hut (1002). Artefacts were also recovered from the sample sections of the drains (1001, 1003 and 1004), and a representative sample of displaced parts of the model itself were kept (1006). A full list of artefacts can be found in Appendix 1.

Artefacts fall largely within five categories:

Category 1 Period artefacts (1916-18)
Category 2 Artefacts relating to the demolition of the camp
Category 3 Artefacts relating to the presence of Groucott
Category 4 WWII on the Chase
Category 5 Accidental losses by visitors Post 1945

7.1 Category 1 Period artefacts (1916-18)

This category of artefacts relate to the building of the model in 1918 and include samples of the structure itself as well as three Small Finds which were recovered from the ditches surrounding the Model.

A copper alloy spur (SF 1, Plate 37) was recovered from the north east of the site, adjacent to Groucott's hut. Spurs were not only worn by the Cavalry during the Great War but also by Army Service Corps personnel, Officers and Horse Artillery. At present we are unable to confirm the military provenance of this artefact but will continue the search for parallels.

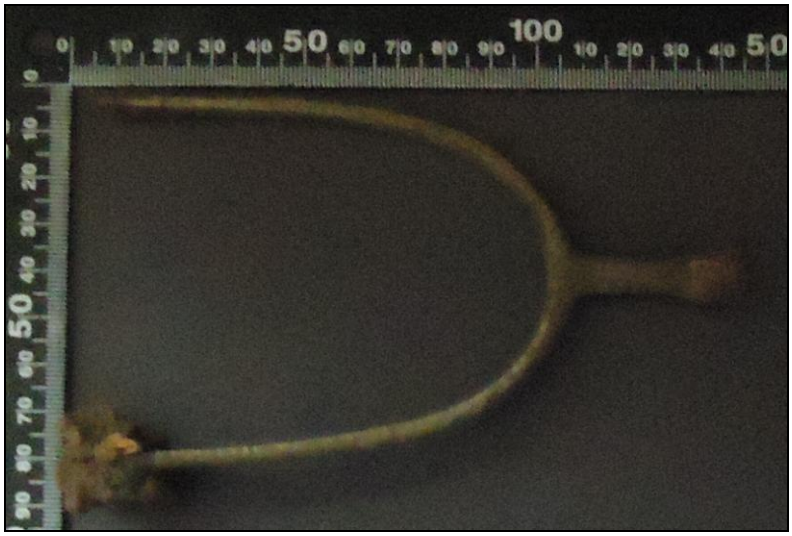


Plate 37 Copper alloy spur (SF 1)

The Silver plated, Copper Alloy, propelling pencil (SF 2, Plate 38) probably belonged to an Officer. This artefact was found in the sealed deposit of the drain, and, for this reason, it is considered to be contemporary with the model. However secure dating on typology has not been possible. If this artefact is contemporary with the model it is likely to be of sufficient value to have been owned by a member of the Officer Corps.

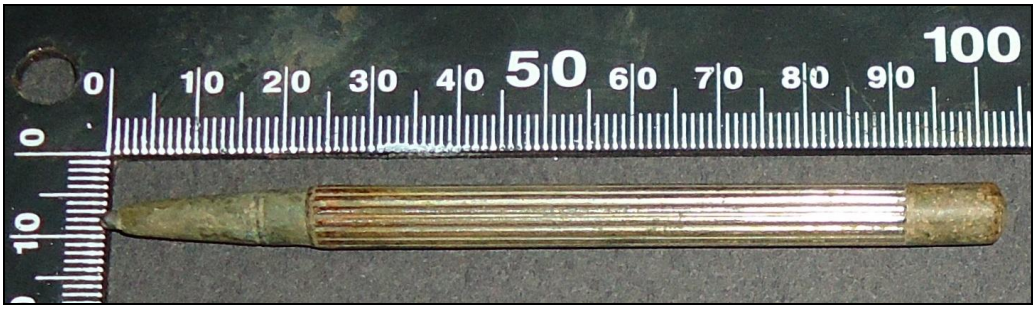


Plate 38 Copper Alloy propelling pencil (SF 2)

The third small find was an oil can (SF 3) which was recovered from a secure deposit in the southern arm of the drain. However, the oil can could not be dated as war issue on stylistic grounds and was from drain fills consistent with post-war decay. Two boot cleats were also recovered from the topsoil (1000) which are likely to be from Army issue boots.

