THE RISE OF THE SCIENTIFIC SOLDIER AS SEEN THROUGH THE PERFORMANCE OF THE CORPS OF ROYAL ENGINEERS DURING THE EARLY 19TH CENTURY.

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TABLE OF CONTENTS.

TABLES AND FIGURES.

LIST OF APPENDICES

ABBREVIATIONS

Abbreviation	Description
ADC	Aide-de-Camp
ADD	British Library Manuscripts
BL	British Library
CRE	Commanding Royal Engineer.
EIC	East India Company
IGF	Inspector General of Fortifications. The most senior Royal Engineer.
NAM	National Army Museum
QMG	Quarter-Master-General
RA	Royal Artillery
RE	Royal Engineer
REM	Royal Engineers Museum
RMA	Royal Military Artificers
RSC	Royal Staff Corps
RSM	Royal Sappers and Miners
WD	Wellington's Despatches. 1st Edition unless stated otherwise.
WO	War Office papers, National Archives.
WSD	Wellington's Supplementary Despatches

ABSTRACT

The second half of the 18th century saw the formation of the first establishments to provide formal training to officers prior to receiving their first commission. The first school, the Royal Military Academy, was formed in 1741 by the Board of Ordnance to train Artillery and Engineer Officers. It was 1800 before the army formed a similar establishment and the building blocks were in place for the creation of the Scientific Soldier.

This thesis will look at the formation of the Royal Military Academy and look at the training that officers received with a focus on those officers destined to serve during the Peninsular War. The complementary roles and training of the Royal Military Artificers and the eventual formation of the School of Military Engineering will be described.

A thorough review will then be undertaken of the officers in the Royal Engineers, the numbers, their background, the locations they served in and the tasks they carried out.

A new review of the sieges during the war will be completed using unpublished material. The other roles undertaken by the Royal Engineers in the Peninsular War will be fully investigated and described. These roles are more comprehensive than has been commonly understood and will demonstrate the contribution of the educated officer to the war.

The thesis will conclude by looking at the impacts of the post-war peace on military education.

ACKNOWLEDGEMENTS.

It has taken five years from the formation of the idea for this thesis to its completion. My original thoughts were to undertake a study which was solely focussed on my primary interest in military history. Over a period of two years, my tutor at the University of Sunderland, Peter Wilson guided me to the point where I recognised that this narrow focus was not the best direction. Being introduced to works such as Brewer's *Sinews of Power*, and Evan's *In Defence of History*, led me to accept that a wider understanding of history, war and society would help me in my learning. Although Peter moved on to another institution in 2006, he was instrumental in helping an amateur grapple with the requirements of the academic environment. In the later stages guidance has been continued by Michael Turner and he has had to deal with my frustrations as I learned the style and format necessary to make the grade. I thank both of them for their efforts and patience during my journey. Behind the tutors, I have had efficient help from the staff at the Graduate Research School and the University Library who have efficiently dealt with all the paperwork, organised the necessary workshops and sourced material which I needed.

The research I have carried out has required significant time in archives and I am particularly indebted to Rebecca Cheney, the Curator and her staff at the Royal Engineers Museum and Library. They have been incredibly helpful and made me feel most welcome even after several hours of asking for letters to be retrieved from their archives. I am even more grateful for their understanding in allowing me to photograph the letters as this allowed me to access huge amounts of data in a short space of time, which I could then review over a longer period at home.

I have to thank the staff at the National Archives and the British Library where I was impressed by the organisation which allows rapid retrieval of material from their vast stores. I have made several visits to both and have always found the staff helpful. Similarly, on several visits to the National Army Museum, I have always received prompt attention to my requests, something that is vital for

someone who has to travel large distances to access material. I would also like to thank John Montgomery at the Royal United Services Institute for allowing a non-member to access the Challis index. Over the years, I have made a number of requests to Chris Woolgar at Southampton University for help with questions. I am very grateful for his willingness to receive questions by email and amazed that he has time to answer them.

I have met many people through the Internet who I feel I now know well. The website, 'The Napoleon Series' has been a constant source of inspiration and information. The speed at which I have been able to obtain answers to obscure questions never ceases to amaze me. I would particularly like to thank Bob Burnham, Howie Muir and Ron McGuigan for their help and guidance.

Some people have been on longer journeys with me. Shaun Lowery has been a friend and fellow Napoleonic enthusiast for nearly thirty years. All too often, the beer has been forgotten as we have debated some point of interest. Earlier this year Guy Dempsey published his eagerly awaited book on Albuera. Guy and I have shared both a passion and information on this battle for over ten years. I beat him into print, but only so that I could concentrate on this thesis. Through this particular battle, I have met a surprising number of other specialists and we have readily shared information and argued points of detail. I would particularly like to thank Donald Graves, Michael Oliver and Richard Partridge for their interest.

There are some special thanks that need to be made. Throughout my research I have been supported by the massive knowledge and enthusiasm of Rory Muir. He has been a constant source of information and inspiration. His awareness has led him to write to me with ideas that I had not even considered. I had the pleasure of meeting him at the Wellington Congress in 2006 and I hope to do so again.

A chance encounter with Julia Page at the Royal Engineers Library led me to probably the only other person in the world with whom I can talk detail on this subject. Julia has been working with Fletcher, Burgoyne and Jones of the

Royal Engineers longer than I have and has a huge knowledge not only about the engineers but also on the Peninsular War. This encounter also led to a very useful trip to Spain and Portugal in 2004 with the 'Forlorn Hope' group. It was a great opportunity to visit many of the locations discussed in this thesis with fellow historians. Julia and I have had many discussions on the Royal Engineers and I hope these continue for many years to come.

Finally, I would like to thank my wife, Trish and daughters, Ruth and Katherine for their patience and support. I am especially grateful for their understanding when I resigned my full-time job to concentrate on completing the thesis. This thesis is dedicated to them for allowing me the time and space to follow a dream.

SECTION 1. INTRODUCTION

1.1. Context

The middle of the 18th century saw the establishment of the Royal Military Academy which introduced professional training for British officers commissioned by the Board of Ordnance. By the start of the 19th century, the Royal Artillery and Royal Engineers were populated by 'Scientific soldiers' who received formal training and usually had to pass examinations before they received their first commissions. In contrast it was not until 1800 that the British army established the Royal Military College to provide similar education for army officers. Even the United States, which did not have the European history of centuries of war, established their military academy at West Point in 1802.[1] Up to this time the British army was characterised by 'wretched negligence, lack of discipline, and ignorance of officers who gained commissions and promotions, not by military talent or good service, but by political favour, by money, and by intrigue'.[2] Henry Bunbury, who was Aide-de-Camp to the Duke of York in Flanders in 1799, and later became Under-Secretary of State for War, described the army as 'lax in its discipline, entirely without system and very weak in numbers. The colonels of each regiment managed it according to his notions, or neglected it altogether. There was no uniformity of drill or movement; professional pride was rare; professional knowledge still more so'.[3] The Adjutant-General commented even more forcefully 'of the fifteen cavalry and twenty-six infantry regiments … twenty-one are commanded literally by boys or idiots.'[4]

But was there in practice a great difference in professionalism between the army and the Ordnance? Was the training of the Ordnance officers appropriate

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[1] S. Forman, 'Why the United States Military Academy was established in 1802', *Military Affairs*, vol. 29, No. 1, pp. 16-28.
[2] R. Glover, *Peninsular Preparation : The Reform of the British Army 1795-1809* (Cambridge, 1963), p. 117.
[3] D. Gregory, *No Ordinary General : Lt. General Sir Henry Bunbury (1778-1860) : The Best Soldier Historian* (Cranbury, New Jersey, 1999), p. 21.
[4] C. Barnett, *Britain and her Army* (London, 1970), pp. 256-257, quoted in A. Clayton, *The British Officer* (Harlow, 2006), p. 56.

for their needs? Were the Ordnance officers any better at their profession when they were faced with operational problems and difficulties? Did the strict adherence to promotion by seniority strangle the Ordnance and ensure that its senior officers were too old to serve in the field, and too far removed from current demands to make appropriate decisions at home?

This thesis will address two main areas. Firstly it will consider the introduction of education and training in the military with a focus on military engineering. It will analyse in detail the structures that were set up within the Board of Ordnance and compare them with what was being done in the British army. Whilst formal training establishments had been established in the Ordnance in the mid-18th century, the debate about the need for pre-commission education in the army raged on until the mid-19th century when formal exams were finally introduced for army officers. One common error, which appears in a number of recent published works, is attributing the formation of the Royal Sappers and Miners to Wellington, usually as a result of his letter after the third siege of Badajoz in April 1812.[5] This view is not supported by the facts and the thesis will describe the actions that occurred within the Board of Ordnance to address known problems within their organisation.

Secondly, the present study will revisit the operational activities of the Royal Engineers during the Peninsular War and take a fresh look at their performance to determine how well they contributed to the war effort. It will ask if the training they received was adequate and investigate if there is any evidence of learning through experience during the period. It will also consider the role the Royal Engineers undertook in supporting the command structure of the army.

A review of literature will show that when historians consider the role of the Royal Engineers in the Napoleonic Wars, the tendency is to think of the construction of the lines of Torres Vedras in 1810 and the sieges that occurred

[5] Examples are : ed. I. Fletcher, *The Peninsular War : Aspects of the struggle for the Iberian Peninsula* (Staplehurst, 1998), p. 58; I. Fletcher, *In Hell before Daylight* (Tunbridge Wells, 1984), p. 117; ed. P. Griffith, *Modern Studies of the War in Spain and Portugal, 1808-1814* (London, 1999), p. 111; F. Myatt, *British Sieges in the Peninsular War* (London, 1987), p. 117.

in Spain between 1811 and 1814. All the sieges and blockades carried out by the British army during the Peninsular War account for less than 15% of the time. There was never more than a third of the total number of Royal Engineer officers present in the Peninsula. This raises the question, what were the Royal Engineers actually doing during the Napoleonic Wars? The thesis will show that much of their work involved maintaining and supporting the various stations in Great Britain, Ireland and across the world. The distribution of the Royal Engineers around the world will be outlined in section three, but this thesis will concentrate on their role in the Peninsular War.

This thesis will address three primary questions :

- Were the Royal Engineer officers suitably trained and provided with the necessary resources to undertake their roles?
- If a small percentage of engineer time was spent on the sieges during the Peninsular War, what roles did the Royal Engineer officers perform for the remainder of the time?
- How well did they perform in their operational roles?

1.2. The Military in the Age of Enlightenment

One possible side effect of the Glorious Revolution was that the strict controls placed on the military stifled the growth of professionalism. There was a reluctance to establish military colleges, partly because of the cost but also because there was uncertainty amongst the military leadership of the benefit of prior education. Clayton comments that 'professional zeal was not respected or fashionable' in the mid-18th century.[6] The dispersion of troops at home to keep civil order also made practical training difficult to organise. There was a growing recognition amongst enlightened officers that professionalism in the military had to improve and that it had to come through training and education. The general standard of education in the country was improving and one of the arguments put forward for improving officer education was that there was a real possibility that subordinates could be better educated that their superiors. For the first time the rank and file in some infantry regiments were being taught to

[6] Clayton, *The British Officer* (Harlow, 2006), p. 43.

think and act independently rather than wait for orders and this meant that they had to be trained to carry out these roles. Their officers needed to be better trained in order to ensure that soldiers would have confidence in them.[7]

The growing size of the armies in Europe meant that ad-hoc education of junior officers at the regimental level was becoming more difficult. Similarly, the growth of the British Empire meant that troops were dispersed far and wide and any form of consistency or co-ordination across units was difficult. With the increase in the size of the standing army, there was a greater need for staff officers to manage the forces both in peace and war. There was some evidence of military reform in Britain through the 18th century but progress was very slow,[8] and at the end of the 18th century none of these issues had really been addressed in the army and for men who wanted a military education prior to joining the British army, there was no alternative but to enrol at one of the military schools in Europe or to seek out private tutors from mainland Europe. Wellington, Beresford, Moore, Craufurd, Hope, Cole[9], Baird and Picton[10] are examples of officers who followed this route.

In Europe the situation was different. The greater progress of Enlightenment in Europe was one of the drivers of military reform, as were the more immediate prospects of conflict that always existed in mainland Europe. Writers such as Guibert, Cognazo, Morogues, Saxe, Folard and Teil were putting forth ideas on strategy and tactics which can be readily seen in the actions of the revolutionary French armies.[11]

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[7] D. Gates, *The British Light Infantry Arm, c1790-1815* (London, 1987), pp. 95-99.
[8] Clayton, *British Officer*, pp. 38-73.
[9] Wellington, Royal Academy of Equitation at Angers; Beresford, Military Academy at Strasbourg; Moore, Craufurd and Hope through private tuition across France and Prussia; Cole In Stuttgart.
[10] F. Myatt, *Peninsular General; Sir Thomas Picton 1758-1815* (Newton Abbott, 1980), p. 16. Picton did not actually go abroad, but was taught at a private military academy in London run by a Frenchman, de Lachee. A. Haley, *Our Davy* (Liverpool, N.D.), p. 13. David Baird appears to have attended the same school, his biography noting attendance at an academy run by a refugee called Lochie.
[11] Ed. J. Black, *European Warfare 1453-1815* (London, 1999), pp. 224-227.

At the start of the 19th century there was almost no military material in print in English. Engineer officers remarked that most of the material they read came from Europe and many of the military engineering terms were French, without any attempt to translate them into English. The situation was little better for army officers. The only recent British writer of note was Henry Lloyd, a Welshman who started his military career as an engineer in the Spanish army as he did not have the status or personal wealth to join the British military. Lloyd worked as a mercenary officer across Europe, taking part in the War of Austrian Succession, the Seven Years' War and the Russo-Turkish War. He believed that war was a science and could be taught and mastered. His experiences, particularly during the Seven Years' War, led to the development of his views on military science and ultimately to the publication of his history of the war in 1766. In his history he laid out his primary principles. First, 'analyses of the political events that sparked the war as well as a geo-political survey of the belligerents'. Second, 'the limitations imposed on operations by geography … without geographic knowledge, Lloyd, an engineer by training, considered it impossible to understand the nature of war'. Third, an understanding of the goals of the belligerents was essential.[12] Lloyd's ideas on military science were well received both in Britain and in Europe and were certainly read by the more enlightened of the engineer officers. There was a small number of publications designed to provide some military education, for example, Simes' *Military Guide for Young Officers*, published in 1772, but generally there was a dearth of material available for officers who wanted to improve themselves.

The very end of the 18th century and the start of the 19th century saw the first steps to speed up military reform in Britain. The appointment of the Duke of York as Commander-in-Chief was significant in that for the first time in many years the head of the army was committed to improve standards and eradicate the abuses that had been occurring. This was partly driven by the Duke of York's personal experiences in the Low Countries where he was let down by almost all components of the military. Dundas' regulations of 1792 formed the

[12] P.J. Speelman, *Henry Lloyd and the Military Enlightenment of Eighteenth Century Europe* (Westport, New Jersey, 2002), pp. 123-128.

first serious attempt to standardise the drill across the army. The experiments at Shorncliffe with light infantry led to what were probably the best trained and most effective soldiers in the British army, the Light Division. Le Marchant published his *Rules and Regulations for the Sword Exercises of Cavalry* in 1796, and established the Royal Military College in 1800. The Senior Staff College had been established under Jarry a year earlier.

These changes are not attributable to one particular event. There had been no step change in the technologies used. Battlefield tactics had evolved but were still centred on the basic building blocks of manoeuvring masses of men armed with smoothbore muskets. Enlightenment drove the review of past policies and the search for a more efficient mode of war. The differences in the Napoleonic War were twofold. First, the scale of operations was much larger than in previous wars[13] and second, the realisation from the British perspective that the war with Napoleon was a war to the end. Previous wars throughout the 18th century had never seriously threatened the British mainland. Britain's survival depended more than ever before on the performance of its army and the first engagements in the 1790's were not encouraging. John Brewer's work on the Fiscal-Military state describes the changes in Great Britain that allowed more effective generation of government income than other states in Europe. Whilst most European powers elected to keep large standing armies, Britain chose to keep its army as small as possible as a direct result of the fear of the military which had arisen from the civil war and the Glorious Revolution and also to free funds to maintain its powerful navy which protected home shores and trade routes. Britain also used some of this wealth to hire mercenaries and support foreign armies rather than expand its own land forces.[14] The consequence of these actions was that experience and specialist skills were limited within the British military.

Over this period there were no material changes in the structure of the education that had been given to the Ordnance Corps cadets since the

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[13] Ed. L. Stone, *An Imperial State at War 1689-1815* (London, 1994), p. 9.
[14] Stone, *An Imperial State at War*, p.10; Also J. Brewer, *The Sinews of Power, War, Money and the English State, 1688-1783* (London, 1989), p. 31.

formation of the Royal Military Academy. It was 1811 before the most effective changes began with respect to the training of junior officers and artificers. The officers of the Ordnance were, however, much more proactive than their predecessors. The Royal Engineer, Captain Charles William Pasley's military experiences in the early years of the 19th century led him to believe that there were some fundamental flaws in the way Britain was conducting its defence. Following his injury during the Walcheren campaign he concentrated on his writing and in 1810 published his *Essay on the Military Policy and Institutions of the British Empire, Part 1*. The book was very well received and ran to four editions over the next few years. Pasley's original intention was to publish a second part, which would describe what was wrong with the Board of Ordnance, an action that was sure to cause great anger amongst his superiors. In the end this was never published as Pasley obtained approval to establish the School of Military Engineering in 1812, that remedied many of his complaints. Captain John Birch R.E. a peer engineer of Pasley had previously published the less well known *Memoir on the National Defence,* in 1808. What is remarkable about these works is that they were not accounts of military campaigns but works of a more strategic nature. Their authors were not senior generals but relatively junior captains in the Royal Engineers who were showing an attention and appreciation of the challenges that lay ahead for Britain. Apart from these published works the officers were freely discussing these issues and forming opinions on what needed to be done.

The demand for better education and information led to informal arrangements like the formation of the Society for Procuring Useful Information in the Royal Engineers but also to more formal responses for the military in general. 1810 saw the publication of the *Royal Military Chronicle*, which was published monthly through the Napoleonic Wars and was a predecessor to the long running *United Service Journal*, which was first published in 1829. The dedication in the first issue of the *Royal Military Chronicle* was 'To the real and permanent good of the British army … being an anxious effort … to infuse into the younger officers a professional zeal'.[15] The focus of this publication was to

[15] Royal Military Chronicle (London, 1810), vol. 1, Nov 1810, Dedication.

inform the military on the progress of the war, to provide information that would be of use to officers who were to embark on operations (the first issue had two maps of Portugal and contained a description of the Portuguese army) and to provide military education to junior officers. For the first time in English there were military manuals being printed, although it should be noted that the first course on tactics was a translation of material used 'in the Polytechnic School of France'.[16] The course was described as having three parts :

- Course of Tactics covering field and permanent fortifications
- Practical Engineering covering military surveys, planning, taking up ground and artillery
- Strategy covering general details of war, duties of generals and staff officers, principals of military movements etc.[17]

In the May 1813 edition a new series of articles began, entitled 'Elements of the art of war'. The focus was once more heavily on the military engineering side, being a translation from the French of the work of St Paul, the French Chief Engineer.[18] The dedication stated that the translation had been done for the use of the officers of the Foot Guards.

The easy access to these journals made large amounts of information readily available to officers for the first time. As there were no official manuals for officers in the British army, the printing of such educational information must have been extremely valuable. Equally valuable was the current information on the 'Seat of the War', which provided officers (probably French as well as British) with detailed descriptions of towns, topography and communication routes in Portugal and Spain. There is no doubt that any officer who wanted to learn was able to obtain useful information prior to his arrival in the theatre of operations.

[16] Royal Military Chronicle, vol.1, Nov 1810, p. 40.
[17] Royal Military Chronicle, vol. 1, Apr 1811, p. 459.
[18] Royal Military Chronicle, vol. 6, Jul 1813, p. 213.

1.3. Historiography of military engineering during the Peninsular War

Literature on the Board of Ordnance is relatively limited and the records in the National Archives are very patchy. The first significant published account of the role of the Board of Ordnance was in Clode's *Military Forces of the Crown*.[19] Forbes' three volume work[20] also covered the general structure with the more specific military elements being covered in the histories of the Royal Artillery[21] and the Royal Engineers.[22] More recently the Ordnance's role within the military hierarchy is briefly described in S.G.P. Ward's book, *Wellington's Headquarters*,[23] and a more detailed commentary is contained in Richard Glover's book on the period leading up to the start of the Peninsular War.[24]

Commentaries on military education and training in the Ordnance tend to be restricted to the establishment and running of the schools themselves, the primary works being by W.D. Jones,[25] B.R. Ward,[26] and F.G. Guggisberg.[27] There has been no review of the operational effectiveness of the training that the officers received. This thesis will undertake such a review.

There is a recent trend to look beyond the operational aspects of war during this period. Christopher Chilcott, in the introduction to his recent thesis, remarks that there is a gap between historians such as Stone, Emsley and Black who have written on state support for the military and Griffiths [sic] Fletcher and Haythornthwaite who have written on military operations. This gap includes staff, logistics and intelligence. Chilcott comments that 'the attitude of historians … has often been apathetic' in these areas.[28] Charles Esdaile has written at

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[19] C.M. Clode, *Military Forces of the Crown* (2 vols, London, 1869).
[20] A. Forbes, *A History of the Army Ordnance Services* (3 vols, London, 1929).
[21] R.A. Duncan, *History of the Royal Artillery* (2 vols, London, 1874)
[22] *History of the Royal Corps of Engineers* (12 vols, Woolwich, 1889).
[23] S.G.P. Ward. *Wellington's Headquarters* (Oxford, 1957).
[24] R. Glover. *Peninsular Preparation. The Reform of the British Army 1795-1809* (Cambridge, 1963).
[25] W.D. Jones, *Records of the Royal Military Academy* (Woolwich, 1851).
[26] B.R. Ward, *The School of Military Engineering 1812-1909* (Chatham, 1909).
[27] F.G. Guggisberg, *The Shop, The Story of the Royal Military Academy* (London, 1900)
[28] C. Chilcott, 'Maintaining the British Army; 1793-1820', unpub PhD thesis, University of the West of England, 2005, p. 3. Chilcott does not mention the earlier PhD by T. Redgrave on a

length on the role of guerrillas during the Peninsular War and has widened the understanding of the important role they played in tying up French resources.[29] Chilcott's thesis looks at logistical support and another recent addition is Romans' thesis, which describes the role of staff officers in gathering military intelligence, especially in the area of topographical surveying.[30]

Works on Military engineering, artillery and sieges.

There are no publications specifically about the Royal Engineers during the Napoleonic Wars. This topic is covered, somewhat briefly, in around one hundred and fifty pages of volume one of the Corps' twelve volume history.[31] This is still the best single source of information on the history and the operations of the Corps. The focus, as with all published work on the activities of the Royal Engineers is on sieges and defence work. There has been no evaluation of the wider role of the engineer officers in the Peninsula and this is an area that will be addressed for the first time in the thesis.

There is a great deal of material written by the officers of the Royal Engineers which reflect their professional training in encouraging accurate record keeping as part of their daily activity. This material falls into four categories. Firstly, a number of the officers wrote on wider strategic and military matters showing their awareness of the contemporary issues. These include Charles Pasley's *Essay on Military Policy in Britain and the Empire*[32] and John Birch's *Memoir on the National Defence,*[33] as mentioned above.

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similar subject. 'Wellington's Logistical Arrangements : 1809-14', unpub PhD Thesis, King's College London, No Date.

[29] C. Esdaile, *Fighting Napoleon: Guerrillas, Bandits, and Adventurers in Spain, 1808-1814* (Cumberland, Rhode Island, 2004).

[30] M. Romans, 'Professionalism and the Development of Military Intelligence in Wellington's Army 1809-14'. Unpub PhD thesis, University of Southampton, 2005.

[31] W. Porter, *History of the Royal Corps of Engineers* (Woolwich, 1889) , volume 1.

[32] C.W. Pasley, *Essay on Military Policy in Britain and the Empire* (London, 1810).

[33] J.F. Birch, *Memoir on the National Defence* (London, 1808).

Secondly, there are general military histories. Lieutenant-Colonel J.T. Jones R.E. published his two volume history of the Peninsular War in 1821,[34] seven years before the first volume of Napier's classic work was published.[35] Captain John Squire R.E. wrote a history of the Walcheren campaign, which included both topographical and operational commentaries.[36]

Thirdly, there are technical works. The most important of these is J.T. Jones' comprehensive work on the British sieges during the Peninsular War.[37] Most writers on the subject of the sieges use this as the primary source. There is also a similarly detailed French equivalent by Belmas, which also covers the British sieges.[38] Pasley wrote many works for use as training material at the School of Military Engineering.[39]

Fourthly, there is a wealth of primary material in the form of personal letters, diaries and correspondence some published and many not. The most significant published work is Wrottesley's *Life of Burgoyne*,[40] also useful are works by Rice Jones,[41] George Landmann[42] and Charles Boothby.[43] John T. Jones privately published his diary for his immediate family only.[44] Several officers' dairies or letters were also published in the Royal Engineers' in-house journal.

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[34] J.T. Jones, *Account of the War in Spain and Portugal and the South of France From 1808 to 1814 Inclusive* (2 vols, London, 1821).
[35] W.F.P. Napier, *History of the War in the Peninsula* (6 vols, London, 1828-40).
[36] J. Squire. *A Short Narrative of the late campaign of the British Army under the orders of the Earl of Chatham* (London, 1810).
[37] J.T. Jones, *Journal of the Sieges carried on by the army under the Duke of Wellington in Spain Between the Years 1811 to 1814; with Notes and Additions also Memoranda Relative to the Lines Thrown Up to Cover Lisbon in 1810.* 3rd edition, (3 vols, London, 1846).
[38] F. Belmas, *Journaux des sieges faits ou soutenous par les francais dans la Peninsule, de 1807 a 1814* (4 vols, Paris, 1836).
[39] For example, C.W. Pasley. *Course of instruction originally composed for the use of the Royal Engineer Department* (3 Vols, Chatham, 1814-17.) See bibliography for other works by Pasley.
[40] G. Wrottesley, *Life and Correspondence of Field Marshall Sir John Burgoyne* (2 vols, London, 1873).
[41] H.V. Shore, 'Letters from the Peninsula during 1812-14. Letters of Rice Jones R.E', *Royal Engineer Journal,* vol. 17, July 1912.
[42] G. Landmann, *Recollections of Military Life 1806-1808* (2 vols, London, 1854).
[43] C. Boothby, *A Prisoner of France*, (London, 1898); *Under England's Flag from 1804-1809* (London, 1900).
[44] J.T. Jones, *The Military Autobiography of Major-General John T. Jones*. Twelve copies only, privately published for family use, (London, 1853).

The unpublished primary material is held in various archives including the Royal Engineers Museum, the British Library, the National Army Museum and the National Archives. Much of this material has not been used before in publications. This thesis will make significant use of this unpublished material.

The involvement of the Royal Artillery in the sieges is covered in two main works: Duncan's History of the Corps[45] and the Dickson Letters.[46] Alexander Dickson's diaries contain large amounts of detail and complement J.T. Jones' book on the sieges, particularly as Dickson was heavily involved in most of the sieges. Hughes also briefly discusses the Peninsular sieges in his book on artillery tactics.[47]

In terms of general military histories, there has been no serious review of British sieges in the Peninsular War since the multi-volume histories of Oman[48] and Fortescue[49] appeared at the start of the 20th century. There have been three single-volume works on the Peninsular War in the last twenty years, by Gates,[50] Esdaile,[51] and more recently by Robertson.[52] None had the space to go into military engineering events in significant detail, and generally they pass quickly over them following the lines taken by Oman or Fortescue. Two compilation works on the Peninsular War, edited by Fletcher and Griffith have been published in the last ten years.[53] Both contain articles on various topics by recognised experts and both have chapters on sieges.[54] There are also works

[45] R.A. Duncan, *History of the Royal Artillery* (2 vols, London, 1874)
[46] ed. J.H. Leslie, *The Dickson Manuscripts* (5 vols, Woolwich 1905-8).
[47] B.P. Hughes, *Open Fire : Artillery tactics from Marlborough to Wellington* (Chichester, 1983).
[48] C.W.C. Oman, *A History of the Peninsular War* (7 vols, Oxford, 1902-1930).
[49] J.W. Fortescue, *History of the British Army* (13 vols & 7 map vols, London, 1899-1930).
[50] D. Gates, *The Spanish Ulcer. A History of the Peninsular War* (London, 1986)
[51] C. Esdaile, *The Peninsular War,* (London, 2002).
[52] I. Robertson, *A Commanding Presence : Wellington in the Peninsula 1808-1814 : Logistics-Strategy-Survival* (Stroud, 2008).
[53] Ed. I. Fletcher, *The Peninsular War : Aspects of the struggle for the Iberian Peninsula* (Staplehurst, 1998) and ed. P. Griffith, *Modern Studies of the War in Spain and Portugal, 1808-1814* (London, 1999).
[54] In Fletcher, *The Peninsular War*, the article on sieges is by P. Haythornthwaite and in Griffith, *Modern Studies,* the article is by D. Chandler.

that cover the non-British Peninsular sieges, including those by Horward,[55] Lamare,[56] and Rudorff.[57]

There have been four recent works on specific elements of British Peninsular military engineering operations. Myatt[58] wrote on the British sieges, and worked mainly from well known published sources. Grehan wrote about the Lines of Torres Vedras.[59] The work focuses more on Wellington's campaign prior to the retreat into the Lines and adds nothing new to what was already known. Fletcher has written twice on the third siege of Badajoz in 1812.[60] Both works pull together, in a convenient format, the common information on the siege, but they do not add any new information.

All of the above works contain factual errors, which would suggest that this subject area has been treated as an issue of secondary importance and consequently has not received the attention to detail that has been given to the primary thread of the publications. Two examples are given below as an illustration, although other errors will be addressed at the appropriate place in this thesis.

Chandler's chapter on siege warfare refers to '36-pounder or larger pieces being the norm'.[61] Such a size was not used in any of the major sieges and the use of larger guns was very rare. The 'norm' was 18 or 24-pounder guns. On the same page, Chandler writes about 'century old Portuguese iron guns' developing muzzle droop. The old Portuguese guns were almost invariably brass, and it was these brass guns not iron guns that were prone to muzzle droop. He then refers to rank and file from the Royal Military Artificers as belonging to the Royal Engineers.

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[55] D. Horward, *Napoleon and Iberia, The Twin sieges of Ciudad Rodrigo and Almeida, 1810* (London, 1994).
[56] J.B. Lamarre, *Relation des Sieges et Defences D'Olivenza, de Badajoz et de Campo Mayor en 1811 et 1812* (Paris, 1825). Lamarre was the Chief engineer at the sieges of Badajoz.
[57] R. Rudorff, *War to the Death: The Sieges of Saragossa 1808-1809* (London, 1974).
[58] F. Myatt, *British Sieges of the Peninsular War* .
[59] J. Grehan, *The Lines of Torres Vedras* (Staplehurst, 2000).
[60] I. Fletcher, *In Hell before Daylight* (Tunbridge Wells, 1984), and *Badajoz, 1812* (Wellingborough, 1999).
[61] Fletcher, *The Peninsular War*, p. 58.

Oman states that men from the Royal Military Artificers were used to train soldiers from the Third and Seventh Divisions in sapping and mining before the second siege of Badajoz. The engineers recorded that they had to train both the artificers and the soldiers, as neither had any prior knowledge.[62]

There is much material that was not available one hundred years ago and it is time for a re-evaluation of military engineering in the Peninsular War. Uffindel has contributed to this through his evaluation of primary material held in the National Army Museum.[63] This thesis will review this new material and determine if it alters the common perceptions as documented in previous publications.

Key officers mentioned in thesis.

Below are the names of officers that will feature prominently in the thesis.

The most frequently mentioned is Richard Fletcher who commanded the Royal Engineers from August 1808 until he was killed in August 1813 (apart from a three month period at the start of 1813). He was replaced by Howard Elphinstone for the remainder of the war. Elphinstone also commanded briefly at the start of the campaign, being wounded at the battle of Vimiero, although he was about to be superseded by Fletcher anyway. The three other most common names from the Peninsula are John Thomas Jones, John Fox Burgoyne and John Squire, who were some of the most senior engineers below their commander. Between them they had twelve years service in the Peninsula. Burgoyne was there for the whole of the war, Squire until he died in May 1812 and Jones until he was wounded at the siege of Burgos in October 1812. Stephen Chapman is also mentioned before he returned to England at the end of 1811. He was a friend of Henry Torrens and was liked by Wellington. Charles William Pasley only served briefly in the Peninsula in 1808,

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[62] Oman, *Peninsular War, vol. 4, p. 420.*
[63] A. Uffindel, *The National Army Museum book of Wellington's Armies. Britain's Campaigns in the Peninsula and at Waterloo 1808-1815* (London, 2003).

but is mentioned regularly throughout the period due to his correspondence with the officers in the Peninsula and his work at home to improve the training of the engineers and artificers.

Apart from these seven officers, there are only fleeting mentions of other officers, usually specifically related to some specific event or activity. The final name that will be mentioned frequently is Alexander Dickson, who commanded the artillery at many of the sieges and went on to command the artillery in the Peninsula from mid 1813. Appendix I gives further details on the key officers who are mentioned.

1.4. Structure of Thesis

One of the major challenges in undertaking this thesis has been the lack of published material on the Royal Engineers themselves. Due to their role being primarily supportive and often away from the major centres of activity, they are often only mentioned in passing, or not at all. To enable a comprehensive analysis of their organisation and operations a great deal of archival work has been required to access the necessary information and this has prompted the creation of important resources. The first is a comprehensive electronic database of all the officers who served during the Napoleonic Wars. It contains information on their background, family history, ranks, the locations they served in and the activities they carried out. This information has not been compiled before and will be a valuable new source available for future researchers. The second item is the analysis and cataloguing of many of the unpublished letters of these engineer officers covering specific engineering related material but also wider comments on the strategy, operations and battles during the war. The collection includes several thousand digital images of the original primary documents.

Section two of the thesis will describe the political and military background in the long 18th century and comment on the relationship between the government, the army and the Board of Ordnance. The Royal Engineers were

not part of the army at that time and were not directly responsible to the Commander-in-Chief. These relationships are still not well understood and confusion is evident even in the latest works. For example, the diagram in Stephen Ward's book[64] is misleading and Chilcott's description of the structure of the Board of Ordnance is incorrect.[65]

Section three will describe the introduction of education, undertake an analysis of the military engineering resources and the effectiveness of the education of the engineers. It will also carry out an analysis of the officers who made up the Corps and finish with a detailed investigation of command and seniority in the Corps.

Section four will undertake a wide ranging investigation of the roles and activities carried out by the Royal Engineers during the Peninsular War and will conclude with an assessment of their performance.

Section five will briefly describe the progress of military education and military engineering after the Peninsular War through to the start of the Crimean War.

Section six will provide a summary of the research and outline the findings.

[64] S.G.P. Ward, *Wellington's Headquarters* (Oxford, 1957), p. 7.
[65] Chilcott, 'Maintaining the British Army', Introduction.

SECTION 2. HISTORICAL AND POLITICAL CONTEXT.

2.1. Britain in the Long 18th Century

The 17th and 18th centuries had seen a change in the importance of nation states in Europe. There had been a growth in the status and power of England from insignificant player to a world power. England's rise in importance was partially due to the growth in world trade on the back of the many territorial acquisitions. Over the same period there was a decline in the status of Spain and a rise in the power of France.

Through the long 18th century Britain's population grew significantly driving the growth in national wealth. The population growth and the increasing international trade led to increasing military demands both to keep public order at home and to protect the trade routes and colonies. The growth in wealth allowed the necessary increase in the size of the army and the navy. The army was partly funded by keeping a significant number of troops in Ireland.

Following the Glorious Revolution in 1688 the power base in England moved from the monarchy to Parliament. The stability that ensued and the growth in trade provided the environment that allowed the development of the strongest Fiscal-Military state in Europe and allowed Britain to fund the war against Napoleon. The end of the 18th century and start of the 19th century was a period of tremendous change in Europe. Throughout Europe, revolutionary ideas were being voiced and traditional values being challenged. The French Revolution had frightened the monarchs across the continent into realising that their power was not absolute. Britain found herself at odds, first with France, and then, as Napoleon swept across Europe, with more and more counties as they fell into step with his demands. The war with France and the Continental blockade were intended to destroy England as a world power.

The British military successes of the 18th century had been achieved by small 'professional' armies supplemented by mercenaries from her larger European Allies. Britain found herself involved in a struggle where armies were measured in tens, if not hundreds of thousands of men and she could not compete with these vast sizes. At the start of the Napoleonic Wars in 1793, the effective strength of the regular army amounted to no more than 40,000 troops. By 1808, this had risen to around 200,000.[1] This total had to police Britain, defend the many colonies across the world, and control the continually difficult situation in Ireland before any thought could be given to offensive operations. Britain could pay for war across Europe, but had limited ability to fight it.

Even Napoleon recognised the power of the Royal Navy to dominate the waves, but a ship of the line exerted limited power away from the coast, and that was where Napoleon operated. The Royal Navy could strangle trade and movement but could not take or hold land, and land was the commodity that was being fought over. The Royal Navy also had problems of it's own as the continental blockade and the growth in overseas colonies increased demands on resources, and this was made worse when the argument with America turned to war in 1812.

Britain approached the Napoleonic wars as the wealthiest country in Europe, with the biggest navy in the world, a standing army much smaller than the other major European states and a political stability that allowed the highest taxation in Europe. Britain also approached the Peninsular War with an unimpressive recent military history that included the Low Countries in 1793 and 1799, Egypt in 1800, Copenhagen and South America in 1807. The professionalism of the British army was on trial.

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[1] R Glover, *Peninsular Preparation* (Cambridge 1963), p. 7. Originally, taken from J.W. Fortescue's *History of the British Army* (13 volumes, London, 1899-1930), vol. 4, part 2, p. 940. The number of British troops remained quite static from 1808 to 1815 only rising from 189,000 to 207,000; Foreign troops in British service rising over the same period from 37,000 to 54,000. These figures are taken from : J.W. Fortescue, *County Lieutenancies and the Army 1804-1814* (London, 1909) pp. 291-294.

In Britain the organisation of the military was spread across a number of different groups. The King, Parliament, the Cabinet, the Commander in Chief and the Master-General of the Ordnance all held part of the power and responsibility. This mix of responsibility and decision making had a major effect on the operations and the effectiveness of the military. To understand the operation of the British army through the Napoleonic Wars requires an understanding of these various roles and relationships. The following section will outline how the various components fitted together and how well they worked together.

2.2. The British Government during the Napoleonic Wars

Whilst Napoleon fought across the plains of Europe, another battle was under way on the banks of the Thames. A whole generation of orators and politicians lived and died, fighting for control of Britain, where Whigs, Tories and the Monarch manoeuvred in the corridors of Westminster. At stake was control of probably the richest country in the world, a country that was fighting for its independence, if not survival. Had Napoleon taken Britain, he could not leave such a powerful enemy intact.

Even in Britain, the power of the people was growing to the detriment of the King. It was a period of increasing infirmity of the monarch coupled with an ineffectual heir to the throne. It was also a period of great instability for the British government. The political scene was a mixture of strong individuals fighting for power and weak individuals who were unable to hold a government together. The names of the politicians who battled in the Houses of Parliament reads like the who's who of British History including Pitt, Fox, Grey, Liverpool, Castlereagh and Canning.

Between 1783 when Pitt formed his first Government, and 1815, there were seven separate Governments in Britain. There were six different Prime Ministers with Pitt serving two terms. The longest serving government was

Pitt's first from 1783 to 1801 the shortest being the Ministry of the Talents, for a period of only 13 months from February 1806 to March 1807. There were six different Governments between 1801 and 1815, which averages slightly over two years each. Some measure of stability did commence as the Peninsular War started with only two Governments covering the period from 1809 to 1815, but the previous years of turmoil took some time to settle. Throughout this period, forming an efficient government was extremely difficult due to the many rivalries that existed between the key players. The King disliked Fox; Canning and Castlereagh would not serve together (after the duel); Sidmouth would not serve with Canning and Mulgrave would not work with Chatham.[2]

THE CABINET IN 1808.

In 1808, the Government was led by the Duke of Portland. The Cabinet was made up of the following ministers :

- Prime Minister
- Chancellor of the Exchequer
- Lord Privy Seal
- Lord President of the Council
- Lord Chancellor
- Foreign Secretary
- Home Secretary
- Secretary of State for War and the Colonies
- First Lord of the Admiralty
- Master-General of the Ordnance
- President of the Board of Trade

Two further cabinet members were added, the Secretary at War (June 1809) and the President of the Board of Control (July 1809). The Secretary at War was not normally of cabinet rank, and did not appear in subsequent cabinets when Portland resigned in October 1809.

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[2] These points extracted from C.D. Hall, *British Strategy in the Napoleonic War 1803-15* (Manchester, 1992), pp. 52-70.

Several of these cabinet ministers had responsibilities for different components of the military machine at that time. This division of responsibility seems illogical today, but had its origins in the country's desire never to let the army gain sufficient power to threaten the legitimate government of the country. The legislation of the country laid responsibility for internal management of the army with the Commander-in-Chief; financial control rested with the Treasury and the Mutiny Act ensured that Parliament always had overall control. Overlaid over this understandable control, was an evolutionary division of responsibilities, which were never considered at the operational level. This led to a situation where most senior members of the cabinet had a partial role in the funding, movement or supply of the army, both at home and abroad. Once power had been given, no department would willingly give it up to another department for the sake of efficiency, so these inefficiencies were never properly addressed until after the Crimean War.

The importance of the military to the government at this time, can be understood by looking at total government spending. Military expenditure in 1804 was around £30m, rising to £42m in 1808 and £71m in 1813. In the same periods, total government expenditure was £40m, £66m and £77m.[3] As a percentage in these three years military spending accounted for 75%, 65% and 92% of the total expenditure. Government borrowing also increased significantly over this period, both to run the country and to provide financial support for Britain's Allies. Looking at these figures it is clear that the war against France WAS the primary business of the British government through the period.

Clode confusingly described the responsibilities of departments like this :

> The Treasury continued to be primarily responsible (1) for all estimates submitted to the Crown, and, (2) for all monies voted [by Parliament] to the Crown; but in framing the one, and in disbursing the other, the Ministers in charge of the Ordnance and the War Office [Secretary at

[3] Hall, *British Strategy*, pp. 15-16. Hall is quoting from works by Siberling and Mitchell & Deane.

> War], each in degree, were responsible to Parliament for these financial services.[4]

This structure still confuses historians today, but can be explained as follows. Ultimate control for all military expenditure rested with the Treasury. Day-to-day responsibility for the financial management of the army was under the Secretary at War; the Ordnance Department was under the Master-General and the Navy was under the First Lord of the Admiralty. All had direct Parliamentary responsibility for their roles but ultimately could not undertake any new activity which increased their budget without the approval of the Treasury. The above control also encompassed the Commander-in-Chief, who had no financial authority in his own right and had to submit all finance requests through the Secretary at War.

The major military responsibilities of the various cabinet ministers will be outlined below and in the following section the roles of other senior, non-cabinet officers will be described.

Chancellor of the Exchequer – The Treasury

Whist command of the army rested with the Commander-in-Chief, the true power was held by Parliament who tightly controlled both the purse strings and the movement of troops. Wars were hugely expensive undertakings and this in part explains the desire to reduce the size of the army as quickly as possible following any conflict. Within the Treasury, the most important functions, from a military perspective were :

Paymaster General

The Paymaster-General was responsible for payment of the troops. This was, until 1783, probably the most profitable of all the sinecures available in Britain. Up to that point the Paymaster-General withdrew the sums approved by Parliament to pay the army and held these huge sums in separate accounts where he obtained the benefit. As part of Burke's reforms, this practice was

[4] C.M. Clode, *Military Forces of the Crown* (2 vols, London, 1869), vol. 2, p. 187.

stopped and the Paymaster-General could only withdraw sums from the Bank of England against warrants for specific payments.

The Paymaster-General worked through each regimental agent who communicated directly with the regimental paymasters. The regimental paymaster was appointed by the regimental colonel up to 1797 and again gained much income through his management of the money. From 1797, the situation became more complex with the Regimental Paymaster having joint and conflicting responsibilities; military responsibility to his colonel, and civil responsibility to the Secretary at War.

Commissary General

The Commissary-General was responsible for the transport and supply for the army whilst on campaign and for the issue of government funds abroad. These were civilian employees of the Treasury who handled all business abroad under instructions from the Treasury[5] and were fully independent of military control. The commissaries had the unenviable task of standing between the demands of the army who wanted the materials to wage a war and the demands of the Treasury who wanted both thrift and full records of every transaction.

Even when they were following the regulations, they attracted the anger of military officers and certainly in the early campaigns in the Peninsula there were several who did not know their job and attracted complaints from Wellington. Christopher Hall quotes Wellington complaining that 'the men in the commissariat were incapable of managing a counting house'.[6] Wellington wrote home many times on matters concerning the commissariat including reporting one individual who had previously being dismissed the service for theft,[7] and on another occasion asking for an individual to be removed.[8] Wellington was not always negative. On a further occasion, Wellington wrote to the Commissary-General recommending a Mr Ogilvie for promotion because of his 'abilities and

[5] Clode. *Military Forces of the Crown,* vol. 2, p.193.
[6] Hall, *British Strategy*, p. 34.
[7] WD, To Col. Gordon, 17 Apr 1810.
[8] WD, To Col. Gordon, 18 Apr 1811.

services'.[9] The commissariat were in a very difficult position. Because Wellington was campaigning on 'friendly' territory he had to abide by the rules in terms of paying for his supplies. This meant that Wellington could only move when he had sufficient supplies for his army or money to pay for them. When supplies failed, such as during the Talavera and Vitoria campaigns, then his whole strategy was thrown into chaos.

The scale of the work of the commissariat should not be underestimated. The average daily consumption in Wellington's army in 1813 was 100,000 lb of biscuit; 200,000 lb of forage corn and 300 cattle.[10] Obviously the cattle could move themselves but this set the pace of the army. If you pushed the animals too hard, they had insufficient time to feed and consequently they lost weight. This then led to needing more animals to feed the army. The typical capacity of a peninsular cart was 500 pounds, which meant that six hundred carts were needed to carry the one hundred and thirty tons, which made up one days supply. Much of the actual delivery was by mule and the numbers present with the army ran to several thousand. Whilst the inland waterways could be used to move supplies in bulk, eventually they had to be loaded on carts and mules for final delivery. The commissariat was responsible for all this as well as making sure stores were in the right places and in the right quantities.

Storekeeper-General.

This position was established in 1807 to bring under government control, a private enterprise which was managing storage depots on behalf of the army. This had been run (quite successfully according to Forbes, but not everyone agreed) since 1794 by Messrs Trotter & Co. and peaked at one hundred and nine stores around the world.[11] Its purpose was to 'be Storekeeper of all military stores in the departments of the Quartermaster-General, the Commissary-General … and of all such stores as had been theretofore

[9] WD, To Earl of Liverpool, 13 Sep 1810.
[10] Hall, *British Strategy* , p. 34.
[11] A. Forbes, *A History of the Army Ordnance Services* (3 Volumes, London, 1929), p. 171. Conversely, J.S. Watson in *The Reign of George III, Oxford History of England* (Oxford, 1960), pp. 418-419 describes complaints in the House of Lords about Trotter withdrawing large sums of money from the Bank of England, 'mingling' government monies with his own and Dundas not addressing the issue.

provided under the direction of the Secretary at War'.[12] The Storekeeper-General's responsibilities were restricted to services in Britain. Abroad, the Commissary-General was responsible for distribution of stores and money, although from 1812 staff from the Storekeeper-General's department were sent abroad to operate the stores on campaign. These stores were in addition to those managed by the Ordnance department which held and dispensed warlike materials (guns and ammunition) to the army and navy.

Comptrollers of Army Accounts.

These were employed by the Treasury to audit army expenditure through the Paymaster-General and Commissary-Generals offices. All extraordinary expenditure (sums not approved by Parliament) had to be reviewed by the Comptrollers. A special Auditor-General was appointed for the first time during the Peninsular War to go out to the Peninsula and undertake local audits on behalf of the Treasury.

Secretary of State for War and the Colonies.

Clode described three key components of the responsibilities of the Secretary of State for War and the Colonies :

- the number of the military forces to be maintained;
- the appointment of officers duly qualified;
- the employment of the army.[13]

It was the Secretary of State for War who gave orders to generals on campaign and corresponded with them. He was responsible for proposing the size of standing army and the movement of troops abroad. The Secretary of State for War was also responsible for all the British colonies.

Foreign Secretary

Whilst the Foreign Secretary had no specific responsibilities within the military, he had a great interest in when and where armies were employed. The

[12] Clode, *Military Forces, v*ol. 2, p. 212.
[13] Clode, *Military Forces*, vol.2, p. 316.

employment of armed forces abroad should have always been for some strategic purpose and it was the Foreign Secretary through his ambassadors who collected information on the intentions of the other European powers. With this information he could suggest where Britain's military forces should be used and consider how this could be co-ordinated with its Allies.

Home Secretary

The Home Secretary was responsible for the defence of the United Kingdom and all military personnel present in the country. This included approving all movement of troops on British soil. Requests for troop movements in the United Kingdom were made by the Home Secretary to the Secretary at War who issued the appropriate 'route'. Without this route, troops were forbidden to move.

Apart from the regular forces he was also responsible for raising and control of the extensive militia and volunteer forces. During the height of the invasion scare in 1804-1805, the Home Secretary presided over the raising of a huge volunteer force which peaked at 360,000 in 1803-4 but as the invasion threat receded, it dropped substantially, to less than 70,000 by 1812. Over the same period, the militia forces which had peaked at 85,000, dropped to 71,000.[14] At times during the Napoleonic Wars, the Home Secretary commanded a paper force larger than the army and navy combined.

The other major impact that the Home Secretary had on military strategy was his concern for internal order in the country. This was maintained by having small bodies of troops dispersed at all centres of population. Concentration of these troops for military purposes (for example, training), or for use abroad was never to the satisfaction of the Home Secretary who had to deal with the incoming complaints of disorder from local authorities.

[14] Fortescue, *County Lieutenancies, p.* 294.

Master-General of the Ordnance

Theoretically, the Master-General was the military advisor to the cabinet. The constitutional safeguards that excluded the Commander-in-Chief from the government left the cabinet bereft of professional military advice from within their numbers. The different governments through the period rarely asked for military advice from the Commander-in-Chief, the Master-General or the First Lord of the Admiralty, often presenting their decisions as a 'fait accompli'. This situation changed as the Napoleonic Wars continued, with particularly Canning and Liverpool showing greater willingness to consult and seek advice.

The Master-General was responsible for the supply and issue of all arms and ammunition on both land and sea. This included small arms, artillery and gunpowder. He was also responsible for construction, maintenance and supplies in fortifications both at home and abroad. He commanded both the Royal Artillery and the Royal Engineers which were not part of the army and therefore not under the control of the Commander in Chief. Further details of the role and responsibilities of the Master-General will follow below.

First Lord of the Admiralty

Whilst the army was viewed with suspicion by the government, the navy was seen as the right and proper tool to project British power abroad. However, the Royal Navy did not win wars, no more than air superiority can today. There is no doubt that Wellington succeeded in the Peninsula partly through the British naval superiority which kept French forces restricted to the land and through the effective supply of material to his army.

Apart from the well understood responsibilities for building, and operating the ships and men of the Royal Navy, the Admiralty had other responsibilities. The movement of troops and materials involved the Royal Navy in two separate activities; the arrangement of naval protection for convoys and the hiring and equipping of civilian ships to transport troops. The Admiralty was also

responsible for the movement and the care of all Prisoners of War, and the care of sick and wounded seamen.[15]

Like the Commissariat, the scale of these duties should not be underestimated. Often with little warning, they were required to gather a large number of privately owned vessels to meet the demands of the government. These vessels were generally quite small and consequently large numbers were required. For example, the 1807 expedition against the Danish fleet required three hundred and seventy-seven transports, and the Walcheren campaign needed about five hundred. Trials were made using the larger ships of the line to move troops, but the navy simply did not have such vessels to spare.

2.3. Military responsibilities outside of the Cabinet

Secretary at War.