7.2 Category 2 Artefacts relating to the demolition of the camp

There is a huge range of material relating to the demolition of the camp across the Chase. Whilst parts were reused by Groucott (see below) others were simply discarded. Artefacts from the top soil across the site include materials which had been used in the construction of the hutments – nails and bolts etc - to fixings: window and door furniture, guttering and down pipes, window glass and lock plates, as well as parts of the interior furnishings such as bits of the pot-bellied stoves which were used to heat the huts, and coat hooks.

7.3 Category 3 Artefacts relating to the presence of Groucott on site

Ernest Groucott was one of the people in charge of overseeing the demolition of the camp in the immediate Post-War period. He was also responsible for the construction of a small hut and flag pole in the north-east corner of the site from which he gave regular tours of the model and described the battle it depicted to visitors to the site. His hut was constructed from reused materials from the camp, which included a pot-bellied stove which was found in-situ and a reused coat hook. The presence of ceramic electrical insulator suggests that there may even have been an electrical supply to the hut.

Artefacts relating to his days spent in the hut include China tea cups, milk bottles, marmalade jars, and cordial bottles. The hut contents also included the bases of two jars of Kruschen Salts which was a product used largely as a laxative. Constipation has, at different times, been considered the cause of other illnesses, such as rheumatism, arthritis, headaches and influenza, and advertisements for Kruschen Salts made all sorts of claims for its remedial powers. Customers were exhorted to "Get that Kruschen feeling!"(www.powerhousemuseum.com).

A sixpence dated 1922 may be seen as evidence of Groucott's purpose for being on site. Oral history evidence suggests that he was paid sixpence for a tour of the site. The sixpence was found within the hut, and may represent one such tour.

7.4 Category 4 WWII on the Chase

A .303 round dated to 1937 was found within the top soil of the model. It almost certainly related to Home Guard/Military training on the Chase in WWII.

7.5 Category 5 Accidental losses by visitors Post 1945

Cannock Chase is used for a variety of leisure activities today, and these have left their imprint in the archaeological record. Horseshoes, bike parts, and items that probably relate to picnics such as beer, milk and pop bottles, were all recovered from the site. A thick leather strap (SF 6) with studs and poppers was probably from horses tack.

8 DISCUSSION

Comparison of the excavated remains with the trench maps and aerial photographs of the area indicate that the model was an accurate depiction of the town of Messines and its environs. It presents a miniature landscape that allows the viewer an aerial view across the terrain but at a scale impossible to achieve on an aerial photograph and in three dimensions, rather than two. In an era before 3D film or computer modelling, like that used to record the model, the terrain model was the only way to achieve the views demonstrated at Brocton. As such, terrain models have a long history, including 17th century relief models (Plans Reliefs) of the fortifications designed by Vauban for Louis XIV, which may be seen in the Des Invalides museum in Paris, or Siborne's diorama of Waterloo (Hofschroer 2004). More recent examples are known from Romarin/Petit Pont in Belgium, where a tactical model of the Messines battlefield was created in advance of the June 1917 offensive (Australian War Memorial photograph E 00631) and close to Cambrai. Both were used for the briefing of troops prior to the attacks. Many, much smaller, portable models are known to be in storage in the Imperial War Museum (Paul Cornish, pers. comm.).

Like the Siborne model, the Brocton model raises questions about what moment is depicted. For Siborne and Wellington the question was whether the time of arrival of the bulk of Prussian forces should be depicted. At the Brocton model careful examination of the sources reveals a definite timing of depiction. The final trench map of the sector is prepared on 1st April 1917 two months ahead of the attack (28 SW 4 Ploegsteert). However, the model appears to depict features not visible on this map, including trenches in the eastern sector towards Bethleem Farm, or the feature interpreted as the trench railway toward Petit Douve Farm. These elements do not appear on the April 1917 map and may be seen as a later adaptation of the line, perhaps representing improvements to German defences ahead of the June 1917 attack. As such it might be reasonable to suggest that the model depicts the extent of New Zealand triumph and shows the situation at the end of operations on June 7th. However, consideration of the buildings suggests a level of detail that transcends a semi-abstract symbolic creation of the townscape: doorways, alleys and ponds indicate that the makers had a definite sense of making an accurate representation.