Kenneth Bourne's recent work on Palmerston includes the following description of the role of Secretary at War :

> The office of Secretary at War is not merely difficult, it is almost impossible to describe. It was not responsible for military policy; that was the business of the Secretary of State for War and the Colonies. It was not in charge of personnel and discipline; they were the sphere of the Commander in Chief. It did not control the supply of arms and equipment; these were the functions of the Ordnance and the Commissary-General. It did not even pay the army; that was the job of the Paymaster-General. But it was concerned primarily with finance and with acting as a sort of constitutional buffer between the army and the public, and the complex nature of these responsibilities, together with the curiously complicated structure of Army organisation, deeply involved the War Office one way or another in virtually all aspects of military policy and administration, and its interference and authority therefore overlapped in widely varying degrees with responsibilities that supposedly were centred elsewhere.[16]

The Secretary at War was responsible for obtaining Parliamentary approval for the funding for army; for day-to-day management of military expenditure and for the setting of pay scales. He, and not the Commander-in-Chief authorised

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[15] Morriss, *Royal Dockyards,* p. 8.
[16] K. Bourne, *Palmerston ,the Early Years 1784-1841* (London, 1982), pp. 90-91.

troop movements at home, ostensibly as part of the controls on the army.[17] The request for the movements originated from the Home Secretary to whom the Commander-in-Chief had to make his request.

The role of the Secretary at War was much more than a keeper of the purse strings. In 1809 there started a protracted dispute between Sir David Dundas, the Commander-in-Chief and Palmerston, the Secretary at War. The issue was whether the Secretary at War was subordinate to the Commander-in-Chief. The output of this debate is covered at length in Clode.[18] There are different views today on the importance of this debate, particularly as it happened at the height of the Napoleonic wars when the senior officers of the government should have been concentrating on more important issues. But, there was an important constitutional question being considered. This question revolved around who controlled the army. The Secretary at War was directly responsible to Parliament and controlled the finances of the army. If this position was subordinate to the Commander-in-Chief, then the army would gain some control over its spending. This was the big constitutional question of whether Parliament controlled the army or vice-versa. On a number of occasions during the 18th century there had been no Commander-in-Chief, and on these occasions the Secretary at War took full control of both civil and military decision making. The outcome of the debate was sensibly to conclude that the Secretary at War was independent of the Commander-in-Chief and owed his allegiance to Parliament. It also agreed that the Secretary at War should consult with the Commander-in-Chief on planned changes which would have an effect on the army, and where there was disagreement these would be brought to the cabinet for their consideration. Clode described the reality of the situation which existed between the Secretary at War and the Commander-in-Chief when he wrote 'no minister doing his duty faithfully to the civil community, was so certain to be unpopular with the army as the Secretary at War. How could it be otherwise?'[19]

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[17] Glover, *Peninsular Preparation*, pp. 35-36.
[18] Clode, *Military Forces*, vol. 2, pp. 687-723.
[19] Clode, *Military Forces*, vol.2, p. 268.

The Secretary at War ran the War Office which was one of the largest government departments at that time. The War office was perceived to be very inefficient with several well known people, including Lord Liverpool, Colonel Gordon (Military Secretary to the Duke of York) and Wellington criticising its efficiency.[20] One has to question the efficiency of a department, which worked a five hour day at the start of the 19th century!

Commander in Chief of the Army.

The Commander-in-Chief reported directly to the King and was responsible for the internal discipline and training of the army. This was managed through the Horse Guards who supported the Commander-in-Chief in the execution of his duties. The Commander-in-Chief had no involvement in military strategy or the setting of objectives, his role was purely administrative. His only influence came from his control of the armed forces and his ability to say what troops were, or were not available for any particular service. However, some ministers during the period, Pitt particularly, wanted to get involved in the detail and micromanage all aspects of the military. In Pitt's defence, during the period of the invasion scare, the defence of Britain was the most important item on his agenda.

Under the Commander-in-Chief was the Board of General Officers. This group was formed by Royal Warrant in 1707 to provide some sort of independent control on the actions of regimental colonels when clothing and equipping their regiments.[21] Any profit made from the difference between the actual cost and the funds provided by the government went to the Colonel and there had been a number of instances of the troops suffering for the financial gain of their colonel.

The Commander-in Chief was assisted by three senior officers :

[20] Muir&Esdaile, *Strategic Planning in a Time of Small Government* (Southampton, 1996), p. 7.
[21] Forbes, *History of the Army Ordnance Services, v*ol 1, p. 159.

- Adjutant-General who was responsible for discipline, leave, dress and recruitment;
- Quarter-Master-General who was responsible for planning accommodation, routes and orders of march (which had to be ordered by the Secretary at War);
- Military Secretary who was responsible for general correspondence with the Government, appointments and promotions.[22]

2.4. The Board of Ordnance

The Ordnance Department was originally established in 1597, under its first Master-General, Robert, Second Earl of Essex.[23] Its responsibility covered the provision of armament for both army and navy and also the construction, maintenance and operation of the country's defensive works. In 1683, the Royal Artillery and the Royal Engineers were formed in the military branch of the Board of Ordnance. The importance of the Board of Ordnance is seen in the fact that, until 1828, the Master-General of the Ordnance had a seat on the Cabinet.[24]

The Board of Ordnance was made up of two distinct branches, Military and Civil. The structure of the Board in 1784 was five principal officers under the Master-General, three of whom needed to be present for the Board to sit :

- Lieutenant-General who was responsible for the military branch including the Royal Artillery and the Royal Engineers;
- Surveyor-General who was responsible for the Civil functions, and was responsible for checking the quality and quantity of all stores received;
- Clerk of the Ordnance who was effectively the Accountant of the Ordnance, responsible for drawing up the annual estimate for Parliament and the monthly returns to the treasury;
- Principal Storekeeper who was responsible for the articles received into and issued from the stores. The stores at outposts and garrisons were his responsible through local Storekeepers.

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[22] Muir & Esdaile, *Strategic Planning,* p. 3.
[23] N. Skentelbery, A History of the Ordnance Board (Woolwich, 1967), p. 12.
[24] Skentelbery, *History of the Ordnance Board,* p.13.

- Clerk of the Deliveries who managed the actual issue of stores providing warrants to the Storekeepers and arranging delivery of the items.[25]

The responsibilities of the Military Branch included :

- The issue of all arms and ammunition (land and sea);
- Permanent stores at home and in the colonies;
- Construction and maintenance of fortifications at home and abroad;
- Royal Artillery under the Deputy Adjutant General of the Artillery;
- Royal Engineers under the Inspector General of Fortifications;
- Royal Military Artificers (Royal Sappers and Miners from 1812);
- Royal Corps of Artillery Drivers;
- Royal Military Academy.

In the opening sentence of Richard Glover's book,[26] he criticises Oman for being "betrayed into historical misjudgement" over a reference which suggests that Oman was unaware the Royal Engineers were part of the Board of Ordnance rather than the army. Based on this perceived error, Glover then seems to dismiss Oman's work whilst praising the great value of Sir John Fortescue's.[27] However, it does illustrate the point that even at the highest levels historians still find the structure of the British military machine difficult to understand and communicate to the reader. This is probably most true when discussing the responsibilities and operations of the Board of Ordnance, which in many books is simply ignored and combined with the roles and responsibilities of the Army.

The Civil branch was managed by the Surveyor-General. Its responsibilities included '(1) custodians of public treasure in land, buildings and stores (2) supply the army and navy with warlike munitions and equipment'. [28] The Civil Branch was made up of six departments :

- Stores

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[25] Taken from 12th Report of the Commissioners of the Public Accounts of the Kingdom upon the Ordnance Office. Quoted in Clode, *Military Forces* , vol. 2, pp. 671-673.
[26] Glover, *Peninsular Preparation,* p. 14.
[27] Glover, *Peninsular Preparation,* p. vii.
[28] Clode, *Military Forces*, vol. 2, p. 205.

- Land
- Survey
- Defensive Works
- Contracts
- Manufacture (Factories including gunpowder)

The Board of Ordnance's role and contribution to the war effort should not be underestimated. Through the period they supplied all the weapons to both the army and navy in a period of huge growth in demand. Not only did the army's size increase five fold, but the Militia and Volunteers forces made even greater demands for weapons. In addition the Board of Ordnance was responsible for the maintenance and provision of all permanent fortresses both at home and abroad. There were other conflicting demands, such as the East India Company who competed for the limited resources of the gun makers, thereby driving up prices, or through surpluses like the inferior East-India pattern musket that was handed out the British troops in Europe when it was not possible to obtain supplies of the preferred weapon. Through the Napoleonic wars the Ordnance was called upon to supply weapons not only to the Spanish and Portuguese but also to other European Allies.

The Board of Ordnance also proved itself to be many years ahead of the army in recognising the need to have trained officers. All artillery and engineer officers were not commissioned until they had proved their knowledge through examination. The Royal Military Academy was set up in 1741 for this purpose. In comparison, at this time an infantry officer was appointed without any training and was expected to learn his skills on the job. Whether he actually learnt anything was left up to the diligence or otherwise of his regimental commander.

Throughout the war, the officers employed at the Board of Ordnance worked to improve the quality of the tools which the armed forces had to use. Often quoted are inventions such as Shrapnel shells or Congreve rockets, although one more important, but less well known improvement, was in the quality and consistency of gunpowder. It would be wrong to suggest that everything at the

Board of Ordnance was good. If fact, there are numerous complaints from many sources throughout the war about inefficiencies in the department.

This is some part was probably due to the unusual role and responsibility of the Master-General of the Ordnance. The Master-General of the Ordnance was one of the great offices of state in the early 19th century. He controlled an enormous budget, and until Burke's Reform Act in 1780 had complete authority over how the sum was spent. As mentioned above, the Master-General was a member of the government with a permanent seat on the cabinet. The role entailed both civil and military responsibilities, and in a number of cases was also held with other responsibilities. For example, Chatham was Master-General when he commanded the army at Walcheren and Lord Cornwallis was both Master-General and Lord-Lieutenant of Ireland. As a member of the government, the Master-General was a political appointment. This meant appointments were not always based on suitability for the job and the Ordnance departments efficiency was dependent upon the individual who held the position. Some Master-Generals such as Richmond were very effective and their leadership led to improvements but others, particularly Chatham, were seen as lazy and incompetent and left the organisation to fend for itself. Unfortunately, Chatham was in control for most of the period from 1801 to 1810 and his contribution was not impressive. As a serving senior officer in the army, Chatham still wanted to command in the field, and this ultimately led to his resignation after the disastrous Walcheren campaign. His replacement, Mulgrave, was more effective and approved the major organisational changes that occurred in the Ordnance in the latter part of the Peninsular War. These will be discussed in detail below.

2.5. SUMMARY.

Britain's growth as a commercial and martial nation had occurred in a relatively short space of time. The organisational structure of monarchy, government and the military was confused and responsibilities were often unclear or overlapped.

The British military had grown into a small professional army that hired in expertise as and when required. Funding of the military was always an issue in peacetime and this made it difficult to retain experience and competence in readiness for the next war. Much of its activity through the 18th century was in non-European campaigns and the army and the ordnance reflected this in their structures and thinking.

The early campaigns of the Napoleonic wars had not been successful for the British army and, by 1807, almost every other country in Europe had been defeated or threatened into submission by Napoleon. Britain was faced with a situation where they could not pay for someone else to fight the French and needed to find opportunities where they could make direct military incursions. Britain was incapable of fielding an army that was large enough to face the French. The chaotic structure of the military organisation faced new challenges in funding and supplying the resources for a first European campaign on a scale never faced before by Britain.

Recent thinking has recognised that understanding the problems faced by Wellington in the Peninsula need to look much deeper than the purely martial aspects. Winning a battle was about getting the right number of troops, properly fed and equipped to a battlefield. The key components of this statement were *delivery, fed* and *equipped*, not fighting. Most of these components were out of the direct control of Wellington, relying on civilian and military staff from the Treasury, Royal Navy and Ordnance. The success of Wellington was dependent on the education, training and competence of these people. The role of the Ordnance department is not well understood and has faced much criticism. The most visible sign was the weapons used by soldier, ship and fortress. Operating with the army were the key specialist troops, the artillery and engineers. The role of the Royal Artillery tends to be included in the descriptions of campaigns and battles due to the importance that artillery now had on the outcomes. Less well understood is the role of the Royal Engineers. This thesis will investigate their activities and evaluate their performance and contribution to the war effort.

SECTION 3. THE RISE OF THE SCIENTIFIC SOLDIER

3.1 Overview.

The need for trained specialists had been recognised in the English army since the invention of gunpowder. Artillery specialists had always been present in very small numbers, but there was no recognition that training was required for army officers prior to them receiving their first commissions. The chapter on tactics in the first monthly part of the *Royal Military Chronicle* began with : 'It is often mentioned … of foreigners who have travelled in England, as a subject of reasonable astonishment, that we are totally without any general school for military instruction'.[1] In contradiction to many of the most senior officers of the day the article goes on to argue against the 'very shallow' objections to the study of military science to allow an infantry officer to perform his role effectively.

The 18th century saw the formation of the first military school in England to specifically address military education. The opening of the Royal Military Academy by the Board of Ordnance in 1741 recognised the need for consistent training for artillery and engineer specialists to meet the growing demand for officers. This section will review the formation of the school and the progress in providing relevant training to Ordnance officers. The primary focus will be on the Royal Engineers but it will also look at the development of the Royal Military Artificers, who were the rank and file dedicated to providing support to the engineer officers. The need for scientific soldiers was also recognised in the army but not for another fifty years. The introduction of trained military specialists in the army will also be touched on, as the performance of both is reviewed.

Because the number of Royal Engineer officers was relatively small, it is possible to take a detailed look at them as individuals and build a picture of the type of person who joined, their background and their views on what was

[1] Royal Military Chronicle, vol. 1, part, 1, Nov 1810, p. 40.

happening around them. Due to the education and training which emphasised accurate recording of information, their diaries and letters contain much unused material relevant to the wider conflict in the Peninsula.

The question of effective provision of training and resources to the Royal Engineers is an important one. Their activities during the Peninsular War have been heavily criticised by many authors and it is time for a re-evaluation of their performance based on the availability of new primary material and a greater understanding of the logistical and political challenges which they faced. The focus of this section will be on the education and professionalism of the military engineering service and will address the question of whether the education they received was appropriate for the demands. Understanding of these areas is necessary to allow a full review of the operational performance which will be undertaken later.

3.2. Education, Training and the rise of the Scientific Soldier.

This section will review the education and training of Ordnance officers and compare it with what was undertaken in the army. It will then look at the development of engineering artificers to support the officers and finish with a review of the engineer officers view of their training and leadership prior to the Peninsular War. The questions to be addressed in the section are :

- Was the training the Royal Engineer officers received appropriate for their needs?
- Was the engineering support they received adequate?

3.2.1. THE ROYAL MILITARY ACADEMY AND ITS ROLE IN THE TRAINING OF OFFICERS

The early years of the Royal Military Academy

The Royal Military Academy was created in 1741 to satisfy the need for better trained officers for the Ordnance Department. This was primarily to furnish officers for the Royal Artillery. At this time the Royal Engineers did not exist as

a distinct corps although the Ordnance Department retained some officers trained as engineers. Ordnance cadets had been in existence prior to 1741 and had been attached directly to the seven artillery companies. Their military education was dependent upon the skills, interest and presence of the officers in each company, as was the case in the army until well into the 19th century.

The Royal Warrant of 30 April 1741, stated 'that it would conduce to the good of our service if an Academy … was instituted … for instructing the … people belonging to the Military branch of this office, …to qualify them for the service of the artillery, and the business of engineers'.[2] The rules and procedures which were drafted made it clear that the original intention was wider than the training of new cadets. The 'Rules and Orders', with the associated 'Directions for the Teaching of Theory and Practice', made it clear that the lectures should be attended by 'Engineers, Officers, Sergeants, Corporals and Cadets' of the Royal Artillery, and also all such … as have a capacity and inclination'. [3] The word 'inclination' suggests that the various officers and soldiers mentioned had some choice in their attendance, and it should be noted that there was no greater onus on the cadets attendance, than there was on the others. The Chief Master did, however, provide monthly lists of attendees and their performance to the Master-General. According to Duncan, the practical lessons were attended by the cadets and all the officers and soldiers who were off duty, while the theoretical lessons were only attended by those above the rank of Bombardier and soldiers who had shown special talent for capacity and study. [4]

The initial budget approved was £1,000.[5] Part of this sum paid for the appointment of two teaching staff and a secretary. The Chief Master, Mr John Muller, was appointed on a salary of £200 per annum, and a second master, Mr Derham, on a salary on £100.[6] They were each to be employed three days a week, providing three hours teaching daily, based in the Warren at Woolwich.

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[2] F. Guggisberg, *The Shop, The Story of the Royal Military Academy* (London, 1900), pp. 1-2.
[3] Guggisberg, *The Shop,* pp. 264-265.
[4] F. Duncan, *History of the Royal Regiment of Artillery*. (2 volumes, London, 1873). vol.1, p. 108.
[5] W.D. Jones, *Records of the Royal Military Academy* (Woolwich, 1851), p. 4.
[6] Guggisberg, *The Shop,* p. 264.

The Governor of the Academy was the Master-General himself, who delegated day-to-day command of the Academy to the Commanding Royal Engineer at Woolwich.

In 1744, it was decided that the cadets would be withdrawn from the artillery companies and formed into 'The Company of Gentlemen Cadets'. This decision appears to have been made soon after the Royal Artillery were inspected by the Duke of Cumberland and the cadets were an embarrassment to all present. The Company had an original establishment of one Captain, three Lieutenants, a Drum-Major and forty cadets.[7] Apart from attending the Warren for lectures and parades the cadets were left to themselves, which did not appear to have done much for discipline or their studies. In many cases these cadets were young children, possibly away from their home or some form of control for the first time in their lives. The cadets links to the artillery companies was not fully severed until 1764, and it was still possible that cadets could be called up for foreign service, as happened when they were sent to Flanders in 1747 and the East Indies in 1754.[8]

1764, saw the appointment of the Lieutenant-Governor, Lieutenant-Colonel Pattison, with direct responsibility for the day-to-day operation of the Academy. The staff size was increased to six and attendance at the Academy was restricted to cadets only, with serving officers and non-commissioned officers being stopped from attending lectures. This was seen as a benefit to the cadets as the interest and behaviour of the others often set a bad example. Lieutenant-Colonel Pattison endured strong resistance from both cadets and masters who were unused to organisation and discipline.[9] His power was further enhanced in 1772, when the first Inspector of the Royal Military Academy, Captain G. Smith, was appointed. Through their efforts, the teaching standards and the behaviour of both cadets and masters improved.[10] Some level of consistency was also achieved through there being only two Lieutenant-

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[7] Guggisberg, *The Shop,* p. 4.
[8] Guggisberg, *The Shop,* p. 6; Duncan, *History of the Royal Regiment of Artillery*, vol. 1, p. 115.
[9] Guggisberg, *The Shop,* p. 10.
[10] Connolly & Edwards, *Roll of Officers of the Corps of Royal Engineers From 1660 to 1898*. Royal Engineers Institute (Chatham, 1898), p. 10; Guggisberg, *The Shop,* p. 258.

Governors at the Royal Military Academy during the period of the Napoleonic wars. Lieutenant-Colonel William Twiss R.E. was in charge from 1795 to 1809 and Lieutenant-Colonel William Mudge R.A. commanded until 1820.

Size of Academy

Table 3a. Size of the Royal Military Academy.

Year	Number of Cadets	Year	Number of Cadets
1744	40	1810	200 (0 for EIC)
1746	48	1816	188
1782	60	1819	150
1793	90	1820	100
1798	100 (40 for EIC)	1828	60
1803	180 (60 for EIC)	1831	90
1806	248 (60 for EIC)	1839	100
1807	259 (45 for EIC)[11]		

In 1798, the number of cadets was increased to one hundred, although this was actually a decrease due to an agreement with the East India Company (EIC) that allowed forty of its engineer cadets to be trained. To make up the numbers for the Ordnance Department, 'extra cadets' were placed in local schools around Woolwich. These extra cadets had to pass the entrance examination, follow, the same education plan and were included on the muster roll for the Academy.[12]

In 1803, the size was increased again to one hundred and eighty, of which sixty were for the East India Company. One hundred of these were at Woolwich (sixty for the Ordnance and forty for the EIC) and eighty were placed at the new Royal Military College at Great Marlow (sixty for the Ordnance and twenty for the EIC).[13] The numbers at Great Marlow included the transfer of all the extra cadets from the local schools.

[11] Jones, *Records of the Royal Military Academy* , p. 81.
[12] Jones, *Records of the Royal Military Academy* , p. 66.
[13] Guggisberg, *The Shop,* pp. 12-13.

Cadets occupied a new building on Woolwich Common for first time in 1806.[14] One hundred and twenty-eight cadets, from the top four academies, were housed there. The two lower academies of sixty cadets were left in the old building at Woolwich Arsenal. A further sixty cadets were in the Junior Department of the Royal Military College at Great Marlow. Of these two hundred and forty-eight, approximately sixty were allocated to the EIC. A further fifteen to twenty supernumerary cadets were housed in local schools at their parents expense.

In 1810, the East India Company opened its own college at Addiscombe, and started withdrawing their cadets. Once more space was created by their removal, the Ordnance cadets located at Great Marlow were moved back to Woolwich, the last returning in January 1811.[15] Appointment of supernumerary cadets was stopped in 1814 as the effects of the peace started to have an impact on the opportunities for promotion.[16] As the vacancies dried up from 1814 onwards, cadets had to wait two to three years for a commission to become available.[17]

Structure of the RMA

In 1766 the cadets were divided into two academies[18] as the less able cadets were so far behind the most able. This was directly related to the lack of an entrance examination, which in the worst cases led to cadets arriving who could not read or write. The focus of the lower school was on basic education with no military subjects being taught. There were also four classes within each academy to reflect the different abilities of the cadets. In 1782, a third academy was added to cater for the increase in the number of cadets,[19] and by 1806, there were six academies. The first and second were taught the 'more advanced parts of mathematics, military subjects and drawing'.[20] The third and

[14] Guggisberg, *The Shop,* p. 42.
[15] Jones, *Records of the Royal Military Academy* , p. 91.
[16] Guggisberg, *The Shop,* p. 43.
[17] Guggisberg, *The Shop,* p. 53.
[18] Guggisberg, *The Shop,* p. 25.
[19] Guggisberg, *The Shop,* p. 31.
[20] Guggisberg, *The Shop,* p. 67.

fourth learnt 'mathematics, French and drawing'.[21] The lower academies were taught the same as would have been taught in ordinary schools of the time. In 1810 the syllabus of the third and fourth academies were extended to include the elements of fortification.

General Admissions process

From 1741 to 1774 all requests for entry to the Royal Military Academy were made directly to the Master-General. It was only on nomination from the Master-General that cadets were admitted. At this time there was no entrance examination. When there were no vacancies, it was possible for students to study at Woolwich at their own expense. These students were called 'Gentleman Attendants' and were not included in the muster-roll. The admission of Gentleman Attendants was abolished in 1797.

The newly appointed Lieutenant-Governor, found on his arrival that many cadets on the muster-roll were not present at the Academy. On ordering them to report, he found the youngest was not yet ten. Special permission was granted for them to remain at home until they reached the age of twelve and further admission before the age of twelve was stopped.[22] Because of this, in 1764 the minimum age of entry was set at twelve but no maximum age was set. There were cases of cadets joining in their twenties, but generally most were younger than seventeen. In 1774, following strong representation from the Lieutenant-Governor, the Master-General approved the use of an entrance examination based on the 'The first four rules of arithmetic with a competent knowledge of the rule of three and the elements of Latin grammar'.[23] This was seen as essential to improve entry standards. Too much time was being spent by the masters bringing the children up to a point where their military education could start.

[21] Guggisberg, *The Shop,* p. 66.
[22] Guggisberg, *The Shop,* p. 4.
[23] Guggisberg, *The Shop,* p. 14.

In 1782 the minimum age of entry was raised to fourteen, although there was some flexibility in its application.[24] Admission into the Academy was granted to applicants between the ages of fourteen and sixteen, after they passed the examination set by the masters of the lower academies. The general requirements were 'to be well grounded in arithmetic, including vulgar fractions, write a very good hand, and be perfectly the master of the English and Latin grammars'. In 1813, the Lieutenant-Governor, Colonel Mudge, persuaded the Master-General to further tighten the entry qualifications for the admission of Gentleman Cadets[25] :

> No candidate can be admitted under 14 or over 16 years. Must be possessed of (at 14) decimal fractions, duodecimals, or cross multiplication, Involution, Extraction of the square root, notation and the first four rules of Algebra, Definitions in Plane Geometry, English Grammar and Parsing, French Grammar. At 16 add, remainder of Algebra except cubic equations, the first two books of Euclid's 'Elements of Geometry' or the first 65 theorems of Dr Hutton's course of Mathematics, construing and parsing the French language. [26]

It is likely that part of the reason for tightening up the entrance requirements was to reduce the time the cadets would take to complete their studies and therefore be able to turn out officers faster. Although from 1799 three attempts were allowed to satisfy the entrance requirements, as vacancies became more scarce towards the end of the war, the number of attempts was reduced to one. These new regulations also introduced a probation period of one year, after which cadets were removed if satisfactory progress was not made[27] 'as not being likely to qualify for commissions in the time allowed'.[28] This did lead to a marked improvement in the effort of the junior cadets.

The length of study at the Academy varied from one month to the maximum of five years. The duration depended primarily on the prior education, intelligence

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[24] Guggisberg, *The Shop,* p. 15.
[25] Guggisberg, *The Shop,* p. 44.
[26] Jones, *Records of the Royal Military Academy*, p. 97.
[27] Guggisberg, *The Shop,* p. 46.
[28] Guggisberg, *The Shop,* p. 71.

and application of the cadet, but also on the demand for officers by the Ordnance.[29]

Fees

In 1810, the entry charge into the Royal Military Academy was twenty guineas to pay for uniform, books and other items, plus an additional thirty shillings for the cadet's warrant. This amount was very close to the annual pay of a captain in the line at that time,[30] although this was considerably cheaper than the cost of buying a commission which was around £400 in a line regiment and £900 in the Guards.[31]

Teaching.

From the start in 1741 when the Academy was formed with two masters , there was a steady growth in the number of staff and the subjects covered. The list below, indicates the growth as each new subject was introduced :

1741 Mr John Muller – Chief Master; Mr Derham – Assistant Master; Mr Talbot Fulchet – Secretary
1743 Mr Crosbie – Model Maker; Mr Abel Cassel – French Master
1744 Mr Gabriel – Drawing Master
1759 Mr John Palladin – Fencing Master
1764 Rev William Green – Master for Classics, writing and arithmetic
1772 Mr F Warre – Dancing Master
1788 Dr Allen Crawford – Lecturer on Chemistry.[32]

Many of the senior masters spent their whole life at the Royal Military Academy including Professor Barlow who taught mathematics for forty-one years, Doctor Bonnycastle who taught fortification for thirty-nine years (his son joined the Royal Engineers), Mr. Landmann who taught fortification for thirty-eight years

[29] Guggisberg, *The Shop,* p. 15.
[30] Haythornthwaite, *The Armies of Wellington* , p. 269.
[31] Charles James, *The Regimental Companion; containing the Relative Duties of Every Officer in the British Army* (London, 1800), p. 38.
[32] Jones, *Records of the Royal Military Academy* , introduction (pages not numbered.)

(his son joined the Royal Engineers) and Messrs. Green, Gregory and Hutton with about thirty-five years. [33]

Up to 1797 the masters were allowed to take private pupils and also provide extra tuition to the cadets and Gentleman Attendants. Since masters decided when a cadet was eligible to be promoted from one academy to another, private tuition was a conflict of interest. It was also customary for masters to receive 'presents' from the parents of pupils.[34] Following the appointment of the Inspector in 1772, the movement between academies was through examinations in the presence of the Inspector, rather than through the recommendation of the masters.[35] In February 1799, a limit was placed on the number of attempts by cadets for academy promotion.[36] After three failed attempts, the cadet was given two months for further study. Three more attempts were allowed before the cadet would be recommended for removal from the Academy.

Appendix A shows the examination syllabus of 1792. The masters were required to give monthly reports on the progress of cadets. The Inspector also prepared reports on the attendance of the Masters.

Academy Environment.

In the period immediately after the foundation of the Academy :

> the cadets were under no discipline worthy of the name; they wore no uniform, and were so outrageous in study. That one of the occupations of the officer on duty in the Warren was occasionally to visit the Academy, and prevent the Masters from being ill-used, and even pelted.[37]

[33] Guggisberg, *The Shop,* p. 23.
[34] Guggisberg, *The Shop,* pp. 24, 27.
[35] Guggisberg, *The Shop,* p. 28.
[36] Jones, *Records of the Royal Military Academy* , p. 70.
[37] Duncan, *History of the Royal Regiment of Artillery*, vol. 1, p. 110.

Duncan went on to say :

> The cadets, ingenuity in evading detection [of offences] was equalled by their talent in inventing new methods of annoyance. This talent was too often aided by the connivance of the newly commissioned officers, whose sympathies were more with the law-breakers, they had left than the law-insisters they had joined.[38]

Discipline was a major problem through the whole period and there were many documented cases of bullying for the purpose of stopping the studious cadet from embarrassing his less industrious peers.[39] Bullying was endemic and maintaining discipline was a constant problem. Many cadets were dismissed for their behaviour. One of the likely causes of poor discipline and study was the complete lack of extra – curricular activities, which led the cadets to provide their own. The wide range of ages of the cadets, from twelve through to twenty, also did not help. Similarly, the presence of commissioned and non-commissioned officers was reported as a major source of difficulty in maintaining discipline.[40]

The behaviour of the masters was often no better than the cadets. From the early days of the Academy little control was exercised over their activities. The introduction of the Lieutenant-Governor and then the Inspector brought restrictions that they resented and fought against. Duncan cited one example of the friction which was present :

> the reply … is principally to correct two essential mistakes contained in the four lines which compose the letter. You say that at my *request* you have subjoined your opinion on the mode of education in the Academy, and desire me to present it to the Master-General in *your names* … I signified to you the Master-General's being not well pleased at the slow progress made by the Gentlemen cadets … you expressed great discontent at the printed rules you are prescribed to teach by … I *required*, not *requested* you to represent them to me in writing, that I might … lay them before the Master-General; not meaning as you seem to *conceive* to be merely porter of them in your names.[41]

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[38] Duncan, *History of the Royal Regiment of Artillery*, vol. 1, p. 111.
[39] Guggisberg, *The Shop,* pp. 54-55.
[40] Guggisberg, *The Shop,* p. 13.
[41] Duncan, *History of the Royal Regiment of Artillery*, vol. 1, p. 118.

The attitude to study was seriously affected by the demand for cadets. Throughout the Napoleonic wars the demand far outstripped the supply. This had two effects. Firstly there was pressure on the Academy to speed up the education process, which led to pressure to reduce the examination requirements. Secondly, the cadets knew the situation and on occasions had seen cadets commissioned without having to take the examinations. It was possible that a cadet who was ejected from the Academy for failing the examinations, or for bad behaviour, could still get his father to buy him a commission in the army, which would involve the cadet in much less effort.

Examinations and Commissions

Public exams were first introduced in 1764, were held annually and attended by senior officers of the Ordnance. In 1768 these were replaced by private exams held in the presence of the Lieutenant-Governor, and from 1772 the Inspector was also present. Public exams resumed in 1786.[42]

In 1791 the Royal Artillery added two more companies and had thirty-five vacancies to fill. The Lieutenant-Governor said the 'backward state' of the cadets meant he could not fill them. Similarly, in 1792, the Lieutenant-Governor announced that thirty commissions would be available, but only six cadets passed the examinations. Public examinations were again suspended in 1794 following the outbreak of war :

> The Master-General is very desirous of filling up the vacant commissions … the Professors and Masters will take measures for enabling the cadets in the Upper Academy to make a quicker progress, by dispensing for the present with some of the less essential particulars, and by making some other changes suitable to the occasion … but when the demand for officers becomes less urgent, the more regular mode of teaching must be again adopted.[43]

At that time, the Gentlemen cadets had to be :

> examined and found to be qualified in Arithmetic and logarithms; Algebra as far as Quadratic equations; the first four books of Euclid; Mensuration

[42] Guggisberg, *The Shop,* p. 33.
[43] Jones, *Records of the Royal Military Academy* , p. 53, dated 1 Jul 1794.

> including trigonometry and heights and distances; practical geometry; the general principles of fortification the construction of the three systems of Vauban the definition and explanation of artillery in general and the construction of a piece of ordnance, illustrated by 24 drawings; they must also be able to read and translate French.[44]

The Napoleonic wars made great demands for the supply of officers that the Academy could not meet. From 1794 to 1811, the public examination of cadets was suspended and the syllabus of the 'private' examination under the stewardship of the Lieutenant-Governor varied as the demand rose and fell. This had a significant effect on the quality and quantity of training that the cadets received. The cadets likewise recognised the high demand for officers and this affected their commitment to study. The demand was so great that on occasions exams were held on an individual basis as soon as a cadet felt himself competent. In 1795, the inspector was asked to recommend without examination, those cadets from the upper and second academies 'who may appear likely to prove useful at this moment as officers'.[45] :

> I am directed to inform you, … that the … service requires an immediate supply of officers from the Royal Military Academy; his lordship therefore desires that …you will recommend to him for promotion such of the cadets … as may appear likely to prove useful at this moment as officers, selecting those only who have distinguished themselves by their general conduct. However as the persons you are now required to propose are wanted for immediate service, a certain degree of height and manliness will be indispensably necessary, and you are not to recommend any one … who has not attained the height of five foot four inches.[46]

'Fifteen cadets from the upper and twenty from the Second Academy were recommended for commissions'.[47] Later that year, on 14 July 1795, the Master-General made it clear that this relaxation was a one-off and that in future, cadets must meet the current regulations.

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[44] Jones, *Records of the Royal Military Academy*, p. 53.
[45] Guggisberg, *The Shop,* p. 35.
[46] Jones, *Records of the Royal Military Academy*, p. 54, 11 Mar 1795.
[47] Jones, *Records of the Royal Military Academy*, p. 55.

Section 3. The Rise of the Scientific Soldier.

In June 1798, a change was made to the way commissions were awarded. Previously, all commissions were awarded into the Royal Artillery, with officers stating their preference to be transferred to the Royal Engineers :

> The Master-General … thinks it more advisable that a limited number of such cadets as may be found to have a turn for the profession should (after being duly qualified at the Academy) be sent to some station where they may improve themselves … by acting as Assistant-Engineers until vacancies occur for them in the Corps. [48]

In 1802 the Master-General considered the re-introduction of public exams, but on the strong recommendation of the Inspector he decided against as :

> the war had so shortened the time spent there by most cadets, that they were completely ignorant of all but the most elementary parts of the subjects in the course; consequently they could not fail to bring great discredit on the teaching at the Royal Military Academy if they were allowed to present themselves at a public examination. [49]

The Inspector at this time had been in post for ten years and must have been very familiar with the masters, the cadets and the state of the education at the Academy. The concern expressed about 'discredit' to the Corps, probably indicates a high failure rate was expected in the public examinations. It provides an internal view on the state of the education of the cadets against the syllabus. What it does not do, is allow us to make any judgement on the suitability of the syllabus at that time. We will come back to this point later when the views of the officers themselves, on their education is examined.

The demand for officers remained high, and in 1803, 'In consequence of a most serious want of officers for the Royal Regiment of Artillery, the Master-General 'directs that the usual summer vacation shall not take place, but that a fortnight be added at Christmas this year'.[50] By the end of the year, seventy-seven cadets had been commissioned (including seventeen into the EIC). This was a

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[48] Jones, *Records of the Royal Military Academy* , p. 65.
[49] Guggisberg, *The Shop,* p. 36.
[50] Jones, *Records of the Royal Military Academy*, p. 75. 6 Jun 1803.

very large number in view of the fact that there were only one hundred and eighty cadets in the Academy at this time. [51]

The custom was that cadets wishing to join the Royal Engineers would remain at the Academy for a further six months to improve their knowledge. On 1 March 1803, the Lieutenant-Governor proposed that candidates for the Royal Engineers 'instead of remaining at the Academy an extra six months … were to be sent to the Royal Military Surveyors under the direction of Major Mudge, to be instructed in surveying'.[52] This had the dual benefit of getting the junior engineers some practical experience, while also providing a trained resource for the urgent task of mapping the southern shores of England against the risk of a French invasion.

Public examinations resumed in 1811, but the problems with the education were still not resolved. The whole of the Upper Academy (twenty-nine cadets) was examined in July 1812, with a maximum of twenty-four to be commissioned. All the cadets failed in mathematics and were ordered to re-sit. This was done on 9 September 1812, and the twenty-four were then equally split between the artillery and the engineers.[53]

Throughout the period of the Napoleonic wars there was a steady increase in the annual number of engineer commissions. Prior to the French Revolution, the number had usually been below five. There were a number of years between 1793 and 1807 where the number grew up to twenty, with the average being about ten. The average across the period 1808 to 1815 was about twenty per year. Appendix E, shows the commissions into the Royal Engineers over the period.

The Royal Engineer officers who served in operational theatres throughout the Napoleonic Wars were the officers who passed through the Royal Military Academy during the period when public examinations were stopped and private

[51] Guggisberg, *The Shop,* p. 36.
[52] Jones, *Records of the Royal Military Academy,* p. 75.
[53] Jones, *Records of the Royal Military Academy*, p. 93.

examination requirements were variable. The most senior officer who served in the Peninsula, Richard Fletcher, was commissioned in 1790, at the start of this period. The other senior officers who served in the Peninsula were commissioned between 1793 and 1800, and all the Captains by 1804.[54]

There is no doubt that the Royal Military Academy was concerned about the level of education that was being given to the cadets. There is no doubt that demand outstripped supply throughout the period. But there is also no doubt that even the partial training of an Ordnance officer at the Academy was far in excess of anything that was given to a regular army officer at that time. Until the Royal Military College started producing its first recruits after 1800, there was no other source of officers with some education and technical training. The army's response to education and the Ordnance officers view on their education will be discussed below.

The next section will look at the other significant gap in the supply of specialist services to the army, trained artificers who could provide military engineering support to the Royal Engineer officers.

3.2.2. THE ROYAL MILITARY ARTIFICERS, AND THE SCHOOL OF MILITARY ENGINEERING.

The Royal Military Artificers

One of the anomalies of the Corps of Royal Engineers on its formation was that it was an officer only organisation. There were no lower ranks. Manual labour and tradesmen were provided from the infantry regiments whilst on campaign and by local civilians for static establishments.

The first steps to redress this omission were taken at the garrison in Gibraltar around 1770 when they could not find enough local tradesmen to work on the fortifications. The Commanding Royal Engineer at that time was Lieutenant-

[54] e.g. Birch 1793; Lefebure 1793; Elphinstone 1793; Thackeray 1794; Squire 1797; Burgoyne 1798; Goldfinch 1798; JT Jones 1798; Pasley 1799; GC Ross 1799; Fanshawe 1801; Nicholas 1801; Boothby 1804; E R Mulcaster 1804.

Colonel William Green and he suggested to the Governor, General George Augustus Elliot (another ex-engineer), that skilled tradesmen should be transferred from the garrison regiments at Gibraltar and formed into a permanent body to carry out military engineering work.[55]

A Royal Warrant was issued on 6 March 1772, to raise a 'Company of Soldier Artificers' at Gibraltar.[56] The initial strength of the unit was sixty-eight rank and file with the local Royal Engineer officers providing command. The intention was for the unit to serve only in Gibraltar. It performed well through the siege of Gibraltar from 1779 to 1783 and on 30 June 1786, a second company was raised with the total strength of two hundred and seventy-five men. [57]

As tensions grew in Europe, and the need to defend the shores of England became more apparent, a further six companies of one hundred and twenty-six men each, were raised on 10 October 1787, under the title of the 'Corps of Royal Military Artificers' (RMA). They were to serve at Woolwich, Chatham, Portsmouth, Gosport, Plymouth and the Channel Islands. Again each company was destined to serve only in the one location. The Gibraltar companies were also amalgamated into the RMA. A further four companies were added on 1 August 1806 to serve at Dover, Cork, Nova Scotia and the West Indies.

The intention behind the formation of the RMA was to provide skilled workmen at the main ordnance locations around Britain, Europe and eventually the globe. There was never an intention that these troops would be mobile and available to travel in significant numbers with an army. The lack of their own officers meant that they were never properly managed and were allowed levels of freedom which should never have been tolerated in any military organisation. Captain Charles William Pasley commented on the soldiers 'going grey' in the corps, while stagnating in the same location, for life. He also commented on the effects of receiving volunteers from the line regiments, which allowed units

[55] www.remuseum.org.uk/corpshistory/rem_corps_part4.htm , Viewed 18 Apr 2006.
[56] Forbes, *History of the Army Ordnance Services*, vol. 1, p. 173.
[57] B.R. Ward, *The School of Military Engineering 1812-1909* (Chatham, 1909), p. 4.

to get rid of their worst troops.[58] When Pasley took command of the Plymouth Company in 1811, not one of the RMA companies had been employed as a unit on active service. In a letter to a fellow officer he wrote :

> The command of the Company here gives me a greater insight into the nature of our establishment … There is no guard except of a Sunday at the Barrack gates, which breaks up at eleven o'clock … The … backward spirit amongst the Non Commissioned Officers is very great, and their ideas of subordination are exceedingly lax … I think these companies will not be worth much till they are changed every two or three years, and go upon actual service bodily, not by detachments.[59]

Pasley's role in the advancement of the RMA will be described further below. Another famous engineer from that period, John Thomas Jones wrote :

> After … observing how very much the want of Sappers and Miners prejudiced every siege operation in Spain, it will be learnt with surprise that, … England paid, fed, clothed, and lodged a very large body of engineer troops, … These …composed chiefly of mechanics, were considered as more intimately intended for permanent works; and the most limited number were reluctantly spared for field service, it being difficult to make it understood how mechanics could be required in any great number with an army [60]

Although it had been known for some years that the Ordnance could not easily put together troops for active operations, the start of the Peninsular War highlighted this serious inadequacy both in the numbers available and the quality of the soldiers training. Through the early years of the war, the Corps struggled and the sieges of 1811 brought home the fact that the current situation could not continue.

The problem had been recognised at home. Steps were being taken, but they would not bring immediate changes. One significant step was taken in May 1811 when the size of the RMA was increased to four battalions of eight companies with a total strength of over 2,800 men. At the same time it was decided that in future the RMA companies would be rotated around the

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[58] Pasley, *Course of Military instruction,* vol. 2, p. iv.
[59] REM, 5501-79, CW Pasley to JT Jones, 3 Feb 1811.
[60] Ward, *The School of Military Engineering,* p. 5.

locations and would move as a whole body rather than in small detachments.[61] These changes were in place by the end of the year, but in parallel, actions were also being taken in the Peninsula.

After the second attempt to take the fortress of Badajoz, in June 1811, in an effort to reduce the skills shortage, Wellington had asked Burgoyne to start training two hundred volunteers from the Third Division.[62] On 29 July 1811, Jones noted that Lieutenant Wright was ordered to join Burgoyne at Castello Branco to assist him in training the men to sap[63] and by 16 August 1811, Jones recorded that 'Captain Burgoyne was complete with all the prerequisites to enable him to teach his party to sap and they are now regularly instructed'.[64] This clearly was a serious attempt by the army in Spain to enhance its limited resources. Burgoyne noted in his diary on 15 August 1811, that he commenced that day instructing the men. Lieutenants Emmett and Reid were ordered to join Burgoyne on 25 August 1811, to assist in the training, and on 5 September 1811, Lieutenants Skelton and Elliot also joined him. [65]

Captain George Ross R.E. was ordered to carry out a similar exercise in the First Division,[66] and Captain William Nicholas R.E. was instructing soldiers in Cadiz.[67] Burgoyne in a letter to Pasley, written after the siege of Ciudad Rodrigo in February 1812, mentioned this training and stated that although little progress was made, there was some benefit.[68] Pasley congratulated him on being the first person to train 'Sappers in the British service that acted against the enemy'.[69]

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[61] T.W.J. Connolly, *History of the Royal sappers and Miners* (Chatham 1992), vol. 1, pp. 183-184. Warrant for increase signed 28 May 1811.
[62] REM, 4201-68, Burgoyne's diary *1810-12*, 28 Jul 1811
[63] REM, 5501-59-2, Jones' diary, 29 Jul 1811, Wright joined Burgoyne on 19 Aug as reported in Jones' diary.
[64] REM, 5501-59-2. Jones' diary, 16 Aug 1811
[65] REM, 5501-92-2, Jones' diary, 5 Sep 1811.
[66] REM, 4601-72, letter from Burgoyne to Squire, dated El Boden, 20 Sep 1811. 'Ross has 200 men of the 1st Division to educate.'. REM, 5501-59-2, Jones' diary, 11 Sep 1811, 'Order sent to Ross …'
[67] BL, ADD41963, Pasley papers, *ff.* 11-12, Rowley to Pasley, 22 Feb 1812.
[68] REM, 5501-139-1, Burgoyne to Pasley, 12 Feb 1812
[69] Wrottesley, *Life of Burgoyne,* vol. 1, p. 195, Pasley to Burgoyne, 2 Mar 1812.

Pasley, however, was not completely right with his congratulations. The deficiency was known to many of the engineers and Jones made reference in his diary in April 1811 to 'an arrangement made for instructing the RMA and the younger officers in the manner of forming a sap'.[70] A group of RMA artificers had just arrived at Elvas, under the command of Captain Ross and since they had no previous training in operational activities, it was decided to start training them.[71] Over the following days, Jones' diary noted the General Order, allocating one hundred troops from the ranks who had artificer skills, being brigaded with the RMA and being trained in siege works. The instructions they received included physically digging a sap to learn the requirements. It was Ross who took charge of the troops that were assigned, the training being carried out in the vicinity of Olivenza. Clearly, all this preparation was for the first siege of Badajoz, and occurred before the training referred to above by Burgoyne.[72] This method of training troops from the ranks was tried through the first and second sieges of Badajoz with very limited success. Training troops from the line regiments at the point to need was not going to provide the skills and dedication that was required. The training also required the continuous involvement of the engineers and the troops, both of which proved very difficult. Although Burgoyne was first asked to train troops in July 1811, the order was repeated in November 1811,[73] showing how difficult it was to provide any consistent form of training due to interruptions caused by operational movements. Burgoyne's diary through this period, makes almost no mention of the instruction of troops, but makes frequent mention of part or all of the Third Division being moved. There is no mention of instruction between the first entry on 15 August 1811, and the repeat order in November 1811, this period of course being when Marmont was manoeuvring in front of Ciudad Rodrigo. There is then no further mention in Burgoyne's diary through to the end of the year. However, Burgoyne in a letter dated 14 September 1811 noted that :

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[70] REM, 5501-59-1, Jones Diary, vol. 1, entry dated 25th April 1811
[71] Connolly, vol. 1, p. 179; Jones, *Sieges, v*ol. 1, p. 10.
[72] BL, ADD63106, Squire letters, f. 28. Squire also makes mention of artificers [i.e. RMA] and junior officers being trained in a letter of 30 Apr 1811.
[73] REM, 5501-59-2, Jones' diary, 9 Nov 1811.

> My principal business now is training 200 men of different regiments to the duties required in a siege, which, to our disgrace and misfortune, we have no regular establishment equal to, notwithstanding the repeated experience of the absolute necessity of such a corps to act under the engineers in a campaign. For want of such an establishment we are frequently led to the loss of valuable officers, and very undeserved discredit. The undertaking I am set about will only be temporary, and will supply very imperfectly this deficiency.[74]

Burgoyne was based at Albergaria from early August to mid September 1811. It is very unusual that Burgoyne did not mention the training in his diary if it was happening. Some comment positive or negative would be expected. Burgoyne does not mention the training in any of his letters before his long letter criticising the siege of Ciudad Rodrigo, dated 12 February 1812. This lack of comment suggests that little training was in fact carried out.

John Squire writing to Pasley in March 1812 wrote :

> Every event in this country proves more and more the necessity of our having an establishment of Sappers and Miners … Lately at Ciudad Rodrigo we succeeded in taking the place more from its own weakness, than from any means we possessed of approaching nearer with success. I really should dread to attack a regular fortress :- we have no men fit for the operation, and if we attack Badajoz again, which is something like a regular place, depend upon it, that our loss in officers will be severe :- it must be so, until we have men drilled to this particular service. Your efforts at Plymouth do you the greatest credit … However persevere in the noble work you have begun, and it is probable that their eyes may be opened, and they may be convinced. [75]

The noble work referred to by Squire, was Pasley's proposal to form a school to train soldiers in military engineering, who could effectively support the Royal Engineer officers in the field.

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[74] Wrottesley, *Life of Burgoyne,* vol. 1, p. 137.
[75] BL, ADD41963, ff. 13-16. Squire to CW Pasley, 3 Mar 1812. Portalegre,

The school of Military Engineering and the formation of the Royal Sappers and Miners

The start of the 19th century saw the emergence of a new breed of engineer who faced new challenges of a type that had never been faced before by British engineers. These engineers cut their teeth in sieges in Egypt, Turkey, South America, the Low Countries, and Holland. They had seen first hand the consequences of not having trained specialists to help with the attack and defence of places and had started commenting on the need for the situation to be rectified. Initially these comments were addressed to each other, but the more forward thinking and in some respects, braver officers started writing to their superiors making suggestions on how the corps could be made more effective. Their views did not always receive a good reception from some of the senior officers in the corps : 'some of the old officers such as General Mercer; who objected that they could not see why this innovation should be introduced, since they themselves experienced no difficulties in the American War'.[76] General Morse, the Inspector General of Fortifications 'threw cold water on it [the proposals] from the first in all its stages'.[77]

The need to make changes became more public, primarily due to the actions of two people. The first was the Duke of Wellington who suffered through four sieges in 1811 and early 1812 and wrote home on a number of occasions expressing his view that changes in the engineering service, which were not part of the army, were required. On the 11 February 1812, Wellington wrote to Lord Liverpool :

> I would beg to suggest to your Lordship the expediency of adding to the Engineer establishment a corps of Sappers and Miners. It is inconceivable with what disadvantage we undertake anything like a siege for want of assistance of this description. … we are obliged to depend … upon the regiments of the line; and although the men are brave and willing, they want the knowledge and training which are necessary. Many

[76] BL, ADD41963, ff. 38-40. Pasley to his sister, 2 May 1812.
[77] Wrottesley, *Life of Burgoyne,* vol. 1, p. 166. Pasley to Burgoyne, 2 Mar 1812.

> casualties among them consequently occur, and much valuable time is lost at the most critical period of the siege.[78]

Wellington's letter after the third siege of Badajoz, in April 1812, made his views explicitly clear and could not be ignored any longer. This letter, which was addressed privately to the Earl of Liverpool was lost for many years and was not printed in Wellington's Despatches. It was found in 1889 amongst Liverpool's papers :

> My dispatches of this date will convey the account of the capture of Badajoz, which affords as strong an instance of the gallantry of our troops as has ever been displayed. But I anxiously hope I shall never again be the instrument of putting them to such a test as that to which they were put last night. I assure your lordship that it is quite impossible to expect to carry fortified places by vive force without incurring great loss and being exposed to the chance of failure, unless the army should be provided with a regular trained corps of sappers and miners. I never yet knew a head of a military establishment or of an army undertaking a siege without the aid of such a corps, excepting the British Army. … I earnestly recommend to your lordship to have a corps of Sappers and Miners formed without loss of time. [79]

Writing the day after Wellington, John Squire, who was one of the senior engineers at the siege, said nearly the same, 'This siege has served to confirm an opinion, which I have long since entertained - that constituted as our Corps is - we are decidedly not equal to the attack of a place ... Sappers and Miners are as necessary to engineers during a siege, as soldiers to the General'.[80]

The second person working for changes was Charles William Pasley. Pasley was a promising and intelligent young engineer officer who had seen service on a number of campaigns. He also had very strong views on what was necessary to make the Royal Engineers more effective. As a twenty-nine year old Captain serving during the Walcheren campaign, he felt so strongly that he wrote to Colonel Fyers, Deputy Inspector General of Fortifications, on 12 May 1809, enclosing his ideas 'on making the Corps more efficient'.[81] Tragically for his

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[78] WD, To Liverpool, 11 Feb 1812.
[79] Athenaeum, 27th April 1889, p. 537. Wellington to Liverpool, 7 Apr 1812.
[80] BL, ADD63106, Squire Letters, ff. 54-5, 8 Apr 1812.
[81] BL, ADD41962, Pasley Papers, f. 149,

operational career, but luckily for the service, he suffered a serious back injury on 14 August 1809, at the Siege of Flushing. After a lengthy period of convalescence, Pasley took up duty again, commanding the Royal Military Artificer company at Plymouth in 1811. Pasley then set his mind to the task of improving the training and effectiveness of this RMA company and over several months made huge improvements. He believed that artificer soldiers were required to support engineer officers on operational duty and the RMA in its current state was not capable of providing this. Pasley wrote bluntly and at length on his findings and proposed that a school should be set up to train soldiers who could be deployed with the army to assist in military engineering activities. In August 1811, John Rowley, Secretary to the Inspector General of Fortifications wrote to Pasley :

> on the subject of training the R.M. Artificers to their duties in the field. … General Morse forwarded the letter you sent him, to the Master-General, with his recommendation … I … hope that his Lordship will think proper to call upon you to superintend and carry on the system of instruction you have so well pointed out.[82]

Not waiting for any official sanction for his activities, Pasley continued with what he believed was right, but kept his superiors informed of his actions :

> Since I last wrote to your lordship upon this subject, I have employed my spare time entirely in digesting a system of instruction for the use of the young officers of engineers and for the non-commissioned officers and soldiers of the department. When complete, it will be, to the engineer department, what General Dundas' book is to the army. And, though I have no model to follow, … I have practically proved the efficacy of it by the rapid improvement of the Royal Military Artificers under my command. … they now not only make no difficulty in marking out field works according to a plan, but are themselves capable of drawing plans and sections of any kind of work. As it will be much more gratifying to my feelings to contribute … to the improvement of the department … than to lay its deficiencies open to public view, I have determined to proceed no further with the second part of my essay until I have completed the system of instruction in question [83]

[82] REM, 4601-79 f. 49. John Rowley to CW Pasley, 6 Aug 1811
[83] BL, ADD41962, Pasley Papers, ff. 359-60. CW Pasley to Lord Mulgrave, 11 Dec 1811.

Pasley's reference above to the 'second part of my essay' concerns the publication in 1810 of his *Essay on Military Policy*.[84] This was very well received in both military and political circles and ran to four editions over the next three years. It was certainly read by Wellington and Beresford. His original plan was to publish a second part, describing what was wrong with the Ordnance Department and what needed to be done to correct it. This would clearly have caused some anger within the Board of Ordnance. His offer to concentrate on improving the Ordnance by working within their systems was as an olive branch to the senior officers he was criticising.

Considering that Pasley was only a Captain in the Royal Engineers, his correspondence verged on the insubordinate. Writing to Colonel-Commandant Mann, the Inspector General of Fortifications, in January 1812, :

> I enclose a memoir upon the state of the engineers department, which will fully explain the grounds upon which I consider it the most inefficient department in His Majesty's Service … Not long after the retreat … of the British troops employed under Sir John Moore, in a campaign , in which the defects of the department had been fully proved … Lord Chatham directed General Morse to give in a plan for forming an establishment of trained sappers and miners, with a view to render the Corps efficient in the Field … Major Lefebure had declined the command in Portugal when offered to him, on the avowed plea; that the engineer Establishment in the field was so imperfect, that the officers had nothing before them but a prospect of certain failure and disgrace in every operation of importance. … At Copenhagen and Flushing, the most mortifying blunders, confusion and delays took place owing to the inefficiency of the department … At Badajoz … some of our most promising officers of the Corps, either suffered, or actually fell a sacrifice to the defects of the system. Captain Dickenson lost his life [at Badajoz], because he was obliged continually to expose himself on the top of a parapet, showing the men of the working party how to place and picket down fascines … As a proof of this I have learned since I wrote you last [sic], that Lord Wellington has lately adopted an expedient for obviating … the defective state of the Establishment. For two or three months past, a certain number of soldiers … have been trained to sapping and other field duties of the engineer department. If something of the same kind is not Established at home by authority of the Master-General from whom it will naturally be expected that all improvements of the engineer department should originate; I am sorry to say that I feel thoroughly persuaded that the Ordnance Department will soon sink into public contempt and that the

[84] C.W. Pasley, *Essay on Military Policy in Britain and the Empire*, 1st Edition, (London, 1810).

> consequences of the necessary measures just stated, to which Lord Wellington has been forced to resort for the safety of his army, may prove in the end highly injurious to the honour and interests of the Corps of Royal Engineers, and may tend to set aside the Royal Military Artificers altogether as an [sic] useless and contemptible description of troops which I know that they are generally considered. [85]

Although the tone of the letter was very strong, his views were obviously supported by some of the Ordnance hierarchy as his proposals for setting up a school were well received and were being seriously considered. Two letters from John Rowley to Pasley show that events in early 1812 were moving fast :

> As General Mann is very desirous that the instruction of the R.M. Artificers in the construction of field works, should be put in train, … he wishes to see you upon the subject as soon as convenient … General Mann wishes you would turn in your mind some outline … for him to lay before the Master-General, as to the best means of carrying the system into effect, with some idea if possible of the expense which would attend it upon any given scale. [86]

> I have made known to General Mann that you are ready for your order to come up to town. Your memorial [Request for promotion to brevet Major] has been forwarded to the Master-General with his recommendations.[87]

Pasley's ideas were also being aired by his peers who were serving in the Peninsula. Richard Fletcher wrote to the Inspector General of Fortifications after the siege of Ciudad Rodrigo in January 1812 'The sappers we lately employed were taken from the Third Division, and had received such instruction as time and means afforded, under Captain Burgoyne. They were certainly useful, but far from expert'.[88] This quotation is taken from Wrottesley's work on Burgoyne. In it, Wrottesley suggests that the common belief was that the first proposal for the formation of a trained body of sappers and miners came from Wellington in April 1812. As this quote predates it, this cannot be true. A review of the dates would show that Wellington's letter of 7 April 1812, which was received in London on 23 April 1812, cannot have been the cause, since the Royal Warrant for the formation of the Royal Sappers and Miners was also dated 23 April 1812. Wellington's letter may have been the final trigger, but it

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[85] BL, ADD41963, Pasley Papers, ff. 1-2. CW Pasley to Gother Mann 18 Jan 1812.
[86] BL, ADD41963, Pasley Papers, ff. 9-10. John Rowley to CW Pasley 17 Feb 1812.
[87] BL, ADD41963, Pasley Papers, ff. 11-12 John Rowley to CW Pasley 22 Feb 1812.
[88] Wrottesley, *Life of Burgoyne*, vol. 1, p. 164. Fletcher to IGF, 29 Jan 1812.

was not the first proposal. More concrete evidence can be found in a letter from Rice Jones of 28 August 1811 where he records 'the Royal Military Artificers, called Royal Sappers and Miners very soon; and they are to be drilled in the construction of batteries, trenches, saps, &c.'[89] Wrottesley's error in giving full credit to Wellington for the formation of the Royal Sappers and Miners is still common amongst some recent writers.[90]

Omitted from Wrottesley's commentary, is the fact that Fletcher also submitted with this letter of 29 January 1812, mentioned above, a proposal for the creation of a corps of sappers and miners which was different from Pasley's proposals. They were similar in a number of ways, but clearly developed independently. This leads to the question of whether Fletcher knew of Pasley's proposal. It also questions if there was any communication going on between Fletcher and Pasley, as it seems unusual that Fletcher would have submitted a separate proposal at this time if he knew of and agreed with Pasley's proposals. Fletcher's main subordinates, Burgoyne, Squire and Jones certainly all knew of Pasley's plans and it is inconceivable that Fletcher did not know.

It appears that Fletcher was proposing a quick fix solution for immediate implementation by cherry picking the best soldiers from the Royal Military Artificers and using junior Royal Engineer officers to command them. His proposal made no reference to Pasley's plans which is surprising as a co-ordinated effort was more likely to produce success. Fletcher's proposal would also appear to be a little optimistic in believing they could identify 800 suitable soldiers from the RMA. At that time the total size was around 1,700 soldiers and only 900 were in England.

Pasley's continued correspondence with the Master-General eventually led to him submitting a proposal to set up the School of Military Engineering. A committee was formed, at the request of the Inspector General of Fortifications, to evaluate Pasley's proposal and make recommendations. The committee of

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[89] Shore, *Diary of Rice Jones, 28 Aug 1811.*
[90] Fletcher, *Peninsular War*, p. 58; Fletcher, *In Hell before Daylight,* p. 117; Griffith, *Modern Studies*, p. 111; Myatt, *British Sieges,* p. 117.

three senior engineers, headed by John Rowley with Alexander Bryce and George Bridges, reported on 14 March 1812 and recommended that Pasley's proposals be put into action.[91] The Inspector General approved the Committee's recommendation and Pasley was asked to take command of the new School of Military Engineering. Unfortunately at this point the plans came to a halt due to a stand-off between Pasley and the Master-General over promotion. Pasley believed he was entitled to a brevet rank of Major and would not accept the position until it was granted. The Master-General would not agree to the promotion.[92] On 23 April 1812 the Royal Warrant was issued by the Prince Regent authorising the establishment of the school under Pasley.[93] The Warrant was signed on the same day that Wellington's despatch of 7 April 1812 was received in London.[94] In the National Archives there is a letter from the Master-General, dated 8 April 1812, which seeks legal opinion on whether changing the name of the Royal Military Artificers would require all the soldiers to be attested again and whether new soldiers would be bound by the Articles of War and the Mutiny Act.[95] This shows that the Master-General was taking steps to progress the formation of the school regardless of the stand-off with Pasley.

The RMA was reformed on 4 August 1812 under the title of the 'Royal Military Artificers or Sappers and Miners'. This was shortened to the 'Royal Sappers and Miners' the following year.[96] The initial strength remained at around 2,800 men.[97] The first soldiers from Pasley's school were in the Peninsula before the end of 1812. Though there were still complaints about their skills, they were a major improvement on the performance of the RMA. Apart from training more suited to operational activities, they now came with their own subaltern officers,

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[91] BL, ADD41963, Pasley Papers, ff. 22-27. John Rowley to Gother Mann, 14 Mar 1812.
[92] See Pasley's description of the situation in : Wrottesley, *Life of Burgoyne,* vol. 1, p. 166.
[93] Ward, *The School of Military Engineering,* p. 5.
[94] Royal Military Chronicle, May 1812, Gazette dated 24 Apr 1812, announcing despatch received previous day.
[95] WO44/612, Chapman to R. H. Crew, 8 Apr 1812.
[96] www.remuseum.org.uk/corpshistory/rem_corps_part4.htm (viewed 18 Apr 2006).
[97] REM, 4501-65. These details taken from Pasley's 'Memoir relative to the Royal Sappers and Miners No 2, 1813'. 5 Sergeants, 5 First Corporals, 5 Second Corporals, 3 drummers and 70 privates, commanded by a sub-lieutenant who was always raised from the ranks.

which removed the problem which ruined the RMA of having no constant and consistent leadership.

Another consequence of the formation of the school, which appears to have been overlooked by all writers on the subject, was that from 1812, all newly commissioned Royal Engineer officers were sent to the school to instruct and be instructed on practical field works. The Corps monthly returns state clearly that officers were being sent to Chatham for this purpose.[98] Writing to his sister in May 1812, Pasley's view is clearly explained 'you know I have long had a plan in view of training the young officers and all the N.C. Officers and soldiers to their field duties'.[99] He uses almost identical words in a letter to John Burgoyne in March 1812.[100] Also, in a minute from the meeting of the Board of Ordnance dated 11 May 1812, reference is made to 'the System of Instruction in the Field Duties intended for the junior officers of engineers and the Corps of Military Artificers Sappers and Miners'.[101] Pasley's Memoir on the formation of the Royal Sappers and Miners states that the key role of the engineer officers was the instruction of the soldiers but goes on to say :

> When the officers of engineers are not occupied in military or field duties, they have a course of study laid down for them, calculated to improve them in the science of attack, upon which the art of fortification is founded. They are required to present memoirs relative to the various operations of a siege, stating the number of men, materials and tools, and the distribution of them.[102]

The junior officers typically spent a further four to six months gaining experience of the practical aspects of their profession and also gained valuable insight into the command of the first sappers and miners who were to be sent to the Peninsula. In many cases, these junior officers would travel to the Peninsula in command of the soldiers they had trained with. Pasley also used any other officers who were available to come and teach the new recruits. A greater testament to the newly formed establishment was given by Lieutenant-Colonel

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[98] See WO54/252, for officers commissioned in 1812
[99] BL, ADD41962, Pasley papers, ff. 38-40. Pasley to his sister, 2 May 1812.
[100] Wrottesley, *Life of Burgoyne,* vol. 1, p. 166. Pasley to Burgoyne, 2 Mar 1812.
[101] WO47/291, 11 May 1812
[102] REM, 4501-65. 'Memoir relative to the Royal Sappers and Miners No 1, 1813'.

Samuel Dickens, who wrote to Pasley requesting permission to spend a couple of months at the school, 'to take a little instruction' before going out to the Peninsula.[103]

Pasley was keen to remove the previous experiences of poor discipline through attaching engineer officers permanently to each company of the Royal Sappers and Miners. Whilst he acknowledged that many engineer officers were averse to any form of regimental duties, which they saw as 'drudgery', he saw the introduction of the newly commissioned junior engineers immediately into the regimental role at Chatham as a way of reducing this view. Pasley also put forward the notion that there should be one title, 'Royal Engineers' for both the officers and the soldiers. He saw the two separate titles as causing a lack of concern in the engineer officers about the actions of the artificers as they took no pride or responsibility for their actions and reputation.[104]

3.2.3. THE ARMY'S RESPONSE - THE ROYAL STAFF CORPS & THE ROYAL MILITARY COLLEGE.

Royal Staff Corps

The Royal Staff Corps was formed in 1798 by the Duke of York partly in reaction to the Board of Ordnance's inability (or unwillingness) to provide sufficient engineers and artificers for the campaign in Holland in 1795. The Duke of York had asked for engineers and heavy ordnance to be supplied to support the planned campaign and was told that the Ordnance could supply neither the officers or artillery in the quantities he required. The Duke of York decided that he did not want to have to rely on the Board of Ordnance in the future and encouraged the Horse Guards to provide their own specialist troops who would be attached to the Quarter-Master-General's department.

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[103] BL, ADD41963, Pasley papers, ff. 60-61, Dickens to Pasley, 4 Sep 1812. Dickens had been CRE at Malta from 1800 to 1812, returning to England. According to the returns, he was on leave at this time, before returning to Malta in Feb 1813.

[104] REM, 4501-65. These comments are taken from Pasley's 'Memoir relative to the Sappers and Miners'.

Unlike the Royal Engineers, the Horse Guards recognised that the Royal Staff Corps required both officers and soldiers to provide a complete military engineering service. The life of this corps is not well documented. From the General Order of 1 February 1804, it would appear that the ranks were initially filled by volunteers from the army. The General Order asked for men who had served regular apprenticeships as carpenters, wheelers, sawyers, shipwrights, boat builders, masons, bricklayers or miners. It also indicated that the applicants would be tested in their trade before being accepted.[105] There is no evidence of a separate arrangement for training of the officers. The Royal Staff Corps received some officers from the Royal Military College and they also received some officers who transferred from the Royal Engineers.[106] The original establishment was only one company, but this was rapidly increased to five in 1800 and then to a battalion (10 companies) in 1809, giving a total strength of not much more than five hundred officers and men.[107]

On paper there was a distinction between the roles of the Royal Staff Corps and the Royal Engineers. The Royal Staff Corps were responsible for acting as guides, surveying terrain and undertaking temporary works such as field works and flying bridges, while the Royal Engineers were responsible for more permanent fixtures like besieging and defending fortresses, and major building work. In practice, there was less distinction. Wellington appeared to use whatever group was available when he needed them. The commander of the Royal Staff Corps in the Peninsula, Lieutenant-Colonel Sturgeon, is mentioned many times in Wellington's Despatches and made a particular name for himself with some innovative bridges, including the repair of the bridge at Alcantara and the design of the bridge over the river Adour. He died in 1814 at Vic Bigarre, it has been suggested, getting himself deliberately killed for incurring Wellington's wrath for failures in his command of the postal service.

One of the major contributions of the Royal Staff Corps to the war in the Peninsula was their work to map Spain and Portugal. Along with colleagues

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[105] Glover, *Peninsular Preparation,* p. 105.
[106] including Henry Brownrigg, who transferred in 1801, and Robert Dundas in 1802,
[107] Fortescue, *British Army,* vol. 4, Part II, p. 881.

from the Quarter-Master-General's office, several staff corps officers worked constantly to map the Peninsula at a scale of four miles to the inch, giving Wellington access to mapping information that was not available from the printed maps of the period.[108] Some of the output of this work was eventually printed in what is still the best and most accurate maps of the peninsular battlefields, Wyld's Atlas.

Royal Military College

The Royal Military College (RMC) was the brainchild of John Gaspard Le Marchant. He believed that there was a need for the British army to improve its professionalism by training officers to provide the administrative and organisational skills required in the Quarter-Master-General's department. This need had been fulfilled for many years in continental armies, but staff experience in the British army was gained by trial and error.

Le Marchant was well known to the King and the Duke of York, and his proposals were received favourably and strongly supported by both, as well as by Dundas, the Quartermaster-General, Calvert, the Adjutant-General[109] and Brownrigg, the Military Secretary. Le Marchant's proposals were submitted in January 1799, approved and the school officially opened in May 1800. [110]

The original proposal was for a school with three departments. The senior school was for those destined to serve on the staff; the junior department for the training of Gentleman Cadets; and the Legion was for sons of soldiers and Non Commissioned Officers. The Legion was not approved due to concerns that the number of promotions from the ranks would be too great.[111]

The junior department was very much the equivalent of the Ordnance's Royal Military Academy and in fact for a number of years the surplus from the Royal Military Academy was placed at the Junior College at Great Marlow. The

[108] Ward, *Wellington's Headquarters,* p. 110.
[109] Glover, *Peninsular Preparation,* p. 201.
[110] Ward, *Wellington's Headquarters*, p. 24.
[111] Glover, *Peninsular Preparation,* p. 200.

Warrant described two purposes : to train some of those who from an early life were destined for the military, and to provide for the sons of officers who died or were wounded in the service of their country. As with the Royal Military Academy, there were entry requirements, with cadets having to be between thirteen and fifteen years old, to be mentally and physically fit, and to have some mathematical knowledge and a good hand for writing. Cadets had to pass final examinations within four years of entry. Initial capacity was for one hundred cadets.[112] Of these one hundred, twenty were destined for the East India Company, thirty were the sons of officers who died or were wounded in the service of their country, twenty were for the sons of serving officers, and thirty were for the sons of noblemen and gentlemen (who paid more for the privilege of sending their sons to the College).[113]

The senior department, or Staff College, started life as a private venture by the French émigré, General Jarry, who set up a school at High Wycombe in 1799, to teach staff duties to junior officers. The numbers present in the original school were quite small, never exceeding thirty-four in this period. In 1802, when the Staff College received its warrant, it moved to High Wycombe. Entry requirements required both practical experience and a basic level of education. They had to be at least nineteen years old, with two years regimental service and a knowledge of mathematics and French.

The RMC was also dogged by problems with the behaviour of the cadets. In 1806, Le Marchant was charged with calumny for complaining in private to the governor of the college that the discipline and education was unacceptable at Great Marlow.[114] As Great Marlow housed the additional cadets from the Royal Military Academy one is left to wonder if the attitude had been transferred from Woolwich or if it was more of a general problem. It is difficult to understand why the two military colleges had discipline problems which would not have been tolerated in schools for gentleman and even more so, in the army.

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[112] Glover, *Peninsular Preparation,* p. 205.
[113] Glover, *Wellington's Army*, p. 39.
[114] R.H. Thoumine, *Scientific Soldier. A Life of General Le Marchant 1766-1812.* Oxford University Press (London, 1968), pp. 120-121.

Although this was a start, the impact it had during the Napoleonic wars should not be over estimated. The Junior department at the college only provided about 4% of the first commissions into the army.[115]

3.2.4. ENGINEERS VIEW OF THEIR TRAINING, CAPABILITY AND LEADERSHIP.

The common view of artillery and engineer officers amongst the army, was of studious, stuffy and pedantic officers. The 'Scientific soldier' was a term that was used at this time and the training and education of Ordnance officers differed significantly from the training and education of junior officers in the army. But was this perception based on fact? Were the Ordnance officers better trained? Were they competent to undertake the tasks they would be asked to perform? Did the Ordnance even understand what the requirements were for modern warfare in Europe?

Their experience in the 18th century was almost non-existent. Early 18th century campaigns made extensive use of officers from other European nations to provide the specialist engineering services in English armies. More recent operations by the British army alone were focussed on colonial campaigns in India or America, or limited attacks on coastal fortresses often carried out by, or with, the Royal Navy. There was very limited experience of siege warfare in Europe. Wellington was one of the few British generals who had experience of siege warfare, but 'Sepoy' experience counted for little at home.

Training

The engineer officers who were involved in operations through the early years of the 19th century were not happy with the training they had and felt that changes were required. There was resistance from several senior ordnance officers to the reforms which were being proposed by the younger breed of

[115] Glover, *Wellington's Army,* p. 39

engineer officer like Pasley, Squire, Lefebure and Burgoyne. Bearing in mind the remarks made above on the Royal Military Academy and the quality of training the cadets received, it is important to note that many of the officers who played prominent roles in the Napoleonic wars passed through the Royal Military Academy during the period when examination requirements were being lowered to meet the demand for officers.

In almost (if not) all cases, the officers themselves complained bitterly about their training and their experiences. One only has to look at the campaigns in which they fought in the period from 1793 to 1810 to realise that they had almost all had nothing but bad experiences at Alexandria, Buenos Ayres, Copenhagen and Walcheren. There was a constant theme of the lack of training engineer officers had received in the practical aspects of their work.

Pasley writing around 1811, described his views :

> I should have suggested several improvements that appeared to me from my own experience and reflection to be essential, … I considered the British Army … to be incapable of succeeding in a siege, … without either having recourse to the barbarous measure in incendiary bombardment, or without an enormous sacrifice of the lives … in sanguinary assaults … which might be rendered unnecessary by a more efficient organization of the Royal Engineer department, and especially by forming a well-instructed and well-disciplined body of engineer soldiers … The better instruction of the junior officers of the Royal Engineers appeared no less essential, for at that time they were not even taught the theory of the attack of fortresses … and the examinations for commissions were merely a matter of form, and no genuine test for proficiency. As for practical instruction, they had none, for they were sent on service without ever having seen a fascine or gabion, without the smallest knowledge of the military passage of rivers, of military mining, or any other operation of a siege, excepting what they may pick up from French writers, of which a striking proof occurred in Sir John Moore's retreat, when all attempts to blow up stone bridges … made by officers of the Corps, myself amongst others, failed … with the exception of only one, which Lieut. Davy, a very promising young officer, succeeded in completely destroying, but at the expense of his own life, which he lost from not understanding the very simple precautions necessary to insure the safety of the person who fires the train of the mine. For my part, I should not have even known how to make a battery in the attack on

> Copenhagen, the first siege in which I was employed, but from the information I derived from a French book on the subject.[116]

Jones made a similar point in the preface of his book on the sieges during the Peninsular War, 'In the English language there exists not a single original treatise on sieges; all our knowledge of them is obtained from foreign writers'.[117]

Analysis of the movements of officers on these campaigns shows that there was a small number who repeatedly appeared in the operational activities and these officers came to know each other very well and trusted the judgement and discretion of their peers. Their letters over the period on occasions display an almost incandescent rage at the bad planning and organisation of engineering activities. The early years of the 19th century saw these officers talking amongst themselves about what needed to be changed. There was a recognition that change at home was going to be very slow and they started talking about how they could make progress themselves. Pasley described how this small group of officers responded to the challenge :

> The very inefficient state of the engineer Department, strange to say, appeared to be unknown, not only to the rest of the Army, from the Commander-in-Chief to the youngest ensign, but even to the senior officers of the engineers themselves … Young or in the prime of manhood, full of enterprise and zeal, meeting and comparing notes together in the metropolis after the desultory expeditions in which they had served, and afterwards those employed in 1810 in the construction of the lines of Torres Vedras, meeting from time to time in some central spot, they excited each other, and inspired their juniors with an espirit-de-corps and a devotion to the service of their Sovereign and Country that I do not suppose was ever exceeded. Captain Charles Lefebure … was at first the most influential of these officers, partly from his character and example … He it was who first pointed out to me and other officers his juniors as early as 1805 the inefficiency of the Corps for want of disciplined and instructed Sappers and Miners. [118]

As mentioned above, the initial instigator appeared to be Charles Lefebure, who started talking about forming a group to foster ideas and knowledge. Burgoyne

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[116] Kealey, *General Sir Charles William Pasley KCB, FRS, Colonel-Commandant RE 1780-1861* (London, 1930). p. 13, Quoting Pasley, talking about planned content of 2nd part of his Essay.
[117] J.T. Jones, *Journal of the sieges undertaken by the Allies in Spain.* 1st Edition. (London, 1814), p. ix.
[118] Kealey, *Charles William Pasley,* pp. 7-8.

seems to have taken up the planning of this society. This was no easy task at this time as many of the officers were placed in different locations and planning was over an extended period by letter. In 1810 the 'Society for Procuring Useful Military Information' was formed with an initial membership of six, made up of J.F. Burgoyne, S. Dickenson, G.C. Ross, E.R. Mulcaster, J.T. Jones and J. Squire,[119] Lefebure having been killed in April 1810, at Matagorda. The aim was the 'encouragement of military study and engineering'.[120] Membership was by invitation only and restricted to officers 'as are inclined to be of the same way of thinking with ourselves'.[121] The admittance of the junior officers was discussed and initially discounted, as they were not thought to have sufficient experience to contribute, but, it was hoped that membership would 'particularly act as a forcible hint to the young men we admit how absolutely necessary it is to study and procure information theoretical, practical and local in our complicated profession'.[122]

One unexpected omission from the initial group was Charles Pasley who had been tirelessly campaigning for years to improve the standard of training and education in the Ordnance. Although Pasley was working at home to convince the Ordnance on the need to re-organise the Royal Military Artificers and corresponding regularly with the likes of Squire and Burgoyne, he was not invited to join. Pasley had previously not been on good terms with Lefebure, but this was unlikely to have been the reason. He was a logical choice for membership, even if it was for the sole reason of having a UK based supporter who could collate, disseminate and promote on the Society's behalf. The probable reason why Pasley was not amongst the founder members was because he was recovering from the injuries he received at Walcheren. He was also working to complete and complete his '*Essay on Military Policy'*, which was published in November 1810. Pasley returned to service in December 1810, when he took up a position as commander of the sixth company of Royal Military Artificers at Plymouth. Also omitted from the group were the Senior

[119] Kealey, *Charles William Pasley,* p. 9.
[120] REM, 5501-79. Burgoyne to Squire, 4 Jan 1811.
[121] REM, 2201-79, Dickenson to Burgoyne, 9 Jan 1811.
[122] REM, 5501-79. Burgoyne to Squire, 4 Jan 1811.

engineers in the Peninsula during the period, Richard Fletcher and Howard Elphinstone. Elphinstone, was by this time, back in England, but Fletcher's omission is more surprising.

The group grew from six to eighteen in January 1811 when Birch, Nicholas, Goldfinch, Fanshawe, Pasley, Boothby, Thackeray, Parker, Lewis, Marlow, Douglas and Arnold were admitted. Very little correspondence has survived on the activities of this group. What is clear, however, is the recognition of the need to share experiences and to improve effectiveness in the Corps. That no senior officers were invited to join indicates that the membership did not feel they shared its views.

Leadership

Another driver for the formation of the 'society' was a lack of confidence in their senior officers. Letters from the most recent European campaigns contain strong language and emotion as the performance of their superiors was discussed. The Walcheren campaign of 1809 was led by the Earl of Chatham, who at that time was Master-General of the Ordnance. Along with 40,000 troops there were twenty-eight engineer officers and two hundred and sixty Royal Military Artificers. This was the largest contingent sent on operation in the history of the corps. The engineers were under the command of Colonel William Fyers, who was Deputy Inspector General of Fortifications and about fifty-six years old. The engineering aspects of this campaign were as unsatisfactory as the other military elements. The letters of the engineers reflect their opinions on the campaign from an engineering perspective :

> The Corps of Engineers is disgraced and damned for ever. The cry of the whole army and navy is against us. I found Jones when I landed in a state of despair. Boteler wished that the first shot might take off his head … We were offered the whole army to act under us. … such circumstances would have put life into a statue … But what could we do with a parcel of old men or rather old women at our head, … with fellows old in years, poor in spirit, beardless in military experience, destitute of knowledge'.[123]

[123] BL, ADD41962, Pasley papers, ff. 160-161. Pasley to Squire, 9 Aug 1809.

Pasley had already written once on the subject in May 1809, but clearly he still felt so strongly that he felt further complaint was necessary. :

> The same melancholy disgusting system prevails in our Department, … our brilliant second was seized with a fit of zeal and enthusiasm : he represented our want of activity to D'Arcy, and proposed to undertake the improvement of the works of Flushing himself … but the vile system upon which D acts is this : - make a shew of work - never mind what you do – so that you do something : - can anything be more contemptible and absurd than this : - but our department is going headlong to win an eternal infamy : the island it seems will be retained … much now depends on the exertions of the engineers and their conduct now will most justly become a subject of severe censure hereafter : - We entered the place on the 16th or 17th August – we attempted no efficient repair or reform, until the 16th Sept; and then our operations are guided by the pitiful desire of pleasing the eye of an English General at the expense of the real interests of the country … the fine season has now slipped through his hands : - and the late incessant rains have almost put a stop to the proceedings.[124]

> Our affairs here, I grieve to tell you , proceed worse than ever; and our chiefs have neither sense nor spirit enough to resist the [?] and insults continually offered to the Department. … I have proposed, that all the Captains should express their sentiments on this lamentable occasion … Let us not permit - that age and rank should not cover the grand defects of understanding and experience - The country should and ought to know in what manner it is served.[125]

> A base exposure of facts … is quite sufficient to convince a military man … of the absurdity of our proceedings - But, I will go further, and say, that we have been criminally negligent … we have had ample means at our disposal … The state of indecision, in which we have been placed, since the occupation of the island has been our ruin … A weak and vacillitating Ministry - a commander in Chief without spirit, patriotism or judgement and an engineer department conducted by obstinacy and ignorance - Such are the grievous evils under which we have laboured … I certainly should be glad to return to England - because the system pursued here in every matter is thoroughly disgusting.[126]

> but what are we to expect from such men as these without patriotism, talent or energy … we must do our utmost to change our military system - I mean the conduct of our military operations … Is D'Arcy to be a Baronet!!!!!!! Impossible.[127]

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[124] BL, ADD41962, Pasley papers, ff. 171-72. Squire to Pasley, 28 Sep 1809.
[125] BL, ADD41962. Pasley papers, Squire to Pasley, 22 Oct 1809.
[126] REM, 4601-90-1. Squire to Jones, 6 Nov 1809,
[127] BL, ADD41962, Pasley papers, ff. 181-2. Squire to Pasley, 26 Nov 1809.

One other event which says much about the leadership of the Royal Engineers at the time is described by Jones :

> An order was issued by Colonel Fyers [after he was wounded on 13 August 1809] that the senior Engineer . . . should . . .deliver a written report . . . of anything extraordinary that might have occurred during the night. The first morning Colonel D'Arcy. . . refused compliance, saying he had other things to do, and no solicitation could prevail on him to write a single line. . . The third morning Colonel D again declined, saying it was all nonsense. . . He was requested to reconsider the matter, and on a decided refusal, the Brigade-Major put him under arrest.[128]

D'Arcy continued his refusal right up to the point of the Court Martial beginning. His argument appeared to be based on his skewed understanding of relative seniority of himself and Fyers, but does demonstrate a less that cordial working relationship between the senior engineers. Another comment from Jones sums up his view of the leadership of the whole campaign :

> The nomination of Lord Chatham was forced on the Ministry by George III ... Lord C was a man so notoriously indolent as to have acquired the soubriquet of the 'late' earl ... He was sadly embarrassed in his circumstances, and if he should not attain fame he was at all events certain to acquire the means of paying his debts. The second in command was a man of acknowledged gallantry and of much experience, but sadly deficient in headpiece, if not actually labouring under the aberration of intellect which shortly afterwards caused his ruin. Of the General officers, some were better known on the turf than in the field, … and only one or two had any recent military experience. Furthermore, the honours and pensions bestowed on the captors of Copenhagen two years previously drew forth from their snug abodes the heads of the military departments under the expectation of similar recompenses. Thus a veteran who had held a snug and lucrative post at Woolwich for more than thirty years and who had never served in the field except as a subaltern, now reappeared on the stage as Commanding Officer of Artillery; and an equally old officer, precisely on an equality with the last described, with respect to experience and service, came forth from an office in London as Commanding Engineer … Such was the experience and energy brought together to command a force destined to invade the French territory and contend with the most active and intelligent troops the world ever saw. [129]

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[128] Porter, *History of the Royal Engineers,* p. 252.
[129] Porter, *History of Royal Engineers,* p. 254.

This was the background with which the middle-ranking engineer officers faced the major task ahead in the Peninsula. Their expectation was that they could not rely on help from above and would have to make do with their own best efforts.

3.2.5. SUMMARY.

The section started with two questions :

- Was the training the Royal Engineer Officers received appropriate for their needs?
- Was the engineering support they received adequate?

The Royal Military Academy provided a standard education to artillery and engineer cadets. The majority of the cadets were destined to serve in the Royal Artillery and the education had to be tailored to meet the needs of both corps. Such a situation will always lead to compromises. Engineering commissions were typically seen as the preferred objective and the best students usually chose the Royal Engineers. Through continued attendance or secondment to the Ordnance Survey new engineer officers were able to gain some further training and experience after being commissioned. The syllabus at that time is shown in Appendix A. A major part of the syllabus covered the attack and defence of fortifications. What was lacking at this time was practical experience of the various activities. A complaint of the engineer officers was that they had no real experience before they arrived at their first siege. Whilst a complaint such as never having made a fascine or gabion could be easily remedied, it is less likely that the full challenges of a real siege could be practiced. The major problems in actual operations were dealing with the limitations of time, resources and men, these would be even harder to teach. The officers who were most useful in the field were those who were most able to adapt to the circumstances. It should also be noted that almost all complaints about lack of training were related to siege work. As will be described later, undertaking sieges was only a small part of an engineers role. They had adequate training for the other roles they undertook.

Much of the writing on the Royal Military Academy (and also the Royal Military College) focuses on the negative, the bullying, the poor discipline and the relaxing of examination requirements. These were all real problems, but focussing on these elements masks the fact that cadets received education that did help them when they were commissioned. Even when the examinations were suspended, cadets were only recommended for commissions when the masters thought they were capable of being useful. One can understand that the purists and often the new officers themselves felt that standards were not good enough, but the fact is that the engineer and artillery officers who were commissioned were able to perform their duties. Where they had no experience, they, like the army officers had to learn as best they could. The demands of war often lead to compromises and the output of the Royal Military Academy was not exempt from the realities of war.

The limitations in education were addressed as the war progressed, both through peer education and through improvements at home. From 1812, all new engineer officers received several months practical training before being sent abroad. The officers in the field shared information and also prepared instructions which were sent home for use in the schools. The training of the Royal Engineers was not perfect, but it did give officers a grounding in the principles they needed. As the war progressed the training of cadets and officers improved.

The situation with regard to engineering support is less satisfactory. Broadly, it would be true to say that there was no effective engineering support for operational activities at the start of the Peninsular War. The Royal Military Artificers could best be described as static garrison soldiers. Whilst this fact was appreciated it needed the painful experience of a major siege to bring the seriousness of the situation to the commanders. Before 1812, the presence of engineering artificers at a siege was effectively non-existent. The two sieges of Badajoz in 1811 started the impetus that eventually led to the formation of the School of Military Engineering in April 1812. It should not be forgotten that the biggest change was the decision to make the Royal Military Artificer companies mobile in mid 1811. This was the decision that allowed artificers companies to

be despatched into the field. The engineer officers continued to struggle with the lack of support until the end of 1812, Burgos being the first siege where the newly trained sappers were available. From 1813 the number of trained sappers increased and, more importantly, they also had consistent leadership through nominated engineer officers and their own sub-lieutenants. The junior engineer officers had also taught and trained with the sappers at the School of Military Engineering and they knew each other when they went on campaign. The work of Palsey particularly had a huge impact on turning the Royal Military Artificers from a liability into an effective military engineering force.

3.3. Analysis of Royal Engineers Officers

The men who joined the Corps of Royal Engineers during the late 18th and early 19th centuries performed a very different role from most officers in the British army of the time. Unlike their peers in the line and to a lesser extent, the artillery, the engineer officer typically worked and lived with the senior officers in the army. Their usefulness was often not restricted to the engineering skills and experience which they possessed but often encompassed wider responsibilities where the generals needed an intelligent officer to perform some activity. These roles often overlapped with those of the Quarter-Master-General's department, the Royal Staff Corps and Aides-de-Camp. This section will look at the type of person who joined the Royal Engineers and analyse their background, their progress in the military and their personal lives.

3.3.1. WHO JOINED THE ROYAL ENGINEERS?

Entrance into the Royal Engineers was, in theory, open to anyone, but in practice there were restrictions placed on those who could enter. Up to 1774, entry was based solely on the recommendation of the Master-General of the Ordnance. To gain such a recommendation, required access to the offices of the Master-General and also the recommendation and patronage of someone of note who could champion the potential cadet's case.

In 1774, the Lieutenant-Governor of the Royal Military Academy successfully argued that an entrance examination was required to ensure that some basic

level of education was received by all applicants prior to joining the Academy. The entrance examinations were of such a level that it was essential that the applicant had received significant schooling prior to joining. This in turn required sufficient wealth to allow the child to either receive private tuition or to attend preparatory school. So although there were no limits based on position in society, there were obvious boundaries based on the need for sufficient wealth to put the child through schooling.

However, one difference between the Ordnance and the army was that commissions did not need to be purchased. So a prospective parent could save the £400 price of an Ensigncy in the line, if he could get his child into the Ordnance. Similarly, because promotion in the Ordnance was based on seniority, the prospect was there for steady progression through the ranks without further expenditure. On the other hand, this was perceived to be much slower than progression in the army through the purchase system. To reach the highest ranks in the Royal Engineers could take fifty years.

Guggisberg suggests that there was a difference of opinion between the cadets themselves and their sponsors. Many of the cadets realised that to graduate from the Academy typically required two to four years of hard work. Exam failure, or in some cases, expulsion, was likely to require the parents who had set their mind on their son entering the military, to purchase a commission, which got the son the rank without the effort.

It should also be remembered, though, that there was a tradition of military families in Britain similar to that in France, where positions were almost guaranteed to sons from families with generations of service. The letters of the officers of the British army through this period, confirm that patronage and connections were still important parts of the process of obtaining commissions and later promotion. Even the French Revolution did not destroy this link in the French army. Blaufarb describes this at some length in his recent work on the French Army.[130] Can this traditional link be demonstrated in the applicants to

[130] R. Blaufarb, *The French Army 1750-1820. Careers, Talent, Merit* (Manchester, 2002).

the Ordnance? The table below shows the occupation of the fathers of several of the Royal Engineer officers.[131]

Table 3b. Occupation of fathers of Royal Engineer officers.

Background (Father)		Total
Ordnance	TM Dickens[132], EW Durnford, F Fyers[133], WC Holloway, HD Jones, JT Jones, GCD Lewis, C Mann, GF Macleod,RZ Mudge[134], FW Mulcaster, AW Robe, CW Rudyerd, JMF Smith, HP Wulff	15
RMA staff	RH Bonnycastle, GT Landmann	2
Army / Militia	JR Arnold, JF Burgoyne, C Boothby, ST Dickens[135], GH Henderson, J Jebb[136], R Jones, JS Macaulay[137], L Machell, GF Macleod[138], G Nicholls, G C Ross,[139] C Shipley, PO Skene, GIP West, FW Whinyates[140]	16
Navy / Royal Marines	W Bennett,[141] MC Dixon[142]; E Fanshawe[143], A Fraser[144], H Elphinstone[145]; J Oldfield, L Peake[146], JE Portlock, JN Wells	9
Clergy	R Fletcher, G Gipps, W Gregory, GC Hoste,[147] R Morse, W Reid, RJ Shipley	7
Civil Service & Gov't	J By, W Nicholas[148], A Walpole[149]	3
Royalty	J Mackelcan[150]	1
Doctor	J Carmichael Smyth, J Squire, FR Thackeray	3
Law	J Longley, RJ Vicars	2
Total		58

[131] All 280 Royal Engineer officers were investigated. The table show the officers where details of the father could be determined..
[132] Brother Charles in RA, Brother J.T. in RN
[133] Father was Willam Fyers RE
[134] Father was William Mudge RA, third Director of Ordnance Survey.
[135] Father was Lieut-Col. Thomas Dickens, 1st Foot.
[136] Father was Lieut-Col. in Scarsdale Volunteers.
[137] Father was a Surgeon in 33rd Foot.
[138] Two brothers in the RA and one in the Army.
[139] Father was Uncle of Sir Hew Dalrymple.
[140] Two brothers in the Navy, one in the RA and one in the EIC.
[141] Grandfather was Admiral William Bennett.
[142] Father Admiral Sir Manley Dixon; brother Manley Hall Dixon RN.
[143] Father was Captain Robert Fanshawe RN.
[144] Father was Vice-Admiral Fraser.
[145] Father was Captain John Elphinstone, R.N
[146] Father was Sir Henry Peake, Surveyor of the Navy.
[147] Two brothers in Royal Navy.
[148] Grandfather was Admiral Sir Thomas Frankland, Bart.
[149] Sixth son of the Hon. Robert Walpole.
[150] Illegitimate son of George III.

The table above shows officers in the corps for whom parentage could be determined and represents roughly 20% of the total number. Of the sample, 72% of the officers came from families where the father had a military connection. The remainder came from 'professional' families, with no evidence of cadetships being given to the trades or working classes. As mentioned above, this is almost certainly due to the high educational requirements to gain admittance. The footnotes to Table 3b show, many officers also had other relations in the military.

The figures above suggest that there was a strong relationship between the cadets joining the Ordnance and previous military service in their families. It is also interesting to note the near equivalence of sons of ordnance and army officers. As there are a great many more army officers (ten thousand against two hundred), it suggests a strong tendency for sons to follow their fathers footsteps into the ordnance.

3.3.2. COMPARISON WITH THE ARMY.

As discussed above, the early days of the Royal Military Academy were characterised by indiscipline amongst the students, but the subaltern officers who left the Academy had a level of education which was far above what was available in the army. Obtaining a commission in the army had some similarities and some differences from the ordnance. The major difference was pre-requisites in terms of education. The basic requirement to obtain a commission was to be at least sixteen years old, with the recommendation of at least a Major in the army as to the applicant's character, education and bodily health.

Against common perception, most first commissions were not purchased, but obtained free. Purchase of a commission was usually necessary to obtain a regiment of choice, and was much more prevalent in the cavalry (nearly 50% against an average of 20% in the army overall). A further 70% of promotions were by seniority with the remaining 10% being recommendations by the

Commander-in-Chief. Glover comments that in many popular regiments, promotion by purchase was not faster than promotion by seniority.

The breakdown of first commissions was[151] :

Table 3c. Breakdown of obtaining first commission.

From the ranks	5%
From Volunteers	5%
From the Royal Military College	4%
From the Militia, for persuading forty men to sign up	20%
Applying for commission	65%

Regulations stated that within two years of joining his regiment, an officer had to be capable of commanding and exercising a troop or company in every situation. After that, any other education was at the discretion and diligence of the Colonel of the regiment.

Another common misunderstanding was that the officer class was populated from the landed gentry and nobility. Glover records that there were only 140 Peers or sons of Peers among the 10,000 officers in the army. Similarly the representation from the great Public Schools was below 300. The majority of Peers and ex-public school officers were concentrated in the Guards and the cavalry, the proportions being around 57% in both cases. This left less than 200 officers in total, spread across the rest of the army.[152]

3.3.3. PATRONAGE & FRIENDS

The Ordnance officers were a very close knit community. Apart from working with a small number of colleagues who they got to know very well, they also socialised with their peers. On campaign, they usually shared accommodation, when there were other Ordnance officers present. Several also married

[151] Glover, *Wellington's Army*, pp. 38-41.
[152] Glover, *Wellington's Army*, p. 44.

relations of other officers. At least thirteen of these officers married into a military family, several of them being Ordnance families.[153]

The Ordnance officers had a very different relationship with senior army commanders than regular army officers. There are four reasons for this :

They were not part of the army hierarchy. As previously mentioned, the artillery and engineer officers were responsible to the Board of Ordnance, not to Horse Guards. This had both advantages and disadvantages. One disadvantage was that they were not eligible for staff positions with the army, a task that many would have filled very capably. Army commanders had limited opportunities to recognise their efforts. Generally, an army officer could suggest that an engineer officer was promoted for his efforts, but could not recommend it.[154] The award of brevet army ranks was used, but rank within the corps could not be altered. However, the award of brevet ranks caused major issues in the Peninsula, as Second Captains in the Ordnance were not entitled to awards of brevet ranks. As there were several Second Captains serving in the Peninsula, this caused great resentment. It was eventually overturned in 1813, when a group of artillery officers gained Wellington's support and he took the matter up directly with the Prince Regent.[155] On the advantage side, the engineer officers in the Peninsula had a great deal of autonomy because the senior officers of the Ordnance were not present. Most of these officers would have been very happy to be outside of the control of Ordnance headquarters. The absence of these senior Ordnance officers from the campaigns meant that many engineer officers got to know the senior commanders in the army, and in several cases they had served with these generals before the start of the Peninsular War. This helped both in securing places on operational campaigns, and in quickly fitting in to the army or divisional headquarters when they arrived.

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[153] William Bennett, Richard Bonnycastle, Ralph Bruyeres, Henry Cardew, Edward Fanshaw, Richard Fletcher, George Gipps, Alexander Hall, John Handfield, Charles Holloway, William Holloway, James Carmichael Smyth and Frederick Mulcaster.

[154] One example of this was Wellington's active support for the promotion of Captain Chapman after he returned to England in 1811. Wellington wrote at length to show his support for Chapman's claim for promotion. WO5/599, pp.316-319.

[155] M. Glover, *Wellington as Military Commander* (London, 1973). Sphere Books edition, p. 221.

They had regular contact with senior army commanders. Because the number of engineer officers was so small, they were probably all known to the senior army commanders. On campaign, many were attached to Headquarters or divisional command and worked directly for the senior commander. From the lowest ranks in the Royal Engineers, they could receive orders directly from the army commanders and could make reports directly back to them. It was this sort of responsibility and direct contact that got officers noticed and could have an impact on future assignments and promotion prospects. One example is Burgoyne using his prior involvement with Sir John Moore to write to him and secure a place on the planned campaign in Sweden in 1808.[156]

Greater responsibility for their rank. Most officers in the Royal Engineers undertook tasks that would normally have been entrusted to much more senior officers in the army. The Commanding Royal Engineer for most of the Peninsular War was Richard Fletcher. When he first joined the Peninsular army in 1808, he held the Corps rank of Captain. He was promoted to Lieutenant-Colonel in 1809, but like the artillery officers was still very junior compared to the officers in the army. This level of responsibility at low rank applied equally across the Royal Engineers. One other example was Lieutenant Reid's attachment to General D'España's Spanish army in a staff liaison role in 1811.[157]

Engineer officers were usually part of a General's family. As a general rule, engineer officers were included in the 'families' of the various headquarters, whether they were Wellington's, divisional or in some cases Spanish. They lived within the command structure, often working with the staff and ADC's to carry out the general's orders. This wider role will be examined in more detail later. Because of this close relationship, they developed friendships and working relationships with the senior officers in the army.

Apart from the particular Ordnance related differences, the officers still operated within the normal 19th century conventions of friendship and patronage. Because of the points mentioned above, many engineer officers did form

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[156] Wrottesley, *Life of Burgoyne,* vol. 1, pp. 17-18.
[157] REM, 4601-72, f. 1811/80 Burgoyne to Squire, 15 Dec 1811.

friendships with army officers who they had served with. It was normal to help friends and relations get positions by using contacts and friendships. Some examples are given below.

Pasley was related to the Malcolm family who were great friends of Wellington. In 1811, Captain Pulteney Malcolm RN, wrote to Wellington, asking if he could employ Pasley in the Peninsula.

John Burgoyne was made Commanding Royal Engineer of the 1807 expedition to Egypt by General Fox, brother of Burgoyne's godfather.

George Ross was educated by Sir Hew Dalrymple after his own fathers death. Ross wrote regularly to Dalrymple up to his death at Ciudad Rodrigo in 1812.

John Squire was a great friend of Henry Bunbury, Under-Secretary for War. They had served together previously. The correspondence of Squire and Bunbury is another rich source of information. Several of Squire's letters were used by Napier in his history of the war. Squire was also not above blatant attempts to use his contacts to better his position. In one of his first letters to Bunbury after he arrived in the Peninsula, he asked Bunbury to see if he could get him transferred into another role which would be 'very agreeable'.[158]

Stephen Chapman was a great friend of Henry Torrens, Military Secretary to the Commander-in-Chief. Torrens was appointed by Wellington as his Military Secretary during the 1808 campaign in the Peninsula. Torrens, was a confidant of Wellington, and their letters show the trust they had in each other. Torrens wrote to Wellington twice, seeking his support for obtaining promotion for Chapman.[159] Torrens in this correspondence also notes that he had raised the matter with the Commander-in-Chief.

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[158] BL, ADD63106, Squire letters, Letter dated 7 Apr 1810. Squire had been left in charge of building work at the fort of St Julian in Lisbon. He wanted Bunbury to request that he made a reconnaissance on Cartagena with a view to making it a second stronghold like Cadiz.

[159] National Archives, W05/599 ff. 316-319, 3 Jun 1811 and W03/602 ff. 60-63, 28 Apr 1812. Details provided by Rory Muir.

Attempts to use connections were also used outside of family and friendship. During Pasley's stand-off with the Master-General about his promotion in 1812, he even wrote to General Eyre Coote asking him for a testimonial based on his services at Walcheren. This is surprising due to the very critical comments Pasley made at the time about the command of this expedition.

Because of the small number of officers in the Peninsula and their high profile around the senior officers, a significant proportion of them were mentioned in official correspondence. It is likely that this high profile caused some jealousy back in England. The officers themselves felt that their efforts were not appreciated and that there was a distinct lack of support from Ordnance headquarters in the award of brevet ranks. This is maybe not surprising, since the active officers during the Peninsular War obtained their brevet ranks of Major and Lieutenant-Colonel much quicker than their superiors, in some cases in half the time.[160] In most cases these brevet awards were for service in the field, which is exactly the same reason why many were awarded in the army. The awarding of brevet army ranks did not follow the same sequence as corps rank and this did cause some confusion. There were a number of occasions where questions were asked about whether corps or army rank took precedence when deciding on command. This will be considered below.

3.3.4. LATER POSITIONS OF RESPONSIBILITY

The inability to sell an engineer commission and the promotion by seniority meant that most officers remained with the corps. Of the two hundred and eighty officers who served in the corps during the Peninsular War, only twenty-four went on to Half-Pay. Ten of that number went on to Half-Pay around 1824 when the Ordnance was trying to reduce the huge backlog of cadets waiting for commissions. A further officer went on Half-Pay in 1813 as a result of losing his leg at the battle of Talavera.[161] Only five of these twenty-four officers subsequently retired, the remaining nineteen staying on half-pay until they died.

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[160] Pasley, Burgoyne, Goldfinch and Jones made brevet Lieut.-Colonel in 14-15 years. Gother Mann, the Inspector-General of Fortifications at that time took 34 years. See Appendix J for a sample of the times taken for various officers.
[161] Charles Boothby.

Seventy-eight officers retired (including the five mentioned above). Seven of these retirements were around the 1824-25 period of restructuring. Of the remainder the majority had around forty years service with very few of them having less than thirty years. This would mean that most of these officers would still have been serving past fifty and some would have been in their sixties. William Twiss served until he was sixty-five, Nepean to sixty-seven, Morse to sixty-eight, Charles Holloway until seventy-five and Samuel Dickens until eighty-three. The longest serving and oldest was Gother Mann who served as Inspector General of Fortifications until his death at the age of eighty-four, by which time he had served for sixty-seven years.

This leaves around one hundred and eighty officers who remained with the Corps until their death. Deaths on active service account for about thirty of this number, so around one hundred and fifty, which is over half of the total served with the corps until they died.

Of the two hundred and eighty officers, one hundred and one remained to make Colonel and forty continued through to the highest rank of Colonel-Commandant. This shows the resilience of the officers as there were only around five posts as Colonel Commandant and ten as Colonel, in the establishment of the corps.

The summary above shows that most engineer officers remained in the Corps for the whole of their career and in many cases the whole of their life. Some did make the transition to positions of responsibility outside of the Corps. Several went to hold senior positions of responsibility in the empire. In almost all cases it was their education as an engineer that led to their future appointments. The following section highlights some of the future activities of these officers. It is also worth noting that several of these positions were held whilst still retaining their Royal Engineer commissions.