Aerial photographs taken before and after the battle (for example New Zealand Archives WA 250/40, McMaster University Box 2 Envelope 99 233 and Box 2 Envelope 34 168, both reproduced below, Plates 39 and 40), as well as photographs of the town taken shortly after its capture (e.g. Passingham 116), clearly depict the destruction wrought on the town by artillery fire in the five days before the attack: on 1st May 1917 the town is ruinous but still standing to roof height (McMaster 233) but a month later it had been reduced to rubble both by the Allied preparatory barrage and by German fire onto the town following its capture. This suggests a deliberate decision by the builders of the model to depict the town immediately prior to the snap bombardment at 3am on 7th June 1917.

Plate 39 Aerial Photograph of Messines, 1st May 1917 (McMaster University Box 2 Envelope 99 233)

Plate 40 Aerial Photograph of Messines, 5th June 1917 (McMaster University Box 2 Envelope 34 168)

It is probable that this choice of the pre-battle town was influenced by a desire to depict a recognisable settlement, within which key points and features could be identified, rather than a heap of rubble. This desire for recognisable features is reinforced by the two exceptions to the struggle to create an accurate depiction. The Church in the town centre and the mill in the north-east quadrant of the model were both reproduced as standing buildings. Photography suggests that the church was not an accurate replica of the original but, since the medieval edifice was utterly ruined by the time men of the

NZRB saw it, this is hardly surprising. These standing buildings are considered to have been deliberately designed to be obvious features on the model and it is possible that this was because they were used as landmarks in miniature for instructors enabling them to point out locations to watching soldiers. The same is probably true of significant and obvious buildings, including Sniper's House and Petit Douve Farm.

The creation of what is a significant structural depiction of a piece of the Western Front represents not only the vision of its commissioning agent but also a considerable investment of material and human resources during a time of war. The location of the model at the heart of the NZRB part of the camp and the scale of the undertaking not only underline its official status but also suggests that its creation was imbued with both function and meaning.

The inclusion of the Allied line is also an interesting area for discussion. The great majority of the model depicts the German-held town and its defences. One area of Allied trenches is depicted on the western side of the model, close to the southwestern corner (Plate 41). Three lines of Fire, Support and Reserve trenches are shown, facing up the slope toward the German defences on the Messines Ridge. Comparison of the model to contemporary plans indicates that the area shown was occupied by New Zealanders (Plate 42).

Plate 41 Detail of Allied Line, south-west corner of model.

The choice to depict only one small portion of the Allied Lines when the German defences had been rendered in considerable detail may be regarded as odd, or even perverse until one considers the fact that these were the trenches from which the New Zealanders jumped off into action against the Germans.

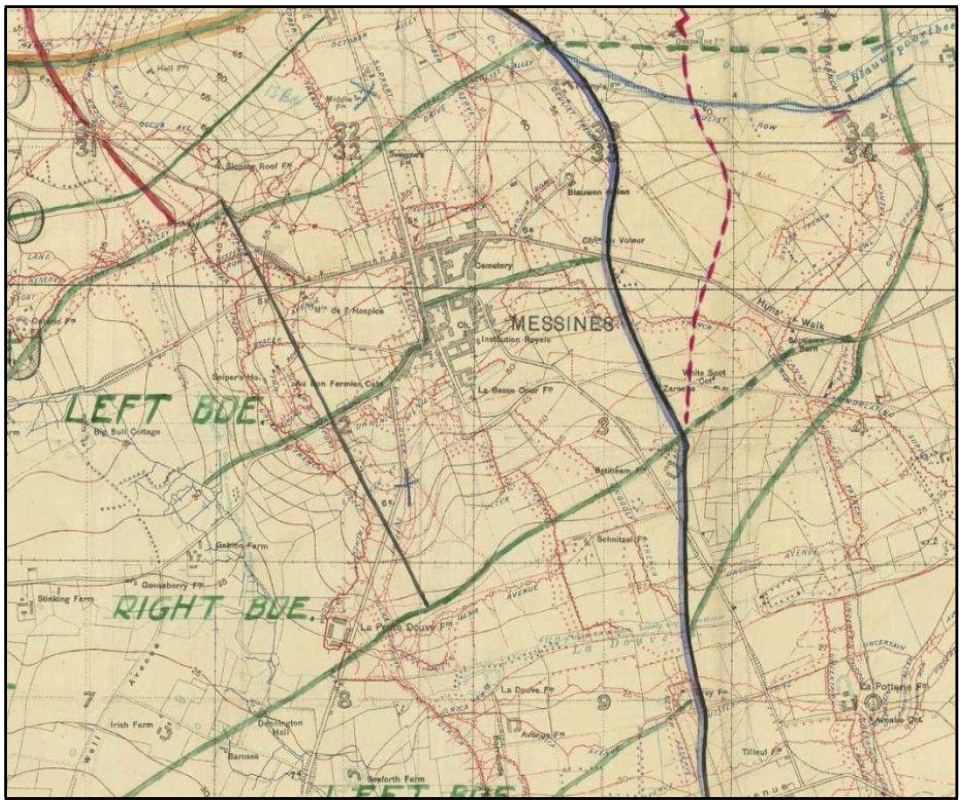


Plate 42 Divisional Map of the Order of Battle for 7th June 1917, showing the Left and Right New Zealand Brigades. The Brocton Model shows the area in front of Gabion Farm.

The principal use of the model may be seen as instructional. At the time of its creation in 1918 there was no suggestion that the war would end in November: the Germans were still occupying parts of France and Belgium and were still offering stiff resistance to the Allies. Indeed, the Germans had retaken Messines in April 1918 and it was only retaken again by the Allies at the end of September that year (Oldham op. cit., 116-119). Given that the war was expected to continue and that the NZRB were continuing to train men at Brocton it is reasonable to assume that the principal aim of the model was to allow trainees to study a successful action in detail, understanding both the terrain and its defences and the way in which they affected the operation and were finally overcome. This method still underpins military training today and tours of historic battlefields are common, as is the study of historic actions in the classroom. For the New Zealanders, Messines offered a useful epitome of war, including, as it did elements of different aspects of early 20th century conflict. The first phase of the battle was trench warfare at its zenith, including mining, creeping barrage and infantry assault against a heavily defended landscape of trenches, barbed wire and concrete emplacements that afforded defence in depth. As the trenches were over-run, the attacking force entered an unfamiliar environment that they had not prepared for – the urban battlespace. German fortification of ruins and use of inter-connected cellars had been a feature of other battles, including the Somme at, for example, Thiepval. House to house fighting and clearance of cellars was unfamiliar territory but as the Germans began to falter and retreat in Summer and Autumn 1918 it became a recurrent strand of operations and if, as some expected, the fighting was to continue to the gates of Berlin, the value of training in urban operations would become invaluable. Meanwhile, the third phase of the battle, from the town to the Black Line at Fanny's Farm offered lessons in mobile, open warfare. Unlike the open warfare of 1914, the horse was no longer a major component of the strike force and the tank was now a critical element of infantry support. In addition,

cooperation with air power, both to provide close support and to report movement on the battlefield was becoming a powerful feature within British operations. For the instructors at Brocton Camp, the model provided a perfect canvas onto which the lessons of three different types of modern warfare could be projected.

The didactic origins of the model are underlined in this account:

> *"We have practically completed a model of a sector of ground taken from a map dimensions 40 yards square- representing 2,000 yards of ground in Belgium. The scale of the plan is 1 in 50, and the altitude 1 in 25. It was built under instructions from Lieutenant- Colonel J. G. Roache, for the use of the Regimental School, to instruct officers and NCOs in Topography. It is a facsimile of the old battlefield of Messines."* (NZEF 1918: 257)

In addition to its instructional use the model may be seen as contributing to the unit ethos, or esprit de corps, of the NZRB. Many modern Army units will visit battlefields that have a historical significance for them; partly for instruction but also because of their contribution to what the British MOD refers to as "Ethos and Honour" (www.mod.uk accessed 24/01/2008). The Great War includes a number of successful operations across difficult terrain - but the capture of Messines was almost exclusively a New Zealand victory, where unit battle honours and personal decorations were won and the Germans decisively defeated. Seen in this light the model may be regarded as a trophy, signifying and embodying the achievement and glory of the units involved, principally the NZRB. This idea of instilling ethos and esprit de corps may be regarded as an explanation for the decision to depict one small part of the Allied Line.