- George Barney made Lieutenant-Governor of North Australia in 1846.

- John By supervised the construction of the Rideau canal in Canada from 1826-32 and founded Bytown, which later became Ottawa.
- Stephen Chapman was Governor of Bermuda 1832-9.
- Thomas Colby spent his whole career working on Ordnance Survey and was one of the founder members of the Royal Astronomical Society.
- George Gipps was Private Secretary to first Lord of the Admiralty from 1834 and Governor of New South Wales and New Zealand from 1838-46.
- George Graydon was Lieutenant-Governor St Lucia from 1841.
- Francis Bond Head was Lieut.-Governor of Upper Canada from 1835-37.
- George Harding was Lieutenant-Governor Guernsey from 1855.
- George H Henderson was founder/Director of London & South Western Railway Company & Southampton Gas and Light Company.
- Joshua Jebb was made Surveyor-General of prisons in 1837 and in 1844 he was made Inspector General of military prisons.
- William Reid was Governor of Bermuda from 1838-46 and Governor of Windward Islands in 1846. He was knighted in 1851 for his service as Chairman of the Great Exhibition. He was then Governor of Malta from 1851-1858.
- Charles Shipley was Governor of Grenada from1813-15.
- James Carmichael Smyth was Governor of the Bahamas from 1829 and Governor of Guyana from 1833.
- James Vetch was appointed to the commission for settling the Irish boundaries. From 1836-1840 he was the Chief Engineer for Birmingham and Gloucester Railway. He designed the drainage system for Leeds and Windsor, including Windsor castle.

3.3.5. SUMMARY

The conclusions from this research is that there is a strong family tradition of service in the military shown in the officers who served in the Royal Engineers. There is no evidence of the introduction of officers from the new class of business men that were emerging in England at this time. The majority of the officers completed their whole life in the Corps. Therefore, being an engineer

was seen as a lifetime's occupation and not as a career step to something 'better'.

In many cases the officers took an active interest in science and engineering outside of their profession and in most cases they belonged to local and major interest groups. Membership of the Royal Society, the arts, Civil Engineers and the Astronomical Society were quite normal. They clearly were well respected in society. One example was Thomas Colby, who was nominated to the Institute of Civil Engineers by Thomas Telford.

Several officers moved on to civil positions in their later careers. It is not surprising that many of these posts were in distant locations of the British Empire. These officers had served abroad and understood what was required. Often the officers are better known abroad than they are at home. The Dictionary of Canadian National Biography has information on several officers, because of the important roles they played in the formation of that country. There are similar entries in a number of Australian publications.[162] This small group of engineer officers had a material effect on many countries around the globe and they have a lasting legacy to the good work of the Royal Engineers.

3.4. Careers of the Engineer officers

Between 1808 and 1815, there were two hundred and eighty officers who served at some point in time in the Corps of Royal Engineers. This number of officers had to provide engineering support to the whole of the British Empire, with the exception of India, which was separately resourced by the East India Company. This section will review the distribution of the officers around the globe to meet the demands of the Empire, and the growing and conflicting needs of the wars in Europe and worldwide.

Seniority was as great a source of comment and concern in the Corps of Engineers as it was in the army, which is perhaps surprising when promotion in

[162] A.J. Smithers, *Honourable Conquests : An account of the enduring work of the Royal Engineers throughout the Empire* (London, 1991); recounts some of the better known examples.

the engineers was fixed by seniority. The different methods of promotion between the Corps and the army will be described followed by and examination of the time taken to reach the higher ranks and an analysis of whether promotion by seniority was strictly followed. This will lead in to a review of the command of the engineers in the Peninsula and the issues that seniority and brevet promotions brought.

The analysis will continue by looking at the officers' operational experience and consider what experience they brought to the campaigns in the Peninsula from 1808 to 1814. The number of officers with significant experience was very small, but many of them wrote a great deal through this period and much can be learnt from their correspondence. The casualty rates for the period will be reviewed and compared with those of the army.

3.4.1. SIZE AND DISTRIBUTION OF THE CORPS OF ROYAL ENGINEERS

Officer Numbers

Between 1808 and 1815, there were two hundred and eighty officers who served in the Corps of Royal Engineers. The largest number in any one year, during this period, was two hundred and twenty-nine in 1815.[163] The total number of engineer officers had risen steadily from one hundred and forty-three in 1808, constantly trying to train enough new officers to reach the approved establishment level, which peaked at two hundred and sixty-two in 1813.[164] The actual number of officers continued to rise after the war to a maximum of two hundred and sixty-one in 1817, as cadets already in the system were commissioned, before the effect of the peace caused the establishment to be slashed.

[163] Calculated from Army List 1815.
[164] Establishment levels from W. Porter, *History of the Corps of Royal Engineers* (Chatham, 1977), vol. 1, p. 400.

Table 3d. Actual and Establishment levels in the Royal Engineers.[165]

Actual	1796	1800	1802	1806	1808	1809	1810	1811	1812	1813	1814	1815
Colonel Comm.	1	1	1	3	3	3	4	4	4	4	5	5
Colonel	5	5	6	5	6	6	6	7	9	8	9	9
Lieut.-Col.	6	6	6	10	12	12	15	15	16	16	22	22
Captain	16	17	20	24	30	30	35	35	40	40	45	45
2nd Captain	14	19	20	25	31	31	36	36	41	41	47	46
1st Lieut.	27	30	41	46	51	61	67	71	80	77	77	89
2nd Lieut.	14	13	2	4	9	29	18	24	0[166]	14	12	13
Brigade Major	2	2	2	1	1	1	1	1	1	1	0	0
Total	**85**	**93**	**98**	**118**	**143**	**173**	**182**	**193**	**191**	**201**	**217**	**229**
Establishm't	94	114	113	157	172	201	201	229	229	262	262	262
% of Lieuts	48%	46%	44%	42%	42%	52%	47%	49%	42%	45%	41%	45%
% of Capt's	35%	39%	41%	42%	43%	35%	39%	37%	42%	40%	42%	40%

The number of engineer officers nearly trebled between the French Revolution and Waterloo, reflecting the increasing demand for skilled officers. Over the same period that size of the army grew from around 40,000 in 1793[167] to around 230,000[168] and the artillery grew from around 4,000[169] to 27,000.[170] Although at first glance there was a significant increase in the number of engineers, the Royal Engineers grew less quickly than the other parts of Britain's military establishment.

The Location of Engineers at Home and Abroad

The Corps of Royal Engineers had to provide resources across the whole of the British Empire, with the exception of India. The Napoleonic Wars put a massive strain on the Corps in trying to meet this demand from their very limited resources. The expansion of the British Empire during this period placed

[165] Actual numbers taken from the appropriate years, Army List. Establishment numbers from Porter, Vol.1. The establishment was the approved manpower level for the Corps.
[166] Army List shows no Second Lieutenants, which is odd. The Corps returns, WO54-252 shows 25 Second Lieutenants. The previous years commissions were promoted to 1st Lieutenant in June and the next batch were commissioned in August, so the army list may have been produced in the intervening period. I have left at zero to be consistent with other figures taken from Army Lists.
[167] Fortescue, *British Army,* vol. 4, part II, p. 940. Figure for 1793.
[168] Fortescue, *County Lieutenancies*, p. 292. The September 1813 total for infantry and cavalry was used.
[169] Fortescue, *British Army, v*ol. 4, Part II, p. 938.
[170] Fortescue, *County Lieutenancies*, p. 293. Although Glover in *Wellington's Army*, p. 92, shows artillery officer numbers growing slower from 247 in 1791 to 727 in 1814.

additional strain on the establishment. The conflict with the United States led to further demand which in the short term was difficult to meet.

The geographical spread of these officers was as follows :

Table 3e. Royal Engineer Officers by Location.

Location	Jan 1809[171]	Jan 1811[172]	Jan 1813[173]
Great Britain	77	67	77
Ireland	14	22	17
North America	16	15	15
Caribbean	10	10	10
Africa & Asia	8	9	7
Mediterranean	24	30	32
Iberian Peninsula	25	42	39
Others	2	2	3
Total	176	197	200

This table highlights a number of points. Through the whole period, around half of all engineer officers were based in the United Kingdom. Many of these were newly commissioned officers and assigned to local districts or the Ordnance Survey whilst they gained experience. From 1812 onwards, all newly commissioned engineer officers spent time at the School of Military Engineering. Table 3f shows the number of junior engineers in the corps, in selected years.

Table 3f. Newly Commissioned Engineer Officers

	1809	1811	1813
Commissioned previous year	26	14	13
Total 2nd Lieutenants	29	24	14
Total 1st Lieutenants	61	71	77

The proportion in the United Kingdom dropped over the period from 52% in 1809 to 47% in 1813, showing that more officers were being posted outside of the United Kingdom, which was inevitable during a war. The percentage of engineers who were not in the Peninsula or Mediterranean averaged around

[171] WO54-251. Taken from Returns for 1809.
[172] WO54-252. Taken from Returns for 1811.
[173] WO54-252. Taken from Return for 1813.

65%. It can be generalised that this group was involved in garrison duty. So, at any one time during the Peninsular War, two thirds of the corps were not involved in the war. The percentage is actually higher than this, as the majority of the engineers serving in the Mediterranean were not involved in active operations (the exceptions being Gibraltar and Cadiz).

The increase in the engineer establishment during this period was used to supply officers for the operations in the Peninsula with the proportion of the total rising from 14% through to 20%. Towards the end of 1813, the proportion peaked at 25%. There was also an increase in the officers serving in the Mediterranean. The actual numbers serving in the United Kingdom, the Americas and elsewhere remained static throughout the period with almost all spare staff being directed to operations in Europe.

Table 3g. Officer numbers summary[174]

	1809	1811	1813
Great Britain and Ireland	91	89	94
Americas and Caribbean	26	25	25
Peninsula and Mediterranean	49	72	71
Others	10	11	10
Total	176	197	200

Further analysis reveals that many of the officers who were located at the remote stations around the world did not move often, if at all. This was partly due to the accumulation of local knowledge, but was also, in part, due to the very serious travel limitations during the age of sail. Whilst passage of the Atlantic was usually a voyage of a few weeks, the journey to far flung outposts like Ceylon could take up to nine months.

Engineers in the Peninsula

Eighty-six (31%) engineer officers served at some point during the Peninsular War with the Duke of Wellington. This number increased to ninety-seven officers who either served in the Peninsula with Wellington or during the Spanish east coast campaign of 1812 to 1813, which is roughly 35% of all

[174] Source is the same as table 3e.

engineer officers.[175] Sixty-six officers served in the Mediterranean, the Spanish fortresses or the campaign on the east coast of Spain (this covers Cadiz, Gibraltar, Tarifa, Sicily, Minorca, Malta, Madeira, Genoa, Ionian islands and Corsica). In total, one hundred and thirty-four[176] different engineer officers served at some time in the Peninsula or the Mediterranean between 1808 and the end of the war, which is 48% of the total of Corps of Royal Engineers over that period.

The maximum number in the Peninsula at any one time peaked at forty-five in the summer of 1813. The number had been growing steadily through the war, with roughly fifteen in 1809, twenty in 1810, thirty in 1811 and 1812 and forty in 1813 and 1814.

The longest serving officer was Captain Frank Stanway who served the full six years from summer 1808 to summer 1814, with John Burgoyne serving only a few months less. The average length of service in the Peninsula was approximately twenty-one months.[177] Many of the officers spent a significant time in the Peninsula and their knowledge and experience must have grown over the period. Nineteen officers served more than three years and thirty-four served over two years.

The number in the Peninsula was never enough to meet the operational demands. There were occasions when Wellington said that he did not have engineer officers for a particular task. Through the peak years of 1811 and 1812, the casualties were particularly high and the influx of new officers did not lead to an overall increase in numbers.

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[175] Michael Glover in '*Wellington's Army'* wrote there were 102 officers served in the Peninsula, but does not give his source. I am confident the numbers used above in this are correct.

[176] This differs from the totals above, as some officers served in both the Peninsula and in the Mediterranean.

[177] Appendix C, provides a month by month breakdown on the service of engineers in the Peninsula. Full details can be obtained from the database which I have prepared.

Table 3h. Officers killed and wounded in the Peninsula

Year	Killed	Wounded[178]
1808		1
1809	1	2
1810	2	
1811	6	4
1812	9	17
1813	5	8
1814	2	2
Total	25	33

Reacting to the demand, Wellington wrote to Liverpool on 31 March 1811,[179] forwarding a letter from Fletcher and asking for more engineers to be sent out. Several new officers did come out later in the year, but the total number of officers available did not change due to the casualties. Whilst some of the wounds suffered by officers were minor and did not have any long term effect, some were much more serious. Boothby lost a leg at Talavera in 1809. In 1812, J.T. Jones, W.C. Holloway and Macleod were wounded; in 1813 G.C. Lewis lost a leg and Barry was wounded. None of these officers returned to the Peninsula.

Throughout most of the war there was a fairly consistent presence of a small number of senior engineer officers. Between 1809 and 1813, Wellington dealt almost exclusively with Fletcher, J.T. Jones and Burgoyne. Jones was injured at the end of 1812 and returned to England. When Fletcher was killed in 1813, he was replaced by Elphinstone who was present until the end of the war. Burgoyne was present throughout. This gave Wellington a stability in his dealing with the Royal Engineers that he never achieved with the Royal Artillery, until he appointed Dickson in mid 1813. He may not have liked Fletcher or Elphinstone, but he could work with them. Wellington certainly had confidence in Burgoyne and Jones.

[178] These are reports of officers being wounded. An individual officer may have been wounded more than once during this period.
[179] WD, vol. 7, p. 423.

3.4.2. SENIORITY AND COMMAND

Comparison of Promotion in the Ordnance Department and Horse Guards

Very different systems were used by the army and the Ordnance for the promotion of officers. The army followed a process based on the historical precedent of the regiment being the personal possession of its colonel. The regiment was a business, in which the colonel, if he ran it efficiently (or some would say negligently) could make a profit. Britain got a body of trained and equipped men partly funded at someone else's expense. Officers bought their rank and saw it as an investment, which could be cashed in or exchanged at a later date. The system of purchase was seen as discriminatory and favouring those with money. It was claimed to introduce those who had no interest or talent into the army to the detriment of its effectiveness. The period immediately preceding the wars with France from 1793 reinforced this view through an ineffective or non-existent British Commander-in-Chief, who allowed permanent rank to those with no military experience. The arrival of the Duke of York in 1794 slowly brought about a change which eventually put some order into the system. One of the major changes was the introduction of minimum periods of service at a rank before an officer was allowed to purchase a promotion to the next rank. This was set at two years in the regular army before a Lieutenant could purchase a Captaincy, and six years for a Majority.[180] The purchase system could only be used up to the rank of Lieutenant-Colonel.

The Ordnance followed the more equitable policy of promotion by seniority. Each officer was promoted to the next rank based on his length of service in the Corps with no exceptions. There was also no opportunity to sell the rank and no pension, except for injury[181], so officers often remained until death. Whilst this system appeared fairer, it led to almost complete stagnation in the upper ranks and the consequent lack of opportunities for younger officers. More seriously, the development of the Corps was stifled by these same old men who saw no need to change the way they had operated through the second half of

[180] Glover, *Peninsular Preparation,* p. 154.
[181] Glover, *Wellington's Army,* p. 91.

the 18th century. Most of these officers had no operational experience in mainland Europe and their knowledge, if they had any, was based on operations in North America, the Caribbean and India. Generally though, the Ordnance officers accepted the process and knew that persistence would eventually gain them the senior ranks and the benefits that went with them.

With the added complexity of brevet ranks in the army, there was still opportunity for tensions and disagreements. One example occurred in early 1812 following the successful siege of Ciudad Rodrigo. Burgoyne was the siege director, under the Commanding Royal Engineer in the Peninsula, Richard Fletcher. Jones was the Brigade-Major and Macleod, one of the engineers at the siege. In Wellington's despatch after the siege, dated 20 January 1812,[182] Macleod got a mention in passing and Jones got a thanks from Wellington along with Fletcher as the Senior Engineer. Through an oversight, Burgoyne was not mentioned. Based on them being mentioned in despatches, Jones and Macleod received their brevet army rank of Major. Less than two weeks after Wellington wrote his despatch, Charles Pasley was writing from England to Burgoyne :

> You have been unlucky in having two junior officers promoted over you, who were employed on the same service. Macleod's case in particular is a great shame, his father took advantage of the mere mention of his name, and settled the matter in a moment.[183]

Macleod and Jones were below Burgoyne in the corps seniority list and by getting their brevet army rank first could have a claim to seniority. Jones' promotion was justified but it appears Macleod got his because his father was a Major-General in the Royal Artillery. Wellington realised the mistake and it was quickly resolved, with Burgoyne also receiving a brevet army Majority with the same effective date as Jones and Macleod.[184] The imbalance was restored, a

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[182] WD, 2nd Edn, vol. 5, p. 472.
[183] Wrottesley, *Life of Burgoyne,* vol. 1, p. 166. Letter from Pasley to Burgoyne, 2 Mar 1812. Jones, one of the two recipients of promotion did not find out himself until 8 Mar 1812, REM, 550159-3, Jones, Diary.
[184] See WO 3 /601, p. 276-79. Torrens to Wellington, 21 Feb 1812, where Torrens informs Wellington that HRH has approved Burgoyne's promotion.

few months later, when Burgoyne and Jones got their brevet army promotion to Lieutenant-Colonel, Macleod not getting his until 1817.

Pasley was embroiled in a similar argument with the Ordnance at the same time as described above. He had been asked to form the School of Military Engineering, which he had been arguing for years was desperately needed. However, he expected to receive his brevet Majority for this role and the Master-General would not agree. Pasley refused to take up the role until the issue was resolved. Along with the issue of rank in the Portuguese army, brevet army ranks caused a number of problems during the war in the engineers, the artillery and the army. This will be discussed further below.

Though the system of purchase was seen as unfair, in practice it did produce some good results and wealth was not necessarily a barrier to talent. In some ways the purchase system followed in principle the system in use in France up to the start of the Revolutionary wars, where families (often gentry) with generations of service held key posts and were admitted to the ecole militaire in preference to their poorer countrymen. This is discussed at some length in Blaufarb's book on the French army.[185] There is similar evidence in this country of families with generations of military service providing excellent officers.

The Duke of York reformed the purchase system, but recognised that it could not be replaced easily due to the sums invested in it by the officers. He advised against the introduction of purchase for the East India Company and did not allow it in the Royal Staff Corps.[186] His preference, based on the advice he gave to the East India Company was for promotion by seniority up to the rank of Captain, and then by merit. This was a compromise solution between that which operated in the army and that which operated in the Ordnance.

In December 1814, the Master-General broke the hallowed seniority tradition for the highest rank of Colonel-Commandant, arguing :

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[185] R. Blaufarb, *The French Army 1750-1820. Careers, Talent, Merit* (Manchester, 2002).
[186] Glover, *Peninsular Preparation,* p. 154.

> he cannot conceive that the possibility of breaking the routine of seniority by succession in consequence of distinguished services, can hurt the emulation or break the spirit of the corps.[187]

This change was strongly opposed by the officers themselves who saw their guaranteed (but slow) promotion prospects being eroded. The Master-General went on to explain that he could not change his decision, particularly as he had received the Prince Regent's 'pleasure' to make this change. The officers saw it differently. As brevet army promotions had shown, promotion based on performance could give an advantage to those in the right place at the right time, which some would argue was unfair. Garrison and headquarters duty was not as exciting (or dangerous!) but it was still a necessary task.

Time taken to gain promotion in the Corps[188]

Earlier, the different methods of promotion between the Ordnance and the Horse Guards were described. In this section, the time taken to rise through the ranks within the Royal Engineers will be reviewed. For the analysis, the time to rise from an officers' first commission as 2nd Lieutenant, to the rank of Lieutenant-Colonel has been used. Of the officers who were still active during the Peninsular War, there were forty-eight who reached the rank of Lieutenant-Colonel. The earliest was Robert Morse in 1783 and the last, John Burgoyne in December 1814.

Twenty-one were appointed before the Peninsular War started (that is twenty-one, in the twenty-five years between 1783 and 1808), with twenty-seven being appointed in the following six years between 1809 and 1814. It was not just the volume of appointments that changed during the period. The time taken to reach the rank also decreased at the periods of maximum demand for officers. The longest time was Gother Mann, who obtained his rank in 1793, nearly thirty-one years after being commissioned.[189] The shortest was between

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[187] Porter, *History of the Royal Engineers,* vol. 1, p. 402.
[188] Full details of the information comes from Appendix F, unless otherwise specified.
[189] Mann, went on to become Inspector General of Fortification in 1811, and served in this role until 1830, when he died at the age of 84! This was the effect of having no pension and no way of selling your commission in the Ordnance.

sixteen and seventeen years for six officers promoted in the years 1806 and 1814. The time taken dropped from an average of around twenty-seven years before 1800, to twenty-one years, up to the start of the Peninsular War and then down to around eighteen years during the war. The surplus of officers after the war, immediately pushed the average time back up to twenty-five years. The officers who gained much faster promotion to Lieutenant-Colonel, were fortunate to be able to take advantage of the rapid increase in the size of the corps. The number of Lieutenant-Colonels on the establishment grew from eight in 1805, to ten in 1806 (this is the 1806 blip in time to reach Lieutenant-Colonel mentioned above), and on to the peak of twenty-two in 1814 (the second blip in time to reach Lieutenant-Colonel mentioned above).

In the later years of the war, the time taken to rise from 2nd Lieutenant to 1st Lieutenant was about a year; to rise from 1st Lieutenant to 2nd Captain about four years. Both of these times were significantly reduced from averages of five years and eight years respectively around 1780. Further promotion came to a complete stop after the war with no promotions to Captain or Lieutenant-Colonel between 1817 and 1824.

There is no evidence of alteration in the principal of seniority which was used in the Royal Engineers. Officers, whether on active service, employed at headquarters or on garrison duty were promoted in turn. Two officers spent the whole period as prisoners of war, and still kept their place in the seniority lists.[190] Recognition for exceptional effort came through brevet promotions and these invariably, but not always, went to officers on active duty. Charles Pasley received his brevet promotions for his work in the training and education of the Sappers and Miners. The difficulties caused by brevet ranks will be discussed below.

[190] M.C. Dixon and A. Fraser were captured in 1808 and spent the rest of the war to 1814 at Verdun. They both received promotions to 2nd Captain, when they were due in 1810/11 even though they were prisoners.

Michael Glover's analysis across the army showed an average time to reach Lieutenant-Colonel in the infantry, of 24.8 years by seniority and 17.6 years by purchase. The figures for the cavalry, were not significantly different.

Table 3i. Time taken to reach Lieutenant-Colonel In the Army.[191]

(Years)	Infantry by seniority	Infantry by purchase	Cavalry by seniority	Cavalry by purchase
Time to Lieut.-Colonel	24.8	17.6	24.2	16.7

Comparing the time to reach Lieutenant-Colonel in the Royal Engineers with the same event in the army, shows a unexpected finding. Although the common view was that promotion by seniority was slower, there does not actually appear to be any significant difference in the time to move through the ranks in the army and the Ordnance. The fastest promotion to Lieutenant-Colonel in the Royal Engineers during the Peninsular War was Charles Pasley in 16.4 years. This is actually better than the average by purchase in the army. An army officer who purchased all his promotions up to Lieutenant-Colonel would have spent £8,200[192] to obtain an annual salary of just over £300.[193]

The problem with slow promotion was more apparent above Lieutenant-Colonel. There were just not enough positions at the top of the Corps. In 1815, there were only fifteen posts as Colonel or Colonel-Commandant. This dropped to twelve posts in 1819, when the size of the Corps was reduced by 25%. The young, recently appointed Lieutenant-Colonels had no promotion prospects for the foreseeable future.

Command of the Engineers in the Peninsula

The highest ranking engineer officers in the field in the Peninsula were Richard Fletcher and Howard Elphinstone. Fletcher, who did not make Lieutenant-Colonel until June 1809, was a lowly twenty-fourth in seniority in the Corps, and Elphinstone, a Captain until 1813, was nine places lower. It would seem

[191] Glover, *Wellington's Army,* p. 84.
[192] Glover, *Wellington's Army,* p. 76.
[193] http://www.napoleon-series.org/ British Officer's Pay, Per Diem (1815). Viewed 14 Jan 2008.

unusual that such a junior officer was sent to command the biggest military operation that the British army was mounting in the world. The questions which needs to be considered are : was Fletcher the first on the seniority list who was available and able to go to Peninsula?; was the selection based on previous operational experience? or was there some other reason for the choice? A review of Fletcher's superiors provides the following information :

Table 3j. Royal Engineer Officers by seniority, Part A.

Name	Role/Location in 1809	Age in 1809[194]	Last Active service[195]
Morse	Headquarters. Inspector General of fortifications.	66	1763
Mercer	Headquarters	70est	1779
Mann	Headquarters	62	1793
Twiss	Lieut-Gov. Royal Military Academy.	64	1799
Evelegh	CRE Portsmouth for at least 4 years	58est	nk
Fisher	Ireland for at least 4 years	56	nk
Nepean	Headquarters	61	1794
Shipley	West Indies for 30 years	54	nk
Fyers	Headquarters – Deputy IGF	56est	1783
Johnson	West Indies for at least 16 years	53est	1794
Kersteman	CRE Severn district for at least 6 years	53est	1794
Holloway	CRE Gibraltar	60	1800
Humfrey	CRE Jersey for at least 4 years	53est	nk
D'Arcy	CRE Chatham for at least 4 years. Went to Copenhagen in 1807.	53est	1807
Bridges	CRE Ceylon for 7 years	53est	1795
Dickens	CRE Malta for 9 years	45	nk
Mackelcan	No record of his responsibilities[196]	50	nk
Bruyeres	CRE Canada for 9 years	44	1799
Rowley	Headquarters	41	1793
De Butts	CRE Guernsey	39	1794
Fenwick	Ireland for 2 years	41est	nk
Bryce	CRE Sicily for 4 years	40	1800
Pilkington	CRE Weedon Stores for at least 4 years (Main engineer stores)	44	nk
Fletcher	Portsmouth for 5 years 1802-7	40	1807

[194] Estimated ages are where date of birth is not known and I have made an assumption that the officers in question were 20 years old when they were commissioned.

[195] 'nk' (Not Known) in the Last Active Service column, means that I have found no information. In most cases this is likely to mean that the officer had no active service.

[196] He was court martialled in 1808 for accounting irregularities related to his command of the Guernsey depot, which ended in Jan 1808. There is no record of his service after this date, until he retired in 1815.

There are not many obvious candidates above Fletcher in the seniority list. If the most senior officers who were based at headquarters are removed; then remove officers with long residences at locations; then remove officers at remote locations; then remove officers who had no recent military experience, and then look at the age of the senior officers, there are a small number of potential candidates. These would include D'Arcy and Fletcher, with Bryce, De Butts and Rowley as less obvious candidates. D'Arcy did not go out to the Peninsula, but did go out to Walcheren, where he was court martialled for refusing to accept orders. He did not serve abroad again. Bryce had just returned from nearly four years in the Mediterranean. De Butts never left the United Kingdom during the Napoleonic Wars. Rowley was attached to headquarters for most of his career, being Deputy Inspector General of Fortifications from 1812. Fletcher was the first in the seniority list who did not have a substantive command, had the most recent operational experience and had the most operational experience. This makes Fletcher, the logical choice, but it is still surprising that no senior officer wanted to take the command. Fletcher was a mere Captain when he first took command in August 1808, although he was promoted to Lieutenant-Colonel in June 1809.

One of the complaints about the Walcheren campaign was that many senior officers were present, because those who went to Copenhagen made substantial financial benefits and officers were expecting the same for the Walcheren campaign. The conclusion is that the view of many senior Ordnance officers was the same as their juniors', that the campaign would be swiftly over when Napoleon pushed the British out of the Peninsula.

Working further down the seniority list from Richard Fletcher, again there are few candidates.

Table 3k. Royal Engineer Officers by seniority, Part B.

Name	Role/Location in 1809	Age in 1809	Last Active service
Evatt	At Gibraltar for 4 years	37	1799
Hayter	At Woolwich for at least 4 years. Inspector of buildings and stores.	37(est)	1793
Ford	Southern District for at least 4 years	36(est)	1800
Mulcaster	Command of Gunpowder works at Faversham for 6 years.	37	1798
Gravatt	Gravesend for at least 4 years. In poor health. Transferred to Invalid Engineers in March 1812.	38	1797
Rudyerd	Portsmouth for 2 years, with previous 2 years being in Canada.	36(est)	1799
Lefebure	Recently returned from five years in Mediterranean.	36(est)	1806
Hughes	Canada for at least 8 years	36(est)	1794
Elphinstone	Some operational experience over past 10 years	36	1807

The two most obvious, with recent experience, Lefebure and Elphinstone, both went out to the Peninsula in 1808. Elphinstone arrived in the Peninsula first, in July 1808, and took overall command as the senior engineer. He was wounded the following month and returned home. By that time, he had been superseded by Fletcher, who arrived in August 1808. Lefebure did not arrive until August 1808, and missed his opportunity to command before Fletcher arrived. Had he not been killed in 1810, it was Lefebure who would have taken command in the Peninsula when Sir Richard Fletcher was killed in 1813. Lefebure was a great loss to the Corps. He was well respected by his peers, and was the instigator of the formation of the 'Society for the Procurement of Useful Military Knowledge' mentioned above. Lefebure had been the cause of some major disagreements with other officers a few years earlier during his time in the Mediterranean, particularly with Pasley, but these had been resolved and there was a sense of comradeship in the letters amongst the officers who were involved in operational activities.

The conclusion from reviewing the senior Ordnance officers is that it was the middle ranking officers who were available to command the operational

activities and also were more likely to have had recent operational experience. The most senior officers were in static posts, commanding the major districts, garrisons or managing the Corps. Fletcher and Elphinstone (along with Lefebure, who did not survive the war) were the most senior of this group. The officers who made the biggest names for themselves during and after the war, came further down in the seniority lists again. These include John Burgoyne, John T. Jones and Charles William Pasley.

Investigation on the issue of command of the Corps in the Peninsula

From the very first days of the Peninsular War, there was 'discussion' about seniority in the Corps. In August 1808, Elphinstone was certainly unhappy about Fletcher replacing him and this may have had some part in his decision to return home after he was wounded at the battle of Vimiero :

> I have this day written for leave to return to England so you may expect me daily after you receive this letter. I think General Morse having sent out Fletcher over my head as shabby a thing as ever was done. Luckily he did not arrive until after both actions had taken place so that in all events I have secured the credit . . . I am just going to write a Jesuitical letter to General Morse in hopes of securing a good station upon my return.[197]

Clearly his wound was not serious, as he took the post of Commanding Royal Engineer at Gravesend on his return to England in September 1808, a post he held until his return to the Peninsula in February 1813. Elphinstone was ordered back out to the Peninsula at a time when Fletcher had been granted temporary leave of absence to return home. Judging by Elphinstone's letters, he was clearly expecting to take command of the engineers, but was very concerned that Fletcher would return and take the command from him again.[198] Fletcher wanted to return home as his wife had died in May 1808, and with five young children, he wanted to make long term arrangements for their future. This included, according to Elphinstone's 'gossipy' letters, returning to England to find a wife to look after them. Fletcher did return in April 1813 and was killed in August at the siege of San Sebastian. Wellington subsequently wrote to Lord

[197] REM, 4201-274. Elphinstone to his wife, 8 Sep 1809.
[198] REM, 4201-274, Various letters dated through January and February 1813.

Liverpool in October 1813 asking for a provision to be made for Fletcher's family.[199]

When Richard Fletcher went home in December 1812, Burgoyne wrote to Wellington seeking clarification on who was the senior engineer. Goldfinch held the seniority in the Royal Engineers, but Burgoyne held the senior army rank of brevet Lieutenant-Colonel. Wellington found in favour of Goldfinch.[200] This exchange is important at a number of levels.

Firstly, Wellington had no authority over such matters, it being an Ordnance Department concern. It would have been expected that the engineers would write to the Board of Ordnance for clarification of seniority. There is no doubt that the Board would also have found in favour of rank in the Corps.

Secondly, was Burgoyne trying to gain advantage by playing on his good relationship with Wellington? It is difficult to see why Burgoyne would believe that army rank would take precedence. In a similar debate a few years earlier, which Burgoyne was aware of, the Board had clearly stated that even seniority within the Ordnance (that is, Royal Artillery against Royal Engineer) did not hold and the senior engineer present would always command.[201] According to Jones, a similar situation occurred on the east coast of Spain in 1812, where he believed he should have command over Thackeray based on his brevet army rank of Lieutenant-Colonel, but an 'amicable' settlement was made where he was transferred to the Quarter-Master-General's Department and Thackeray commanded the engineers.[202]

Thirdly, Wellington's response stated that the senior engineer would take command when there were officers from different armies present. Burgoyne's claim for command was based on the need to command engineers from the British, Portuguese and Kings German Legion. Wellington's response that the

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[199] WSD, vol 8, p. 319.
[200] REM, 5501-139-4.
[201] BL, ADD41961, ff. 345-6. Burgoyne to Pasley, Malta, 4 Sep 1806.
[202] J.T. Jones, *The Military Autobiography of Major-General J T Jones*, Privately printed, (London, 1853), p. 62. Copy held in the Royal Engineers Library.

senior would take command could have led to a situation in which the senior Portuguese Engineer officer would lead. This was not a situation he was willing to allow in the army. Yet, Wellington used exactly this route to appoint Dickson to command the artillery in 1813, he being the senior on the basis of his rank in the Portuguese artillery.

The situations highlighted above recurred throughout the Peninsular War. They were usually featured in private letters rather than official correspondence. Burgoyne's letter to Wellington was unusual in that it was done formally. Burgoyne's own explanation was that this was so that he could show the correspondence to Goldfinch to demonstrate that his intentions were honourable.[203]

When Fletcher was killed, Burgoyne took over as temporary Commanding Engineer at Headquarters. Elphinstone was the senior engineer in the Peninsula at this time. He was based in Lisbon, having been ordered there from Headquarters when he arrived in the Peninsula. It would appear that Wellington was in no hurry to call up either Elphinstone from Lisbon or Goldfinch who was at Pamplona. He was surprised when Elphinstone, on his own initiative, got a sea passage and arrived at headquarters on 13 Oct 1813.[204] Elphinstone had some very real concerns about his taking over command after Fletcher's death. Wellington had recently caused great consternation in the Royal Artillery by keeping Alexander Dickson, as his senior representative of the Royal Artillery in the Peninsula, over the head of more senior artillery officers. Elphinstone's letters to his wife suggest that he thought the same might happen again, in favour of John Burgoyne. In letters to his wife, he wrote :

> My coming up will I fancy make some little bustle at Woolwich, as Ld W. has sent away two Lt. Col's and put Dickens [Sic, should say Dickson] in command upon his brevet rank over the heads of four senior officers in

[203] REM, 5501-139-3, Private note to Fitzroy Somerset attached to the formal request for clarification.
[204] REM, 4201-274, Elphinstone to his wife, 13 Oct 1813. Wrottesly, *Life of Burgoyne, vol. 1,* p. 282, states that Elphinstone wrote to Wellington about taking command, but Elphinstone's letter clearly states that he took it upon himself to travel to Headquarters.

> the country, all of whom are mean enough to remain and serve under him.[205]

And,

> I heard rather a moderate man say he thought if any officer senior to Dixon [Sic, Dickson] remained to serve under him after my coming up they ought to be sent to Coventry by the regiment.[206]

Wellington had suffered with problems with his relationship with the Commanding Officer of the artillery and had developed a close working relationship and trust in Dickson going back two or three years. Following the injury to Colonel Robe at Burgos, Colonel Fisher was sent out to replace him. Wellington and Fisher fell out and in May 1813 and Fisher asked to resign the command and return to England. Wellington then appointed Dickson to command the artillery, over several other officers who were his senior in the regiment, based on his local rank in the Portuguese artillery. Although Elphinstone's letter would suggest that the officers in the artillery were against Dickson, there were other officers who recognised his merit and were willing to serve under him,[207] although they all recognised the sensitivity of the situation. In fact there had already been a precedent set two years earlier, when Dickson commanded at the first siege of Badajoz over more senior officers in the Royal Artillery.[208] Dickson did his bit to play down the situation by always wearing his Portuguese army uniform.[209]

Elphinstone also commented in one of his letters that Burgoyne had indicated to him that he would refuse the command if it was offered to him by Wellington.[210] This would fit in with the picture of Burgoyne as someone who would not ask for, or take anything that he was not entitled to. The justification for keeping Burgoyne in command would have been very tenuous, as the only obvious reason would be using Burgoyne's brevet army rank over Elphinstone's corps

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[205] REM, 4201-274, 16 Oct 1813.
[206] REM, 4201-274, 23 Oct 1813.
[207] Ed. E. Sabine, *Letters of Colonel Sir Augustus Frazer, K.C.B., commanding the Royal Horse Artillery in the army under the Duke of Wellington written during the Peninsular and Waterloo campaigns* (Uckfield, 2001), p. 101.
[208] Duncan, *History of the Royal Artillery,* vol. 2, p. 291. Captain Hawker served under Dickson.
[209] Glover, *Wellington as Military Commander,* p. 222.
[210] REM, 4201-274, Elphinstone to Bridges, 16 Oct 1813.

rank of Lieutenant-Colonel. Elphinstone could clearly see parallels between Dickson and Burgoyne who had both been with Wellington for some time and commanded his respect.

Wellington had tried on a number of occasions before to keep officers he trusted, near to him, with varying levels of success. One example was Robert Craufurd, who commanded the Light Division, when there were more senior officers available. By 1813, Wellington's successes, gave him more power to influence decisions on officer appointments, but it must have caused him some concern that he officially had no say over Ordnance appointments (artillery and engineers). Wellington was working in a very sensitive area. The early years of the Peninsular War were difficult because many general officers refused to serve under Wellington for the very same reason of seniority. It was not until he was appointed Field Marshal that the issue was resolved.

The issue in the engineers was made slightly more difficult by the awarding of brevet army ranks. Whilst there is no evidence to back up suggestions that officers were promoted out of turn within the corps,[211] there was a clear difference around brevet ranks. Outside of the routine awards of brevet ranks, almost all the more senior engineer officers who served in the Peninsula received their brevet ranks earlier, generally through being mentioned in the official despatches of army commanders. They included Lefebure, Birch, Chapman, Squire, Jones and Pasley.[212] This created an issue around brevet ranks which had not occurred before, as there had been limited use of them in the past. Situations now were occurring regularly where there was debate about whether Corps or army rank took precedence. The evidence of the letters of these officers show that the lack of clarity did have an effect on morale and relationships.

[211] A detailed analysis of the promotion dates of all corps officers, shows no instance where an officer in the Royal Engineers was promoted out of turn. There is evidence of quicker promotion during the war, but it was done in the correct sequence for 'seniority'.
[212] Pasley was different in that he received his brevet rank as part of the recognition for his services in arguing for, and setting up the school of military engineering.

All the situations described above do appear to follow a common thread, and it appears that Wellington was applying the rules consistently. Although a number of officers including Burgoyne and Jones tried to use brevet army rank to claim command, the fact is that Wellington did not recognise this within the Ordnance corps. Wellington in responding to Burgoyne and in appointing Dickson, made the senior artillery or engineer officer the commander, whether he was in the British, Portuguese or Kings German Legion. The issue of brevet was not taken into account. Wellington's view could not have been put any clearer :

> In the event however of the British officers meeting either with those belonging to the King's German Legion, or with Portuguese officers, the Marquess of Wellington would then look upon the senior officer of the Corps of Engineers, whether Portuguese, British or German, as the one to have command of the whole.[213]

It would appear that Wellington was acting in a consistent manner in his dealings with officers. Although Wellington tried very hard to avoid situations where an officer from the Portuguese or Spanish armies could claim seniority, he did recognise the principle. One example was at the battle of Albuera when General Long was replaced as commander of the Allied cavalry by General Lumley as there was a Spanish cavalry commander who was senior to Long. In this case Wellington was not willing to allow the British cavalry to be commanded by an officer from any other nation.

3.4.3. OPERATIONAL EXPERIENCE AND SELECTION

Experience of Officers Prior to the Peninsular War

An analysis of operational activity between 1790 and 1809 paints an interesting picture of the breadth of experience that the officers in the Royal Engineers could provide. Only sixty-nine officers had any operational experience during this period (see Appendix B). This was approximately a quarter of the Corps total. The majority of these had only served in one campaign (forty-four of the sixty-nine officers) leaving only twenty-five officers who had served in more than

[213] REM, 5501-139-4. Fitzroy Somerset to Burgoyne. 10 Dec 1812.

one operational campaign (10%). The Walcheren campaign of 1809 saw a number of officers going on their first campaign. Omitting this campaign would reduce the number of officers with operational experience down to fifty-two, which is only 19% of the Corps. Including Walcheren only twenty-five or 10% had served in more than one campaign and only ten officers had served in more than two operations. Whilst these numbers show that there was only a small proportion of engineers with operational experience it is also true that the same situation would be present in the army and the proportion of army officers with operational experience would have been similarly small. The final point to note is that the majority of the officers with experience continued to serve in the field through the Napoleonic wars, so the most experienced officers were present.

Allocation of Officers for Active Duty

It is not clear how officers were selected for operational appointments. The diaries of engineer officers suggest that selection was, in many cases, by them actively canvassing for operational employment. This was not only achieved by writing to the senior officers in the Royal Engineers, but also by writing directly to general officers who they knew, had served with previously, or who they knew were about to embark on some expedition.

For example, in 1802, Burgoyne served as the Aide-de-Camp to General Fox, the brother of the politician Charles James Fox, who was also his Godparent. This connection led to him being appointed to be Commanding Royal Engineer in the expedition to Egypt in 1807 organised by General Fox. Burgoyne, unfortunately suffered eye trouble and was replaced by Thackeray. During this campaign, Burgoyne became acquainted with Sir John Moore, and this in turn led to his appointment to the planned expedition to Portugal in late 1807, which was abandoned when the French Marshal, Junot, entered Lisbon and the Portuguese royal family fled to South America. Burgoyne was again requested by Moore for his expedition to Sweden in early 1808, and remained with the expedition when it was subsequently diverted to Portugal, although Richard Fletcher joined as Commanding Royal Engineer in July, before they reached

Portugal. Boothby was another engineer officer who went on the Swedish expedition and the connections he made with Sir John Moore led to his appointment on the expedition to Portugal.[214] Clearly, patronage could have a significant impact in the selection of officers for specific duties.

Burgoyne served throughout the Corunna campaign, before embarking with the Light Division at Vigo, thereby missing the battle of Corunna. On returning to England, Burgoyne noted in his diary on 19 February 1809 that he 'Wrote to General Morse to request to be employed on active service'.[215] Clearly there were events in the planning stage, as Morse replied only three days later advising Burgoyne to be ready to embark at the shortest notice. Burgoyne noted that Squire, Boothby, Pasley and Mulcaster were also going.[216]

Although these officers were keen to go on active service, there appears to have been great reluctance by some officers to go to the Peninsula. Burgoyne, writing in his diary on 8 March 1809, noted that 'Squire and Pasley had, by their solicitations, been countermanded from the service'.[217] He made the reason for their action clearer when he went on to write 'there is little doubt we are going to Lisbon, and our prospect is only that of remaining quiet in a dull quarter, and returning to England if the French approach'.[218] Other officers with experience were ordered for this foreign service and accepted their position.[219]

In Pasley's case this was a decision that prematurely truncated a potentially glorious active career, but turned one of the best minds in the Royal Engineers to improvement in the Corps' efficiency.

This extract above raises several questions about the allocation of officers. It is likely that the officers mentioned were actively canvassing to be appointed to expeditions. Their appointment is understandable in the context of enthusiastic

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[214] C. Boothby, *Under England's Flag* (London, 1900), p. 130, 132.
[215] Wrottesley, *Life of Burgoyne,* vol. 1, p34.
[216] Wrottesley, *Life of Burgoyne,* vol. 1, p34.
[217] Wrottesley, *Life of Burgoyne,* vol. 1, p34.
[218] Wrottesley, *Life of Burgoyne,* vol. 1, p34.
[219] Boothby, *Under England's Flag*, p. 232.

volunteers being appointed to positions, when there was a significant number of officers who could not go, or did not want to go. It is surprising that they also appear to have had some say in which expeditions they were appointed to, as the implication is that they were appointed to the Peninsular expedition and then managed to get their names removed.

There is little evidence to prove that serving in previous campaigns made an officer more likely to be selected for a successive campaign. As discussed above, when looking at the selection of command in the Peninsula, there were a limited number of the senior officers who were not attached to some ongoing responsibility, such as command of an engineer station. The officers who became available, on completion of one piece of operational activity were the easiest to allocate to the next operation. The only exception during the period appears to be the Walcheren campaign, which was different for two reasons. Firstly, it was close to England, so many UK based officers were allocated to attend. It was certainly convenient, and the campaign was expected to be short. Secondly, the Earl of Chatham, who was Master-General at the time, commanded the expedition. The potential for advancement, through serving directly under the eyes of your commander, was not lost on the officers. There was possibly a third, reason, suggested cynically by one officer, that there were so many senior officers there at the prospect of prize money, as had been given at Copenhagen.

It is clear that once officers were selected for an operation, they tended to stay there until the end. There are very few situations where an officer left part way through a campaign. Chapman and Rice Jones went home when they were appointed to staff positions in the Ordnance and Edward Fyers was sent home with mental problems. Other than these three officers, the only other officers who went home were injured. Fletcher briefly went home at the end of 1812, but this was an exceptional circumstance, and it was temporary leave not a re-assignment.

It was unusual for newly commissioned officers to be sent straight out on campaign. In almost all cases they were appointed to stations in the UK or

Ireland to gain some experience before they were sent abroad. From 1812, all new officers spent time at the School of Military Engineering to gain some practical experience of operational skills.

Casualty Rates of Engineers on Active Operations

As shown in Table 3g above, twenty-five officers died on active service during the Peninsular War, which is roughly 27% of the officers who served in that theatre. Two more were killed in 1814, one at Bergen-op-Zoom in the Netherlands and the other at New Orleans. The sieges account for nineteen of these deaths with Badajoz's three sieges alone accounting for nine.[220]

Engineer officers were also reported as having been wounded thirty-three times during the period. Combining the two groups, there were forty-eight officers who were wounded or killed during the Peninsular War. This amounts to a casualty rate of 36% of officers in the Peninsula or 17% of the whole corps. In addition to the twenty-seven officers who were killed in operations, a further twenty-three died, worldwide, of other causes making a total of fifty.[221]

Without any attempt to increase the size of the Corps, seventy new officers were required to keep the strength constant through this period.

The engineer officers were unhappy about the casualty rate, particularly as they felt they were having to take unnecessary risks to compensate for the lack of support from the artificers, the lack of trained soldiers from the army and the lack of attention to duty by the army officers whilst on garrison duty. The casualty rates though high, were not substantially higher than those suffered by many units in the army. For example, officer casualties (killed and wounded) at the battles of Fuentes d'Onoro, Albuera and Salamanca were roughly 7%, 36% and 13%. At the third siege of Badajoz, the officer casualties were over 50%. Compared with these numbers, the engineer casualties look quite normal.

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[220] (Others included Almeida 1; Ciudad Rodrigo 2; San Sebastian 4; Burgos 1; Cadiz 2.)
[221] Locations were U.K.-6, North America-3, Mediterranean-6, West Indies-4, Mauritius-1, Ceylon-2, at sea-1.

Apart from the sieges where the engineers were thrust into the front line of events, they were generally well protected and looked after. Their role was to be at the front leading during sieges and that is why their casualties were high at those times. Overall an engineer officer probably had a better life expectancy that the average infantry officer.

3.4.4. SUMMARY OF CAREERS OF OFFICERS.

The key points from this section confirm some common understandings but also highlight a number of unexpected conclusions. There were two key differences between the army and Ordnance. In the Ordnance, promotion was by seniority and officers were unable to sell their commissions. This led to stagnation at top of the Corps with the most senior officers serving over sixty years until their death in their eighties! Partly for this reason, no senior Corps officer went out to the Peninsula. Most were based at Headquarters or in charge of major garrisons.

The numbers of engineer officers trebled during the Napoleonic Wars. The majority of these remained on static duty in garrisons and fortresses around the world. As the number of officers increased there was a larger proportion allocated to the war in Europe. Analysis of promotion within the Corps identified two main points, that promotion during the war was much quicker with officers reaching Lieutenant-Colonel in about sixteen years rather than the thirty years it took before the Napoleonic War. The unexpected finding was that promotion by seniority in the Corps did not appear to be slower than by purchase in the army.

Another unexpected finding was that Wellington appears to have applied his rulings on command consistently. He said that the most senior officer of any corps would command. In the case of the engineers (and artillery) that would be the most senior, be they British, Portuguese or KGL. Dickson was appointed on the basis of his rank in the Portuguese army although this did cause great concern at the time. Based on Wellington's decisions in the army, for example the replacement of Long by Lumley at Albuera, he also applied this ruling to include Spanish officers. Wellington made sure the situation of a Spanish

officer commanding never happened in the army by moving officers around. This situation never came up in the Ordnance corps. There was some challenging around command based on Brevet rank, but again Wellington was consistent with Corps rank taking precedence.

In terms of prior experience, about 25% of officers had some operational experience at the start of the Peninsular War with only ten having been on more than two operations. This shows that there was limited experience but this small number of officers had served in Egypt, South America, Copenhagen and Walcheren so they had what little operational experience it was possible to get.

The final point to note was that casualty rates were high but the analysis has shown that they were no higher than was being suffered in the army.

3.5. Conclusion from Section 3

The Napoleonic Wars saw the widespread use of British soldiers in mainland Europe for the first time in many years. Significantly different from previous campaigns was the fact that Britain was fighting alone and could not call on specialist skills such as engineers and artillery from their Allies. At the start of the Napoleonic Wars the army and the Ordnance had to move from a reduced peace time establishment to a full wartime strength and this was not without problems.

The Royal Engineers struggled to supply the demand for trained officers throughout the war and this did affect the training given to officers. Both the need for formal examinations and the syllabus were adjusted as the demand rose but officers were still given a reasonable grounding in the skills required and although the test was subjective, they were not commissioned until the academy thought they were ready. As the war progressed the situation improved through new officers being sent to the School of Military Engineering to finish their training and by the commissioned officers actively sharing

experience and mentoring each other. The provision of artificers to support the engineer officers was similar. Effectively, there were no artificers available for operational service at the start of the war. This deficiency was complained about by both the army and engineer officers. By 1812, with the opening of the School of Military Engineering there was now a formal mechanism for consistently training artificers and this complemented by the changes in the organisational structure meant that there were trained units of artificers being deployed from the end of 1812. There is no doubt that the professionalism of the engineer officers and artificers improved greatly during the war.

The officers who served in the field during the Napoleonic Wars were a sub-set of the Corps. Generally they were from the middle or lower levels of seniority and in many cases showed personal initiative to get assigned . The dedication and persistence they showed led to them being well known to army commanders and this sometimes assisted in more rapid promotion. Although there are many comments by officers throughout the war about relative seniority, there is no evidence that the normal rules as applied across Corps, brevet and army rank were broken is determining command status.

In terms of the officers themselves, there is strong evidence of them coming primarily from military and professional families. There is no evidence of an influx from the families of businessmen or tradesmen. Promotion by seniority and the inability to sell commissions meant that for many officers the Corps was a lifelong career, literally until death. Many exhibited a desire to learn the skills of their profession and these skills assisted a number who in later life went on to use their skills in the civil engineering arena. A number built on their colonial experience to take up roles as governors or administrators in the British Empire.

Having looked at the education of the officers and the officers themselves, the next section will undertake a review of the operational activities and determine how effectively the officers carried out their role in the field.

SECTION 4 – OPERATIONAL PERFORMANCE

4.1. Overview of Section 4

This section will investigate the operational roles and performance of the Royal Engineers in the Peninsula and describe their wider operations. Previous writing on the Royal Engineers' role has tended to focus on their involvement in sieges. The time spent on sieges during the Peninsular War was fifty-six days[1] for the four major sieges in 1811-12 and less than one hundred and forty days for all the sieges.[2] There were Royal Engineer officers in the Peninsula from July 1808 through to September 1814, which is six years and two months or approximately 2,250 days. Based on these numbers, engineers were employed in sieges for a maximum of 6.2% of the time. Even if the blockades, such as that at Pamplona are included, this time spent on sieges still comes to less than 15% of the total time. Not all engineers in the Peninsula were employed at the sieges, so the actual involvement of Royal Engineer in sieges is much lower than these figures. This naturally leads to the question, what were the Royal Engineer officers doing the rest of the time?