To the builders, the only bit of significance within the Allied Line was the section occupied by Kiwis. Essentially, from a didactic perspective the trainees would need to see the whole picture from "hopping the bags", crossing no-mans-land and into the street fighting in the town. However, from a more tribal perspective the recruits needed to hear specifically about the glorious deeds of their comrades and compatriots. Like Wellington's struggle to ensure Siborne kept the number of Prussians on his model to a minimum (Siborne op. cit.) the builders of the Brocton model omitted to mention the Australians and Englishmen on their flanks. This is the materiality of New Zealand martial pride and of the newly-raised Rifle Brigade in particular.

To the new trainees arriving for training the model served as inspiration and exhortation to emulate and exceed the achievements of their comrades. In effect the model allowed troops to visit the battlefield, which was still in the combat zone, and learn from it in safety. This creation of unit ethos is a crucial aspect of all military training and it has been observed that soldiers do not fight for ideals, monarchs or countries, nor even flags and regiments, but for their mates (Carlton 1992: 75-76; Brown 2011: 130-132). As such the idea of the 'Band of Brothers' may be seen as a force multiplier, increasing unit effectiveness and resilience.

Had the model served only as a training aid its continued existence would not have been of concern to the departing soldiers, but its robust construction, capable of surviving for a century, suggests that it had been imbued with pride and symbolic status to a degree in excess of that normally afforded to a tactical model created for briefing, like Petit Pont. Instead, it is not unreasonable to regard this model in the same way as the Plans Reliefs, or the Siborne models of Waterloo that were intended to endure as a material commemoration of achievement and as a projection of physical power and martial prowess. As such, the NZRB model should be regarded as materialising and making

permanent the physicality of the victory at Messines. In the same way the creation, maintenance and continued survival of the Bulford Kiwi (Wiltshire) may also be seen within this context of Dominion troops seeking to commemorate their contribution to the Victory of 1918.

The continued resonance of Cannock Chase in the New Zealand memory may be seen in the willingness of the NZ Defence Attaché (Lt. Col Mike Beale) to make a long, early morning journey to pay his respects to his military forebears and countrymen and to place a wreath on Fanny's Farm. This wreath-laying served to renew a bond between the miniature and the actual battlefield and demonstrated a further function of the model; that of memorial. Whether the model originally had memorial aspects ascribed to it remains unknown but it is clear that the site manifests this meaning today. Whether officially including memorial aspects in its conception, it is possible that individual soldiers at Brocton did ascribe a commemorative aspect to the monument because, for anyone who had been present at the action, the accurate depiction of the trenches and townscape are likely to have evoked strong and possibly traumatic memories. It should be noted that this recollection need not only have been restricted to ANZAC instructors; the German prisoners of war pictured labouring on the model may also have been captured at or have served in or close to the landscape recreated on the Chase. In the contemporary world the memorial sense has also enjoyed popular support, including the music played by a local retired teacher, which included music familiar to the soldiers of 1918, as well as songs such as Eric Bogle's contemporary folksong "The Band Played Waltzing Matilda", which strongly evokes and at the same time criticises remembrance and commemoration.

Following the conflict the upkeep of the model remains of interest. Ernest Groucott's hut is a lasting testament to the desire to preserve and present the model to the public. Nevertheless his attitudes to the monument do not accord with modern ideas of historic integrity. Not only did Groucott insert his sunken building into the model but he appears to have shovel- scraped areas, creating localised belts of piled debris. In addition, he appears to have used collected broken fragments of the surface cement to create a solid surface between his hut and the town. This suggests a careful consideration of the visitor experience where the model was tidied up, with broken surfaces removed and used to create a path/viewing area so that the sub-base was not eroded by visitors' feet. Groucott's actions indicate a carefully considered response to a monument that was already in a state of decay and which, in his mind, appears to have needed what may be termed "tidying up" to make it attractive and legible/intelligible to the non-expert visitor.

Oral testimony from visitors to the excavation indicates that the model continued to be a popular destination for visits and picnics into at least the 1960s. However, the final, major event in the post-war history of the monument appears to have been the dumping of a thin skim of gravelly quarry waste over the monument in an ad hoc attempt at conservation that did actually serve to protect and preserve the remains from inclement weather.

The sense of the miniature as replica that can be regarded from and experienced at a different scale, allowing different perspectives (Stewart 1993) was also manifest for anyone familiar with the modern landscape of Messines and environs. For a number of the excavators (including many in No Man's Land), Messines is a familiar location as the Plugstreet Project has been based there each summer since 2007 (www.plugstreet-archaeology.com). Regular comments on the uncanny nature of the model, depicting roads that individuals regularly drove, or buildings where they had shopped or drunk, were made. For anyone spending time on the model, the sense of it being Belgium, rather than a depiction of a foreign country was peculiarly strong and people observed how it became common to talk about French and Belgian locations off the model as though they were physically present. However, the reverse did not happen:

once off the model; the sense of place was renegotiated, recognising the model as artefact, rather than landscape.

As such, it was fascinating to see the continued power of the model, even in its current, fragmentary form, to unsettle and to evoke a sense of place. If one regards landscape as a cultural and phenomenological construct (for example, Schama 1996) where ideas inform and create Place, then this small part of Staffordshire has become a manifestation of Belgium, translated and transformed as miniature to be experienced and to have meaning ascribed to it across a century. It is, in some conceptual sense, no less a piece of the Belgian landscape than the town of Messines/Mesen at 1:1 scale.

Whether Belgium or Staffordshire, the continued power of the model was evident during the project. The idea of the miniature landscape, created by New Zealanders and Germans, both far from home amidst a global conflict is evocative. The sense of dislocation and tragedy and the local sense of pride in the Chase, as well as in the unique monument, served to draw diverse interests to the site. Some came with family stories of Sunday visits, others wanted to talk about family connections, either to the Chase, the camps or to the War. Some came with very definite ideas about the Great War and about the model in particular and some exhibited strong ideas of ownership. As a result, this landscape had personal ideas, emotions and viewpoints projected upon it reinforcing its multivocality but also its contested nature. Nevertheless, it remained and remains significant.

9 STATEMENT OF SIGNIFICANCE

> *"War has shaped the modern world, from the physical scars of – and the preparations for – battles, to states of mind, political and ideological positions and to the language we use…….The immediacy and the relevance of 20th century war has meant its prominence in educational curricula and its growing influence in cultural tourism. There is a growing demand for informative, factual television documentaries. People want to visit the remaining structures; they have an interest and that interest is burgeoning. The surviving sites are therefore important to satisfy that growing interest and demand, and for reasons of memory, commemoration, and sense of place."*
>
> (Schofield 2004, 2)

Schofield was, of course, writing of remains dating to the Second World War, but his statement is just as pertinent (if not more so) to remains dating to the Great War period. We are currently entering into the centennial commemoration of the Great War. The last combatants have passed away and this époque in world history is now passing from human memory. It is at this juncture that public and academic interest in this period is burgeoning.

The significance of this monument can, therefore, be measured on many different levels. The 'Great War', or the 'War to End All Wars' was the first truly international/global war, involving combatants from around 135 countries of the world, either as independent states or colonies and dominions of the European empires. It is for this single reason that there are British troops, German Prisoners of War, their British guards and New Zealanders on Cannock Chase, all at the same time. All with time on their hands, and all (one assumes) eager to return to their prospective homes, some the Victors, others the vanquished. It is due to this extraordinary set of circumstances that a scale model of a Belgian town comes to be built on a 'blasted and bleak' heath in the Midlands. The connections embodied in this model afford significance far beyond Staffordshire or even the United Kingdom as it is connected to the history of a global event, depicting a

Belgian town where men from across the globe fought and died and where some remain, either in the military cemeteries or undiscovered in the fields of Flanders.