An analysis will be undertaken on the various tasks that the engineer officers performed and give a more comprehensive picture of their activities during the war. It will start by undertaking a fresh review of the major sieges to evaluate the performance of the Royal Engineers and also to consider the engineers' own view of their performance. A neglected area of research is the other activities that engineers were involved in. This will be addressed by investigating and analysing the activities that took up the bulk of the engineers' time during the Peninsular War. The activities of the Royal Staff Corps and the Royal Engineers will be compared to determine the commonality and differences in their roles and also to look at how the two separate corps were used by the army commanders. This section will conclude with a review of the

[1] Ciudad Rodrigo, 12 days; first, second and third sieges of Badajoz, 11, 12 and 21 days respectively.
[2] Burgos, 30 days, Olivenza, 6 days, Salamanca forts, 10 days, first and second sieges of San Sebastian, 11 and 12 days respectively, Tarragona, 12 days . Does not include blockades of Almeida, Tarragona or Pamplona.

performance of the Royal Engineers based on the tasks identified and their success in achieving them.

4.2. Sieges in the Peninsula

4.2.1. INTRODUCTION TO SIEGES IN THE PENINSULA

The Peninsular War did not follow the previous Napoleonic trend, as it had a significant number of sieges. As David Chandler described, the operational doctrine had changed, certainly in Napoleon's eyes, to crushing the enemy in battle and not getting involved in major sieges.[3]

The Iberian Peninsula had four groups of fortresses, which commanded the main communication routes. These fortresses could not be ignored, as bypassing them would leave supply routes open to disruption. Routes into Portugal were guarded by Badajoz and Elvas in the south with Almeida and Ciudad Rodrigo in the north. The western route into France was commanded by Pamplona and San Sebastian with the eastern route guarded by Gerona, Figueras and Perpignan. These towns were the locations of almost all the sieges during the war.[4] Chandler noted fifteen[5] sieges during the war, and Philip Haythornthwaite, twenty-nine.[6] A comprehensive analysis shows thirty-nine sieges or blockades, the other writers having ignored some of the smaller events. The complete list of sieges and blockades is detailed in Appendix K.

Apart from the strategic importance of these places, the sieges had one other important effect, particularly on the Allied army. This was the cost in terms of casualties. Compared with some of Wellington's major battles, these were significant not only in terms of the actual numbers but also more importantly in the loss of experienced troops and officers who tended to fare worse in assaults.

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[3] Fletcher, *Peninsular War,* p. 47.
[4] This explanation is given in both, Fletcher, *Peninsular War*, p. 49, and Griffith, *Modern Studies,* p. 213.
[5] Griffith, *Modern Studies*, p. 48.
[6] Fletcher, *Peninsular War*, p. 419.

Table 4a. Casualties at sieges and major battles.[7]

Siege	Killed	Wounded	Total
Sieges of Badajoz	1,263	4,889	6,152
Siege of Burgos	509	1,555	2,064
Sieges of San Sebastian	?	?	3,500
Battle	Killed	Wounded	Total
Talavera	801	4,562	5,363
Fuentes d'Onoro	241	1,563	1,804
Albuera	984	3,564	4,548
Salamanca	896	3,866	4,762
Vitoria	751	3,843	4,594

Between 1811 and 1813, Wellington lost about 13,000 troops during sieges compared with about 15,500 in the major battles. The French were more successful because many fortresses surrendered to them thus avoiding the need for a costly assault. The French were also in a better position to absorb their casualties, whereas Wellington was badly affected by the loss of Allied troops.

It is not intended to go through the sieges in detail. This has been thoroughly done by Jones, Oman, Myatt and Fortescue amongst others. The investigation will initially compare the sieges carried out by the French and the Allies with a review of the specialist resources that each had available to them. It will then focus on the Allied sieges, evaluating the reasons for decisions, the effectiveness of those decisions and in some cases, who made the decisions. A key question is : who was making the decisions? Wellington was not renowned for listening to other officers' views, even those of his senior generals. The engineer officers were blamed for poor choices at some of the sieges. This section will examine evidence about who was making the decisions and the relationships between the various officers involved. The investigation will also focus on whether the materials, resources and training were appropriate and consider if there were any other external factors to take into account (for example, time).

[7] The battle figures are taken from Oman's *Peninsular War* and the siege figures from Jones' *Journal of Sieges*. The exact breakdown of killed and wounded across the two sieges of San Sebastian cannot be determined.

The Allied army was involved in thirteen sieges and blockades during the Peninsular War :

- Olivenza in April 1811
- 1st Siege of Badajoz in April/May 1811
- 2nd siege of Badajoz in May/June 1811
- Blockade of Almeida in May 1811
- Ciudad Rodrigo in January 1812
- 3rd Siege of Badajoz in April 1812
- Salamanca Forts in June 1812
- Burgos in September 1812
- 1st siege of San Sebastian in July 1812
- 2nd siege of San Sebastian in August 1812
- Blockade of Pamplona in 1813
- 1st siege of Tarragona in June 1813
- Blockade of Tarragona in July 1813

The table below summarises all the sieges and blockades and their outcome.

Table 4b. Comparison of sieges and blockades.[8]

Nation	Number	Surrendered	Stormed	Other	Failed
British	13	3	3	1	6
French	24	14	3	2	5[9]
Spanish	2	0	1	1	0

Looking at the raw statistics, the British failure rate was 46%, against a French failure rate of 21%. The six British failures include the abortive siege and blockade of Tarragona. The other four, the first and second sieges of Badajoz, Burgos and the first siege of San Sebastian were all abandoned on the threat from approaching French armies, although some were progressing very badly at the time they were abandoned. These will be discussed in more detail below.

[8] Sieges and blockades as listed in Appendix K.
[9] Cadiz, two sieges of Gerona, Tarifa and the first siege of Saragossa.

A much greater proportion of the French sieges ended in surrender, with only three fortresses being stormed; Saragossa, Gerona and Tarragona. Looking at the other sixteen French successes (apart from storming the three fortresses), they have been broken down as follows :

Table 4c. Sieges : Reasons for surrender to the French.

Reason	Total
Breach practicable for an assault	7
Ran out of food or ammunition	3
Garrison escaped	2
No good reason (i.e. too early)	3
French bombarded civilians	1

Time does appear to have made a big difference. The average duration of successful Allied sieges, excluding the blockade of Pamplona, was sixteen days. The average time for the French, excluding the siege of Cadiz was forty-five days. If the very short French sieges of Campo Mayor, Castro-Urdiales, and Lerida are removed,[10] the average duration of the sieges rises to fifty-two days. The French typically took three times as long as the Allies to take a fortress. The French usually had less time pressure, as there was no effective relief force. In some cases, they defeated the relieving force, leaving no hope for the besieged. The only French siege that was stopped by the approach of a relieving force was the second attempt on Gerona in August 1809. In most cases there could be no rescue and all the governor could do was resist as long as possible. Several sieges appeared to have ended sooner than was expected, but it is not difficult to have some sympathy for the defenders who knew that there was no chance of relief and every chance of death.

Another important factor was that the Spanish and Allies were defending towns containing a friendly population, who would suffer in an assault. In many cases the loss of the fortress was inevitable, and inflicting additional hardship on the civilians would seem unnecessary. The French when defending, had less concern about the fate of the civilians, and their soldiers could also expect fair

[10] Where the governor surrendered because the French were bombarding the town rather and killing large numbers of the civilians. There was no French attempt to make an assault.

treatment from the enemy during a storm. The French had much less to lose by resisting to the end. The final difference was that Napoleon had made it clear that he did not approve of surrender, except as a last resort and the French governors knew that they would receive no sympathy from Napoleon if they surrendered too early. The gentlemanly conduct of sieges in the 18th century was not present in the Peninsula.

A constant theme throughout this thesis is the number of trained engineers and artificers available. In comparison with the limited resources available to the Allied army, the French armies had an established organisation which was assigned to the larger French formations as a matter of course. A French corps would typically have one or more companies of sappers and a body of miners as well as dedicated engineers. An early example during the Peninsular War was at the second siege of Saragossa where the French engineer park consisted of forty engineers, two hundred and thirty-eight miners and 1,082 sappers.[11] The engineer stores establishment for a French corps amounted to one hundred and twenty men with fifty waggons carrying 5,000 entrenching tools, 1,700 cutting tools and various other items of engineering and bridging equipment.[12] British armies had no established engineer resources and consequently had to make do with much less throughout the Peninsular War. The situation was improving towards the end, but the first British army to take the field with a proper engineering establishment was Wellington's army for the Waterloo campaign. The table below shows that during the early part of the Peninsular War, a significant portion of available Royal Engineers had to be drafted in for siege work.

Table 4d. Engineers present at sieges.

Siege	Engineers present at siege	Total number of engineers in Peninsula
1st siege of Badajoz	21	31
2nd siege of Badajoz	21	32
Ciudad Rodrigo	19	33

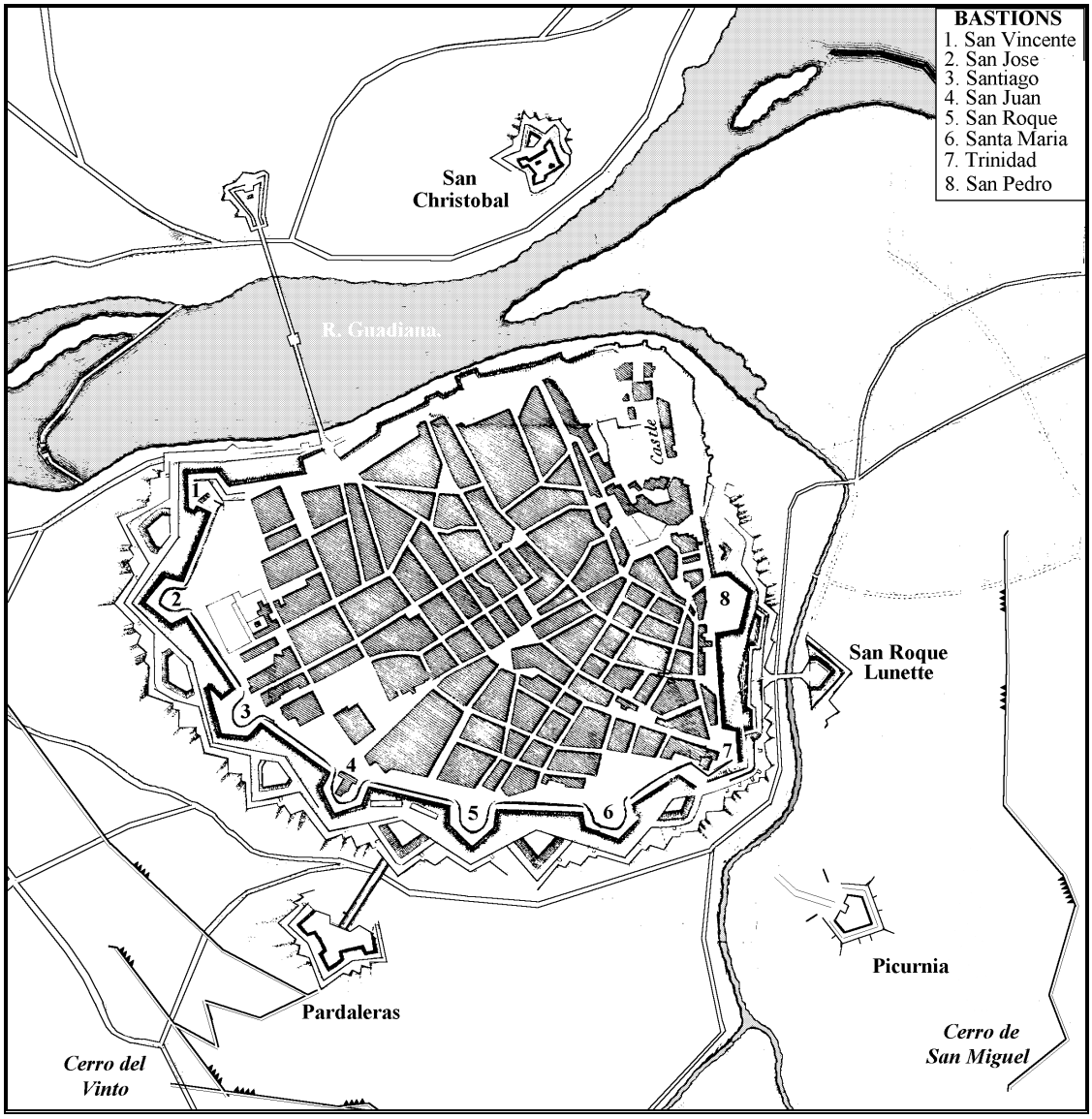
[11] Fletcher, *Modern Studies*, p. 222, quoting from Belmas, *Journaux des sieges,* vol. 2, pp. 337-339.
[12] Jones, *Journal of Sieges,* vol. 2, p. 386.

3rd siege of Badajoz	24	33
Burgos	5	33
San Sebastian	18	45

4.2.2. SIEGES OF BADAJOZ IN 1811.

There were three sieges of Badajoz carried out by the Allied army. The first two sieges were between April and June 1811 and were both aborted due to the approach of French armies. The third siege in April 1812 ended successfully with the fortress being stormed, but at a high cost in casualties.

Figure 4.1. Map of Badajoz



4.2.2.1. First Siege of Badajoz, April 1811

This was the first major siege that the British conducted during the Peninsular War. They had just successfully completed the siege of Olivenza where the French had surrendered on 15 April 1811. However, Olivenza was a poor fortress with only four hundred troops to defend its one mile perimeter. The governor surrendered soon after the attackers' guns opened fire, as he had no realistic chance of being able to resist.

Table 4e. Timeline for first siege of Badajoz.

20 April 1811	Wellington visits and agrees plan for siege.
23 April 1811	Bridge at Jerumenha swept away.
29 April 1811	Bridge at Jerumenha restored.
4 May 1811	South side of Badajoz invested.
8 May 1811	North side of Badajoz invested.
8 May 1811	Trenches started that night.
10 May 1811	French sortie against Fort St Christoval.
11 May 1811	Allied guns opened fire against Fort St Christoval and Fort Picurina.
11 May 1811	All stores moved to north bank in preparation for raising siege.
11 May 1811	Work started on attack against castle at night and stopped in early hours of 12 May 1811.
13 May 1811	Siege raised.

The unexpected loss of Badajoz to the French changed the face of his whole strategy for 1811. Wellington's intention when Masséna retreated from the lines of Torres Vedras was to advance and re-take the fortresses of Almeida and Ciudad Rodrigo and then, having secured the northern passage, turn his attention to the south. The loss of Badajoz left both the southern and northern routes into Portugal in French control, and put Wellington on the defensive. Replying to a question on his priorities from Lord Liverpool on 7 May 1811, he wrote that retaking Badajoz was his first priority as it dictated his whole strategy for the rest of the year.[13] Speaking to Earl Stanhope in October 1836, Wellington said 'Had it not been for the last, [The surrender of Badajoz] I could have

[13] WD, To Liverpool, 7 May 1811. It is interesting to note that Wellington did not have any great desire to take Almeida at this time. It was circumstance, not planning that led to the blockade.

blockaded Almeida and Ciudad Rodrigo at once; and when I had taken them carried the war to the south'.[14] Strategically, it was vital that Wellington recovered the fortress as quickly as possible.

Operationally, Badajoz was a major fortress with a strong garrison and an able governor. The problem Wellington faced was, because the loss of Badajoz was unexpected, no provision had been made for siege equipment in that area. Oman criticised the British Government for not providing a siege train for Wellington's use writing, 'The British army in Portugal was absolutely destitute of artillery destined for and trained to the working to siege guns'.[15] On this point he is wrong. At that time, there was a brand new British siege train stored in transports at Lisbon. Wellington knew it was there and planned to (and did) use it for the future siege of Ciudad Rodrigo. There was simply no practical way to move it quickly from Lisbon to Badajoz, even if its safety could be guaranteed. Similarly, Wellington was short of bridging equipment, as the only large pontoon train in the south had just been lost at Badajoz.

Wellington made a quick visit to the area, leaving the north on 15 April 1811. With him came Lieutenant-Colonel Richard Fletcher R.E. who was to take command of the siege, taking over from Captain John Squire R.E. who was attached to Beresford's force and had just successfully completed the siege of Olivenza. Wellington's visit required a three hundred mile round trip by horse which demonstrated the importance he placed on recapturing Badajoz. The purpose of his visit was not just to make arrangements for the siege. He also needed to resolve issues around command and seniority between Beresford and the Spanish commanders. It was likely that the French would come to the relief of Badajoz and a battle might have to be fought to stop them. The senior Allied commander in the area was the Spanish general, Castaños.

On Wellington's arrival at Elvas on 20 April 1811, he spoke to Major Alexander Dickson, the senior artillery officer and to Squire. He was informed that the

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[14] Earl Stanhope, *Notes of Conversations with the Duke of Wellington* (London, 1938), p. 90.
[15] Oman, *Peninsular War*, vol. 4, p. 274. More recently, I. Robertson, *A Commanding Presence*, also suggests that Wellington did not have access to a siege train.

siege guns and stores used at the siege of Olivenza were ready to move when Badajoz was invested. As there was a shortage of gun carriages, the gun carriages from Olivenza would then be used to collect further guns from Elvas. Squire also reported that he had sufficient tools to start the siege. Wellington made a personal reconnaissance around Badajoz on 22 April 1811, and the following day wrote three memorandum.

The first was a letter to Beresford outlining the strategy he should follow for the siege and how he should respond if a French relief force was sent. The most important point in this letter was that Wellington authorised Beresford to fight a battle if he felt it was appropriate.

The second memorandum detailed Wellington's recommendations on the siege operations for Beresford, Dickson and Fletcher.[16] The two key points in Wellington's instructions for the siege were :

- All three outlying works, San Christoval, Picurina and Pardaleras were to be attacked simultaneously;
- Only when <u>all</u> three works had been taken would the attack on the fortress itself begin. Wellington suggested that the most likely point of attack would be the south face, but left the decision to Beresford.

The third memorandum was a letter to three senior Spanish generals in the area, Castaños, Blake and Ballasteros, asking for explicit acceptance of Wellington's operational plan. Any move against Badajoz was dependent upon their agreement.[17] Wellington made his views absolutely clear to Beresford on 6 May 1811, writing : 'If Gen. Blake does not positively agree to everything proposed in my memorandum, and does not promise to carry it strictly into execution, I think that you ought not to be in a hurry with the siege of Badajoz'.[18] The following day he informed Liverpool that he had told Beresford to delay the siege until agreement had been received from the Spanish generals[19] It is

[16] WD, All three memorandum were dated 23 Apr 1811, pp. 490-496.
[17] WD, Memorandum 23 Apr 1811, vol 8, pp. 494-496.
[18] WD, To Beresford, 6 May 1811.
[19] WD, Wellington acknowledged Castanos' acceptance in a letter to him dated 13 May 1811.

significant that Beresford did not take any positive steps to start the siege until 8 May 1811 when the Spanish generals agreed to the proposals in Wellington's memorandum. Beresford could have started a few days earlier and the artillery and engineer officers were puzzled by the delay.

Overall the siege was not off to a good start. The lack of siege stores at Elvas, the loss of the temporary bridge at Jerumenha, which provided their primary means of communication across the river Guadiana and the delays in resolving the command issues meant that eight weeks had passed since the French took Badajoz. Beresford heard that Soult was marching to relieve the fortress on 10 May 1811, before the first gun had even opened fire. The day the first gun fired, on 11 May 1811, Beresford was already making preparations to raise the siege.

The Plan of attack on Badajoz.

There are a number of points that need examining in relation to the plan :

- Why was this particular plan chosen and who decided?
- Were the resources available?
- Was the plan followed?

Why was this particular plan chosen and who decided?

According to John Jones R.E., when Wellington arrived at Elvas on 20 April 1811, he was :

> determined to lay immediate siege to Badajoz, if any plan of attack could be offered which should not require more than sixteen days open trenches, as in that period, and the time required to make the necessary preparations for the siege, it was calculated that Marshal Soult would be able to collect a force equal to its relief.[20]

[20] J.T. Jones, *Journal of Sieges carried on by the Duke of Wellington in Spain during the years 1811 to 1814,* 3rd Edition, (3 vols, London, 1844), vol. 1, p. 12. Unless otherwise started references to Jones will be from this edition.

The preference of most of the officers, including Wellington, was for an attack on the southern face. No plan could be developed that would meet the sixteen day target, normal calculations for such an attack indicating that twenty-two days would be required. Jones continued that 'it was of the greatest consequence to the future operations of the army that Badajoz should be retaken'.[21] Probably under pressure from Wellington, Fletcher proposed a plan that he felt could be achieved within the sixteen days. The plan was to take the fort of St Christoval which overlooked the castle and once it was taken, to form batteries to batter the old castle walls which would then be stormed when there was a practicable breach. It was also proposed to make simultaneous false attacks on the other two outworks to mask the real intentions. According to Jones' diary, these discussions occurred before Wellington's reconnaissance on 22 April 1811, and Wellington approved this plan after he had examined the fortress.

There is a confusing difference in the accounts at this point. Jones' published *Journal* described Fletcher's plan above. This *Journal* also printed Wellington's memorandum of 23 April 1811, but crucially left out Wellington's last point, which stated that all three outworks must be taken before the attack on the fortress started. Wellington's instructions made no mention of false attacks and suggested an attack on the southern side. Wellington's instructions do not appear to be the same as Fletcher's plan. Jones' original diaries, which he kept at the time, do not specifically detail Fletcher's proposal. He did however, detail Wellington's memorandum including the crucial last point, which was not printed in his published *Journal*. On 8 May 1811, he noted in his diary 'Fletcher marked out a work against the Picurina redoubt and to conceal from the enemy the real point of attack, it was decided to carry out a false attack against the Pardaleras.'[22] Later in the diary entry for that day, he noted troops breaking ground for the false attack against the Pardaleras fort, but no mention was made of the attack on the Picurina being false. In his published *Journal*, and in

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[21] Jones, *Journal of Sieges,* vol. 1, p. 13.

[22] REM, 5501-59-1, Jones diary, 8 May 1811. The original diaries are very difficult to read. Copious notes from them were taken by John Hancock, the ex-Curator of the Royal Engineers Museum. My comments are from his notes, not the original diaries.

his original diary, Jones made continued reference to false attacks on the Pardaleras.[23]

Alexander Gordon, who was one of Wellington's Aides-de-Camp, travelled with him to Badajoz. His comment on 23 April 1811, the day Wellington inspected Badajoz, was that he expected the attack would come from the south side, after opening against the three outworks.[24] A later letter still talked about taking all three outworks.[25]

Oman was highly critical of the decision to attack St Christoval and puts the blame firmly on the shoulders of Fletcher, the commanding engineer. He criticised the decision to make it a requirement to capture all three forts before attacking the castle, noting that 'none of these were to be mere false attacks'.[26] In Oman's work there is no mention of Jones as a source for the first siege although he does use Jones for the subsequent sieges of Badajoz. Although Oman's text is explicit, the map of Badajoz in his book marks both the Pardaleras and Picurina forts as 'False attacks'.[27] It is possible that Oman did not have, or chose not to use the comprehensive third edition of Jones' work when writing about the first siege. The original first edition of Jones' *Journal*, published in 1814, had a shortened account of the first siege. This edition described the attack on St Christoval, but did not mention the false attacks on the Picurina or Pardaleras.

Fortescue used Jones' *Journal* and recognised that the engineers had a preference for taking St Christoval over the other two outworks. He also criticised the decision to attack St Christoval rather than follow the French lead and attack the southern face.

The above analysis leaves two unanswered questions :

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[23] Jones, *Journal of Sieges,* vol. 1, p. 22, 26; REM, 5501-59-1 Jones diary, various entries from 8 to 14 May 1811.
[24] R. Muir, *At Wellington's Right Hand* (Stroud, 2003), p. 193.
[25] Muir, *At Wellington's Right Hand*, p. 205.
[26] Oman, *Peninsular War*, vol. 4, pp. 282-283.
[27] Oman, *Peninsular War*, vol. 4, facing p. 286.

- Was the decision to attack St Christoval due to time constraints reasonable?
- Why did Jones' published account completely ignore Wellington's final instruction to take all three outworks before attacking the fortress?

In answer to the first question, it is necessary to acknowledge the experience of the engineers. Their judgement was that twenty-two days would be necessary to attack from the south. This did not meet Wellington's requirement of sixteen days. The plan proposed by Fletcher was certainly risky, but quickly taking the outwork would have given the army a great chance of meeting the short timescale. Certainly, the strength of St Christoval had been underestimated by everyone, Dickson noting that St Christoval 'might easily be taken'.[28] On 26 April 1811, Wellington sent Beresford copies of the French plan of Badajoz and their plan of attack which had been intercepted by Castaños. With this information, there was time to change the Allied plan of attack, but no change was made. In the end it was the limited resources that led to failure against St Christoval, not the decision to attack it.

The answer to the second question is more difficult. The plan followed by the engineers, which is clearly reported in Jones' *Journal*, was to attack all three outworks, but only the attack on Pardaleras was meant to be false. The map in Dickson's *Diaries* shows the attack on the Cerro del Vinto (Pardaleras) as being a 'false' attack.[29] Rice Jones similarly talks about only this attack as being false.[30] These do not match Fletcher's original proposal described in Jones' *Journal*. Neither does it appear to follow Wellington's instructions of 23 April 1811. Wellington's instruction to take all three outworks, does not appear to be logical when time was critical. It would have taken significantly longer to capture all three outworks, where the possession of two or even one would allow the start of an attack on the fortress. The plan that was actually followed will be discussed below.

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[28] Dickson, *Manuscripts,* vol. 3, Letter to Maj-Gen Macleod, 21 Mar 1811, p. 364.
[29] Dickson, *Manuscripts*, vol. 3, map of Badajoz and surrounding areas. This map is loose in the 1987 facsimile edition.
[30] H.V. Shore, *An Engineer Officer under Wellington in the Peninsula* (Cambridge, 1986), p. 100.

Were the resources available?

The biggest problem Wellington faced with the loss of Badajoz was getting together the resources to try and re-take it. Both Oman and Fortescue criticise Wellington's preparations but neither are accurate. Fortescue stated that Wellington did not ask about resources at Elvas until 6 April 1811, with deficiencies being made up from the 'English' battering train at Lisbon.[31] Wellington did not actually write 'English' battering train, but 'our' battering train, probably just referring to resources at Lisbon. Wellington was reluctant to use the new English battering train, writing that it would 'cripple' future siege operations.[32] He did subsequently send a number of siege guns from Lisbon, but these were not from the new English battering train.

Oman wrote that Wellington did not start preparations for collecting the guns until 18 April 1811, when he sent Dickson to Elvas.[33] Dickson, the commander of the artillery, was writing as early as 21 March 1811 that the artillery would come from Elvas.[34] Wellington's first letter to Beresford on the subject of the siege was written on 27 March 1811, where he stated : 'Elvas must supply the means [for the siege of Badajoz], if possible : if it has them not, I must send them there; this will take time, but that cannot be avoided'.[35] Writing to Beresford on 6 April 1811, Wellington explained 'In respect to Badajoz, the first thing to do is to blockade it strictly … and I am most anxious to receive the accounts of what Elvas can supply for this purpose'.[36] Beresford sent for Dickson on 2 April 1811, and asked him to prepare a return of the 'ordnance, ammunition etc' in Elvas for Wellington.[37] Clearly the answer Wellington received, was that Elvas could not provide the necessary resources,[38] because on 9 April 1811 Wellington was ordering siege material to be sent up to Elvas

[31] Fortescue, *British Army,* vol. 8, p. 143.
[32] WD, To Beresford. Elvas, 20 Apr 1811.
[33] Oman, *Peninsular War*, vol. 4, pp. 273-274.
[34] Dickson, *Manuscripts*, vol. 3, Letter to Maj-Gen. Macleod, p. 364.
[35] WD, To Beresford, Gouvea, 27 Mar 1811.
[36] WD, To Beresford, Villar Maior, 6 Apr 1811.
[37] Dickson, *Manuscripts*, vol. 3, pp. 374-375.
[38] REM, 4601-71 Misc Letters, f. 13. Squire writing on 11 Apr 1811 dates that 'there are no means at Elvas, and we have not a single platform at our disposal.'

from Lisbon.[39] At the same time, Wellington also ordered heavy guns to be sent from Lisbon to replace the guns that were being moved from Elvas.[40] Writing to Beresford the next day, Wellington provided a list from Fletcher of the ordnance and ammunition that Elvas should supply for the siege of Badajoz and informed him about the stores he had ordered from Lisbon.[41] Beresford wrote to Squire, who was the senior engineer present at that time, asking him to consider what materials could be obtained or made locally and what tools would be required.[42] Squire responded the next day saying that timber would be a problem but he could see no difficulty in obtaining tools or making gabions and fascines.

The criticisms of Oman and Fortescue mentioned above appear to be unfounded. Similarly, Fortescue's comment that Beresford must have told Wellington that Elvas could supply the stores appears similarly unfounded.[43] Heavy material for a siege took time to get together and Wellington had no warning that this would be required for Badajoz. In comparison, it took from May to October 1811 to transport the siege train by sea and land to be ready for use at Ciudad Rodrigo in January 1812.

There were also problems with the delivery of the requested stores. Wellington was informed that there was insufficient transport to move all the stores he had requested from Lisbon and on 23 April 1811, he reduced the amount of stores to be brought forward. The stores ordered from Lisbon did not arrive at Elvas until 12 May 1811, and the first items did not get to Badajoz until that evening, by which time the siege was effectively over.

There were similar difficulties with the availability of guns. There were no modern siege guns immediately available for this siege. The guns that were used were supplied from Elvas and as has been widely recorded elsewhere

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[39] WD, Memorandum for Col. Fletcher and Commissary Gen, 9 Apr 1911. The stores list is detailed in Jones, *Journal of Sieges,* vol. 1. P. 345.
[40] Jones, *Journal of Sieges*, vol. 1, p. 351. Therequisition was for fifteen 24-pounder and five 18-pounder cannons, with 8,000 round shot.
[41] WD, To Beresford, Villar Fermosa, 10 Apr 1811.
[42] REM, 4601-71. Misc. Letters, Hardinge to Squire, 12 Apr 1811.
[43] Fortescue, *British Army* vol. 8, p. 143.

they were generally old and in poor condition. Through the efforts of Dickson, a siege train of thirty guns was put together.[44] Some of these were the guns used at the siege of Olivenza and were still located there. Once again, the more immediate problem was transport. Dickson reported on 22 April 1811, that there were only three carriages at Elvas for transporting guns. To get the guns to Badajoz would require moving the six guns at Olivenza as soon as possible so that their carriages could then be sent to Elvas to move the remainder.

Apart from the physical resources, the engineers were concerned about the availability of experienced soldiers. Although this became more prominent in the later sieges, the concern was there from the very first siege. Squire raised concerns before the siege started about the lack of sappers and miners and the need for men who 'know how to carry on an approach under fire'.[45] He knew that the French in their siege of Badajoz, sapped right up to the glacis and this required trained and experienced sappers. Squire's view was that if the British had to do the same, there would be significant casualties.

Was the plan followed?

Wellington was impatient to get started on the siege of Badajoz. As early as 30 March 1811, he wrote to Beresford asking him to make arrangements for the attack, commenting that 'the breach can be barely more than stockaded'.[46] He wrote again on 6 April 1811, stating that Badajoz must be blockaded as soon as possible. Writing to Liverpool on 9 April 1811, he mentioned that he 'hoped' Beresford would have been blockading Badajoz from 3 April 1811. These timescales all appear unrealistic as there had been problems establishing a crossing point over the river Guadiana in early April due to the river level rising unexpectedly. Beresford also had to take Olivenza before he could move on Badajoz. At that time he also did not know the exact whereabouts of Soult. Wellington also wrote to Beresford on 21 April 1811, when he heard that Soult was fortifying Seville. He saw this as indicating that Soult could be planning an

[44] Jones, *Journal of Sieges,* vol. 1, p. 18.
[45] BL, ADD63106, Squire letters, f. 28, Squire to Bunbury, 30 Apr 1811.
[46] WD, To Beresford. Celorico, 30 Mar 1811.

operation to relieve Badajoz. He explained that it was even more urgent that not a moment was lost in starting operations against Badajoz.[47]

Immediately after the siege of Olivenza was concluded, Dickson and Squire were ordered to start preparing for the siege of Badajoz,[48] and from 19 April 1811 they were preparing the siege train of thirty guns and howitzers. On 27 April 1811, Beresford issued an order for one hundred troops to be permanently assigned to the engineers as artificers. In addition, eighty-four carpenters and miners from the British divisions and twelve officers were to serve as assistant engineers (who were officer volunteers from the army). Squire had requested these on 10 April 1811, and Beresford confirmed he could have them on 20 April 1811.[49] The men arrived at Olivenza on 2 May 1811, and some were immediately put to work cutting timber and making the siege materials. The remainder were given some basic training in siege craft along with the small number of Royal Military Artificers who were present, none of whom had any previous training in siege works.[50]

Beresford told Wellington in a letter of 3 May 1811 that he was waiting for Fletcher to confirm that all the stores were ready and would then order the investment of the north side of the river Guadiana.[51] Dickson and Squire certainly thought everything was ready to start the investment of Badajoz before this date.[52] The final delays were likely to have been caused by waiting for confirmation that the bridges had been restored at Jerumenha; that the troops allocated to assist were present; and that the additional shovels had arrived from Abrantes. All these events happened on or around 2 May 1811.

Following the investment of the fortress on the south side of the river Guadiana on 4 May 1811, the guns at Olivenza were moved up and placed in the park

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[47] WD, To Beresford. Elvas, 21 Apr 1811.
[48] Dickson, *Manuscripts*, vol. 3, p. 384. 17 Apr 1811.
[49] REM, 4601-71, Misc Letters, f. 14, Squire to Hardinge, 10 Apr 1811; f. 19, Hardinge to Squire, 20 Apr 1811.
[50] Jones, *Journal of Sieges,* vol. 1, p. 348.
[51] WSD, Beresford to Wellington, Almendralejo, 3 May 1811
[52] Dickson, *Manuscripts,* vol. 3, p. 389. Letter to Macleod, 1 May 1811; BL, ADD63106, f. 28, Squire Letters, Squire to Bunbury, 30 Apr 1811.

behind the Cerro del Vinto on 6 May 1811. The carriages were then sent off to Elvas to be available to bring up the next batch of guns. The guns for the attack on St Christoval had been available since 5 May 1811, and were only waiting for the north side of the river to be invested. Dickson recorded that it would take two trips (that is, two days) to transfer the eight guns required for the north side. In the same letter he mentioned he was still waiting for two companies of Portuguese artillery, who were essential to progress the siege on the south side of the river.[53]

Dickson expressed his confusion on 1 May 1811, and again on 7 May 1811 as to why the siege had not commenced.[54] Similarly, there were a number of comments from engineer officers, the earliest being 25 April 1811.[55] The engineers believed that arrangements had been made for the right bank of the river Guadiana to be invested on 4 May 1811. They moved stores and pontoons up and had to make rapid arrangements for their protection when no troops arrived on the right bank. Jones commented on 8 May 1811 that the stores for the attack on St Christoval had been waiting on carts for two days.[56]

There appears to have been a change of plan around this time. Jones' diary recorded that the plan of attack was put 'on paper' on 5 May 1811, and agreed by Beresford on 7 May 1811. Wellington's earlier memorandum had not specified exactly how the attack was to be carried out, noting that after taking the three outworks, Beresford was to decide where to attack the castle. Although Wellington had suggested the south side of the fortress, he had not ordered it. The engineers had a clear preference under the time constraints for an attack on the castle, rather than the south side. It may have been the lack of trained sappers and miners that influenced the decision to attack St Christoval and breaching the walls from a distance. Such an attack would require fewer sappers and miners. Based on the comments at the time from the engineers, it is probable that the plan Fletcher presented to Beresford on 7 May 1811,

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[53] Dickson, *Manuscripts,* vol. 3, p. 390.
[54] Dickson, *Manuscripts*, vol. 3, pp. 389-90.
[55] E.g. REM, 4501-86-4, Ross letters, Ross to Dalrymple, 25 Apr 1811; BL, ADD63106, Squire letters, f. 28, Squire to Bunbury, 30 Apr 1811
[56] REM, 5501-59-1, Jones' diary, 4-8 May 1811

included a proposal to start the attack on the castle before St Christoval was taken. It was necessary to attack the Picurina outwork to do this; it was not necessary to take the Pardaleras outwork. This was earlier than had been proposed in Fletcher's original plan as documented in Jones' *Journal*. Fletcher would have been looking for quicker ways to take the fortress to mitigate the impact of the additional delays since the original plan had been agreed. It was now two weeks since Wellington had sent his memorandum to the Spanish generals (and eight weeks since the French took Badajoz) and as yet, there has been no answer from them. That there was a change in the plan is indicated by the numerous comments from engineer officers which refer to attacks on St Christoval and Picurina and false attacks on Pardaleras. These include :

> It had however been previously decided to attack the castle at the east extremity of the town … the intention was to breach the castle, while batteries were established on the right bank of the Guadiana to take in flank and reverse. With this view it was necessary to take Fort Christoval … The whole was intended to be a simultaneous operation, so as to have divided the attention of the enemy. If we had had sufficient tools it was also proposed to make a fake attack to the westward by re-opening the trenches of the enemy.[57]
>
> On the 8th … we broke ground on this side against Fort Christoval in earnest and they in joke opened the old French parallels on the other side.[58]
>
> The project was to commence a parallel embracing the castle having its right on the river, and to attack that part, the castle being like most others on a hill accessible and the wall not covered; at the same time attacks were to be carried on against the fort of St Christoval on the opposite side of the Guadiana.[59]
>
> The attacks to be directed against the castle and Fort Christoval.[60]

On the same day that Beresford approved the plan (7 May 1811), Jones recorded that a working party was preparing materials near the spot where it was intended to start the battery against fort Picurina.[61] This would suggest an acceptance of the plan to attack the castle. Significantly, Jones also noted that

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[57] BL, ADD63106, Squire letters, ff. 31-33, Squire to Bunbury, 17 May 1811.
[58] REM, 4501-86-4, Ross letters, Ross to Dalrymple, 20 May 1811.
[59] REM, 4201-68, Burgoyne's diary, 19 May 1811.
[60] REM, 4601-57-1, Emmet's diary, 7 May 1811
[61] REM, 5501-59-1, Jones' Diary, 7 May 1811.

Lieutenant Forster R.E. was employed that night to cross the Rivellas stream and ascend the height to the castle wall to determine the feasibility of British troops approaching the walls. It is difficult to think of any reason to carry out such a dangerous reconnaissance unless the plan was to attack the castle at this point. It is probable that the actual plan followed by the engineers was what had been agreed with Beresford, but it has not subsequently been recorded in that way. It is inconceivable that the engineers would have been allowed to alter Wellington's plans without his or Beresford's agreement.

Fletcher was marking out the positions for the trenches against the Picurina during the day on 8 May 1811 and Squire was doing the same on the other side of the river against St Christoval. The trenches were started against all three outworks on the night of 8 May 1811. Jones started marking out the ground for the attack on the castle the following morning with the expectation that the trenches would be started that night. However, Beresford 'forbade' any work to start. Jones then wrote that the noon reliefs on 10 May 1811, for the attacks against the Picurina and Pardaleras were 'nominal' to make a 'show of work'. Beresford agreed to start the attack on the castle on 10 May 1811, but on hearing news of the French plan to move against him, he deferred the work again.[62] At the evening relief on 10 May 1811, because 'Beresford was still forbidding' work against the castle, 'it became necessary to devise some means to amuse the enemy',[63] and further trenches were dug against the Picurina and Pardaleras. Jones again mentioned small parties working against the two outworks on 11 May 1811.[64]

The delay in starting the attack against the castle also had a major impact on the attack against St Christoval in that the fire from Badajoz was almost wholly directed against the St Christoval attack. On the morning of 10 May 1811, the French made a sortie against the works around St Christoval. They briefly had

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[62] Jones, *Journal of Sieges*, vol. 1, p. 26

[63] Shore, *Engineer Officer under Wellington,* pp. 100-103, which is the diary of Lieut. Rice Jones R.E. records the same story as John T. Jones. One was Brigade-Major and the other was the Adjutant for the Royal Engineers at the siege. They will have been working together. The similarity in words is too close for coincidence and clearly one of them has copied their diary from the other.

[64] REM, 5501-59-1, Jones Diary.

control over the trenches and did minor damage before they were repulsed, but the British covering party rashly chased them up to the very walls of the fort and suffered four hundred needless casualties. The delays caused by Beresford not allowing work to start against the castle was causing some frustration amongst the engineers :

> Still we were urged on … with the reason … that we were to take the fire off the main attack … by attracting it to ourselves!!!!!! … The daylight of each succeeding day however affording us the mortification of seeing that our promised support from the main attack had been withheld ... Marshall Beresford not allowing the original plan to go on.[65]

> The project was to commence a parallel embracing the castle … at the same time attacks were to be carried on against the fort of St Christoval … This latter one however only was commenced, Marshal Beresford, who commanded saying he would take that first, the consequence was that that small attack [on St Christoval] … had to support for three days the whole fire and efforts of the place and fort.[66]

On the evening of 10 May 1811, Beresford finally gave permission to start work against the castle on the following evening but insisted that work must not start until Fletcher could guarantee that the workmen would be fully protected from French fire by the morning. To achieve this the tools ordered from Lisbon were needed, and these were expected to arrive during 11 May 1811. The batteries finally opened against St Christoval on the morning of 11 May 1811. D'Urban and Oman, both suggested that the battery on St Christoval started too early[67] and took all the return fire from Badajoz. Ross, one of the engineers working at St Christoval wrote clearly that 'on the 11th by order, our battery of three 24-pounders and two 8-inch howitzers opened upon Christoval having [the whole of] Badajoz opposed to it'.[68]

The battery against the Picurina had been ready since 9:00am on 10 May 1811. There is no specific comment on when this battery opened, but Jones commented that the Picurina battery fired one hundred and sixty rounds on 11

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[65] REM, 4501-86-4, Ross letters, Ross to Dalrymple, 20 May 1811
[66] REM, 4201-68, Burgoyne's diary, 19 May 1811.
[67] D'Urban, *Journal,* p. 213, Oman, *Peninsular War,* vol. 4, p. 286. Did Oman take this from D'Urban's journal? D'Urban was not actually at Badajoz. He was with Beresford's army.
[68] REM, 4501-86-4, Ross letters, Ross to Dalrymple, 20 May 1811.

May 1811, hitting the target only four times.[69] This would strongly suggest that the battery had been firing for most of the day.

Dickson said that his and Fletcher's wish 'was not to begin the fire from any one battery until the whole attack should be more advanced'.[70] Their view was that the Picurina battery was not sufficiently far forward to support St Christoval. The effect of the two batteries fire was negligible due to the inexperience of the artillerymen and the faults in the guns. The battery against St Christoval was overwhelmed by fire, with four of the five guns being disabled by mid-afternoon. It was decided to build another battery next to the one that had been badly damaged, and this was started on the night of 11-12 May 1811. This battery did not open fire before the siege was raised.

At 5:00pm on 11 May 1811, Fletcher received news that the tools required to begin the attack against the castle would not arrive that night. He told Beresford that the works against the castle could not start until the following night. When the new tools finally arrived, the trenches were started against the castle on the night of 12 May 1811. Good progress was being made, when at 1:00am an order was received from Beresford for the work to stop immediately and for the troops to be withdrawn.

Activities over the next 48 hours became very confused, with most of 13 May 1811 being spent removing stores. However, work was still continuing against the forts of St Christoval and Pardaleras. According to Jones, at 6:00am on 14 May 1811 Beresford wrote to Fletcher and suggested that the attack could continue against St Christoval, as he believed the French were only manoeuvring. Fletcher had started recalling the stores when he was informed that orders had been issued to the army to raise the siege and he then had to countermand his orders. On the night of 14 May 1811, the batteries were dismantled and any remaining stores that could not be removed were burnt.

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[69] REM, 5501-59-1, Jones' diary, 11 May 1811.
[70] Duncan, *Royal Artillery,* vol. 2, p. 293.

The final covering forces did not leave Badajoz until the night of 15-16 May 1811.

Comments on the First Siege of Badajoz.

Oman's account of the siege is flawed in a number of areas. He claimed that Wellington's orders were for the siege of Badajoz to begin the moment that the guns and material were ready.[71] This is not true. Wellington had told Beresford not to start the siege until the Spanish generals had agreed to his memorandum of operations. This did not happen until 8 May 1811. The evidence shows that the siege was ready to start before that date. Oman states that the south side was invested on the 6 May and the north side on 7 May 1811.[72] He also wrote that Beresford only invested the south side after Fletcher and Dickson said all the stores were ready on 5 May 1811. [73] These dates should be 4 and 8 May 1811, respectively. Wellington's only comment on the investment dates are in a letter to Liverpool on 15 May 1811, where he said both sides were invested on the 8 May 1811. Beresford writing to Wellington on 3 May 1811, stated that he intended to invest Badajoz on 4 May 1811 but this did not happen.[74]

Oman's summary of the strategy accurately reports Wellington's memorandum of 23 April 1811. Oman goes on to say that none of the attacks were to be false attacks and that the engineers had given Wellington 'bad counsel as they certainly did to Beresford during the subsequent weeks'.[75] He then concluded by saying that planning three attacks when the engineers knew they had limited resources was inexcusable. Oman's criticisms are based on the premise that the engineers were following the plan described by Wellington on 23 April 1811. The diaries of the engineers show that they were not. A more plausible solution is that the engineers were operating to a plan based on that originally proposed by Fletcher, but with a change to bring forward the attack on the Picurina and

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[71] Oman, *Peninsular War*, vol. 4, p. 280.
[72] Oman, *Peninsular War*, vol. 4, p. 284.
[73] Fortescue says they reported they were ready on 3 May 1811 but there does not appear to be any specific communication to this effect.
[74] WSD, Beresford to Wellington, Almendralejo, 3 May 1811
[75] Oman, *Peninsular War,* vol. 4, pp. 282-283.

castle to make up some of the additional lost time and this is what was agreed with Beresford on 7 May 1811.

Without even looking at the actual work undertaken during this first siege, the timescales for its completion were unrealistic. The whole operation started too late and was too hurried. Wellington was desperate to recover Badajoz, as his whole strategy was dependent on it being in Allied possession. Wellington pressurised the engineers to come up with a plan to meet his tight timescale. The plan was risky, but could have worked. The strength of St Christoval was certainly underestimated but at the time both the engineer and artillery commanders believed it was possible to take the fort in a few days.

There is real confusion both at the time and amongst writers about which plan was being followed. The plan Wellington wrote up was not that proposed by Fletcher. The plan implemented was not that proposed by Fletcher either, but was much closer to it. The engineers believed they were working to a plan that Beresford would not let them implement fully, after he had approved it. Their frustration comes through clearly in several of their letters.

The resources required were not available, either in terms of guns or siege materials. The siege train was too small and ineffective. Although thirty-two guns were available for the siege, only thirteen of these made it into the batteries. Five guns[76] opened against St Christoval on 11 May 1811, four of which were damaged the same day and were not replaced before the siege was raised, although a new battery for four guns was started. The eight guns for the attacks on the two outworks on the south side were too far away to cause any significant damage. During the whole siege there were only five siege guns firing to make a breach from 7:00am to around noon on 11 May 1811. The stores in terms of tools, shot and powder were insufficient and had to be shipped in from Lisbon. Even the reduced stores ordered from Lisbon did not arrive until 12 May 1811.

[76] three 24-pounders and two 8-inch howitzers

There were too many delays in starting the siege. It appears that the decision to besiege Badajoz had developed a level of momentum and rather than stop it, each problem just delayed the start, with no-one re-evaluating the risk and benefits of continuing with the siege. Most of the delays were not the fault of the engineers. These included the problems with the bridging across the Guadiana, getting the stores to Badajoz and getting the agreement of the Spanish commanders to Wellington's operational plan. The loss of a week between 24 April and 1 May 1811, due to the river rising was the last in a series of delays that severely affected the plan to attack Badajoz. Wellington's correspondence shows that the deciding factor for starting the siege was the agreement of the Spanish commanders to Wellington's memorandum. Beresford did not want to commit to starting the siege until he knew he would have their full support. Neither Oman, Fortescue or later historians pick up on this.

Beresford knew on 10 May 1811 that Soult was advancing to relieve Badajoz. He was in a difficult situation. There was no way that there would be sufficient time to complete the siege before Soult arrived. But if Soult was just making a demonstration, or decided that his force was not strong enough and retired, Beresford would be criticised for raising the siege too early.

The engineers all wanted to start the attack on the castle on 9 May 1811, but Beresford would not allow them. From 11 May 1811, Beresford was trying to protect the siege materials and conduct the siege at the same time. The impact was that neither was done successfully. The siege was half-hearted in its application and many stores had to be destroyed when the siege was raised. A better strategy would probably have been to suspend the siege and keep a tight blockade around Badajoz until Soult's intentions were clear and then restart with all the materials and resources immediately at hand.

In the end there was no way that the siege could have succeeded. There were only five days between the investment of the fortress and the raising the siege. It was impossible to take the fortress in that time. It should be remembered that

the French took forty-two days to take Badajoz and that was through surrender. It would have taken them longer to take the fortress by storm.

One impact of the first siege of Badajoz was the effect it had on Beresford's reputation. There was a growing lack of confidence in Beresford's leadership which had started with the action at Campo Mayor. Gordon, Wellington's ADC had very little good to say about Beresford before they rode down to sort out the problems. Squire described the leadership as all 'doubt and indecision'.[77] Boutflower, the surgeon of the 40th Foot complained that they were 'victims of some shameful mismanagement'.[78] Following the battle of Albuera, there were many other officers who were complaining about Beresford's leadership.

The first siege resulted in nearly seven hundred and fifty casualties with no visible benefit, although the bulk of the casualties were caused by the reckless pursuit of the French sortie on 10 May 1811. Of the twenty-one engineers present, two were killed and three wounded, all on the St Christoval attack.[79] The troops were despondent, and after the bloodbath at Albuera were to come straight back to Badajoz to try again.

4.2.2.2. Second Siege of Badajoz, May 1811

Following the battle of Albuera, there was a stand-off between the armies for two days when Beresford was not sure if Soult was going to renew his attack. On 18 May 1811, when it was clear that Soult was retiring, Beresford ordered Hamilton's Portuguese Division and Madden's cavalry Brigade to re-invest Badajoz, while he followed Soult south. Hamilton completed the investment on the south side of the river on the morning of 19 May 1811. Dickson and Fletcher were immediately ordered to prepare to restart the siege. In the period since the siege had been raised, Phillipon the governor, had worked hard to make repairs. He also ordered the soil to be removed from the area where the batteries would be sited for any subsequent attack on St Christoval.

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[77] BL, ADD63106, Squire Letters, f. 31, Squire to Bunbury, 17 May 1811.
[78] Boutflower, *The Journal of an Army Surgeon during the Peninsular War* (no publication place or date), p. 91.
[79] Oman, *Peninsular War*, vol 4, p.286, says that six were injured, but there was only five; Dickinson and Melville Killed; Boteler, Reid and Ross wounded.

Table 4f. Timeline for second siege of Badajoz.

19 May 1811	South side of Badajoz invested by Hamilton.
25 May 1811	North side of Badajoz invested by 7th Division.
25 May 1811	Flying bridge installed at the mouth of the Caya
27 May 1811	3rd Division joined investment on south side
29 May 1811	Work started on false attack against Pardaleras
30 May 1811	Work started against St Christoval & Picurina
3 June 1811	Guns opened fire on both sides
4 June 1811	7 guns moved forward to new battery on night 4-5th June
5 June 1811	7 Guns opened from Battery No 6, south side
6 June 1811	1st assault on St Christoval, night 6-7th June
7 June 1811	3 guns opened from Battery No 7, south side.
8 June 1811	10 guns opened from Battery No 7, south side, including 6 Iron 24-pounder guns which had arrived from Lisbon
9 June 1811	2nd assault on St Christoval, night 9-10th June
10 June 1811	Siege raised and guns removed by that evening

Wellington also arrived on 19 May 1811, and established himself in Elvas to command the siege personally. Jones noted that it would take around eleven days to have the guns ready, primarily because the gun carriages needed significant repairs after the first siege.[80]

Wellington now considered the plan to be followed for the second attempt. Jones noted that Wellington 'After much consideration, determined … to follow the plan … for the last attack'.[81] This infers that the plan that the engineers actually followed for the first siege was known to Wellington, even though it was not documented, as discussed above. The plan was for attacks against the St Christoval and Picurina outworks (which would ultimately become the attack against the castle), with a false attack against the Pardaleras outwork. Some changes were made to the overall plan, to increase the number of guns available, to set up counter-battery fire and to start both attacks simultaneously. There was one major boost to the planning, in that the stores that Wellington had ordered from Lisbon in April 1811, for the first siege, had eventually arrived at Elvas and were now available for use. But there were still not enough tools

[80] Jones, *Journal of Sieges*, vol. 1, pp. 30-31.
[81] Jones, *Journal of Sieges,* vol. 1, p. 31. Jones provides much of the detail in the following paragraphs.

for the planned activities as 1000 more picks and shovels were ordered from Lisbon on 22 May 1811.[82]

The siege train that Dickson put together comprised thirty 24-pound cannons, four 16-pound cannons, eight 8-inch howitzers and four 10-inch howitzers. These were still all supplied from Elvas and were still of the same age and poor quality as those used previously. To bolster these limited resources, orders were sent to expedite the arrival of the six iron guns that had been ordered from Lisbon around 10 April 1811 and also to assign a company of British artillerymen to support the Portuguese artillerymen. Wellington, clearly still had no intention of using the new English battering train that was at Lisbon. As early as 14 May 1811, he was arranging for it to be moved north for the planned siege of Ciudad Rodrigo. Fletcher also requested that Beresford assign two hundred and sixty-five soldiers to the engineers and that the assistant engineers who volunteered for the first siege would be made available again.