While the construction of terrain models is a common feature in military preparation for operations in theatre these are usually only very temporary affairs modelled in sand or modelling clay and most were not retained after the operation (Paul Cornish pers. comm.). The Great War model on Cannock Chase is almost certainly the only example of this date in the United Kingdom and may be one of a small group of Great War terrain models surviving on the Western Front. The continuing relevance of the model may also be seen in the fact that Messines is now the location of the Peace Village, a hostel and conference centre that seeks to promote reconciliation. Originally started by a group from Ireland to assist the Peace Process it now plays host to groups from other areas of conflict.

The international nature of the model may, like much of western Belgium, be seen as a reminder of war and of subsequent reconciliation and remembrance. This should be considered alongside the fact that Cannock Chase also hosts The Chase also hosts a Commonwealth War Grave cemetery as well as the UK Volksbund Cemetery for German combatants and internees of both World Wars from Britain, as well as a Polish memorial to the victims of the Katyn massacre in 1940. Cannock Chase may be therefore regarded as an international memorial landscape of which the Messines memorial can be seen as a component. Although originally embodying victory this must have been tinged with a sense of tragedy, for the Messines Ridge was not captured without loss.

The model is known to have survived into the inter-war years when it became a tourist attraction with Mr Groucott who built a temporary structure on site to facilitate his acting as guide to the site. There are many stories about this local character, and a huge wealth of oral histories of people that visited the model in their childhood, helped to maintain the monument when they were part of the Guide or Scout Movement, or have photographs of their parents or relatives visiting the site in its heyday. The model remains as significant today as when it was built and stirs the emotions of visitors whatever their age.

Funding from Natural England has ensured that the fabric of the monument has been recorded and its future secured beneath multiple protective layers. The removal of the scrub, bramble and bracken, the exclusion of rabbits, from the site and its continued informed management will hopefully ensure that it survives into its bi-centennial year. However, it remains fragile, and is recommended that access to the site is kept to a minimum and monitored into the future.

The reseeding of the site with heather means that the habitat of the site becomes more akin to what is found in immediate surrounding area, but there is a risk that this site of international importance will once again become forgotten. From the interest that the site has generated in the local media and within the local community it is clear that there are feelings of pride, genuine fondness and protectiveness felt towards it. This can clearly be measured in the numbers of volunteers that spent many hours uncovering, admiring, and carefully re-covering the site. It is for this reason that it is recommended that permanent display panels be installed on the periphery of the site to ensure a lasting legacy and foster an increased understanding of the site into the future.

A recent visit to the site has revealed that the grass seed is beginning to germinate. It also revealed that since the fencing has been removed a cairn-style structure has been built be persons unknown in the centre of the monument using fragments of the monument. Crosses are also being laid (Plate 43) and the site appears to have taken on the significance of a memorial. It is recommended that consideration be given to protection through scheduling of this unique monument.

Plate 43 New memorial on the centre of the model today

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APPENDIX 1
Quantification of artefacts

Key

Fe	Pb	Cu Alloy	Cement, brick, stone	Ceramic Vessels	Other Ceramic	Window Glass	Vessel Glass	Misc

Context	Quantity	Description	Other Information
1000 Topsoil	1	2" Bolt complete with nut	
	1	12" long threaded bolt	
	13	6" nails	
	9	6" nails bent into an L-shape	
	11	2" nails	
	1	Fe U-shaped bracket	
	3	Fe horseshoe fragments	
	2	Fe boot cleats	
	1	Fragments of Cast Iron fire grate	
	1	Fe wheel rim	
	1	Fe Bucket handle	
	2	Fe oval handles from a sheet metal container	
	1	Base of Fe bucket/round container with ash and coke concreted to the inside	
	2	Fragments of Fe sheeting	
	5	1.5" Fe strips	
	1	Fe strap/plate with holes	
	1	Fragment of Fe sheet with nails still attached (?door furniture)	
	1	Fe drop bolt from door/gate	
	6	Fe pipe/gutter fragments	
	1	Fe fragments of window furniture	
	1	Fe coat hook	
	1	Base of ?paint can	
	1	Fe wedge	
	1	Fe file (without handle)	
	1	1ft length of Pb pipe	
	3	Pb strips (? Window lead)	
	1	Folded Pb cuff	
	1	Amorphous Pb lump	
	1	Cu door lock plate	
	2	Fragments of Cu Wire	
	1	Cu SHELL petrol can screw top	
	1	Small Cu cog from a watch	
	1	Foul water ceramic sewer pipe	
	2	Thin-ribbed Stone Ware Marmalade Jar (rim and base sherds)	
	4	China Plate (blurred base stamp)	
	2	Plain straight sided vessel sherds	
	1	Jug handle	
	1	Jar rim	