All the officers knew that this was going to be another race against time. Dickson writing on 29 May 1811, wrote 'Reinforcements are on their march from Massena's army to the south, so that we must soon take Badajoz, or we probably will be interrupted again'.[83] Similarly, Jones' view was 'anything to be undertaken against Badajoz, must therefore be of a rapid nature'.[84] As with the first siege, collecting men and material together with the limited resources that were immediately available proved time consuming and it was not until 30 May 1811 that everything was in place to start the attacks.

Between 30 May 1811, and the morning of 3 June 1811, the batteries and trenches were formed for the attacks against St Christoval and the castle. The attack against St Christoval suffered the same problems as before, through the lack of soil and the incessant bombardment from the French. Due to the limited number of workmen available on the south side, the parallel was not a long as proposed and on the night of 31 May 1811 it was decided to prepare the main

[82] REM, 5501-59-1, Jones' Diary.
[83] Dickson, *Manuscripts,* vol. 3, p. 394, Dickson to Maj-Gen. Macleod
[84] Jones, *Journal of Sieges*, vol. 1, p. 31.

battery at the end of the current parallel rather than wait a further twenty-four hours for the parallel to be extended nearer to the walls. The decision was made to accept the extra distance for the sake of speed.[85] The batteries were completed and opened fire on the morning of 3 June 1811.

Table 4g. Comparison of the ordnance at the start of the sieges of Badajoz.

	1st Siege	2nd Siege
Attack on St Christoval	5[86]	23[87]
Attack on Castle	8[88]	20

There was an impressive increase in the number of guns brought forward. Compared with the first siege, three times the number of guns were available on the morning the firing commenced.

On the north side, there were four batteries in action. On the south side all the guns were initially placed in one large battery. Fletcher had written to Wellington on the evening of 3 June 1811, stating that as 'the guns employed are so uncertain in their effects it may become necessary to push yet further forward'.[89] He told Wellington that he had ordered work to be started that night on the second parallel and a new battery that would bring the range to the castle walls down to six hundred and fifty yards. This work was completed and seven guns opened fire on the morning of 5 June 1811. Again that night, the parallel was extended further to the right and another battery was started at five hundred and twenty yards from the castle. This battery opened with three guns on 7 June 1811, and that night the six iron 24-pounders, which had eventually arrived from Lisbon were installed with one other gun, bringing the battery up to ten guns on the morning of 8 June 1811.

[85] Jones, *Journal of Sieges,* vol. 1, p. 39 and Note 4, p. 351.
[86] Four field guns were added later to enfilade the bridge and discourage sorties
[87] Three guns were held in reserve.
[88] This includes the guns allocated for the attacks on the Pardaleras to Picurina.
[89] WSD, Fletcher to Wellington, 3 Jun 1811.

Table 4h. Guns available each morning of the 2nd siege of Badajoz.

	3 Jun	4 Jun	5 Jun	6 Jun	7 Jun	8 Jun	9 Jun
Attack on St Christoval	23	21	15	14	13	20	17
Attack on Castle	20	18	19	17	18	13	13

The table above shows the number of guns that were available each morning. The old brass guns continued to exhibit all the problems that had been apparent during the first siege. Most were made inoperative through use rather than through enemy action. Both Jones and Dickson remarked on the improvements when the first iron guns became available on the morning of 8 June 1811.

As predicted by the engineers, the wall of the castle was quickly destroyed on the first day of firing. However, what was not expected was that the wall was actually just a facing for the ground behind which refused to collapse and peeled off in sheets leaving a near perpendicular face behind. This was battered incessantly until 10 June 1811, and it was only at this point that there was some hope that the breach might be practicable. Captain Mulcaster R.E. reconnoitred the Rivellas stream on the night of 5 June 1811, and identified two fords where troops could cross near the proposed breach.[90] Captain Patton R.E. was mortally wounded making a further reconnaissance of the Rivellas stream and the castle walls on the night of 8 June 1811.[91]

The fire against St Christoval was also more successful than it had been during the first siege. The breach was declared practicable following a reconnaissance of the breach on the night of 5 June 1811, by Lieutenant Forster R.E. An assault was ordered for midnight on 6 June 1811 led by Lieutenant Forster. The assault failed, primarily due to the prompt action of the French who had cleared away the rubbish from the breach between dusk and midnight when the attack was made. The attacking party made valiant attempts for nearly an hour to find a way in, but eventually retired with losses of twelve killed and eighty wounded. Jones noted that 'the storming party, I am afraid,

[90] REM, 4201-68, Burgoynes diary, 5 Jun 1811.
[91] BL, ADD63106, Squire Letters, ff. 35-6.

did not march until midnight', which suggests that the engineers thought the delay before the assault was too long.[92]

The siege batteries commenced firing again the following morning and battered the walls for a further two days, when the breach was once again declared practicable. To reduce the time for the French to clear away the rubbish, the assault was scheduled for 9:00pm. The size of the assault force was increased but a similar result occurred, with the garrison showing great energy in clearing the rubbish from the breach and blocking the breach itself. The leader of the assault Major McGeechy and Lieutenant Hunt R.E. who was guiding the party, were both killed in the first minutes of the attack. Casualties this time were fifty-four killed and eighty-five wounded.[93]

At noon the following day, 10 June 1811, Wellington called together his officers and told them he was raising the siege. The guns and stores were removed over the following two days. The comprehensive reasons Wellington gave for his decision were :

- The poor quality of the siege guns;
- The even poorer quality of the gun carriages;
- The resistance of the castle wall (he was 'astonished' at the resistance);
- Failure to take the fort of St Christoval;
- The expected arrival of French relief forces;
- The depletion of the ordnance stores at Elvas to a point where it would not be able to defend itself; the lack of replacement stores from Lisbon and the lack of transport to deliver replacement stores;
- The depletion of provisions to the point where there were less than a fortnight of supplies for Elvas;
- The need for the transport used at the siege of Badajoz to replenish the ordnance stores and provisions at Elvas.[94]

[92] REM, 5501-59-1, Jones' Diary, 6 Jun 1811.
[93] Numbers taken from Oman, *Peninsular War*, vol. 4, p. 429.
[94] WD, To Liverpool, 13 Jun 1811.

Comments on the Second Siege of Badajoz.

This section will again concentrate on the performance of the engineers rather than on the events themselves. That the first two sieges of Badajoz were failures is not in doubt. However, it is time, to look again at the circumstances and re-evaluate them.

There are some common threads running through both sieges :

- They were carried out against time pressures;
- There were limited resources available: manpower, materials and guns;
- There were transport problems;
- The choice of point of attack was strongly criticised both at the time and later.

The two most significant English writers on the war, Oman and Fortescue, are highly critical of the sieges, blaming the engineer officers and to a lesser extent Wellington. The same line is generally taken by Myatt, but he is more sympathetic of the problems that the Allies faced.[95] In the analysis below both sieges will be treated as one, because they were effectively the same siege undertaken twice.

Both Oman and Fortescue criticised the decision to attack St Christoval in the strongest terms. Whist criticism with hindsight is always easy, the views of the experts who were making decisions at the time must be considered. On two separate occasions the engineers advised that primarily due to time constraints, there was not sufficient time to carry out a regular approach. The admittedly high risk attack on St Christoval and the castle was the only possible solution they could see to meet the time limits.[96] Their plan was agreed by Wellington and Beresford on both occasions. Dickson, the senior artillery officer, expressed no concern about the strategy before, during or after the sieges. On both occasions, the siege was raised because of an approaching army. Oman,

[95] Myatt, *British Sieges*, p. 45.
[96] Jones, *Journal of the Journal of Sieges*. 1st Edition, (London, 1814), p. 298.

when commenting on the second siege stated that Wellington had four weeks to take Badajoz. The fact is that Wellington only had ten days from opening the trenches to raising the siege. He had even less time in the first siege, just four days. The remainder of the time that the Allies had available was taken up arranging guns and stores or sorting out communications across the river Guadiana. If the plan chosen was believed to be the fastest, then there was absolutely no chance of an attack on the south side succeeding. The French took seven weeks to take Badajoz and that was by surrender, not assault. It is difficult to understand why most writers believe that Wellington could achieve the same in seven days.

D'Urban stated in his diary that the breach in St Christoval was never practicable and noted on 10 June 1811 that a French sapper who had deserted, said that the castle wall could never be breached at the point chosen as it had solid rock behind (which was shown to be untrue). D'Urban wrote the engineers had chosen the wrong point of attack and should have attacked the south side.[97] D'Urban reserved more serious criticism for the overall strategy in that he believed that Wellington should have focussed on destroying Soult's army first and then turned on Badajoz at his leisure. There is also an interesting comment by George Ross R.E. who wrote that Beresford believed that the siege of Badajoz should not have been undertaken.[98]

The two assaults on the fort of St Christoval need further consideration. St Christoval was a small, but very strong fort, each side being around one hundred yards long. The first assault used less than two hundred soldiers and the second a few more. During the first assault, the French had less than two hundred soldiers in the fort and probably not more than four hundred during the second assault. Oman and Fortescue both commented that the storming parties were too small.[99] There is no reason why the size of the storming parties could not have been larger. With the forces Wellington had available,

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[97] D'Urban, *Journal,* p. 222.
[98] REM, 4501-86-4, Ross Letters, Ross to Dalrymple,9 Jun 1811. Lieutenant-General Hew Dalrymple was an uncle of Ross' father.
[99] Oman, *Peninsular War*, vol. 4, p. 425; Fortescue, *British Army,* vol. 8, p. 223.

he could have made an attempt to overwhelm the fort. Brute force may not have led to any greater casualties, as the casualties were caused by these small groups spending up to an hour trying to get into the fort. Ladders could have been used at different points as well as at the breach. At no time did the French have enough troops in the fort to defend all the faces at the same time. When Wellington finally took Badajoz in 1812, it was the secondary attacks that succeeded, not the main attack. A similar approach attacking at multiple locations should have been used in the assault St Christoval in 1811, particularly due to Wellington's strong desire to re-take Badajoz.

There is no doubt that the guns available from Elvas were not up to the task of performing siege work. There is no doubt that the lack of trained sappers and miners had an effect in that there were no experienced troops who could take the sap forward. There is also no doubt that the transport problems meant that not all the materials were there when they were required. But the single inescapable reason why these sieges failed was time. None of the other factors would have prevented the sieges success had Wellington not been working against deadlines. Wellington had known for days that he could not continue the siege past 10 June 1811.[100] In a letter to Charles Stuart, he wrote, 'Badajoz may fall; but the business will be very near run on both sides… I have never seen walls bear so much battering, nor ordnance, nor artillery so bad as those belonging to Elvas'.[101] He also knew that Badajoz only had supplies for two weeks.[102]

Added to the above, there were some other factors. St Christoval proved to be stronger than Wellington, the artillery and the engineer officers expected. It must also not be forgotten that the governor proved his skill many times during the three sieges of Badajoz. With a less energetic governor, Badajoz would probably have fallen in June 1811. Overall there were too many factors working

[100] WD, To Liverpool, 6 Jun 1811.
[101] WD, To C Stuart, 8 Jun 1811.
[102] D'Urban, *Journal,* p. 219, notes that a letter from the French Governor of Badajoz was intercepted that said on 29 May 1811, he had three weeks bread left.

against the sieges succeeding, but they had to be tried because of the strategic importance of Badajoz.

What is surprising in looking closely at the writing of Oman, Fortescue and many modern writers is that the sieges have been skipped over and not really understood by them. Examples of this include Oman's criticism that Wellington could have ordered up better guns in early May 1811 for the second siege of Badajoz.[103] Wellington had ordered additional guns for the first siege of Badajoz around 10 April 1811, a full month earlier than this. The lack of transport made moving them very difficult. These guns finally arrived near the end of the second siege of Badajoz on 8 June 1811, two months after they were ordered. Fortescue gets similarly confused over the guns. First he suggests that time constraints meant that Wellington would not wait for the English siege train.[104] Later he writes that they sent for some British iron guns from Elvas.[105] The iron guns from Lisbon were actually Portuguese marine 24-pounders. They were also old and worn, but much better than the old brass 24-pounders that were being used prior to their arrival.

In summary, the first two sieges of Badajoz were attempted with insufficient time and material available. The choice of point of attack was not the preferred option for any officer but circumstances led them to believe that this was the only option that might succeed. The engineer officers felt that they were not allowed to follow the plan that had been agreed. There is no strong evidence to support the view that another point of attack under the same circumstances would have been successful.

4.2.3. SIEGE OF CIUDAD RODRIGO, 1812.

The siege of Ciudad Rodrigo was probably the only British siege during the Peninsular War that was successfully planned and executed. Unlike the two earlier sieges of Badajoz, Wellington knew this siege was inevitable and could

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[103] Oman, *Peninsular War*, vol. 4, p. 419.
[104] Fortescue, *British Army,* vol. 8, p. 221.
[105] Fortescue, *British Army*, vol. 8, p. 223. Surprisingly, Burgoyne also calls them English in his diary, REM, 4201-68, 7 Jun 1811.

plan when to commence it as part of his overall strategy. The operation started a full eight months before the siege when Wellington gave orders in May 1811 for the British siege train which was lying in transports at Lisbon to be moved north by sea to Oporto.[106]

Table 4i. Timeline for siege of Ciudad Rodrigo.

14 May 1811	Wellington ordered siege train to be moved from Lisbon to Oporto.
1 Dec 1811	Siege Train moved up to Almeida, ready for use.
8 Jan 1812	Fortress invested.
8 Jan 1812	Reynaud redoubt stormed on night of 8/9 Jan 1812.
8 Jan 1811	Trenches opened on night of 8/9 Jan 1812.
13 Jan 1812	Convent of Santa Cruz stormed on night of 13/14 Jan 1812.
14 Jan 1812	French sortie from fortress.
14 Jan 1812	Siege guns opened fire on fortress.
14 Jan 1812	Convent of San Francisco stormed on night of 14/15 Jan 1812.
18 Jan 1812	New battery opens to form second breach
19 Jan 1812	Fortress stormed on night of 19/20 Jan 1812.

The scale of the planning and the time required to move this siege train reinforces the reasons why it was not possible to arrange a similar event at short notice for the previous sieges of Badajoz. The siege train was made up of thirty-eight guns, eighteen mortars and twenty-two howitzers, totalling seventy-eight pieces of ordnance. Wellington's memorandum of 19 July 1811 details 1,092 carts and an additional 768 bullocks to move the train and supplies from Oporto.[107] Even with this large number of carts, they were required to make two trips. One hundred and fifty boats were also needed for the river passage of the siege guns.[108] Collecting this amount of transport together was a major task and keeping the carts and bullocks together for an extended period leading up to the siege was even more difficult. The siege train was ordered forward to Almeida in mid-November 1811[109] and work started on preparing materials for a

[106] WD, To Howarth, 14 May 1811.
[107] WD, To Framingham, Fletcher and Kennedy, 19 Jul 1811.
[108] Dickson, *Manuscripts,* vol. 3, p. 440. Letter to Wellington dated 9 Aug 1811. He mentions 115 boats having been despatched and another 30-40 are required.
[109] Dickson, *Manuscripts,* vol. 3, p. 500.

bridge to be used to cross the river Agueda at the same time.[110] The troops to undertake the siege had been in the vicinity for many weeks and they were ordered to start preparing the siege materials on 18 December 1811. On 1 January 1812, Wellington saw an opportunity to attack the fortress and ordered it to be invested on 6 January 1812. Due to the shortage of transport he decided not to wait for the howitzer ammunition to be delivered and attacked the fortress with cannon only.[111]

Engineer resources for the attack comprised of Fletcher in overall command with eighteen other officers[112] and eighteen soldiers from the Royal Military Artificers. A company of artificers had been ordered up from Lisbon on 18 December 1811, but they had not yet arrived.[113] Burgoyne and Ross were assigned as siege directors, taking twenty-four hour shifts in turn. Additional support as in the previous sieges was made up of twelve assistant engineers and one hundred and eighty soldiers from the Third Division who had been given some basic training under Burgoyne in the preceding months.

Heavy snow delayed the investment due to the difficulty in bringing the stores forward. The fortress was finally invested on 8 January 1812 and the same night the Reynaud redoubt was stormed by troops under the command of Colonel John Colbourne.[114] Work started on the trenches that night and breaching batteries the following night. The plan was to form the breaching batteries on the Great Teson hill and then move nearer to form a second breaching battery on the Little Teson hill.[115] Ross, one of the siege directors, was killed early on the night of 9 January 1812.

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[110] Jones, *Journal of Sieges*, vol. 1, p. 89.
[111] Jones, *Journal of Sieges*, vol. 1, p. 91. Also mentioned in Dickson, *Manuscripts,* vol. 4, p. 562. This would not affect the attack on the fortress walls, but would stop any sort of counter-battery fire which would increase casualties.
[112] Although at least two arrived late. Captain Williams and Lieutenant De Salaberry did not arrive until 15 Jan 1812. Jones, *Journal of Sieges,* vol. 1, p. 118.
[113] Wrottesley, *Life of Burgoyne,* vol. 1, p. 91. They eventually arrived on 15 Jan 1812, Reference, Jones, *Journal of Sieges,* vol. 1, p. 118.
[114] Jones said Fletcher recommended storming the redoubt to Wellington, who agreed. REM, 5501-59-2 Jones' Diary, 8 Jan 1812.
[115] Jones, *Journal of Sieges*, vol. 1, p. 99.

On 10 January 1812, one of the batteries being constructed was found to be partially masked by the Reynaud redoubt and some of the guns had to be moved to another battery. Jones remarked, possibly with some irony, 'that it was thought less labour to remove five of the guns [to another battery]… than to cut away the redoubt'.[116] Overall progress was good but the troops were suffering due to the freezing weather and because they had to march from their camp that was ten to twelve miles away. On the route they had to ford a river so they spent most of their twenty-four hour shift cold and wet.

There was a change of plan on 13 January 1812, when Wellington asked Fletcher if the second, nearer, set of breaching batteries could be dispensed with as he had received news that Marmont was moving to relieve the fortress. This was agreed, although work continued on the trenches to keep Wellington's options open if Marmont did not advance. That night the convent of Santa Cruz was stormed as it directly threatened the second parallel. On the morning of 14 January 1812, the French made a sortie from the fortress and briefly took control of the trenches, but limited damage was done and the breaching batteries opened later that day. There was another error in the siting of the guns, as it was now found that two 18-pounders could not see the foot of the wall in the convent of San Fansisco which they were supposed to attack.

Two new batteries were started to open a second breach in the wall and these opened on 18 January 1812. The new guns had an immediate impact and on 19 January 1812, the wall collapsed creating the second practicable breach. Wellington inspected the breaches and wrote orders for an assault that night. The Third Division was to storm the main breach and the Light Division the second breach. The assault was planned for 7:00pm that evening and both attacks succeeded, the troops then dissolving into a disorderly mob to ransack the town. Order was restored by the morning and work commenced to make the fortress defensible.

[116] Jones, *Journal of Sieges*, vol. 1, p. 103.

This siege was generally seen as being very successful both at the time and by later writers with the fortress taken in twelve days. However, there are circumstances that need further evaluation.

Analysis of the siege.

Wellington's decision to attack on 1 January 1812 was a consequence of intercepting orders from Napoleon reorganising the French command structure and simultaneously detaching troops to the east coast of Spain.[117] The impact being that the French forces covering Ciudad Rodrigo were reduced in numbers and moved further away thereby increasing the response time to any actions by Wellington. The assault on Ciudad Rodrigo was clearly a snap decision, as on 30 December 1811 Dickson wrote 'Wellington thinks in about a fortnight we shall have sufficient [ammunition] here to commence operations'.[118] Two days later, he wrote that the 'operation will be undertaken immediately … and … the trenches will be open in six or seven days'.[119] Dickson who was many miles away was slightly behind with the decision making. Jones noted in his diary on 28 December 1811 that 'Wellington determined to start the siege instantly he could get up the smallest possible proportion of stores and ammunition'.[120] Once again Wellington was starting a siege with a very small window of opportunity, which meant that the normal rules of sieges would be ignored. The weather was atrocious and the stores were not ready. One engineer remarked 'Lord W is anxious to break ground tomorrow night, for which he has not afforded the means'.[121]

This quick decision meant that there was no transport to deliver the howitzer ammunition and Wellington took the risk of starting the siege with limited ability to carry out counter-battery fire. This would explain why there was no attempt to silence the French guns until the day of the assault. After the siege,

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[117] Dickson, *Manuscripts,* vol. 4, p. 562. Dickson to MacLeod. The reasons and consequences of the French moves are discussed at length in Oman, *Peninsular War,* vol. 5, pp. 187-195.
[118] Dickson, *Manuscripts,* vol. 3, p. 534. Dickson to Beresford.
[119] Dickson, *Manuscripts,* vol. 4, p. 562.
[120] REM, 5501-59-2, Jones' Diary, 28 Dec 1811.
[121] REM, 4501-86-4, Ross Letters, 7 Jan 1812

Wellington appeared to justify this decision as a new tactic : 'We proceeded at Ciudad Rodrigo on quite a new principle of sieges. The whole object of our fire was to lay open the walls'.[122] The disadvantage of this principle was that many more Allied troops were injured through the consistent effective fire from the numerous French guns. The French were certainly surprised by the lack of counter-battery fire.[123] Colville, commanding the Fourth Division commented that Fletcher had requested counter-battery fire on 18 January 1811, and that when the guns were directed at the French batteries just prior to the assault they had an immediate effect. Colville also noted that whilst he thought counter-battery fire was necessary, Wellington did not.[124]

One of the main reasons why Ciudad Rodrigo was taken so quickly was because it was a second rate fortress with nothing like the strength of Badajoz. Burgoyne, after a visit to the fortress in 1808, described it as 'incapable of defence … its works … possessing nearly every fault a fortification can have'.[125] Squire in 1810 described Ciudad Rodrigo as 'merely a walled town',[126] and commenting to Pasley after it was taken wrote : 'we succeeded in taking the place more from its own weakness, than from any means we possessed'.[127] Wellington took full advantage of this weakness and was able to breach the walls from the position of the first batteries. The governor and the garrison were similarly weak, Barrie, the governor, was 'the only general of brigade available at Salamanca when his predecessor, Renaud was taken'.[128] Renaud described Barrie as a 'miserable fellow, perfectly unfit for the job'.[129] His performance matched the expectations set : 'all British accounts agree in condemning Barrie for his lack of energy'.[130] There was no serious resistance to the taking of the redoubt, the convents or the fortress. Barrie has to take the responsibility for this.

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[122] WD, To Richmond, 29 Jan 1812.
[123] Fortescue, *British Army,* vol. 8, p. 356.
[124] J. Colville, *Portrait of a General* (Salisbury, 1980), pp. 83-84.
[125] BL, ADD57544, f. 184. Burgoyne to Moore, 10 Dec 1808.
[126] BL, ADD63106, Squire Letters, ff. 3-4, Squire to Bunbury, 27 May 1810.
[127] BL, ADD41963, ff. 13-16. Squire to CW Pasley, 3 Mar 1812. Portalegre,
[128] Oman, *Peninsular War*, vol. 5, p. 165. Fortescue also comments that Dorsenne had no confidence in Barrie. Fortescue, *British Army*, vol. 8, p. 355.
[129] REM, 5501-139-1 f. 4. Burgoyne to Pasley, 12 Feb 1812.
[130] Fortescue, *British Army*, vol. 8, p. 367.

The greatest success of the siege and the single event that made the siege so rapid was Colbourne taking the Renaud redoubt on the first night. Typically four to five days would have been needed to prepare and take such an outwork. It is worthy of note that to take this small redoubt Colbourne used more troops than Wellington did during the two failed attempts on St Christoval at Badajoz. The outcome at Badajoz may have been different had a similar strategy been used.

The size and quality of the guns used during the siege also had a significant effect on the outcome. Wellington had none of the problems with inaccuracy and overheating that plagued the old brass guns at Badajoz. Had he been able to bring up the howitzer ammunition, there would probably have been substantially fewer casualties before and during the assault.

The performance of the engineers tells a different story from the previous two sieges. At Badajoz, the engineers had neither time nor resources to complete their task. At Ciudad Rodrigo they had better guns and more time, although time was still a constraint. Whilst the result was positive, there were some worrying mistakes. Three significant errors were recorded : a battery being placed behind the Renaud redoubt; the guns to attack the convent of San Fansisco being too low to see the base of the wall; and the embrasures for the main batteries being misaligned when originally opened. The first error, the misplacing of the battery, was made on the night of 8/9 January 1811, when Ross who was siege director for the night was killed. Burgoyne was strongly critical of the time and effort wasted, writing :

> it was placed behind the French redoubt, it was nearly finished, some platforms laid, and we had worked two nights to level the parapet of the redoubt, when it was at length ascertained that not a single gun of the nine could see the object to be fired at.[131]

[131] Wrottesley, *Life of Burgoyne,* vol. 1, p. 161. Burgoyne to Squire, 7 Feb 1812.

He continued: 'Our Headquarters party have sent home a journal of the siege, in which I presume this battery does not make its appearance – it makes a very ugly one in my journal'.[132] Burgoyne and his comrades do not specifically identify who they thought was at fault. Fletcher certainly marked out the batteries previously at Badajoz and it is difficult to believe that he was not present when this, the most vital stage, was being carried out, even if Ross actually did the work. Similarly, the failure to open the embrasures properly occurred after the engineer in command, Lieutenant Skelton was killed whilst standing on the top of the parapet encouraging the troops to perform the task. His death was unlikely to have helped with the troops' willingness to expose themselves to the French fire. Burgoyne noted that when the batteries originally opened on 14 January 1812, many of the shots were passing over the top of the town. Jones' published *Journal* notes Skelton's death but not the problem with the embrasures. However, his unpublished diary noted 'the want of [a] qualified … Engineer … to superintend the opening of the embrasures … caused such a delay that the day was lost'.[133] This problem was corrected that night and the guns were firing effectively from the following morning.[134] The loss of Ross so early in the siege probably had an ongoing effect. Ellicombe who replaced him, whilst being a senior officer, had no operational experience and after some years in Ceylon had been in the UK for the preceding three years. All three errors were avoidable and should have been identified earlier. Whilst Burgoyne is highly critical of the errors he took no personal responsibility for them, which as one of the siege directors he should. Ultimately Fletcher must take responsibility as the senior engineer. None of these errors had a material effect on the timescale or the outcome of the siege, but they must have had some effect on the reputation and confidence of the engineers.

Burgoyne was critical of most elements of the siege of Ciudad Rodrigo, even though this was seen as the most successful Allied siege during the Peninsular War. The Commanding Royal Engineer at the siege, Richard Fletcher, gave

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[132] Wrottesley, *Life of Burgoyne,* vol. 1, p. 161. Burgoyne to Squire, 7 Feb 1812.
[133] REM, 5501-59-2, Jones' Diary, 14 Jan 1812.
[134] Wrottesley, *Life of Burgoyne,* vol. 1, p. 164., and REM 5501-139-1, Burgoyne to Pasley, 12th Feb 1812.

high praise to Burgoyne who 'gave me every assistance, and executed the works under his charge with great zeal and ability'.[135] Burgoyne's initial comments in his diary were quite mild : 'Our works were certainly not carried on with great expedition'.[136] In private letters he was much more critical. He wrote lengthy letters to John Squire and Charles Pasley criticising most aspects of the siege including the preparation (the gabions and fascines were made too far away, without proper supervision, leading to poor quality and delivery problems) and the daily operations (the siting of the batteries and guns, the want of arrangement in bringing up stores and the organisation of the working parties). Burgoyne in a letter to Squire complained : 'We go on most miserably, no superintendents, no arrangements, it is said that Wellington objects to give any assistance the Colonel proposes, but I can't think this would be the case to a man of firmness'.[137] In a later letter he wrote : 'His Lordship can have but little confidence in Colonel Fletcher, as it appears from what we hear that he objects to nearly every proposal made by him ... for some reason or other Colonel Fletcher had not influence enough to get the smallest assistance from the army'.[138] This appears to be the first suggestion that there was a lack of confidence in Fletcher's command both amongst his subordinates and Wellington.

Burgoyne's criticism was not restricted to his engineering superiors. He believed that Wellington summoned the French governor too early and that the French would have been much more likely to ask for terms had they had been summoned on 19 January 1811, just before the assault, when there were two significant breaches.[139] The commitment (or lack of it) from the army that became very evident at Burgos was also an object of criticism. Burgoyne noted that the line officers 'do not seem to think it a point of duty or honour to interest themselves in the exertions of a working party'[140] and suggested that having a general officer with the troops in the trenches would help to maintain progress.

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[135] Wrottesley, *Life of Burgoyne,* vol. 1, p. 164.
[136] Wrottesley, *Life of Burgoyne,* vol. 1, p. 160, 19 Jan 1812.
[137] REM, 4601-72 f. 1813/1. Burgoyne to Squire, 16 Jan 1812.
[138] REM, 5501-139-1, Burgoyne to Squire, 12 Feb 1812.
[139] Wrottesley, *Life of Burgoyne,* vol. 1, p. 163. Burgoyne to Squire, 7 Feb 1812.
[140] REM, 5501-139, Burgoyne to Squire 12 Feb 1812.

In terms of resources for the siege, all the senior engineers, Burgoyne, Jones and Ross commented on Wellington refusing to provide line officers to assist.[141] This should, in fairness to Wellington, be offset against the fact that the engineers had been allocated around 200 soldiers and officers from the third division who had been given some rudimentary training in the previous few months. In addition to this the division on duty each day had to furnish a further group of carpenters and miners.

In summary, the siege of Ciudad Rodrigo was a great operational success that materially strengthened Wellington's position and put the French firmly on the defensive. The success was due to three main factors : the weakness of the fortress, the strength of the Allied battering train and the lack of energy in the French governor. Overall, the engineers had performed their duties well, but as Fortescue wrote 'the engineers themselves … were by no means faultless in their plans.'[142] As mentioned above, the first signs of criticism within the engineers were also appearing. This situation was not helped when, due to an oversight, Burgoyne's name was omitted from Wellington's despatch and only Jones and George MacLeod were mentioned. Both received brevet promotions through being mentioned and only a subsequent appeal got the same recognition for Burgoyne. The promotion of Macleod in particular would have caused annoyance as he was mentioned in connection with the troops from the Third Division who had been trained as sappers. Burgoyne was responsible for their training and received no thanks for his work training these troops or for his performance as siege director.

Casualties among the nineteen engineer officers were two killed and five wounded. Two of the wounded sailed to England and did not return to the

[141] E.g. REM, 5501-139-1, Burgoyne to Squire, 12 Feb 1812; REM, 5501-59-2, Jones' Diary, 3 Jan 1812
[142] Fortescue, *British Army*, vol. 8, p. 365.

Peninsula.[143] Three of the four fortresses covering the main routes in Portugal were now in Allied hands. It was not difficult to see what was coming next.

4.2.4. THIRD SIEGE OF BADAJOZ IN 1812.

As soon as Wellington had the repairs for Ciudad Rodrigo underway, he turned his attention to the next challenge, the retaking of Badajoz. On 25 January 1812, Dickson arranged for all the 24-pounder round shot and shells along with nine hundred barrels of powder to be moved to Oporto for onward transmission to Elvas.[144] The following day Wellington ordered sixteen 24-pounder carronades (howitzers) and a number of gun carriages to be moved by land from Almeida to Elvas.[145] On 28 January 1812, Wellington met Borthwick (the senior artillery officer in the Peninsula), Dickson and Fletcher to discuss moving the 24-pounder guns from Almeida to Elvas, but Dickson argued that the state of the bullocks and the availability of forage made it impossible.[146] Wellington then revised his plan to use sixteen 24-pounder guns that were on transports in Lisbon, supplemented by twenty more which Wellington hoped could be supplied by Admiral Berkeley from the British fleet. On the same day Wellington sent orders to Lisbon for the engineering stores to be collected and despatched to Elvas to allow the garrison to start work on gabions and fascines. George MacLeod R.E. was despatched to Elvas to superintend the preparatory work. Wellington had previously made arrangements for a pontoon train to be collected, ready for use to cross the river Guadiana which would be in full flow at that time of year.[147]

Table 4j. Timeline for third siege of Badajoz.

28 Jan 1812	Wellington agreed there was insufficient transport to move main siege guns from Ciudad Rodrigo to Badajoz. Arrangements made for alternative supply from Lisbon.
5 Mar 1812	Wellington hands Ciudad Rodrigo over to Spanish Governor and sets out for Badajoz.

[143] Ross and Skelton killed. E.R. Mulcaster, Marshall, Macculloch A. Thompson and Reid wounded. A. Thompson and Macculloch returned to England .
[144] Dickson, *Manuscripts,* vol. 4, p. 571.
[145] Confusingly called 5.5-inch howitzers and 24-pounder howitzers at various times. See WD, to Hill, 28 Jan 1812 for a description of the pieces. Dickson, *Manuscripts,* vol. 4, p. 580.
[146] Jones, *Journal of Sieges*, vol. 1, p. 144.
[147] Jones, *Journal of Sieges*, vol. 1, pp. 139, 371.

8 Mar 1812	Last guns of siege train arrive at Elvas.
11 Mar 1812	Wellington arrives at Elvas to direct the siege.
16 Mar 1812	Fortress invested.
17 Mar 1812	Trenches opened night of 17/18 March 1812.
19 Mar 1812	French launched sortie from Picurina fort. Col. Fletcher wounded.
25 Mar 1812	Batteries opened fire on fortress.
25 Mar 1812	Picurina fort stormed night of 25/26 March 1812.
5 Apr 1812	Fortress stormed night of 5/6 April 1812.

Dickson found out on 10 February 1812, that Admiral Berkeley was planning to provide twenty Russian 18-pounders instead of the hoped for English 24-pounders.[148] This caused Wellington and Dickson great concern as 18-pounders were significantly less effective in siege work. The guns were also in poor condition, which meant that both accuracy and power were further reduced. Wellington complained to Berkeley, but at the time Berkeley would not offer an alternative. Berkeley did eventually source ten new English 18-pounders but Dickson argued that he did not want to mix 18-pounders (Russian and English) or to delay the siege to bring them up. Myatt notes that he was unsure if they were used in the siege, but Jones' journal clearly stated that they were not used.[149]

Wellington remained in Ciudad Rodrigo while all the preparations were being made. The main reason for this was to keep the French guessing as to what his next step would be. Although the siege of Badajoz was an obvious step, there were other possibilities and until Wellington signified his intention by going to Badajoz, the French had to keep their options open.

Jones' diary described a meeting to discuss the plan of attack on Badajoz. There had been much criticism of the point of attack on Badajoz the year before and a decision had to be made on whether to follow the same plan as last year, the previous French plan, or some other alternative. At the meeting were Wellington, General Castanos, the Spanish Chief Engineer and Fletcher. Jones recorded that Wellington and the Spanish engineer wanted to attack the

[148] Dickson, *Manuscripts,* vol. 4, p. 585, footnote on letter to Wellington.
[149] Myatt, *British Sieges*, p. 82; Jones, *Journal of Sieges*, vol. 1, p. 374; Dickson, *Manuscripts*, vol. 4, p. 599.

southern face as the French had done in early 1811, while Fletcher wanted to attack the south-western corner from the Picurina redoubt. Initially Fletcher was reluctant to admit openly that his recommendation was due to the lack of skilled sappers and miners to deal with the mines that the French were known to have placed on the southern face. Wellington, on being reminded of the situation, reluctantly agreed saying 'he regretted extremely our deficiencies and it obliged him to undertake an attack he did not approve, but that knowing the means he believed it to be the only attack in our power to get through'. Jones added : 'though adopted through necessity, … it was never for one moment approved by any one employed in drawing it up, or in the execution of it'.[150] Jones summed up his thoughts with the comment : 'what a reflection on those who have governed the engineering service for the last nineteen years of war'.[151] Jones added further comments in his published *Journal* to the effect that the attack on the southern side would have required a further thirty guns and significantly more engineering stores and that this was beyond the available resources and transport.[152]

The siege

The south side of the fortress was invested on 16 March 1812. Fletcher had twenty-three engineers including Squire and Burgoyne, who acted as siege directors, and Jones as Brigade-Major. At least one and possibly four of this number did not arrive until the very end of the siege.[153] For the first time in the war there was a significant number of troops from the Royal Military Artificers present, a total one hundred and fifteen men. A further thirty had been ordered up from Cadiz, but they did not arrive before the end of the siege. Fletcher also had at his disposal the remainder of the soldiers from the Third Division who had been previously trained in sapping. This group was now reduced to around

[150] Jones, *Journal of the sieges*, 1st Edition, p. 298.
[151] REM, 5501-59-3, Jones, *Diary*, 25 Feb 1812.
[152] Jones, *Journal of Sieges*, vol. 1, p. 376.
[153] Vetch and two or three other officers were ordered up from Cadiz. Vetch's letters says two other officers, Jones' Journal says three. Vetch did not arrive until 5 Apr 1812. RE Journal, 1 Feb 1881, p. 26.

one hundred and twenty from its starting size of around two hundred. Finally, there were also ten assistant engineers from the line regiments.[154]

Fletcher marked out the first trenches on 17 March 1812, and these were commenced that night. The weather over the first few days was poor with constant rain. And this made work in the trenches very difficult. The river Guadiana rose until it swept away the pontoon bridge on 22 March 1812. This was a major concern to Wellington as the bridge was both his source of his siege supplies and also his line of retreat. A complete loss of communication across the river would require Wellington to raise the siege, the nearest alternative bridge being at Merida, twenty miles away. Lieutenant Piper R.E. was sent to investigate the damage to the pontoon bridge and reported that twelve of the twenty-four pontoons had sunk. Two were subsequently recovered from the river, but the rest were lost. For the remainder of the siege the pontoons were used as rowing boats exclusively for the carriage of powder and shot across the river.[155]

Despite the poor weather, some progress was made. The French launched a sortie at noon on 19 March 1812, and once again caught the Allied army unprepared. A small body of French cavalry made it to the engineers' depot where they attacked the unarmed soldiers and captured two officers before they were driven off. Little damage was done to the works, but many tools were carried off as the French troops had been promised a reward for every one they collected. Allied casualties were around one hundred and fifty men including the Chief Engineer, Fletcher whose wound confined him to bed until 5 April 1812 but did not stop him retaining the command. The routine for the remainder of the siege was for Wellington to meet with Fletcher and Jones each morning to discuss progress and agree the tasks for the next twenty-four hours.

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[154] REM, 5501-59-3, Jones, Diary, 15 Mar 1812. Squire in a letter to Bunbury noted that 13 out of 19 officers were killed or wounded. This would support the argument that the Cadiz officers arrived late or not at all. BL, ADD63106, Squire letters, ff. 54-55.
[155] Jones, *Journal of Sieges*, vol. 1, p. 376.

The poor weather had probably delayed completion of the batteries by two or three days but they finally opened on the fortress on the morning of 25 March 1812 and started to batter the fortress and also the Picurina and San Roque outworks. No significant damage had been inflicted on the Picurina fort when Wellington ordered it to be stormed that night, Oman suggesting that this was to make up some lost time.[156] Due to the delay between the siege guns ceasing fire and the attack the French had time to make repairs and although the attack was successful, fifty-four were killed and two hundred and sixty-five wounded out of five hundred attackers. Once the fort had been taken the second parallel and associated batteries could be started.

From 27 March 1812, the trenches were extended towards the San Roque lunette with the intention of taking it and destroying the dam that kept the ground in front of the fortress flooded. Wellington's intention was to launch the assault across this ground but until the water was drained this was not possible. Progress by the partially trained sappers was not fast enough and casualties were high. An attempt was made without success on 2 April 1812, to mine the dam near the San Roque lunette. Lieutenant Stanway R.E. led a party forward and placed four hundred and fifty pounds of gunpowder on the dam, but the explosion did not have the desired effect. The attack on San Roque was now abandoned and Wellington accepted that the attack would have to work round the flooded area. The danger involved in trenching is well described in a letter from Lieutenant Vetch R.E. :

> I was employed … in advancing the approaches ; we were three or four officers, at least half an hour laying out the work not 80yds from the French parapet. The sap was marked out with a white cord, and the men put down as near as they could work along the line. They squat down and worked away as hard as they were able, in order to cover themselves … the moment we were perceived they opened a very sharp fire of musketry, and killed seven men in the first half hour, after which our men got too much cover to be hit. [157]

As the days moved on into early April, Wellington once again found himself balancing the time needed to batter the fortress against the advance of the

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[156] Oman, *Peninsular War*, vol. 5, p. 239.
[157] RE Journal, Feb 1881, p. 30.

French to relieve the fortress. Wellington was aware that Soult was collecting troops and was moving north towards Badajoz. He needed to decide between rapidly concluding the siege, or putting it on hold and advancing to meet Soult, leaving a force to guard the trenches or raising the siege. Marmont was also demonstrating in the north against Almeida and Ciudad Rodrigo, but Wellington cannot have been seriously concerned about their safety at this time.

By 5 April 1812, the breaches looked ready and Wellington issued orders for an assault that night. Later in the day the assault was postponed for twenty-four hours to allow a third breach to be battered in the curtain wall. It would appear that Wellington asked Fletcher to look at the breaches and give his opinion.[158] Following his inspection, Fletcher advised that the defences the French had constructed behind the breaches were strong and that a third breach should be made where the French would have little time to prepare new defences. The original plan was to make a third breach at the last moment. The concentrated effort of the siege guns on 6 April 1812 quickly battered the wall and the third breach was ready in the afternoon. The three breaches would be attacked by the Fourth and Light Divisions. Separate attacks would also be made on the castle by the Third Division and on the San Vincente bastion by the Fifth Division. Sunset was just after 7:00pm.[159] The siege guns stopped firing at about 7:30pm but the assault did not get underway until around 10:00pm. leaving the defenders with plenty of time to prepare for the assault that they knew was coming. The main attacks through the breaches all failed, with huge casualties, due to the obstacles put across the breaches and the heavy fire from the garrison. When it became clear to Wellington that they had failed he ordered the troops to be withdrawn and planned to make another assault just before daybreak. About this time, Wellington was informed that Picton's Third Division had managed to scale the walls of the castle and that the Fifth Division had also entered the town. He ordered the Fourth and Light Divisions forward again using these footholds to break out and finally take the fortress. As at

[158] Oman, *Peninsular War,* vol. 5, p. 243; Jones, *Journal of Sieges*, vol. 1, p. 193.
[159] J. May, *A Few Observations on the mode of attack and employment of heavy artillery at Ciudad Rodrigo and Badajoz in 1812 and St Sebastian in 1813* (London, 1819), p. 23. Sunset on 4 Apr 1812 was 7:06pm.

Ciudad Rodrigo, there followed an uncontrollable sack of the fortress by the troops and it took two days before order could be restored.

Casualties from the assault were shocking with 800 killed and 2,900 wounded out of an overall total for the siege of around 1,000 killed and 3,800 wounded. As always with the sieges it was the officers and better soldiers who took more than their fair share of the injuries. Engineer casualties were similarly heavy. Of the twenty-four officers present, four were killed and eight were wounded, three of whom went home.[160]

Wellington had taken Badajoz in twenty-one days. His estimate before the start was twenty-four days not taking into account the bad weather that surely delayed progress. Mulcaster, one of the engineers had estimated twenty-seven days for the siege.[161] The French in 1811 took forty-five days to get the fortress to surrender and in reality it should have held out for many more days. The cost of this rapid success was once again measured in casualties. In this case they were all from the very experienced British divisions, troops Wellington could not afford to lose. Although there were criticisms at the time of the decision to postpone the assault for another day to make the third breach, it is probable that this decision tipped the balance by spreading the defenders thinner which meant they were not able to resist the secondary assaults.

Once order had been re-established in the town, work started immediately to repair the defences. As a sign of the importance that Wellington placed on the speedy and effective repair, Fletcher the Chief Engineer was left to oversee the repairs and did not rejoin Wellington at headquarters until September 1812

Analysis of the siege

The huge casualties at the siege of Badajoz finally pushed Wellington into writing a strongly worded private letter to Liverpool demanding that something

[160] MacLeod and Holoway, never returned to the Peninsula. Emmett returned in Nov 1813.
[161] Colville, *Portrait of a General*, p. 93.

be done about the lack of trained soldiers available to undertake siege work. His criticism overflowed into a more general complaint about the skills of the engineers. An analysis of his complaints will be detailed below, but first the other components of the siege that were not within the control of the engineers will be evaluated.

Wellington's strategy of keeping the French guessing about his plans by staying north worked well. Soult made arrangements for Marmont to come to his aid if Wellington attacked Badajoz. Soult then appears to have become distracted and, even though warnings had started filtering through, he was at Cadiz until 20 March 1812. Soult then rushed back to Seville and spent the next ten days pulling together a relief force which did not exceed 25,000 men, believing that Marmont would be doing the same. Marmont, in the meantime, had received direct orders from Napoleon not to support Badajoz, this being Soult's responsibility. He was ordered to threaten Ciudad Rodrigo instead, which Napoleon believed would force Wellington to break off the siege of Badajoz and race north to protect it.[162] Soult did not discover until around 6 April 1812, that Marmont was sending no supporting force. By that time it was too late for the French to relieve the fortress.

The habitual problem of transport once again caused the siege train to be much less powerful than Wellington would have liked. At Ciudad Rodrigo the siege train was made up of thirty-eight new iron English guns, thirty-four of which were 24-pounders. Since these could not be transported to Badajoz, reliance had to be placed on a combination of sixteen new English 24-pounders and twenty old Russian 18-pounders in poor condition. There were an additional sixteen 24-pounder carronades but these were of no use for breaching work and appear to have been used for enfilade fire. Jones commented that the 24-pounder iron howitzer (carronade) 'should never be admitted into a battering train…[as] it only served to waste ammunition'.[163] General Colville commented

[162] Oman, *Peninsular War,* vol. 5, p. 270. Oman describes the situation at great length to show that the primary cause of the loss of Badajoz was the long distance meddling of Napoleon.
[163] Jones, *Journal of Sieges*, vol. 1, p. 403.

'We have for the third time undertaken the siege … deficient of means … half the guns are 18-pounders. We have not a single mortar'.[164]

This siege train was a little better than the one used at the second siege of Badajoz, primarily due to the guns being made of iron, but it was much less powerful than that used at Ciudad Rodrigo, which was a much weaker fortress. The time taken to make a significant impact on the breaches was extended due to this less powerful siege train. The lack of heavy howitzers limited the besiegers' ability to undertake counter-battery fire and this led to greater casualties in the trenches and during the assault.

The weather also had a material effect on the early stages of the siege. It rained consistently until about 25 March 1812, and this slowed down work in the trenches and certainly stopped any attempt to put guns into the batteries until the ground had dried out. Of more concern to Wellington was the loss of the pontoon bridge and the difficulties with the flying bridge as the river rose. At this time, around 22 March 1812, Wellington did not have a clear picture of the movements of Soult and Marmont. The loss of his only bridge was a serious matter. If the French had forced him to lift the siege and retire, his army would have been able to do this, but the siege train would probably have been lost. The wet weather also ensured that the inundation around the walls of Badajoz caused by the damming of the Rivellas stream was higher than normal and was impossible to cross. This was what made the attack on the San Roque outwork important. If heavy howitzers had been available to suppress the French guns, it might have been possible to take the San Roque lunette, which would have enabled the destruction of the dam and the draining of the area in front of the breaches. Wellington could not reasonably blame the bad weather for unexpectedly hampering his plans. He understood what the weather would be like at this time of year and used the poor weather as an argument to explain his timing of the siege, as it would hamper the movements of the French. Of course there was also a chance that it would hamper his own plans and in the event it did.

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[164] Colville, *Portrait of a General*, p. 94.

The French governor, Phillipon, showed the same energy and determination that he had exhibited in 1811. The garrison was made up of seasoned troops and the experienced chief engineer, Lamarre, had been at the fortress for some time and knew it well. The defenders' energy, particularly in clearing the debris from in front of the breaches and in blocking up the breaches, made the assaults much more difficult. As described above, the assaults on the breaches all failed with massive loss of life and it was only due to the secondary attacks that the fortress was taken. With another thousand men, Phillipon would have probably repulsed the assault. It is doubtful that the British troops would have had the energy to make a further serious assault as Wellington planned on the morning of 6 April 1812.

One question that needs further consideration is why did Wellington decide to make the assault on 6 April 1812? Wellington was clearly concerned that the French would try to relieve the fortress, but there does not appear to be the urgency that Wellington felt. He was aware of the movements of Soult and he had a reasonable idea of the size of Soult's force. Wellington was also reasonably certain that Marmont was not marching to the aid of Soult. He had a report on 4 April 1812 that Marmont had been in front of Almeida on 3 April 1812, which suggested Marmont was not making any immediate plans to move south.[165] Wellington was also clearly concerned that the breaches were only just practicable. His decisions to order and then postpone the attack on the night of 5 April 1812 show a level of indecision that is very unusual in Wellington. Wellington had made preliminary plans to suspend the siege and move to face Soult who he believed had up to 35,000 men. When he realised that Soult had around 25,000 men he would have known that Soult could not possibly interfere with the siege without the support of Marmont. Marmont did not receive permission from Napoleon to directly support Soult until 27 March 1812, and would have needed ten to fourteen days to concentrate sufficient troops. A week later he had not moved south and Wellington knew that, so the

[165] WD, To Liverpool, 7 Apr 1812 (the despatch informing Liverpool of the successful assault).

earliest he could have arrived would have been the end of the second week in April.

There are two areas where the lack of trained artificers appeared to have made a difference to the planning. The first was in selection of the point of attack. As mentioned above Wellington's preference was to attack the south face, as it appeared to be the weakest. This was the point that the French attacked. The French, realising the same, had significantly strengthened it by reinforcing the Pardaleras outwork and also by placing mines in the approaches to the walls. The approaches to the southern wall that Wellington last saw in June 1811, were significantly stronger in March 1812. The second was in the attempt to take the San Roque lunette and allow the destruction of the dam behind it. This was abandoned due to the high casualties and poor progress made by the partially trained sappers from the army. If trained sappers had been available, better progress would have been made and casualties should have been lower. But, the major difficulties were caused by the heavy fire from the defenders and without some attempt to reduce this, the effect might not have been any different. The siege train at Badajoz did not contain weapons that were ideal for counter battery and breach clearing activities. The 24-pounder carronades were the only 'high-angle' weapon available and as they were equivalent to the smallest 5.5-inch howitzer they did not carry the punch that was required.

It could be argued that Wellington moved too quickly to the assault, when he could have waited a few more days and continued battering the defences. This would have reduced his casualties although it is unlikely that Phillipon would have considered surrender. Wellington's complaint about the lack of trained sappers and miners causing the additional casualties was justified, but even with the trained artificers he would still have needed to give them time to work and it is unlikely that the siege would have progressed any faster. As in all the previous sieges in 1811 and 1812, Wellington was pushed into attacking early through the need to take the fortress before the relieving force could interfere. Badajoz was no different and trained artificers would not have made a significant difference.

On 7 April 1812 Wellington wrote his despatch informing the government of the success at Badajoz. With it was sent a private letter to Liverpool in which Wellington complained about the lack of trained engineers and artificers and blamed the heavy losses at Badajoz on the lack of such troops :

> it is quite impossible to expect to carry fortified places … unless the army should be provided with a regular trained corps of sappers and miners … The consequences … are – first, that our engineers although well educated and brave, have never turned their minds to the mode of conducting a regular siege, as it is useless to think of that which it is impossible in our service to perform. They think that they have done their duty when they construct a battery, with a secure communication to it, which can make a breach in the wall of a place.; and, secondly, these breaches are to be carried by vive force by an infinite sacrifice of officers and soldiers ... I earnestly recommend to your lordship to have a corps of sappers and miners formed without loss of time.[166]

His frustration at his losses extended his complaints from the reasonable towards what many engineers saw as an unreasonable attack on the whole engineering profession. His complaints about the lack of sappers and miners were fully supported by the engineer officers themselves. One example was Squire who used almost the same words as Wellington in his letter after the assault : 'This siege has served to confirm … that constituted as our Corps is, we are decidedly not equal to the attack of a place; whose scarp is covered by a good counterscarp and glacis … Sappers and Miners are as necessary to engineers during a siege, as soldiers to the General'.[167]

Wellington's critical comments in his letter of 7 April 1812 were lost until 1889, but a subsequent letter on the same subject to Major-General Murray was published in the despatches.

> I trust..... that future armies will be equipped for sieges, with the people necessary to carry them on as they ought to be; and that our engineers will learn how to put their batteries on the crest of the glacis and to blow in the counterscarp, instead of placing wherever the wall can be seen, leaving the poor officers and men to get into and across the ditch as best they can.[168]

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[166] Athenaeum, 27 Apr 1889, p. 537. Wellington to Liverpool, 7 Apr 1812.
[167] BL, ADD63106, Squire letters, ff. 54-55, Squire to Bunbury, 8 Apr 1812
[168] WD, To George Murray, 28 May 1812. also quoted in Glover, *Peninsular Preparation,* p. 106.

This was responded to in Jones' *Journal* : 'the officers … were fully equal to the difficult duty of crowning the crest of the glacis had they been assisted by a proper trained body of men'.[169] Wellington's complaint about the casualties during the assault on the Picurina fort is particularly unreasonable. The fort was stormed on his orders the same day the batteries opened when it was clear that no material damage had yet been inflicted. Wellington rushed the assault to make up time lost due to the bad weather. There is no doubt, based on the available evidence, that Wellington's criticism of the engineer officers was unfair. The four sieges of 1811 and 1812 had all been arranged with limited resources and limited time. This led to compromises that affected the chance of success and the level of casualties. There was not sufficient time at any of these sieges for formal approaches to be prepared. Complaining about the lack of troops to deliver formal approaches is not reasonable when such troops would not have had the time to make the approaches anyway.

However, as described above, Wellington's complaints pushed the Board of Ordnance into finalising its work in establishing the School of Military Engineering and this was in place before the end of April 1812. Liverpool wrote to Wellington on 28 April 1812, informing him that the Board of Ordnance had been working on this issue for some time and that the first troops would be with him before the end of the month.[170] Although the Board of Ordnance's response was a little dishonest, it is true that Pasley had previously started work on training artificers. The incorrect understanding of the causes of the formation of the Royal Sappers and Miners still appears in most works. Oman[171] assumes that Wellington's letter of 7 April 1812, caused an immediate change and the formation of the corps. Fortescue seems even wider from the mark, suggesting that Wellington was 'beginning himself to train one on the spot'. Myatt does not recognise that the Board of Ordnance had been working through 1811 to rectify the situation.[172] Similarly, in the most recent books on sieges in the Peninsula, there appears to be a misunderstanding of the role of

[169] Jones, *Journal of Sieges*, vol. 1, p. 377; see also pp. 222-226.
[170] BL, ADD38326 ff. 30-31, Liverpool to Wellington, 28 Apr 1812.
[171] Oman, *Peninsular War*, vol. 5, p. 256.
[172] Myatt, *British sieges*, p. 116.

sappers and miners. They would undertake the specialist tasks, like sapping up to the glacis or mining, but the bulk of the 'spade work' would still be done by the line infantry with the trained artificers providing the supervision.[173]

Fletcher was left at Badajoz to carry out the repairs and Burgoyne accompanied Wellington with the army as it set out on the Salamanca campaign. This was an unusual arrangement as typically the senior engineer would travel with Wellington. Whilst there has been some question about whether this was evidence of a lack of trust in Fletcher, there is no evidence to support this position. Wellington's decision was probably based on two points that would have been high in his mind. Firstly, that losing Badajoz again was unthinkable, so every effort had to be made to protect it. Secondly, Wellington had handed over responsibility for Ciudad Rodrigo to the Spanish only four weeks before and he had already received communications to show that little progress had been made to complete the repairs; the Spanish were asking for further help to complete them and they had already used most of the supplies left for the use of the garrison. Because of this Wellington was forced to remain in a position where he could support Ciudad Rodrigo when one of his options would have been to pursue Soult south.[174] Although it was not approved, Wellington had also asked for promotion for Fletcher after Ciudad Rodrigo.[175]

In summary, Badajoz was attacked with a second rate siege train; the lack of sappers and miners meant that the preferred choice of attack could not be selected; the fortress was assaulted too early; and together these factors caused the high casualties. Badajoz was taken due to the secondary attacks succeeding when all the main attacks had failed. Wellington was lucky.

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[173] E.g. see Fletcher, *Badajoz, 1812*, p. 20, and Uffindel, *Wellington's Armies,* p. 107, where the inference is that the infantry would be excused duty in the trenches when there were sufficient artificers trained.
[174] WD, To Liverpool, 7 Apr 1812.
[175] WO3/601, pp. 276-279, Torrens to Wellington, 21 Feb 1812.

4.2.5. BURGOS, 1812.

Wellington's successful start to 1812 continued with victory at the battle of Salamanca and his entry into Madrid. To take full advantage of these successes he had to hold his forward position, and to do this he needed to take Burgos. Wellington ordered the guns collected but not used for the attack on the Retiro in July 1812 to be moved north. These were three 18-pounders and five 24-pounder carronades,[176] a composition that was wholly inadequate to attack anything but the most flimsy defence. Burgos did not meet this criteria and the defenders had significantly more ordnance with which to resist the attack. Of even more concern to the Allies was the very limited amount of shot, shell and powder, which meant that the attackers were worried about supply levels before they had fired the first shot.

Table 4k. Timeline for siege of Burgos.

19 Sep 1812	Burgos invested.
19 Sep 1812	Hornwork stormed on night of 19/20 Sep 1812. Work on trenches started.
22 Sep 1812	First battery armed on night of 22/23 Sep 1812.
22 Sep 1812	Attempt to storm outer wall of Burgos failed.
23 Sep 1812	Trenches started from suburb of San Pedro on night of 23/24 Sep 1812.
25 Sep 1812	Work started on first mine.
27 Sep 1812	Work started on second mine.
29 Sep 1812	First mine blown and second attempt to storm outer wall failed on night of 29/30 Sep 1812.
4 Oct 1812	Second mine blown and third assault takes outer wall on night of 4/5 Oct 1812.
5 Oct 1812	French launch sortie on Allied position.
8 Oct 1812	French launch second sortie on Allied positions.
10 Oct 1812	Work started on third mine under church of San Roman.
18 Oct 1812	Third mine blown and fourth assault fails to take French second line.
20 Oct 1812	Siege lifted.

[176] REM, 4601-72, Burgoyne Letters, f. 1812/17, Burgoyne's criticism of the 24-pounder carronades in his report on Burgos is similar to Jones' 'they could not be fired with any accuracy or force'.

Wellington took with him four divisions and two independent Portuguese brigades. The Third, Fourth and Light Divisions which had taken on most of the work at Ciudad Rodrigo and Badajoz earlier in the year were not allocated for this siege. The broad plan was to take the hornwork of St Michael on the first night and establish batteries there. At the same time, trenches would be dug from the suburb of San Pedro to enable a mine to be placed under the outer wall that would be assaulted when the mine was blown. The two sets of inner defences would then be breached using the batteries. Engineering resources were only five officers commanded by John Burgoyne (Fletcher still being at Badajoz) with support from ten assistant engineers (five of whom had previous experience)[177], eighty-one volunteers from the line and eight Royal Military Artificers.

The fortress was invested on 19 September 1812, and the same tactic employed at Ciudad Rodrigo was used with an immediate assault on the hornwork that protected the preferred point of attack. The hornwork was taken with heavy casualties amounting to seventy-one killed and three hundred and forty-nine wounded. Oman described this as a 'vast and unnecessary loss of life'.[178] Jones privately criticised the orders which were given to support the assault : 'Luckily the assaulting columns carried the work and success glossed over this most unmilitary and inefficient mode of supporting them'.[179]

Work immediately started on two batteries, the first of which was fitted with two guns and three howitzers on the night of 22/23 September 1812.[180] Wellington decided to change the plan 'with a view to abridge the attack and save the troops from unnecessary fatigue'.[181] He ordered an assault on the outer line of defences the same night, but the small group of four hundred volunteers failed completely with a further one hundred and fifty-eight casualties. Wellington

[177] REM, 4601-72, Burgoyne Letters, 1812/17, f. 1.
[178] Oman, *Peninsular War,* vol. 6, p. 27.
[179] Jones, Military Autobiography, p. 68.
[180] Oman, *Peninsular War,* vol. 6, p. 27, confusingly says the battery was armed on the night of 23 Sep 1812. Jones' *Journal of the sieges*, and Dickson, *Manuscripts*, say the night of the 22/23 Sep 1812. From reading on in Oman's account from this point the escalade of the same night (22nd) can be believed to also have happened on the 23rd.
[181] Jones, *Journal of the sieges*, vol. 1, p. 283.

then reverted back to the original plan to mine the outer wall. The defenders kept up a continual fire of shot and shell on the attackers and the trenches were so close to the walls that the French could roll the shells down the hill and into the attackers' trenches.

The Allied battery opened for the first time on 25 September 1812. Dickson commented at the end of the first day that 'it being found from the want of precision in the howitzers with round shot, a greater expenditure of ammunition would be required… than the limited means … could afford'.[182] Ten per cent of the available round shot were used in one day to discover that the guns were highly inaccurate! Dickson recorded that the soldiers were offered a bounty for every round shot they could recover and so as not to discourage them, even round shot of sizes which were of no use were paid for. Wellington wrote to both the Royal Navy and the nearest fortresses for additional supplies.

On 29 September 1812, the first mine was declared ready and the assault planned for that night. Like the previous attempt, the assault party was small, only three hundred men. The mine exploded, but the assault failed due to the forlorn hope losing their way in the dark and missing the breach. There is no mention of any engineer officer accompanying the assault party and this probably was a contributory factor to the soldiers losing their way. Jones noted that the effect of one thousand pounds of powder in the mine did not have the impact he would have expected and this may have been caused by the mine being placed against old foundations rather than against the current wall.[183]

Work progressed on the second mine and a new battery close to the wall on the west side of the fortress. The French detected it before the battery had opened fire and they pounded it mercilessly, damaging two of the three heavy cannons that Wellington possessed. On the orders of Wellington, the two damaged guns were mounted on temporary carriages and fired with reduced charges (and reduced effect) for the remainder of the siege. The second mine was

[182] Dickson, *Manuscripts*, vol. 4, p. 746.
[183] Jones, *Journal of the sieges*, vol. 1, p. 296.

successfully blown on 4 October 1812, and finally the outer wall was taken, successfully led by a battalion of the twenty-fourth regiment. Casualties during the assault amounted to thirty-seven killed and two hundred and thirteen wounded. Among the wounded was John T. Jones R.E. which reduced the number of engineer officers present to three. His injuries forced him to return home, although this did give him the spare time to publish in 1814 the first edition of his comprehensive work on the British sieges.[184] For the next sixteen days the siege staggered on. The Allies had neither the guns nor ammunition to make progress and the defenders had plenty of both. The situation reached its worst point on 2 October 1812, when the whole of the working party for the night with the exception of the Guards regiments did not turn up. This led to a stinging rebuke from Wellington and some officers being arrested for neglect of duty. The French launched two sorties on 5 and 8 October 1812, causing some damage but Wellington's troops had just lost heart. A third mine was started on 10 October 1812, under the church of St Roman and blown with the final assault on 18 October 1812, when four hundred troops assaulted the second line. The defenders stood firm and the attack was repulsed with the loss of one hundred and sixty men. The siege just petered out from this point until the siege was raised by Wellington on 20 October 1812 as the French armies finally started to threaten his position.

Analysis of siege.

There was clearly a serious underestimation of the resources required. Burgos was not a strong fortress and even the smallest siege train would have caused severe damage in very little time. Jones described Burgos 'as a very insignificant fortress'.[185] Wellington must have believed that it would put up no defence and once started he would not accept that there were insufficient resources to take the fortress. According to Fortescue, Wellington had

[184] Jones in his private autobiography records with some dissatisfaction that he was shot whilst standing in the open, making the agreed signal to Lord Wellington for permission to blow the mine. Wellington did not acknowledge his signal despite it being repeated several times. Jones wrote that Wellington then refused to mention him in his despatches because of his rash behaviour of standing in the open where he knew he would be hit. Jones' *Military Autobiography,* pp. 71-72.
[185] Jones, Journal of the *Sieges,* vol. 1, p.333.

'snatched away more than one Indian fortress by escalade, he hoped to do the like with Burgos'.[186] Fortescue summed up the result : 'At Burgos … he fulfilled his threat and tried East Indian methods with disastrous results'.[187]

The three attempts to assault the castle were all made by small groups of soldiers who were heavily outnumbered by the defenders.[188] Whether this was due to Wellington's guilt about the casualties at earlier sieges is not clear, but launching troops against defences that had not been seriously weakened could have no effect other than high casualties. The effort of the troops and officers was not to the usual standard and Burgoyne particularly singled out the Portuguese units for their lack of effort. But it must have been obvious to all the troops that the resources available were insufficient. Perhaps the troops were getting sick of being used as cannon fodder? Two thousand troops were injured at Burgos with nothing to show for it. The retreat that followed finished 1812 with a real blow after the successes of earlier in the year.

In his despatch after the siege had been raised, Wellington made it clear that he did not hold the artillery or engineer officers at fault.[189] This was a fairer statement than those he made after the successful siege of Badajoz. Considering the resources that they had to work with, it is difficult to see what else could have been achieved. The engineer resources were miniscule. The siege lasted thirty-five days. From day eight they were down to four engineers when Captain Williams was killed and down to three engineers from day eighteen when Jones was incapacitated. Burgoyne was lucky to be alive having been hit in the head by a musket ball and the two engineer lieutenants, Reid and Pitts, were also sick for part of the time. Of the ten assistant engineers, six were killed or wounded.

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[186] Fortescue, *British Army*, vol. 8, p. 584.
[187] Fortescue, *British Army*, vol. 8, p. 226.
[188] Fortescue, *British Army*, vol. 8, p. 584
[189] WD, To Bathurst, 26 Oct 1812.

Three mines were dug and exploded without any trained miners being present. They had no miners' tools and were obliged to use normal pick axes.[190] Jones stated that the reason for the unplanned assault on the outer wall on 22 September 1812 was because Wellington was doubtful that the mining could be achieved without trained miners.[191] Jones continued that because the second assault failed a further five days were lost whilst the second mine was dug. The mines had varying success. The first did not do the damage expected, possibly due to encountering old foundations. The second made a large breach in the wall as expected. The third caused extensive damage to the terrace in front of the breach but did not bring down the church, which was expected. However the purpose of the third mine was to provide access to the upper level and this was achieved by destroying the terrace.

Overall, Jones was much more critical of the engineering effort than Wellington, although the prime thrust of his criticism was still the lack of trained sappers and miners. Jones believed if there had been sufficient sappers and miners present then much more progress would have been made. The decision to mine the defences was probably made to remedy the deficiency of ordnance. The walls, as even the limited ordnance available showed, were not very strong. A proper siege train would have removed any need for mining. Burgoyne, writing privately to Fletcher, was strongly critical of the efforts of the troops and of Wellington's decision to assault with small numbers of men. Like Jones, he believed that Burgos could have been taken with the resources available. One of Burgoyne's final comments, which Wrottesley[192] did not publish, was 'the last assault failed entirely due to the small number of the storming parties against a fort having 1,500 men in it – they carried the works easy but could not hold them'.[193] As on a number of other occasions, Wrottesley adjusted Burgoyne's quotes when they were especially critical of Wellington. Burgoyne's final paragraph in his private letter to Fletcher, in the version printed by Wrottesley stated :

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[190] Jones, *Journal of Sieges*, vol. 1, p. 292.
[191] Jones, *Journal of Sieges*, vol. 1, p. 335.
[192] Wrottesley, *Life of Burgoyne*.
[193] REM, 4601-72, Burgoyne Letters, 1812/17, f. 13.

> I have heard a hint that Lord Wellington said that the engineers told him "the fort might be taken without guns". This I do not believe; first, because it is not like him to say that he went by other people's advice … although he occasionally listened to some project or other[194]

Burgoyne actually wrote :

> I have heard a hint that Lord Wellington said that the engineers told him "the fort might be taken without guns". This I do not believe because it is not like him, as I believe he never pays anyone the compliment to insinuate that he took their advice, though he may perhaps in a case of failure … and although he occasionally listened to some foolish project or other[195]

Overall, Burgoyne was not impressed with Wellington's performance. The engineers did what they could with very limited resources and for once the British army did not pull a victory out of defeat despite their generals failings. Burgos was probably the biggest failure under Wellington's command in the Peninsula.

[194] Wrottesley, *Life of Burgoyne*. p. 236.
[195] REM, 4601-72, Burgoyne Letters, 1812/17, f. 13.

4.2.6. SIEGES OF SAN SEBASTIAN IN 1813.

First Siege of San Sebastian.

As at Burgos the year before, Wellington needed to take the fortresses of San Sebastian and Pamplona to capitalise on his success at the battle of Vitoria. The French had retreated into the Pyrenees and if Wellington could take the fortresses he had a much better chance of holding the line of the Pyrenees against any future French advance. The castle at Burgos had been destroyed by the retreating French and was no longer a threat. Wellington's original plan had been to attack Pamplona, but he decided to attack the weaker fortress of San Sebastian and blockade Pamplona into submission.

Table 4l. Timeline for first siege of San Sebastian.

11 Jul 1813	Work started on batteries against St Bartolomeo on night of 11/12 July 1813.
13 Jul 1813	Work started on batteries against eastern wall.
14 Jul 1813	Fire opened on convent of St Bartolomeo.
17 Jul 1813	Convent of St Bartolomeo taken.
20 Jul 1813	Fire opened on fortress.
21 Jul 1813	Governor rejects summons.
23 Jul 1813	Main breach practicable, second breach started.
24 Jul 1813	Assault postponed due to fires in town.
25 Jul 1813	Assault fails.
26 Jul 1813	Graham ordered to remove siege guns but keep blockade on fortress.

After the fortress was invested on 11 July 1813, Wellington, Major Charles Smith R.E.[196] and Dickson rode around the fortress, and at the suggestion of Smith, the same basic plan of attack was proposed as had previously been used by the Duke of Berwick in 1719. The plan was to breach the wall on the eastern side where it was fully visible due to the sea going right up to the base of the wall at high tide and not allowing any other form of defence. At low tide it was possible for troops to cross the tidal estuary of the river Urumea and storm any breach. It would also be necessary to take some of the outworks on the

[196] Smith was the senior engineer with Graham's force which was before San Sebastian. Fletcher was still coming up from Badajoz and Burgoyne arrived with him on 15 Jul 1813.

land side to reduce the fire that could be brought to bear on any attack across the estuary and also to give access to the foot of the eastern wall. With this aim in mind the convent of St Bartolomeo was to be captured and trenches thrown forward to allow the defences to be silenced and for enfilade fire on the proposed breaches.

As at the siege of Ciudad Rodrigo, Wellington had effective siege guns available. A new siege train had been sent out to the Peninsula for use in northern Spain and with the six 18-pounders that travelled with the army and six 24-pounders supplied by the Royal Navy, Wellington had a siege train of forty guns made up of :

- Twenty 24-pounders
- Six 18-pounders
- Four 68-pounder carronades
- Six 8-inch howitzers
- Four 10-inch mortars.

Engineering resources commanded by Fletcher included seventeen engineer officers and over three hundred rank and file from the Royal Sappers and Miners.[197] This was the first siege at which there were a significant number of them present. Although Jones' published *Journal* does not record the use of assistant engineers, both Burgoyne and Fletcher mention that a number were used on the left attack.[198] Overall command of the siege was given to Sir Thomas Graham, Wellington being with the army to monitor the activities of the French forces.

The initial attack was made against the convent of St Bartolomeo. Two batteries were constructed and they opened fire on 14 July 1813. The following day a force of Portuguese infantry was sent forward, but they encountered strong resistance and retired. The guns continued firing on the convent for two

[197] As previously Jones' Journal is misleading. He list the full eighteen officers as present throughout the siege, but at least two did not arrive until well into the second siege. Captain Collyer and Lieutenant Wortham did not arrive until 19 Aug 1813 with a company of RSM. These are all counted in Jones' totals.
[198] REM, 5501-108-4; WSD Fletcher to Graham, 25 Jul 1813.

more days. It was taken on 17 July 1813, though not without considerable loss through another undisciplined, pointless charge by the infantry against the main French positions. Two new batteries were started near the convent and the plan was to dig a parallel right across the isthmus.

The batteries against the eastern wall opened on the morning of 20 July 1813 and once the French realised where the main point of attack was going to be, they started work on establishing defences behind the wall being breached. The same night the attackers started work on the main parallel across the isthmus, but due to the poor weather the majority of the Portuguese troops allocated for the work did not appear and only a third of the planned work was completed. The following night, whilst completing this parallel, a large drain was found which had supplied water into the town until the supply was cut off. This was explored by Lieutenant Reid R.E. who found it went up to the western side of the hornwork and it was decided to place a mine at the end of the drain with the intention of breaching the hornwork.

The breach in the eastern wall appeared practicable on 22 July 1813, but the French were making great efforts to clear away the debris despite the Allies continually sweeping the breach with grape shot and shells. On the following day, the breach was declared practicable and the guns were directed to make a second breach in the wall at a location that locals had suggested was particularly weak. This second breach was ready that night although there were also numerous fires in the houses behind the two breaches from the continuous shelling. Graham ordered the assault for the morning of 24 July 1813, but in the morning the assault was cancelled as it was thought the fires that were still raging would impede the assault.[199] This delay gave the French an extra twenty-four hours to improve the defences, although they were working under a continuous bombardment from the attackers.

[199] Frazer was one who disagreed that the fires would have caused an obstruction. Sabine, *Frazer Letters*, p. 204.

The plan of attack was for troops from the Fifth Division to assault the two breaches, starting from the right (eastern) end of the parallel across the isthmus and skirting the foot of the wall until they reached the breaches. The siege batteries would provide heavy covering fire from across the bay. The plan was dependent upon the time of low time and daybreak, which were both expected to be around 5:00am. The signal for the start of the assault would be the blowing of the mine in the drain by the hornwork.

On the morning of 25 July 1813, the mine was blown before daylight and the assault commenced. Filing out of the parallel was very slow and the first troops arrived at the breach in small numbers. Although initially successful, there were not sufficient men present and they were quickly driven back, having been stopped by a twenty foot drop from the breach into the town itself. In doing so they became mixed with the group who were tasked with assaulting the secondary breach and all retired in some disorder. The assault had failed completely before there was enough daylight for the artillery across the bay to provide any support. Casualties from the assault were five hundred and seventy killed and wounded. There were five engineer casualties during the assault. Fletcher, Lieutenant H.D. Jones and Lieutenant Reid were wounded, Captain Lewis lost a leg and Lieutenant Machell was killed. Another officer, Lieutenant Hammond Tapp, had been severely wounded earlier in the siege on 13 July 1813.

When Wellington heard about the failure of the assault, he rode over from his headquarters determined to continue the siege. However, he accepted that it would have to be postponed temporarily until further shot and powder were delivered. In the meantime as Soult was still threatening to attack, so Wellington ordered most of the siege guns to be removed and returned to the boats where they would be safe until further ammunition was available. He ordered a tight blockade to be kept in place.

Analysis of the first siege.

Both contemporary and more recent writers have criticised the performance of the engineers in a number of areas. Fortescue leads the attack with an unjustifiable apportioning of blame for the failures at San Sebastian, while Oman only holds the engineers partially to blame but identifies them as the primary culprit. Their assessments in both cases appear to be led by the thoughts of one particular army officer who clearly had a dislike for the 'scientific soldiers'. The analysis below will look at the criticisms and compare them with to the available facts.

Oman and, more recently Myatt criticised Major Smith's proposal to follow the Duke of Berwick's plan of attack of 1719. Oman wrote that Graham, Wellington, Fletcher, Dickson and Frazer all agreed with the plan and they 'forgot' that the Duke of Berwick did not have to assault the fortress.[200] It is inconceivable, even excluding the other officers, that Wellington 'forgot' about the possibility of another costly assault. The strength of the fortress was directed against the land approaches for obvious reasons and once again the view was that there would be insufficient time to formally approach from the land side. Fletcher's view on the proposed attack on the eastern side was that 'it would certainly save much time … compared with a regular siege of the very powerful defences crossing the isthmus'. An attack on the land front would be a 'work of great difficulty' requiring a larger battering train and thirty to thirty-five days' effort.[201] Burgoyne also supported the proposed plan although with the benefit of hindsight he thought that finding the drain tipped the balance in favour of an attack across the isthmus. He did, however, acknowledge that this attack would have taken more time. Oman and Fortescue both wrote that when Wellington arrived after the assault he was insistent that the siege would continue and required the engineers to come up with a plan for a formal attack from the land side. Burgoyne and Frazer indicate that an alternative plan of attack was discussed at the meeting with Wellington on 25 July 1813. Jones, in

[200] Oman, *Peninsular War*, vol. 6, p. 565, 578; Myatt, *British Sieges*, p. 156; Sabine. Frazer *Letters,* p. 185.
[201] WSD, Fletcher to Wellington, 29 Jul 1813.

his diary entry for 25 July 1813 noted that 'after some consideration, it was decided to persevere in the same plan of attack'.[202] Fletcher also wrote to Wellington on 27 July 1813 noting that Wellington's opinion was for an extended attack using the original plan.[203] Lack of ammunition stopped any progress in the short term. By the time the new supplies had arrived, the plan as Jones noted, remained the same as before, with an attack on the east-facing sea walls. Any thoughts of using a different plan were clearly put aside very quickly.

Oman's narrative stated that when the mine was blown, the hornwork was to be assaulted by Portuguese troops from the parallel on the isthmus. He continued that the engineers were unsure what level of damage would be caused by the mine and because of this no concrete proposals were made to make use of the explosion. He noted that for the attack on 25 July 1813, 'a little more attention, but not nearly enough, was given', but overall described the engineers' plans as 'half-hearted'.[204] Burgoyne clearly understood that the mine was to be used 'as a signal only and with the chance of alarming them' [the French defenders].[205] Jones makes no mention of an assault on the hornwork. Dickson's view before the assault was that blowing the mine would 'create such an alarm as may make them evacuate … and so produce a favourable diversion', a view shared by H.D. Jones.[206] After the assault Dickson noted, 'A party of Cacadores availing themselves of the consternation produced amongst the enemy … made … their way into the ditch … but the defenders … commenced a fire … which obliged them to make … their way back'.[207] It would appear that Oman based his suppositions on the comment above from Dickson, which does not give any real indication that it was a pre-meditated action. There does not appear to be any evidence to back up Oman's claim that an attack on the hornwork was planned and that it was badly organised by the engineers. It should also be noted that it was not the engineers' responsibility to organise the troops for any

[202] Oman, *Peninsular War*, vol. 6, p. 585; Fortescue, B*ritish Army*, vol. 9, p. 232; Sabine, *Frazer Letters*, p. 206; Wrottesley, *Life of Burgoyne*. p. 270.
[203] WSD, Fletcher to Wellington, 29 Jul 1813.
[204] Oman, *Peninsular War*, vol. 6, p. 575, 578, footnote.
[205] Wrottesley, *Life of Burgoyne*. p. 269.
[206] Dickson, *Manuscripts*, vol. 5, p. 971. RE Journal, Feb 1890, p 34.
[207] Dickson, *Manuscripts*, vol. 5, p. 973.

attack. That was the responsibility of the commander of the troops, so any blame should have been directed at Graham, not the engineers.

There are a number of criticisms of the delay between the first breach being practicable and the assault, thereby giving time for the defenders to reinforce the damaged areas. These criticisms are not helped by some confusion amongst the ordnance officers themselves. Frazer complained in his letter of 23 July 1813 that 'after [making] this excellent breach, they hesitate about using it … I am now ordered to make another breach … by which time the original breach will be entrenched'. His view was clearly that the failure of the assault was caused by 'delay and indecision'.[208] According to Jones, the general plan as had been used in previous sieges was to open a second breach at the last minute to stretch the defenders. Frazer did not appear to be aware of this, perhaps because this was the first siege at which he was present. Oman and Fortescue both criticise the two day delay between the first breach being ready and the assault. Fortescue in particular seized on Burgoyne's remarks after the first siege where Burgoyne commented that the 'whole of the batteries … were constructed on the right bank … giving them immediate insight into the nature of the attack… and the breach was practicable two days before the trenches.[209] Careful review of the dates shows that the trenches were ready on the morning of 23 July 1813,[210] the breach was declared practicable the same morning and the assault was planned for the following morning. The two day delay is calculated because the assault was then delayed for twenty-four hours due to the fires behind the breach. This delay may have been unfortunate and significant, but it was not due to the trenches not being ready. It is difficult to see how the work on the breaching batteries could have been delayed to hide the point of attack. They were started on 13 July 1813, which was four days before the convent of St Bartolemeo was taken. It is unlikely that they would have all been ready on 20 July 1813, if they were not started until 17 July 1813, and this would then have lengthened the siege. In every siege in the

[208] Sabine, *Frazer Letters*, pp. 198-99. H.D. Jones also thought the breach should have been stormed the first night and waiting for the second breach would add no value. 'Delays are dangerous!!'. RE Journal, Feb 1890, p. 34.
[209] Wrottesley, *Life of Burgoyne*, p. 271.
[210] Jones, *Journal of Sieges*, vol. 2, p. 31; Wrottesley, *Life of Burgoyne*, p. 268.

Peninsular War, time was a critical factor. San Sebastian was no different and the decisions taken were designed to reduce the time. Graham wrote to Wellington on 24 July 1813, pointing out that the artillery had nearly run out of 24-pounder shot. If the assault had not gone in on the morning of 25 July 1813, the siege would have had to revert to a blockade, as there was insufficient ammunition to continue.[211] One other factor that must be taken into account is the problems with working parties. The problems on the night of 20 July 1813, when the working parties absented themselves, lost the attackers twenty-four hours. They should have been ready on the morning of 22 July, which would have been the day before the breaches were declared practicable.[212]

There were a number of criticisms around the assault itself on the morning of 25 July 1813. The plan required daylight so that artillery support could be given to the assault. Dickson had told Graham that the artillery would be able to suppress the defenders' fire during the assault. Graham's official report stated that the attack took place 'soon after daylight', and Fletcher stated that the assault was given at daylight … the mine having been previously sprung'.[213] However, the artillery officers recorded that the assault had failed before there was sufficient light for them to determine what was happening. Dickson stated 'the column of attack certainly moved forward too early, either from a mistake … or from over anxiety on the part of the directors'.[214] Frazer was more forthright writing 'The assault was … made … stupidly an hour before, instead of after daybreak'.[215] It is almost certain that the mine was blown before 5:00am as Graham's letter to Wellington informing him of the failure of the assault was written at 5:30am.[216] Aspinal-Oglander in his biography of Graham, strongly refutes the claim that the attack commenced before daylight, but seems to base his argument on the fact that Graham's despatch reported it was in daylight.[217] While no account clearly stated who gave the order to start the assault, it is

[211] WSD, Graham to Wellington, 24 Jul 1813.
[212] Burgoyne complains about this in his manuscript account of the siege, but it did not make it's way into Wrottesley's account. REM, 5501-108-4, p. 111.
[213] WD, Graham to Wellington, 27 Jul 1813; WSD, Fletcher to Graham, 27 Jul 1813.
[214] Dickson, *Manuscripts*, vol. 5, p. 973.
[215] Sabine, *Frazer Letters*, p. 204.
[216] WSD, Graham to Wellington, 245 Jul 1813.
[217] C. Aspinal-Oglander, *Freshly Remembered ; The story of Thomas Graham* (London, 1956), pp. 256-257.

likely that Graham did. Even if he did not, he must, as commanding officer, still take the responsibility for the failure.

General Oswald, the commander of the Fifth Division, did not plan the actual attack well. Campbell of the Ninth Foot was of the opinion that the troops were too extended during the assault and thought that if a compact mass had arrived at the breach they 'would have bodily forced through all opposition'.[218] He may have had a point about the organisation of the troops, but his approach would not have worked against the twenty foot drop that the attackers were faced with in the main breach. Oswald's plan, bearing in mind the concerns about the narrow area in which the assault had to take place, organised his troops so that those heading for the nearest breach went first followed by those who needed to pass the first breach to go to the second breach. With the failure of the assault on the first breach, the troops destined for the second breach could not get past the retiring troops and were swept back into the trenches with them.

A more contentious issue is the view expressed at the time that the Fifth Division had not tried very hard. Oman called this a 'monstrous injustice' writing 'everything that mismanagement could accomplish had been done to discourage them'.[219] He quoted statements from Frazer and Larpent who are generally respected commentators, but pointed out that neither was present at the storm. Burgoyne, recognised by Oman as one of the authorities on the siege, also recorded that the officers 'could not get the men to follow them'.[220] Jones wrote that the attack was not pressed energetically but finished cryptically by noting although many officers thought so, it could not be true as the 'highest authority', Graham, had stated in his despatch that the troops had done their best.[221] One authority not used by Oman was Lieutenant Harry Jones R.E. who led the column to the main breach and was captured there after being wounded. Jones commented :

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[218] Quoted in Oman, *Peninsular War*, vol. 6, p. 583.
[219] Oman, *Peninsular War*, vol. 6, p. 584.
[220] Wrottesley, *Life of Burgoyne*. pp. 269-270.
[221] Jones, *Journal of Sieges*, vol. 2, p. 45.

> finding the descent [from the breach into the town] too great on the inside, I returned for the ladders … but upon reaching the foot of the breach everybody was running back with their heads between their legs as hard as they could. At the foot I waited, expecting them to rally and come on immediately, which not being the case, the enemy's Grenadiers jumped into the breach sword in hand and made all prisoners who were able to crawl.[222]

Oman's comment about the mismanagement has some validity, but this, sadly, was true of every other siege and the troops usually did their best despite the mismanagement of their superiors. Whether the criticism of the Fifth Division was fair or not, this was a view held at the time and Wellington was clearly concerned enough to ask for volunteers from the other divisions, which the Fifth Division took as a clear insult.

A figure who appears to have generated much of the criticism of the engineers was Lieutenant-Colonel William Gomm, who was with the Quarter-Master-General's department attached to the Fifth Division (and also an officer of the Ninth Foot, one of the regiments involved in the failed storm). Gomm's criticisms are extensively used by Oman, Fortescue and Myatt with variants of :

> The successes [at Ciudad Rodrigo and the third siege of Badajoz were] … owing to the almost miraculous efforts of our troops has checked the progress of science among our engineers… the artillery have become as summary in their proceedings as our engineers … providing they can make a hole in the wall … they care not about destroying its defences[223]

Of the above writers, only Fortescue uses the portion of Gomm's letter that reads : 'had we … attended to the niceties of the art in the attack of Ciudad Rodrigo or of [the third siege of] Badajoz it is possible we should have taken neither'. Gomm appeared to recognise that the sieges were being undertaken using methods which were not typical. Gomm commented in the same letter that in his opinion there were sufficient resources to attack according to the normal rules of siege warfare. This was clearly not a view shared by Wellington, the artillery officers or the engineers. Gomm's scathing comments continue in his subsequent letters with phrases such as : 'escaping from the

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[222] RE Journal, Jan 1890, p. 34. H.D.Jones' journal.
[223] F.C. Carr-Gomm, *The Letters and Journals of Field-Marshal Sir William Maynard Gomm from 1799 to Waterloo 1815* (London, 1881), pp. 311-12.

hands of those Philistines, the engineers' and 'when we commence [the siege] again, I dare say we shall do it a little less *en charlatan* and more *en regle'*.[224] In this same letter he also notes that 'the enemy made a sortie this morning upon our lines, and, as we did not expect them, gave us more trouble than was necessary'. Perhaps the army officers should have been paying more attention to their own duties before criticising other branches of the military. Gomm was not untypical of the ambitious, confident officer who had a view on everything, which sometimes did not match the views of their superiors or of the actual circumstances. A number of the engineer officers would also fall into this category from their private letters.[225] They may be entertaining to read but that does not make them accurate. It is a little more surprising that Gomm is so outspoken about scientific soldiers, because he was one of them, having been to the Royal Military College in 1805. It is possible that there was an element of professional jealousy in his opinions.

One final puzzling item from the first siege of San Sebastian is the complete lack of comment on the presence of a large body of the Royal Sappers and Miners for the first time. Connolly's history of the corps details their efforts in the siege and the storm,[226] but there is no mention of them by either engineer or army officers.

Second Siege of San Sebastian.

Although Wellington was busy with Soult at the end of July, he left Graham at San Sebastian with sufficient troops to maintain the blockade and keep the French from recovering any of the ground that had been taken. It was not possible to stop the French making repairs in the town but there was a limited amount they could achieve.

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[224] Carr-Gomm, *Gomm Letters*, pp. 314-16.
[225] There are similar outspoken comments in the correspondence of most of the key engineers including, Elphinstone, Jones, Pasley, Squire, Burgoyne and Ross.
[226] Connolly, *History of the Corps of Royal Sappers and Miners*, pp. 194-197.

Table 4m. Timeline for second siege of San Sebastian.

6 Aug 1813	Order received to land the siege guns.
19 Aug 1813	Supply ships arrive from England.
21 Aug 1813	Remaining supply ships arrive from England.
24 Aug 1813	Work on batteries resumes.
26 Aug 1813	Guns open on fortress.
26 Aug 1813	Island of Santa Clara seized on night of 26/27 Aug.
31 Aug 1813	Town stormed successfully, French retire to castle.
1 Sep 1813	Bombardment starts on castle.
3 Sep 1813	Governor refused second summons to surrender.
8 Sep 1813	French surrender.

Following Wellington's orders, the siege guns were returned to the transports until it was judged safe to land them again. Everything was on hold waiting for the additional guns and round shot from England. Four transports arrived on 19 August 1813 containing two full siege trains and a further full siege train arrived on 21 August 1813. There was now sufficient round shot to consider restarting the siege. For the first time in the Peninsular War, the Allied army had more heavy guns than it could use.

All the guns were in place and fifty-seven guns opened fire on the morning of 26 August 1813. The plan, as mentioned above, was similar to that used in the first siege. The larger number of guns on the eastern attack would attempt to destroy the whole south-eastern corner of the fortress. There were fewer guns used on the attack on the left (isthmus) and they made poor progress due to the distance from the walls. Graham complained about this on 26 and 28 August 1813,[227] and Wellington ordered a new battery to be constructed. Frazer noted that 'Wellington wisely ordered another and more advanced battery'.[228] This battery had an immediate impact on the wall of the fortress when it opened fire.

A false attack was made on the night of 29 August 1813, to try to get the French to blow any mines they had placed in the defences of the town, but the French were not taken in. On 30 August 1813, the damage caused by the batteries formed one continuous breach in the walls, and many of the guns were turned

[227] WSD, Graham to Wellington, 28 Aug 1813 and 28 Aug 1813.
[228] Sabine, *Frazer Letters*, p. 228. Burgoyne makes no mention of this advance battery being ordered.

to attacking any remaining defensive armament, the intention being to assault the town the following morning at low tide.

The assault was scheduled for 11:00am on 30 August 1813. The situation with regard to the perceived lack of effort from the Fifth Division in the first assault was resolved to no-one's satisfaction. General Leith, who had returned as commander of the Fifth Division on 27 August 1813, refused to have the volunteers lead the storm and they were to be held in reserve with the Fifth Division making the attack. The attack started on time and once again the troops could not get through the breaches due to the fire and defences of the French. The volunteer reserves were also thrown in without effect. An attack was also made across the estuary by the Portuguese but they did not make any better progress. After about an hour, Graham gave the risky order for the siege guns to open fire and sweep the walls and defences of the town over the heads of the attacking troops. Twenty minutes later when the guns stopped firing the situation had changed and finally the assault made some progress with the French retreating into the castle. By 2:00pm, the town was in Allied hands. It was also in ruins and large parts of it were on fire from the shelling. Following what was now becoming the norm, many of the troops dispersed in an orgy of looting and destruction that took two full days to settle down. Graham and Wellington were genuinely concerned that if the French made a sortie from the castle, the Allies would be hard pressed to hold the town. Fortunately the French were in no fit state to do so.

The Allied guns were now turned on the castle. From 1 September 1813, they bombarded it for the next six days during which time the fires continued to rage through the town. The French governor, Rey, refused another summons on 3 September 1813, and new batteries were prepared to attack the castle. At 10:00am on 8 September 1813, fifty-six guns opened on the castle, which had no covered defences for the French or their prisoners. Rey finally accepted the inevitable and raised the white flag around noon.

Casualties during the siege and assault were again high with nearly 2,400 killed and wounded. Engineer casualties were three killed including Fletcher and

three wounded including Burgoyne.[229] Burgoyne's wound was not serious and he took over temporary command of the engineers.[230] Across both sieges, out of the eighteen engineer officers present, four were killed and seven were wounded.

Analysis of second siege of San Sebastian

Over both sieges, Wellington was again pushed for time due to the very real threat from Soult who made two determined attempts to disrupt the siege and the blockade of Pamplona. There is no doubt that there would have been fewer casualties had San Sebastian been besieged according to the established rules, but, as Fletcher pointed out, this would have taken much longer. In both sieges, the time from opening fire to the assault on the town was five days. This is a very short period of time which only allowed the walls to be breached and did not allow sufficient time to destroy the defenders' artillery and reduce the garrison physically and emotionally. Ironically, Wellington had given orders to limit the amount of shell fire so as to reduce the damage to the town with the consequent reduction in damage to the defenders. Unfortunately the town was pretty much destroyed by fire and Wellington was accused by the Spanish of deliberately burning the town to the ground as a punishment for the Francophile tendencies of the population. Like the previous three sieges at Ciudad Rodrigo, Badajoz and Burgos, Wellington cut corners to reduce the time required due to external pressures. The impact of the time reduction was measured in the increase in casualties that occurred.

The biggest single criticism of the siege concerned the strategy selected for the attack. It is inconceivable that Wellington was not aware of the risk and costs associated with the plan selected. He wanted the fortress taken quickly to avoid the very real chance that Soult would relieve it. Blaming the engineers for the plan is not reasonable since they were producing plans that met the requirements given to them by Wellington. With hindsight, it may have been

[229] Fletcher, Rhodes and Collyer killed. Burgoyne, Barry and Marshall wounded.
[230] There were two officers senior to Burgoyne in the Peninsula, Elphinstone was at Lisbon and Goldfinch was at Pamplona.

better to go for the formal attack as the twin sieges took nearly two months in total, but that was not known or expected when the first siege started. However, the plan agreed by Wellington was to continue the same basic plan of attack for the second siege.[231] The criticism of the engineers and to a lesser extent the artillery, suggesting that they were indifferent to the casualties in the army, is unfair and ignores the fact that it was usually an engineer officer who was leading these desperate attacks and their casualties reflect this. The high casualties in the besieging army were caused by rushing the sieges and the responsibility for that rests with the commander. This was compounded on the first assault by the assault happening before daylight, an action that Wellington had strongly discouraged.

In terms of the operations of the engineers, both sieges were managed reasonably well. There were some problems with the use of short navy 24-pounders, the supply of working parties and the distant positioning of some batteries, but the breaches were still made very quickly despite these issues. Neither assault would have been quicker if these events had not occurred, as there were other tasks that had to be completed before the assault could happen. The siege was under the control of Graham who corresponded with Wellington daily. In some of these letters Wellington was personally critical of Fletcher and Dickson, particularly of their demands for working parties.[232] Such criticism must have undermined the credibility of these officers with Graham. Wellington knew them well, trusted them and had worked with them for a number of years, but Graham did not know them and such criticism must have affected Graham's view of their competence.

The availability for the first time of significant numbers of troops from the Royal Sappers and Miners does not appear to have had any material effect. There is a surprising lack of comment on their presence by both engineer and army

[231] Wrottesley, *Life of Burgoyne*. p. 273. The footnote on this page suggests that Burgoyne did not like the original plan and offered an alternative to Wellington on 25 Jul 1813, presumably after the failed assault. I can find no details of this alternate plan, but as mentioned above both Jones and Fletcher were of the view that Wellington wanted to persevere with the original plan of attack. Unfortunately, no-one has explained the reasoning behind the decision to persevere.
[232] For example, WD, To Graham, 16 Jul 1813, 20:30pm; 20 Jul 1813, 14:00pm; 22 Jul 1813, 09:00am.

officers. H.D. Jones makes one comment about the lack of training : 'sappers and miners who have never seen a gabion made!',[233] but this is in a letter complaining about the number of engineer and sappers present at the siege, which is full of errors. Neither Jones nor Burgoyne make any comment, but it is telling that when Burgoyne was asked to carry out some mining activities between the sieges he requested volunteers from the line regiments.[234] Though most of the sappers present were troops who had been in the Peninsula for some time, the company that arrived on 15 August 1813 was the first to have been through Pasley's School of Military Engineering. Unfortunately, the company arrived too late to have any real impact.

The first assault on San Sebastian was a very poor attempt that was never going to succeed, mainly through the bad planning on the day of the assault. The second assault on the town barely succeeded and could very easily have failed again. The pin point artillery fire during the second assault just tipped the edge in the attackers' favour. It could easily have gone either way. Wellington was lucky, again.

4.2.7. EFFECTIVENESS AND REPORTING OF SIEGES.

Of all the aspects of the British involvement in the Peninsular War, the sieges are the least impressive in terms of the outcomes and also the most controversial in terms of the reasons for these outcomes. It has been both common and convenient to blame the Royal Engineers for the failures and the high casualties and this view still persists today. Richard Glover is particularly vocal in his criticisms :

> No just estimate of the greatness of Wellington can be made except by those who have studied … the deficiencies of the Ordnance corps … On sheer ignorance of these matters rests the supposition that Wellington was bad at sieges … the most sensible line for the modern student … is

[233] RE Journal Jan1890, p. 32.
[234] Wrottesley, *Life of Burgoyne*. p. 274.

> to consider seriously only those criticisms … by the few … who possessed the knowledge for making a valid judgement.[235]

Glover's opinion is as flawed as his criticism of the alleged failings of the Ordnance. There is evidence to support the view that the fault did not lie fully with the Ordnance. The analysis above has reviewed the particular circumstances associated with each siege and reviewed the actions of the engineers involved. There is justification to question the handling of sieges by Wellington, Beresford and Graham which is supported by criticism by officers who possessed the knowledge for making a valid judgement. Many other commentators have also cited the lack of engineers and trained sappers and miners for causing some of the difficulties.[236] There is no doubt that the sieges would have been better run had there been more of these soldiers. But, and it is a big but, the lack of engineers and artificers was known before each siege started and actions should have been tailored to utilise the resources that were available. Wellington was known as a defensive general and would not take unnecessary risks in manoeuvre or battle. He appears to have had an entirely different approach to sieges, where because of the strategic importance of these places he was willing to take huge risks and accept huge losses to take the fortresses. The failures and losses at the sieges in order of impact were :

- Not enough time to use regular methods of besieging;
- Insufficient or poor quality guns and ammunition;
- Insufficient Transport;
- Insufficient engineering resources.

Applied to the sieges reviewed above, we can summarise the outcomes as follows :

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[235] Glover, *Peninsular Preparation*, pp. 105-110.
[236] For example, Oman, *Peninsular War*, vol. 5, p. 256; Griffith, *Modern Studies*, p.223; Myatt, *British Sieges*, p. 198.

Table 4n. Summary of outcomes of sieges.

Siege	Enough Time?	Enough guns and ammunition?	Enough engineering resources?	Result
1st siege of Badajoz	No	No	No	Failure
2nd siege of Badajoz	No	No	No	Failure
Ciudad Rodrigo	Yes?	Yes	No	Success
3rd siege of Badajoz	No	No	No	Success
Burgos	Yes	No	No	Failure
1st siege of San Sebastian	Yes	No	No	Failure
2nd siege of San Sebastian	Yes?	Yes	No	Success

The engineers were criticised for poor advice, particularly at the first two sieges of Badajoz and at San Sebastian. In each case the plan for the siege was based on time constraints not on best engineering practice. There is a clear case to argue that the deciding factor in the success or failure at each siege was having to work against time due to the constant threat of larger relieving forces. The French could almost always concentrate a larger force to meet a major threat. Neither the British nor the Spanish had the resources to do this. The French generally had the time to undertake sieges in the formal manner. Even with sappers it is unlikely that Wellington would have been able to wait for them to follow normal siege craft. It is difficult to look at the sieges described above and conclude that there would have been a different outcome at any of them had there had been a greater number of engineers and artificers present. The military engineering resources were not the root cause of the difficulties encountered.

Of the three successes, Ciudad Rodrigo was the best managed from the Allied side and the worst defended from the French side. The third siege of Badajoz came within a whisker of failing because the assault was rushed. The second siege of San Sebastian also came close to failing through being rushed. In each of these sieges casualties were high because Wellington did not wait for a more effective reduction of the defences.

Wellington took Badajoz in twenty-one days in 1812. The French in 1811 took forty-five days to get the fortress to surrender. In reality it should have held out for many more days and probably should never have been taken. The cost of

this rapid success was measured in men. There were some faults in the engineering, but there were also faults in the army (rash attacks, poor leadership in trenches), in logistics (transport) and in the command. The casualties were caused by attacking prematurely to meet time constraints. It is possible that Wellington was strong enough to hold off or attack Soult and then return to siege. Marmont was not strong enough to pose a significant threat either in the north or south. Wellington did not learn from the resolute defence of 1811. The same governor was there in 1812 with more experienced troops. Wellington's strong complaint of 7 April 1812 about the engineers' inability to sap to the glacis was not justified at Badajoz. Where the attack was made, no sap could be done due to the Rivellas stream. If Wellington had his way and attacked from the south, he would not have had enough guns and other resources for the attack at that point and the defences had been significantly strengthened since he last saw them.

Wellington complained regularly throughout the Peninsular War about the lack of support from the government at home, the lack of support from the Spanish and Portuguese governments, the lack of money for his operations, the lack of support from the navy, the lack of British troops to carry out his operations, the poor quality of the Spanish generals and troops, the lack of good British generals to support him, the poor supply situation and the lack of engineering resources. Wellington's complaints about the engineers were part of this pattern and in many cases were unjustified.

The army's commitment to sieges deteriorated through the war. Numerous diarists record the general antipathy of the troops and their officers to siege work. This was not seen as real soldierly activity and there was no glory in being killed in a siege. The later sieges, particularly Burgos and the first siege of San Sebastian show clear evidence of this dislike translating into poor behaviour. This is also demonstrated by the number of times that French sorties were more successful than they should have been through inattention and poor

leadership on the Allied side.[237] The Allied forces seemed to get caught time and time again and never learnt. It is easy to understand the feelings of the soldiers on storming fortresses as they took part in a succession of butcheries. Whatever the moral feelings today about the troops' behaviour after the storm, the troops were of the belief that they deserved their excesses as payment for the huge risks they took. Fortescue comments on the troops being weary.[238] The troops' appetite for siege work diminished every time they were involved so that by the time of Burgos and San Sebastian they were not interested.

What should have been of more concern to Wellington was that there also a general degradation in the troops' behaviour. Starting with the sack of Ciudad Rodrigo and Badajoz followed by the undisciplined retreat from Burgos. After Vitoria, Wellington was unable to follow up his victory because many of his troops disbanded to plunder. At San Sebastian the troops were out of control while the French were well within striking distance. Wellington made a mistake in not clamping down on this bad behaviour much earlier. Even at San Sebastian he wrote a naïve letter to Graham, *hoping* that the troops would behave and focus on the French rather than plunder.[239] It is difficult to understand why he would have any belief that the troops would act in this way.