	Quantity	Description	Other Information
	2	Thin walled vessel	
	24	Clear glass Pasteurised Milk Bottle (inc 3 base and rim sherds)	
	1	Pale green straight-sided vessel sherd	
	3	Heavy thick-sided clear vessel glass sherds	
	1	Pressed glass fragment	
	1	Moulded glass salt/pepper shaker fragment	
	2	Thick walled ?jar fragments	
	1	Medium thickness window glass	
	2	Thick window glass	
	1	Small fragment of ribbed ?reinforced glass	
	1	Plastic Gillet (Swiss) razor case	
	1	Gear off bicycle	
	1	.303 War Issue Round dated 1937	SF 5
	1	Leather strap with metal poppers	SF 6
1001 Fill of North Drain	1	Cu spur	SF1
1002 Groucott's Hut	6	Fragments of Fe gutter	4 X Disc
	1	Fe linking section for downpipe (very concreted)	
	18	6" nails	
	3	6" nails bent into an L-shape	
	9	2" nails	
	2	1.5" bolts	
	2	Fe threaded bolts with eye hole (one with concreted wood)	
	3	Fe short Y-shaped ties	
	1	Fe long Y-shaped tie	
	1	Fe L-shaped bracket (1.5" diameter)	
	5	Fe 2" wide metal straps	4 X Disc
	1	Fragment Fe barbed wire	
	1	Fe Coat hook	
	4	Fe ?window furniture (34cm long)	
	1	Fragment metal mesh	
	1	Pb fragment of downpipe	
	1	30cm length of Pb 1" pipe	
	3	Fragments Cu wire	
	7	Blue and White China Tea Cup	
	2	Base of China Tea Cup	Foley China
	6	Gilded Tea Cup with a red stripe	
	2	Scalloped edge plate	
	2	China Tea Cup handles	
	3	Plain white China Tea Cup	
	5	Plain Stone Ware Marmalade Jar Dia 9.5cm height 14cm '5' stamp to base	White residue
	4	Thin-ribbed Stone Ware Marmalade Jar Dia 8cm	
	5	Wide-ribbed Stone Ware Marmalade Jar Dia 8cm height 10.5cm London Trademark Stamp to base	
	2	Ceramic electrical insulator	

	Quantity	Description	Other Information
	3	Medium thickness window glass	
	10	Very thin window glass	
	6	Thick window glass	
	1	Small fragment of ribbed ?reinforced glass	
	3	Brown glass beer/cordial bottle rim	
	2	Brown glass bottle base 'Fruit DA??S' (?Dairies) around bottom of bottle	
	2	2 complete bases of brown glass 'Kruschen Salts' jars	
	1	Blue glass side straight sided poison bottle	
	2	Dark green wine bottle (inc rim)	
	1	Pale green jar	
	15	Clear Glass (2 with milk)	
	3	Clear glass pickle jar rims	
	1	Sterilised Milk Bottle rim	
	11	Cod bottle	
	1	Thick walled greenish ?beer bottle base with 'Barnsley' around bottom	
	1	Thick walled greenish jar rim	
	1	Clear glass ?cordial bottle with screw type bung	
	1	Clear glass ?pop bottle top with plastic 'B&S' screw top	
	3	Clear glass base sherds	
	11	Straight sided clear glass vessels (min 3 vessels present)	
	1	Degraded golf ball	
	1	George V sixpence (dated 1922)	SF 4
1003 Fill of West drain	1	Retractable pencil	SF2
1004 Fill of South drain	1	Oil Can	SF3
1006 Fabric of the Model	9	Fragments of road	
	3	Fragments with contours	
	5	Fragments of trench	
	3	Buildings	