The more recent works on these subjects leave a general feeling that sieges were of secondary importance and the reporting often contains errors that would not have crept into discussions of the main campaigns. Some examples have been included in the Introduction above but there are many more. Myatt, in his biography of Picton at the third siege of Badajoz wrote that the 'Picurina had been battered into ruins',[240] whereas all other reports indicate that there was no visible sign of damage. Esdaile, describing the same siege, stated 'the British guns needed so little support; so heavy was the weight of fire that the new siege train could bring to bear that the defenders were quickly

[237] Examples include the French sorties at Badajoz on 10 May 1811 and 19 March 1812, at San Sebastian on 17 July 1813 where numerous Allied casualties were caused by rash charges. Also the capture of two hundred Portuguese soldiers who were surprised in their trenches at San Sebastian on 27 July 1813.
[238] Fortescue, *British Army*, vol. 9, p. 232.
[239] WD, To Graham, 20 Jul 1813, 2:00pm.
[240] F. Myatt, *Peninsular General : Sir Thomas Picton*, p. 148.

overwhelmed, and no fewer than three separate breaches blown in the defences'.[241] This is an overstatement as the siege train was not that 'heavy', nor were the defenders overwhelmed as was seen when the assault was made.

In summary the story of the British sieges in the Peninsular War does not make good reading. There is some criticism directed at Wellington, but the Royal Engineers and the Board of Ordnance have come in for particular criticism over the quality and quantity of resources available. Whilst this was a contributory factor, the main causes of the poor performance were the time constraints that Wellington faced and the logistical difficulties in getting quality guns safely to the points of need. The accusation from Wellington that the Royal Engineers had no knowledge of the skills necessary to undertake sieges is unfair. The senior officers there knew what they had to do but they were unable to do it because of the resource and time constraints. The frequent claim that the French were more effective at sieges is also debatable. They certainly had more troops, and their success rate was more impressive, but the reasons were generally not tied up with the skills of the French engineers. Their successes were often due to poor defence and the desire of the Allied governors to avoid inflicting the horrors of a storm on the population, or both. The story of sieges in the Peninsular War would be very different had the magazine not blown up unexpectedly at Almeida in 1810, or Badajoz had not surrendered prematurely to the French in 1811. To fully understand why the sieges were planned in particular ways and the high casualties that were inflicted, it is important to keep the wider strategic context in mind. Wellington believed that he was working under severe time constraints at every siege and therefore the attacks had to succeed quickly regardless of the cost. Having more engineers or artificers there would have made little or no difference under this constraint.

The management of the sieges was only one aspect of the activities of the Royal Engineers during the Peninsular War. Richard Glover's, *Peninsular Preparation* takes a typically critical and restricted view of the role of the

[241] C. Esdaile, *The Peninsular War* (London, 2002), p. 384.

engineers. His analysis of their work only covers offensive siege operations.[242] Whilst this is without doubt the area that has received the most public attention, it does not adequately reflect the work they undertook. The following sections will take a more complete view on the roles and responsibilities undertaken by the corps. These other roles ultimately had a more material impact on the war.

4.3. Torres Vedras and other defences

The fortified Lines of Torres Vedras were probably the most significant piece of military engineering undertaken during the Napoleonic Wars. John Grehan rightly describes it as the cornerstone of Wellington's strategy in the Peninsula.[243] It gave Wellington a solid, defensible position from which he could launch his campaigns against the French. Torres Vedras was more than just the construction of one hundred and thirty forts, although that in itself was a significant piece of engineering. The defensive position also included the destruction of bridges and roads that would be of use to the enemy, the construction of signal posts, the flooding of ground, the construction or improvement of roads behind the Allied lines and in the last extreme fortified positions from which to evacuate the army.

Wellington had planned these defences well in advance. Having ridden the ground with Fletcher during October 1809, comprehensive instructions were written asking Fletcher to estimate the work required to make the Lisbon peninsula defensible.[244] Work started in November 1809 and continued without interruption until the Lines were manned for the first time as the army retreated into them following the battle of Bussaco. However, even at this time the work was not complete and for the next two years additions and repairs were made to the Lines. The detailed construction of the Lines is described elsewhere and will not be covered here.[245]

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[242] Glover, *Peninsular Preparation,* pp.94-104.
[243] Grehan, *The Lines of Torres Vedras*, front cover.
[244] Jones, *Journal of the Sieges*, vol. 3, p. 115.
[245] The primary source is volume 3 of Jones, *Journal of the sieges*. It is also covered in Grehan, *The Lines of Torres Vedras*; Oman, *Peninsular War*, vol, 3 and Fortescue, *British Army*, vol. 7. There was also a recent survey carried out : A.H Norris & R.W. Bremner, *The lines of Torres Vedras, The First Three Lines and the Fortifications South of the Tagus*, (Portugal, 1980).

Many Royal Engineer officers did not think the Lines would work. Grehan noted that Ross and Goldfinch thought they would be useless.[246] Squire also had major concerns and was highly critical of Wellington's decision not to defend the Portuguese frontier.[247] Some of this pessimism may have arisen because none of these officers really wanted to be working on the Lines, they all wanted to be with the army on active operations. Working on the Lines was seen as being left in a back water with no opportunity for gaining honour and glory and this could have clouded the officers' judgement.

Despite their reservations, there were a significant number of Royal Engineer officers involved in the construction. Their role in many cases was to design the works and then to manage the construction using militia and locally procured peasant labour. Between November 1809 and March 1810, at least ten engineer officers were working on the Lines and by July 1810 this number had risen to seventeen.[248] This was over half the total of Royal Engineers in the Peninsula at that time. When the Lines were occupied in September 1810, twelve engineer officers were allocated to the six districts making up the Lines with Jones keeping overall command (under Fletcher). Royal Engineer resources were allocated to the maintenance of the Lines for the remainder of the war, but as more officers became available the proportion allocated to the Lines was reduced, although the actual number did not decrease.

Keeping the Lines secret from the French was a great success and Massena had no warning at all before he first saw them from Sobral. Considering the security around these defences and Wellington's strong views on information being leaked in the English newspapers, it is very surprising that the January 1811 edition of the *Royal Military Chronicle*,[249] lists the artillery present in the

[246] Grehan, *The Lines of Torres Vedras*, p. 67.
[247] BL, ADD63106, Squire Letters. Various letters in early 1810.
[248] Jones, *Journal of the Sieges*, vol. 3, pp. 18-19. There was one engineer officer from the Kings German legion in the ten. There were two engineer officers from the Kings German Legion and three Portuguese engineer officers in the seventeen.
[249] Royal Military Chronicle, Vol.1, p. 238.

Lines. It was far too early to be making such information publicly available as Massena was still in front of the Lines at this time.

The Lines of Torres Vedras were the most visible evidence of the defensive work carried out by the Royal Engineers during the Peninsular War, but there were many other places where essential work was carried out to support Wellington's strategies. Through the early months of 1810, Wellington's despatches mention several places that were being strengthened. These include Abrantes,[250] where Captain Patton R.E. was present for many months supervising the work, Peniche, Palmella and Setuval.[251] Burgoyne was at Almeida from May to July 1810, first strengthening Fort Conception and then mining it for destruction on the advance of the French.

Wellington's strategy from 1810 to 1812 was partially dependent upon the security of his southern flank, which the continued defence of Cadiz and Gibraltar contributed significantly towards. 1810 saw an influx of Royal Engineer officers into Cadiz. Thirteen officers arrived during that year with twenty-one different officers serving there at some point during the war. Captain Lefebure R.E. the commanding engineer at Cadiz, was killed as the fort at Matagorda (near Cadiz) was being evacuated. Similarly there was a significant presence at Gibraltar. In January 1810, Landmann destroyed the forts in front of Gibraltar to save them from falling into French hands.[252] At some point during the Peninsular War, thirty-three different Royal Engineer officers served at Gibraltar. There was a similar sized presence in Sicily and officers were also present at Malta and the Ionian islands. This continued presence of the Royal Engineers was not particularly visible but it helped to deny access to key locations to the French, provided sortie points to the Allies and tied up many thousands of French troops who would otherwise have been freed to threaten the various Allied armies.

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[250] WD, To Hill, 2 Jan 1810 and 14 Feb 1810

[251] WD, To Liverpool, 31 Jan 1810. In this letter, Wellington asks for more Royal Engineers to be sent out. This seems to have been acted upon as the numbers present jumped from 14 to 21 in Mar 1810; WD, To Fletcher, 3 Apr 1810.

[252] Royal Military Chronicle, (London, 1810), vol. v, p. 28.

The other significant defensive work carried out by the Royal Engineers was in the repair of fortresses. When fortresses were taken it was vital to quickly make them defensible so as to protect them from future French advances and also to allow them to be used as storage depots and staging points. This was particularly relevant at Ciudad Rodrigo, where the fortress was in a sufficiently good state of repair in March 1812 to resist Marmont's threatening behaviour while Wellington was undertaking the siege of Badajoz.

A significant proportion of the resources of the Royal Engineers was allocated to defensive work throughout the Peninsular War. This work was typically unrecognised by the military at the time and by modern writers. The work was never high profile and often forgotten, but it made a significant contribution to the success of Wellington by keeping his lines of communication secure and by tying down large number of French troops.

4.4. River and Road Communications.

River Crossings

The nature of the terrain in the Iberian Peninsula, with numerous mountain ranges made access to bridges vitally important for the movement of armies. The loss of a bridge could entail a detour taking several days. In many areas the rivers were wide and deep all year and made effective barriers to those who did not have access to crossing points. Secondly, the rivers could be used as communication routes to move men and materials quickly to the point of need. This was particularly important to Wellington who used the rivers throughout the war to move his resources.

The rugged nature of the terrain and the unpredictability of the rivers, which could rise or fall by many feet in hours, meant that control of the permanent bridges and access to bridging equipment was a vital part of every movement carried out by both sides in the conflict. The importance of the fortresses commanding the major routes is well understood, but the control of a bridge on

a major river was as effective a defence as the walls of Badajoz or Ciudad Rodrigo.

Wellington took great care to protect his river crossings but also used rivers to his advantage during his campaigning. One example was in 1812, when Wellington ordered the repair of the Roman Bridge at Alcantara over the river Tagus, which had been destroyed in May 1809. At the same time, he also ordered General Hill to destroy the French pontoon bridge at Almaraz. The repair of one bridge for his use and the destruction of the French bridge meant that the distance Wellington's troops had to cover between Ciudad Rodrigo and Badajoz was about 250 kilometres whilst the distance the French had to travel increased by 650 kilometres.[253]

Research into the strategic and practical aspects of river crossings has been limited. A recent study by Burnham has opened up this subject for the first time but has also demonstrated the limited availability of information.[254] Bridging, more than any other area, has shown the confusion that existed and still exists in historians understanding of the roles of the Royal Staff Corps and the Royal Engineers. Published material on bridge building is restricted to Douglas' work on military bridges, first published in 1816.[255] There are unpublished manuscript notebooks on the subject from West, Scott and Burgoyne.[256] All of these documents tend to focus on the two bridges built by the Royal Staff Corps, the suspension bridges at Alcantara and Almarez and also describe the boat bridge over the Adour.[257] This has led to a perception that most bridging work in the Peninsula was carried out by the Royal Staff Corps. The only chronicler of this corps stated 'It is an undisputable fact that the Royal Staff

[253] http://www.napoleon-series.org/military/virtual/c_alcantara.html. Viewed 15 May 2008.
[254] R. Muir, R. Burnham, H. Muir, R. McGuigan, *Inside Wellington's Peninsular Army 1808-14,* (Barnsley, 2006), pp. 226-274.
[255] H. Douglas, *An Essay on the Principles and Construction of Military Bridges,* 1st Edition, (London, 1816).
[256] REM, 5501-52, Notebook of Capt West on river crossings in the Peninsula; REM, 5501-134, Notebook of Charles Rochfort Scott R.S.C.; REM, 4201-68, Burgoyne notebook on bridges.
[257] Which was primary built by the Royal Engineers, although there is some debate about this. The design was by Sturgeon of the Royal Staff Corps, but it was built by the Royal Engineers.

Corps were responsible for the building of military bridges'.[258] Appendix M below, is a comprehensive (but still incomplete) list of bridging operations in the Peninsular War. Of the sixty-five bridging events listed, only eleven were carried out by the Royal Staff Corps with fifty-one carried out by the Royal Engineers.[259] Twenty-one of the events were destruction of bridges and these were all carried out by the Royal Engineers. The Royal Engineers carried out 75% of the build and repair operations, with the Royal Staff Corps completing the remaining 25%.

Looking at the bridging events, it can clearly be seen that they played a major contribution in all of the Peninsular campaigns. The strategically important bridges at Abrantes, Punhete and Villa Velha were first constructed in late 1808 and were in position for most of the rest of the war. At least two bridges were blown up during the retreat to Corunna to delay the French. The inexperience of some of the engineers at that time was demonstrated by Lieutenant Davy R.E. who managed to blow himself up along with the bridge at Betanzos. Many bridges were mined in preparation for the retreat to the Lines of Torres Vedras, although not all of them were destroyed when the route of the French was finally known. When Massena retreated from the Lines of Torres Vedras in March 1811, a number of bridges were built or repaired to maintain the pursuit. In 1812 the two strategic bridges were repaired at Almarez and Alcantara by the Royal Staff Corps and several were destroyed during the retreat from Burgos. In 1813 and 1814 a pontoon bridge travelled with the army and was used on several occasions along with the repair of other key bridges. The final stages of the war saw Wellington needing to cross several major rivers around the Pyrenees and into France. Between October 1813 and March 1814, Wellington's troops crossed the Bidassoa, the Nive, the Adour and the Garonne. The first three were successfully bridged, but there were major problems bridging the Garonne and Wellington was very unhappy with the delays that were caused. This demonstrated that without effective bridging facilities Wellington had real difficulty in his operations.

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[258] The only work I have found on the Royal Staff Corps is F.S Garwood, 'The Royal Staff Corps', *Royal Engineers Journal*, June 1943, p. 83

[259] It is not known who carried out the remaining three.

Apart from using bridges to support the army's operations, there were also a number of bridges built to support Allied siege operations. The most notable of these were for the three sieges of Badajoz and for the siege of Ciudad Rodrigo. These sieges could not continue without the bridges and the temporary loss of the bridges at Badajoz in 1811 and 1812 severely affected the operations.

There does not appear to be any pattern as to why the Royal Engineers or the Royal Staff Corps were used to build specific bridges. It is probable that Wellington used the most appropriate resource based on expertise or availability. The Royal Staff Corps constructed temporary bridges during the Talavera campaign and at the battle of Fuentes d'Onoro because they were present with the army at that time. On most occasions though, troops were borrowed from the line regiments to work under the supervision of an engineer officer. This was also true of the Royal Staff Corps, one example being the building of the trestle bridge at Marialva in November 1811.

The important point to note is the extensive role the Royal Engineers played in the construction and destruction of river crossings throughout the Peninsular War. Like the Royal Staff Corps, the Royal Engineers had to come up with innovative designs based on available materials, as often there was a complete lack of local raw materials. A number of bridges were created during the war by dismantling buildings and using roof beams, floor boards and doors for the construction. Along with their colleagues in the Royal Staff Corps the Royal Engineers gave Wellington an operational flexibility that the French do not appear to have achieved. On the retreats to Corunna and from Burgos, the losses of the Allied army would have been much worse if key bridges had not been denied to the French. Conversely the French losses following the retreats from Oporto in 1809 and Torres Vedras in 1811 were both much worse due to the successful crossing of river barriers. The final months of the war saw Wellington successfully cross a number of major river barriers in the face of the French.

Bridging activity played a vital role in Wellington's offensive and defensive operations, and the activities and outcomes could have been very different had skilled engineers not been on hand to carry out this work.

Pontoon Train.

In the early part of the Peninsular War, Wellington had limited access to pontoon equipment. This was not an immediate problem in the defensive years of 1809 and 1810 but with the retreat of Massena, Wellington moved on to the offensive and the deficiency became more problematic. In southern Spain, the only pontoon equipment readily available was lost when the French took Badajoz in early 1811. On 31 March 1811, which was the day the make-shift bridge across the Guadiana for the siege of Badajoz was swept away, Wellington wrote asking for an extensive pontoon train to be sent out from England.[260] Jones noted in his diary on 1 July 1811 that twenty-four pontoons had arrived in Lisbon from England. Jones also subsequently noted the arrival of artificers to be specifically attached to the pontoon train.[261] Though Burnham[262] suggested that Dickson of the Royal Artillery was responsible for the pontoon train, it is clear that the Royal Engineers were primarily responsible. Lieutenant Piper R.E. was in charge from the pontoon train's formation in 1812 and Captain English also joined when there were sufficient pontoons to form two trains.[263] The Royal Artillery were tasked with maintaining the unreliable carriages and providing the resources to pull the train, a situation which caused considerable resentment when artillery horses were commandeered to pull the pontoon train at key points in the war. Wellington made a mistake when he asked for the pontoon train, stating it was not necessary to send out horses, as bullocks would be provided locally. The size and weight on the pontoons made them very difficult to move and the lack of motive power was a constant problem. By June 1812 the pontoon train had

[260] WD, 31 Mar 1811. Letter to Liverpool suggesting a pontoon train of 80 pontoons is sent out. His despatches for the previous couple of weeks have numerous entries about trying to get bridges built.
[261] REM, 5501-59-2, Jones' Diary, 1 Jul 1811. He also noted on 11 Jul 1811 three artificers arrived in Lisbon to be attached to the pontoon train and on 29 Aug 1811, seven more arrived.
[262] Burnham et al. *Inside Wellington's army,* p. 264.
[263] English Review, vol, xvii, 1852, p.159.

grown to thirty-six pontoons.[264] As more soldiers from the Royal Sappers and Miners became available, companies were permanently attached to the pontoon train. In 1813 three companies were attached to the pontoon train for the Vitoria campaign. In a rare case of joint operation, troops from the Royal Staff Corps were also attached and they worked together through the campaign.[265]

River and road communication

Another unseen aspect of the role of the Royal Engineers was their work on improving communications for the army. This was for the purposes of better troop movement and more efficient supply lines. As mentioned above, an integral part of the lines of Torres Vedras was the improvement to the roads behind the lines that allowed Wellington to rapidly concentrate troops against any French threat. Conversely, Wellington had ordered several roads approaching Torres Vedras to be destroyed to impede the movement of the French. While Massena was stationary in front of Torres Vedras the engineers were busy on the south side of the Tagus repairing roads and bridges, including those from Chamusca to Aldea Gallega.[266]

Preparation for the siege of Ciudad Rodrigo and the subsequent campaign included work to improve the navigability of the river Douro. Two Royal Engineers were employed in late 1811 improving the upper reaches of the river up to the border at Barca d'Alva.[267] After the siege of Ciudad Rodrigo, Lieutenant Marshall R.E. was sent to continue the improvement work. Following complaints from the commissary who brought supplies up in early 1812, Burgoyne was asked to go and review the river and spent three weeks in May and June 1812 carrying out a further survey of the river.[268]

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[264] WD, To Fletcher, 2 Jun 1812.
[265] Connolly, *History of the Royal Sappers and Miners*, vol. 1, p. 193.
[266] REM, 4201-68, Burgoyne's diary, 27 January 1811, p. 109. Squire and Forster R.E. carrying out the work
[267] REM, 4601-57-1, Emmett's Diary, 29 Nov 1811. Ross and Emmett were ordered to carry out the work.
[268] Wrottesley, *Life of Burgoyne,* vol. 1, pp. 189-190

4.5. Surveying and Reconnaissance

Henry Lloyd commented in his theories on military science that :

> The next, and indeed most important object of any, to those who aspire to the command of armies, is geography; not only that which consists in a general knowledge of a country, but a local one: a man must be thoroughly acquainted with the face of the country.[269]

Up-to-date topographical information on the Peninsula was not available in the early stages of the war to either the French or the British commanders. Both sides relied on old and often inaccurate maps and this led to some serious operational errors.[270] From the arrival of British troops in the Peninsula in 1808, Royal Engineer officers were tasked with surveying and reconnaissance activities in support of both defensive and offensive operations.

Comprehensive standing orders were issued to Royal Engineer officers on their duties when attached to the army :

> The Engineer … will observe the general features of the country through which they pass … Rivers should be particularly attended to …bridges, whether of wood or stone, … whether capable of bearing artillery … the population of towns and villages, their distances from each other, and their means of supply .. In general whatever can facilitate or retard the march of the army … must be digested into a written report.[271]

This instruction went on to specify that sketches were to be made of any position the army took and any fortification that they passed. These activities were part of a wider operation involving officers often (but not always) under the control of the Quarter-Master-General's (QMG) department.[272] The surveying and reconnaissance activities were carried out by four groups : specific officers appointed for the purpose within the QMG's department, officers from the Royal Staff Corps, Royal Engineer officers and volunteer officers from the line regiments. It is not clear how well co-ordinated these activities were. Romans, has noted the development of military intelligence within the Quarter-Master-

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[269] Speelman, *Henry Lloyd*, pp24-25.
[270] For example, both Junot and Marmont made bad decisions on the routes to invade Portugal.
[271] Shore, *Engineer Officer under Wellington*, pp. 13-14.
[272] This involved officers from the Royal Staff Corps and also dedicated sketching officers from the QMG staff.

General's department, but also recognises that divisional commanders often carried out their own reconnaissance primarily to meet their local needs.[273] This was not always appreciated by Wellington, who was insistent that intelligence should be routed through his staff to ensure he always had the best information. On occasions Royal Engineer officers worked with QMG staff officers on reconnaissance,[274] but more often than not, their orders came direct from Wellington or the Commanding Royal Engineer in the Peninsula. The impact of this work was that, through much of the war, Wellington had better information on the topography than the French, which while due partly to the better relationships with the Spanish was also due to continuous work by British officers to map and describe the terrain and the towns.

George Landmann R.E. recorded as early as June 1808 that he was employed surveying enemy positions around Ayamonte.[275] Over the following months, he was used to survey the area of operations and potential retreat routes for Sir John Moore.[276] But he was not alone in being used extensively in these early operations. Pasley was ordered to reconnoitre the mountains in Asturias for General Leith in September 1808,[277] and was present throughout the retreat. Boothby was ordered in October 1808 to inspect the Spanish frontier around the river Tagus at Alcantara.[278] He continued surveying roads and towns through November and December 1808 before being employed on reconnaissance duties during the retreat to Corunna.[279] Burgoyne was sent to assess the capability of Ciudad Rodrigo to defend itself,[280] and Captain Carmichael-Smyth R.E. reconnoitred the country between Astorga and Villa Franca in December 1808.[281] While the British army under Sir John Moore was

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[273] M. Romans, 'Professionalism and the Development of Military Intelligence in Wellington's Army 1809-14'. PhD Thesis, (Southampton, 2005), pp. 23-24.
[274] For example, Romans, p. 85. 'Royal Engineers on reconnaissance also provided intelligence of the enemy. Captain Goldfinch accompanied the exploring officer John Water in his observations of French forces.'
[275] G. Landmann, *Recollections of my Military Life* (2 volumes, London, 1854), vol. 2, p.12.
[276] REM, 4201-305, Landmann to Holloway, 20 Feb 1809. Also ADD57544 f. 204, Mackenzie to Moore, 13 Dec 1808, Landmann sent to carry out reconnaissance upper Beira
[277] BL, ADD41962, Pasley papers, f. 95.
[278] Boothby, *Under England's Flag,* pp. 161-164.
[279] Boothby, *Under England's Flag*, p. 203.
[280] BL, ADD57544, f. 184. Burgoyne to Moore, 10 Dec 1808.
[281] BL, ADD57544, f. 146, 25 Dec 1808.

retreating, Burgoyne was sent to Vigo,[282] and Fletcher sent to Corunna[283] to report on their suitability for evacuation. Moore's decision to retreat to Corunna was based on these reports.

Engineer officers were working through the start of 1809 as planning began for defending Portugal from the French. In March 1809, Lieutenants Rice Jones and Stanway R.E. were ordered to reconnoitre ground around Thomar and Leyira.[284] Two engineer officers were captured when Soult took Oporto, although both were released when Wellington ejected Soult in May 1809.[285] Wellington immediately ordered surveys of the surrounding areas. Burgoyne and other Royal Engineer officers spent much of May to July 1809 on such work. Initially they provided detailed reports on the River Douro from Oporto to the Spanish frontier. Details included distances, road condition, river details, terrain, size and defensibility of towns, number of boats, bridges, ferries and fords.[286] Later their work focussed on surveying towns on the northern Portuguese border. Detailed reports were provided on Caminha, Villa Nova, Valenca, Tuy, Moncao, Melgaco, Chaves, with further notes on possible routes to Oporto.

John Squire, who for much of 1810 and 1811 was attached to General Hill's corps in the south, noted in August 1810 that he was 'constantly employed by General Hill in reconnoitring'.[287] Later, in 1810, Squire was ordered to reconnoitre Salvatierra and Punhete following reports of the French having many boats there and concern that they might try to cross the river Tagus.[288] Similarly, Rice Jones noted making almost daily excursions either alone or with General Craufurd in late 1811.

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[282] Wrottesley, *Life of Burgoyne,* vol. 1, p. 31.
[283] BL, ADD57544, f. 258. Although the decision was made to embark at Corunna, Captain John Birch R.E. who was sick at Corunna at the time had written to General Leith stating it was unsuitable. NAM, 7004-16, f. 16. 20 Dec 1808.
[284] Shore, *Engineer Officer under Wellington,* p. 7.
[285] Goldfinch and Thompson.
[286] REM, 4201-68, Burgoyne's Diary, May to July 1809. Also REM, 4601-72 and Wrottesley, *Life of Burgoyne,* vol. 1, p. 46.
[287] BL, ADD63106. Squire letters, ff. 5-6.
[288] Wrottesley, *Life of Burgoyne,* vol. 1, p. 120 and BL, ADD63106. Squire Letters, ff. 13-15.

During the retreat in front of the French in summer 1810, Burgoyne and Fletcher were surveying defensive positions that Wellington could potentially use depending upon the route the French took. The position at Bussaco was one of those surveyed.[289] Once the French were static in front of Torres Vedras, Burgoyne was despatched to survey the river Mondego from Coimbra to the mouth of the river.[290] In the same period, Lieutenant Reid was ordered to survey the area from Ota to the river Tagus.[291]

There are also examples of other types of survey work. In November 1811, Burgoyne was asked to identify positions to bivouac troops out of sight of Ciudad Rodrigo prior to the siege commencing.[292] Through May and June 1812, Burgoyne was surveying the river Mondego with a view to improving communications. In August 1813, Wellington asked for an officer to be sent to Guertaria to evaluate the possibility of building wells and estimate the size of garrison required there.[293]

The activities listed above are just examples and are not an exhaustive list of such events. Evidence from the engineer diaries shows that survey and reconnaissance work was a significant part of the duties of the engineer officers. Whether based at headquarters, with divisional commanders or at static locations, engineer officers were frequently employed collecting topographical information to assist in the operations of the army and the defence of the Peninsula. Romans comments :

> Staff reconnaissance was related to, rather than distinct from the functions of the two technical services [Artillery and Engineers]. Staff Officers were expected to report in detail on features such as river crossing points, but once potential locations had been identified, it usually fell to the Royal Engineers to provide a specialist report. Similarly, while Assistant QMG's or their deputies reported on the suitability of roads for wheeled transport, such initial observations were frequently referred to artillery officers for a second opinion.[294]

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[289] Wrottesley, *Life of Burgoyne,* vol. 1, p. 107.
[290] REM, 4201-68, Burgoyne's Diary for 1810, pp. 65-75. Also REM, 4201-72, f. 1810/11.
[291] REM, 2001-149-4; 28 Dec 1810.
[292] REM, 4201-68. Burgoyne's diary. 26 Nov 1811.
[293] WD 2nd ed, vol. 6, p. 678, To Graham. Stanway R.E. was sent.
[294] Romans, 'Development of Military Intelligence in Wellington's Army', p. 64.

Based on evidence from the engineer officers' letters and diaries it appears that their involvement in reconnaissance was more widespread. Apart from official requests to carry out survey or reconnaissance work, many engineer officers routinely kept detailed journals of their travels, noting terrain, town and weather details. There is no doubt that this information was shared with their peers in the ordnance, but it was also used to provide topographical information to army commanders on request. The inference, based on the lack of requests for work coming from the Quarter-Master-General, is that there was not direct co-ordination, but there is no reason to assume that survey reports delivered to Wellington from the Royal Engineers did not find their way into the global pool of intelligence.

4.6. Activity with the Army on Operations

The officers from the Royal Engineers were no different to the officers from the army in their aspirations. Most wanted to serve with the army on operations and were unhappy when they were given tasks that kept them away from this centre of activity. Although the majority of engineer officers were involved in static activities, building and strengthening defences, there was a core that worked and travelled with the army when it was on operations. The evidence below shows that they were generally welcomed into the general officers' 'military family' and were used extensively by them. Wellington may have had an extensive staff around him, but the other generals had fewer staff. The Royal Engineer officers represented a skilled resource that all the generals including Wellington gratefully accepted and used. Below are some examples of the roles and activities that engineer officers carried out when assigned to the army. The examples build on the previous sections and show that the engineer officers had a much wider role than historians have previously realised and were used by military commanders often in roles that would have been expected to be given to line officers.

In the early stages of the Peninsular War a number of engineer officers were employed as Aides-De-Camp (ADC) and staff officers. Captain Edward

Fanshawe R.E. accompanied Sir Hew Dalrymple to Portugal in 1808 acting as his Military Secretary during that time and during the negotiation of the Convention of Cintra.[295] Pasley was used as an extra ADC first by Sir David Baird and then by Sir John Moore during the Corunna campaign. He was ordered to attach himself to Blake's army in November 1808, to 'report its state, position and operations'.[296] Pasley wrote a lengthy report on his findings to Baird in early Jan 1809.[297] In December 1808 he was writing to Moore with reports from a spy in Burgos.[298] Pasley was clearly considered to be part of Moore's family as he was present when he died and also at the burial, which was only attended by Moore's senior officers and ADC's.[299] During the Corunna campaign, Burgoyne was used to transmit key orders to General Hope and to act as a guide in the required operations.[300] Captain Lefebure R.E. was 'employed as a missionary on affairs of very particular importance', being sent to Bilbao with a message to the leaders in the Biscay regions.[301] In September 1808, Captain Birch R.E. was ordered by General Leith to join the Spanish headquarters to 'enquire into the force, disposition and intended movements of that army'. He met Castaños and Blake and accompanied them to visit Palafox at Saragossa.[302] Landmann was sent from Lisbon to Seville carrying despatches for the British Minister there.[303]

From Wellington's first campaign in 1809, engineer officers were allocated to each of his divisions whilst they were on operations.[304] These allocations tended to be semi-permanent for much of the war. Up to his death, Squire was always attached to General Hill's Corps, Burgoyne was attached to Picton's Third Division and Rice Jones to the Light Division. As illustrated above, a

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[295] Royal Engineer Professional Papers, New Series, Vol. 9, 1860, p. 62. This is a rare occasion of an Ordnance officer taking an official staff position in the army.
[296] BL, ADD41962, Pasley Papers, f. 100.
[297] NAM, 7004-16, f. 4.
[298] BL, ADD57544, f. 182. Pasley to Moore 10 Dec 1808.
[299] BL, ADD41962, Pasley Papers, f. 127, Pasley to his sister, 30 Jan 1809.
[300] Wrottesley, *Life of Burgoyne,* vol. 1, p. 29.
[301] Boothby, Under England's Flag. p. 184; BL, ADD41962, f. 98. Pasley to Fletcher.
[302] NAM, 7004-16 f. 2.
[303] REM, 4201-305, Landmann to Holloway, 20 Feb 1809.
[304] For example, Wrottesley, *Life of Burgoyne,* vol. 1, p. 37.

primary role for these officers was in carrying out survey and reconnaissance activities.

Engineer officers also were regularly involved during military operations being present at almost every battle in the Peninsular War. Boothby described the role of an engineer officer in battle : 'he is always acceptable in the field if mounted, because he is generally a good sensible smart fellow .. and is trustworthy in the communication and explanation of orders … we generally offer our … services as aides-de-camp'.[305]

Elphinstone was wounded at the first battle at Rolica in August 1808.[306] Landmann was also present at the battle and describes it in detail in his recollections.[307] He was with Wellington for part of the action and was sent to assist General Fergusson. Lieutenant Wells R.E. was used as an ADC at the battle of Vimiero and was captured due to his poor eyesight, spending much of the remainder of the battle with the French general, Junot.[308] Lieutenant Edmund Mulcaster R.E. was also with Wellington's party and after expressing concern about the nearness of some French skirmishers was ordered to collect some soldiers and drive them off.[309]

Lieutenant Hamilton R.E. was wounded at the taking of Oporto on 12 May 1809. He had been sent to place some riflemen in position when he was caught between charging British dragoons and the enemy. He chose to charge with the dragoons and was shot through both legs. He never recovered from these wounds and died later that month in Lisbon.[310] In the same action, Burgoyne and Rice Jones were employed collecting boats to cross the river Douro.[311]

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[305] Boothby, *Under England's Flag.* P. 218.
[306] REM, 4201-274, 20 Aug 1808.
[307] Landmann, *Recollections.* vol.2, pp.130-170.
[308] Porter, *History of the Royal Engineers*, vol. 1, p. 245.
[309] Porter, *History of the Royal Engineers*, vol. 1, p. 244.
[310] Wrottesley, *Life of Burgoyne,* vol. 1, p. 41.
[311] Shore, *Engineer Officer under Wellington,* p. 22.

Active involvement in battles continued throughout the war. The commanders of detached corps also used the engineer officers in a similar way. One example was General Graham after the battle of Barossa in 1811, when he praised Captains Birch and Nicholas personally for their contribution during the battle.[312]

Wellington's trust in some of the engineer officers was demonstrated at El Boden on 25 September 1811, when he asked Burgoyne to stay with a Portuguese regiment which was under heavy fire and assist in keeping it under control.[313] Burgoyne, like Dickson in the artillery, was particularly trusted by Wellington. He was often involved in tasks that would normally have been carried out by staff officers. For example, he took in the summons for surrender to the French governor at the first siege of San Sebastian in 1813 and carried out the negotiations with the French to conclude the ceasefire at Bayonne in April 1814.[314] In a similar vein, Fletcher was ordered to command a force that was sent to take the cattle belonging to the French that were grazing outside of Almeida on 11 April 1811.[315]

There were also occasions when engineer officers supported the Spanish forces. Lieutenant Reid spent some time with Don Carlos D'Espana in late 1811. Burgoyne noted that Don Carlos wrote to Wellington asking for Reid to be allowed to stay with him and Reid was also keen that this would be allowed.[316] On another occasion, Lieutenant Wells R.E. was seconded to assist the Spanish attack on Santona.[317]

Another area of activity which did not conform to the engineers' official role was the construction of field works. This was clearly the responsibility of the Royal Staff Corps. In another example of the blurring of responsibilities, there are numerous examples where the Royal Engineers were ordered to construct field

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[312] REM, 4201-68, Burgoyne's diary pp. 117-120
[313] REM, 4601-57-1, Emmett's diary, 25 Sep 1811.
[314] WSD, vol. 9, p. 43, Colville to Wellington. 27 Apr 1814
[315] REM, 5501-59-1, Jones' diary, 11 Apr 1811.
[316] Wrottesley, *Life of Burgoyne,* vol. 1, p151.
[317] Connolly, *History of the Royal Sappers and Miners*, vol. 1, p. 198.

works. This became more evident later in the Peninsular War when there was a greater number of Royal Sappers and Miners present. After the second siege of Badajoz, Fletcher went to Campo Mayor on 22 June 1811 to lay out two redoubts for the defensive positions that Wellington took up to face Soult and Marmont.[318] Burgoyne, Rice Jones and Stanway joined to assist. Jones' diary noted in September 1811 that he was ordered by Wellington to lay out positions for the army at El Boden and Fuente de Guinaldo. He also noted that the work was started on these positions by four hundred and fifty troops from the Fourth Division.[319]

There are numerous references to the building of field works during the Pyrenees campaign of 1813. These include orders to construct defences at the bridge over Bidassoa on 13 October 1813;[320] Lieutenant Pitts R.E. and a company of Royal Sappers and Miners built several field works around Vera after the action there on 7 October 1813;[321] and Smith prepared defences around Irun.[322]

These examples show that, though small in number, the Royal Engineers played an important part in the operation of divisional and headquarters staff with the Allied armies. Early in the Peninsular War it is clear that the lack of educated and intelligent staff officers meant that Royal Engineer officers were given many responsible tasks to assist their commanders. There is also clear evidence that they played an important role with the army whilst on active operations. Apart from their training in surveying and sketching, which made them useful for intelligence work, their knowledge of languages must have been very useful for communication with Spanish, Portuguese and French officers. It is important when looking at the command staff activities in the Peninsula that the presence of engineer officers is not overlooked. Their presence gave a significant boost to the resources available. There is also clear evidence that they played a full part in the operations of the staff groups at the divisional level.

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[318] REM, 5501-59-1, Jones' diary, 21 Jun 1811.
[319] REM, 5501-59-1, Jones' diary, 15 and 23 Sep 1811.
[320] WSD, Vol, 8, p. 298.
[321] Connolly, *History of the Royal Sappers and Miners*, vol. 1, p197;
[322] WSD, vol. 8, pp. 191, 204

4.7. Relationship with the Royal Staff Corps

The presence of the Royal Staff Corps and the Royal Engineers in the Peninsula had the potential to create difficulties. The Royal Staff Corps were part of the Quarter-Master-General's department under the control of the Horse Guards and the Royal Engineers were part of the Board of Ordnance. On paper their roles were separate, the Royal Engineers focussing on permanent works and sieges while the Royal Staff Corps worked on communications and temporary works. In practice, as has been shown above, this distinction was not evident, with both groups carrying out tasks that in principle were the responsibility of the other group. For most of the Peninsular War there were simply not enough of either group to meet the demands of the army and a pragmatic approach appears to have developed that whoever was available was used.

Although on most occasions the two corps worked on separate tasks, there were a number of occasions when they worked together. These include Royal Staff Corps artificers erecting a telegraph station at Celorico under the directions of Captain Chapman R.E. in 1809,[323] Royal Staff Corps artificers being attached to the reserve artillery in 1812,[324] and Royal Sappers and Miners and Royal Staff Corps artificers being attached to the pontoon train in 1813.[325] The most notable occasion was the massive bridging operation across the river Adour in February 1814. The scale of the operation meant that all available resources had to be pulled together and there was also a significant input from the Royal Navy. There has been some criticism that the Royal Engineers unfairly claimed the credit for this construction, when in fact the Royal Staff Corps built the bridge.[326] Officially the command of the bridge construction was entrusted to Elphinstone of the Royal Engineers. He was certainly of the opinion that it was built under his command. In a letter home, he noted receiving a letter ordering him to make the bridge and 'that the staff corps

[323] Shore, *Engineer Officer under Wellington*, p. 60.
[324] Dickson, *Manuscripts,* vol. 4, pp. 738 , 740.
[325] Connolly, *History of the Royal Sappers and Miners*, vol. 1, p.193.
[326] 'The Royal Staff Corps', *Royal Engineers Journal*, June 1943, p. 95, and Burnham, *Inside Wellington's Army*, p. 230, quoting from Napier and Oman.

were to be under my orders'.[327] Sir John Hope who was in local command while Wellington was with the army, noted that Elphinstone was in charge of the task and that Burgoyne and Sturgeon (Royal Staff Corps) were following his orders.[328] Similarly, Larpent describes it as 'Elphinstone's bridge', and recorded that he had seen Elphinstone's plans and drawings.[329] There is no doubt that Sturgeon and Major Tod of the Royal Staff Corps were involved in the design of the bridge.[330] Wellington sent Tod to discuss the design with Admiral Penrose on 7 February 1814, but Wellington was corresponding with Elphinstone on the planning and construction of the bridge.[331] It is unusual that in Wellington's official despatch on the crossing of the Adour, he did not mention the Royal Staff Corps or the Royal Engineers, although several Royal Naval officers are mentioned.[332]

Generally though, relationships between the two groups of officers themselves appeared cordial. Sturgeon, the senior officer of the Royal Staff Corps had transferred from the Royal Artillery. He would have known and trained with some of the senior Royal Engineer and Royal Artillery officers. Burgoyne, in his diary makes criticisms of Sturgeon's attempts to destroy a bridge and his design for ladders at the siege of Ciudad Rodrigo, but these complaints are no more frequent than his negative comments on the performance of his fellow engineers.

4.8. Improvements in Training and Experience

Though some of the Royal Engineer officers admitted that they had limited practical experience at the start of the Peninsular War, there were instructions in place to assist inexperienced officers on their first campaigns. Rice Jones'

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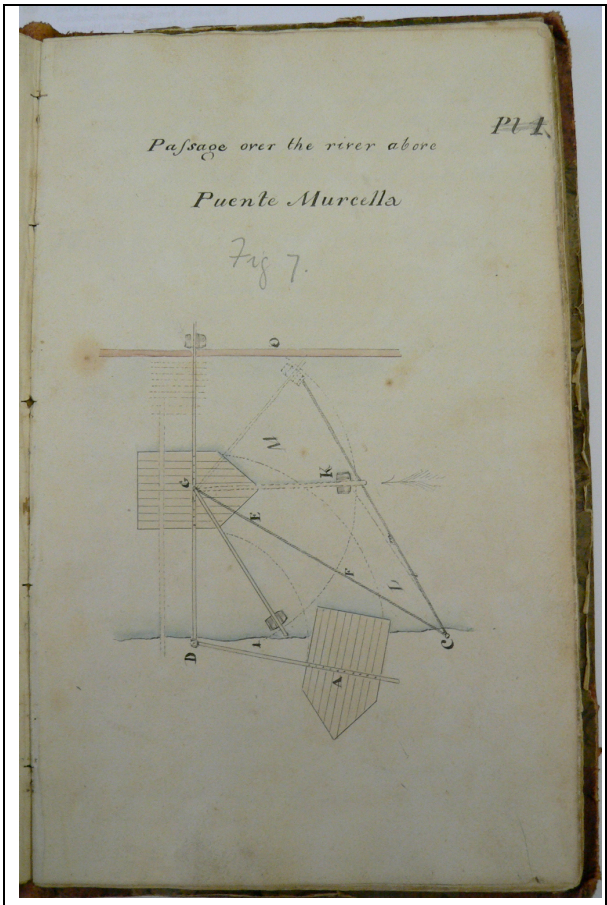
[327] REM, 4201-274, Elphinstone to his wife, 3 Feb 1814.
[328] WSD, vol. 8, p. 595, Hope to Wellington, 25 Feb 1814. This is very unusual in that Sturgeon was senior to Elphinstone. One possible reason may be that the construction was carried out by the Royal Engineers although the original idea came from the Royal Staff Corps (See REM, 4201-68, Bridges, ff. 24-25). Sturgeon's role was advising not commanding. The design was a variant of the suspension bridge design used by Sturgeon at Alcantara and Almarez.
[329] Larpent, *The Private Journal of F.S. Larpent.* (3 volumes, London, 1854), vol. 2, p. 301, 305.
[330] REM, 4201-68, Note book on bridges, ff. 24-25. Burgoyne recognises that the suggestion came from Sturgeon and Tod had a principal hand in the idea and execution.'
[331] WD, vol. 9, p. 505, To Penrose, 7 Feb 1814, and p. 516 To Elphinstone, 13 Feb 1814.
[332] WD, vol. 11, p. 538, To Bathurst, 1 Mar 1814.

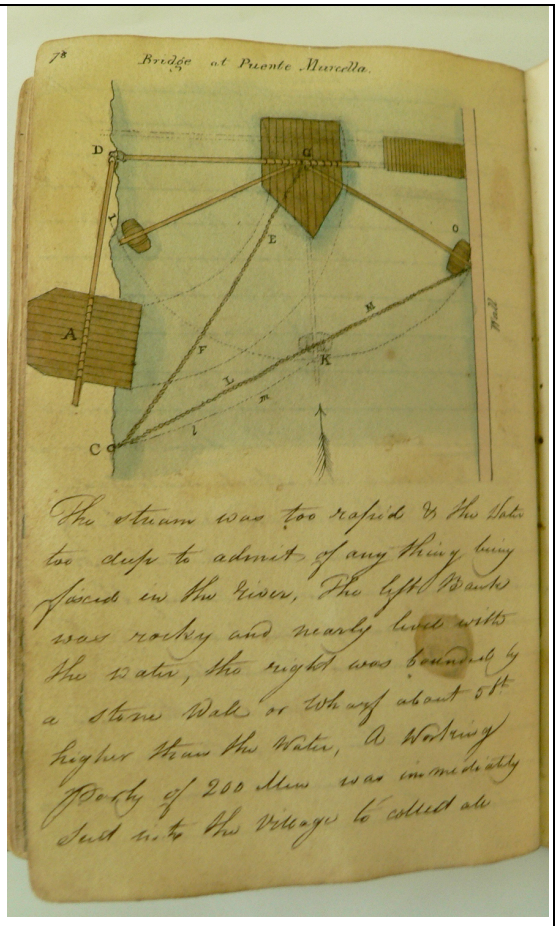
diary[333] contains instructions to officers on active operations outlining the sort of information they should be collecting as part of their normal daily movements. Examining the diaries that still exist, there are detailed descriptions of towns, roads and terrain with comments on people and the weather. There are sketches to provide further detail and hand drawn maps which give information on roads and distances. Assuming that much of this information found its way back to the operational leadership, then over the course of the Peninsular War, the level of knowledge must have increased significantly.

One thing that does become apparent when looking through the letters, notebooks and diaries of the operational officers, is that they did share information. For example, the notebooks of George West R.E.[334] and Charles Rochfort Scott, R.S.C.[335] contain almost identical hand-drawn images and notes explaining how a bridge was repaired or a pontoon was installed.

Figure 4.2. The notebooks of G.I.P. West. R.E. and C.R. Scott. R.S.C.

[333] Shore, *Engineer Officer under Wellington*, pp. 13-14.
[334] REM, 5501-52, Notebook of G.I.P. West.
[335] REM, 5501-134, Diary of Charles Rochfort Scott.





It is evident that the professional courtesy of the scientific soldiers meant that they were willing to share their knowledge and experience with their peers. Burgoyne's notebook on bridging also has similar diagrams and he recorded that his notes on bridging using casks were taken from experiments carried out by Pasley at Chatham in 1813. The same notebook also provides information on how the French repaired bridges (for example the bridge at Ponte Murcella),[336] and describes notes made by Lieutenant Piper on the operation of the pontoon train. Burgoyne wrote lengthy notes on bridging in August 1814 at the request of Ordnance headquarters for use at the Royal Military Academy and School of Military Engineering.[337]

There is evidence that such information was being circulated at an individual level. Writing to Squire in October 1811, Burgoyne enclosed a letter from a fellow officer with information on the destruction and repair of bridges.

[336] REM, 4201-68, Notebook on Bridges and passage of rivers.
[337] REM, 4601-72, f. 1814/11

Burgoyne asked for the letter to be returned after Squire had read it.[338] The formation of the unofficial 'Society for Procuring Useful Military Information' in 1810 which is described above showed that the engineer officers on active campaign were taking their professional responsibilities seriously. Moving more slowly, the Board of Ordnance was also working to improve officer competence. The establishment of the School of Military Engineering in 1812 gave a further opportunity to ensure that junior officers had some practical experience prior to their first active appointment :

> Since that period [the formation of the School of Military Engineering], the junior officers of the Royal Engineers, and all the non-commissioned Officers and soldiers of the Department, in addition to the studies requisite for their respective stations, have been diligently exercised, not only in the execution of parallels, approaches, batteries, saps, mines, and other works of siege; but also in the manoeuvres of pontoons, and in the formation of military bridges in general.[339]

Apart from the training and education of the engineer officers, the engineers were also very aware of the limitations caused by the lack of trained artificers to support them. This deficiency led to the small number of engineers being constantly stretched due to them having to teach and monitor the activities of the soldiers from the line regiments who were drafted in to help. Usually there was little assistance from the officers of the line regiments, who universally loathed siege work. The second consequence of this deficiency was the number of engineer officer casualties that occurred as a direct result of the first. Many officers lost their lives while demonstrating to untrained soldiers the nature of their duties. This was a constant theme of correspondence during 1810-1813 when siege operations were undertaken. A trickle of artificers were sent out to the Peninsula but even when they were present, their training often proved inadequate and complaints about them came home with great regularity. A typical example was :

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[338] Wrottesley, *Life of Burgoyne,* vol. 1, p. 145.
[339] Pasley, *Course of instruction*, vol. 2, p. 5.

> One company of artificers were up who knew nothing and were made no use of except 3 or 4 individuals. The officers of Engineers consequently had everything to arrange and do themselves.[340]

A number of officers regularly wrote home asking for more artificers to be sent out and one, John T. Jones was reprimanded in 1812 for writing about the unwillingness of the Inspector General of Fortifications to risk artificers on campaign, writing : 'Nero fiddled whilst Rome Burned'.[341]

But despite these problems and complaints, the Royal Engineer officers were working to improve the situation. Through most of 1811 and 1812, groups of Royal Military Artificers and volunteers from the line were being trained by engineer officers when time permitted. These efforts continued for the remainder of the war. Lieutenant Matson, R.E. was assigned to train the Royal Sappers and Miners artificers in the winter season prior to 1813 campaign.[342]

The efforts of Pasley in England and several officers in the Peninsula and the complaints by Wellington, eventually led to the formation of the Royal Sappers and Miners. By the end of the war, there was both an increase in quantity and quality of the specialist troops to support the engineer officers.

On a wider level, there was also evidence of the increased awareness of the need for improved professionalism in the army. Whilst the output of officers from the Royal Military College was still small, the first military journal appeared during the Napoleonic Wars. The Royal Military Chronicle was first published in November 1810 and was designed to provide both up-to-date organisational information (promotions, despatches) and also material designed to improve the knowledge of the officer. This included military histories, current information from campaigns around the world and material on the duties of officers. There was a surprising amount of material on offensive and defensive fortifications that possibly reflected the ready availability of material and officers willing to

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[340] REM, 5501-139, JFB to CWP Ciudad Rodrigo, 12 Feb 1812.
[341] Kealey, p. 12. This quote is from Jones' private autobiography.
[342] Connolly, *History of the Royal Sappers and Miners,* vol.1, p.193 .

contribute. After the war, the United Service Journal became a major contributor to military thinking in England and a major campaigner for changes.

4.9. Review of performance during the Peninsular War.

What this section shows is that the role of the Royal Engineer officer was much more wide ranging than is currently thought. The activities carried out by the Royal Engineers made a vital, but often unseen, contribution to the war. They were not just brought out of storage and 'dusted off' when sieges were needed but played an active and useful role with the army through its operational and static phases. Unlike most officers in the army, they were busy during the non-operational seasons carrying out tasks such as improving static defences and communications, training soldiers or undertaking survey and reconnaissance work.

The safety of Lisbon, Cadiz and Gibraltar were ensured by the continuous work carried out in those locations. Although they were never tested by the French, the formidable Lines of Torres Vedras had enormous strategic significance for the Allied cause, giving a safe defensive position for Wellington's army, a secure delivery point for the supply chain and a base from which to launch his offensive campaigns. There was a large engineer presence in these areas throughout the war and this gave the Allied armies safe havens from the French and tied up large numbers of their troops. The quick repair of fortresses made them safe against the French and provided staging points for the Allies and the guerrillas. By their strategic location on the communication routes, they also made the movement of French troops, messengers and supplies more difficult. The analysis above has also demonstrated, for the first time, the major contribution that the Royal Engineers made to bridging in the Peninsula. This role is not fully appreciated by historians and needs further work to build on the useful first study by Burnham.

Another point that has not been noted in previous studies is the wider role that Royal Engineer officers played in supporting the command structure of the

army. Although some of the information used above has been available in print for many years, it is only when these various comments are brought together with unpublished material that a clearer picture emerges of the frequent and comprehensive effort by engineer officers to support the needs of divisional, corps and army command. Particularly in the early stages of the Peninsular War, the Royal Engineer officers were used extensively in staff roles to support their commanders, sometimes travelling large distances and working with the Spanish armies. Recent studies, such as that by Romans, are beginning to explain how military intelligence was collected and used, but this only touches on the complementary roles of the Royal Engineers and the Royal Staff Corps.

The review of the Allied sieges has shown that they were generally believed to be badly planned and executed. The Royal Engineers came in for particular criticism on both the strategies employed and actual operations. Much of this criticism is unjustified and the problems were often caused by poor equipment , limited resources or time constraints. Mistakes were made, but there is no evidence to suggest that they had a material effect on the outcome of any of the sieges. With hindsight it is always easy to conclude that a particular plan of action would have been better than the one selected, but whether this would really have made a difference to the outcome is debatable.

There were some major deficiencies, particularly the lack of trained sappers and miners. This was recognised both in England and in the Peninsula. The Board of Ordnance was moving slowly to address the issue, the biggest change being in mid-1811 with the expansion on the Royal Military Artificers and the decision to rotate the locations of the companies . There is no doubt that the pressure applied by Wellington did contribute to the earlier introduction of some changes, particularly the establishment of the School of Military Engineering. While these changes were being introduced the engineers in the Peninsula were taking steps themselves. These included the training of volunteers from the line and any available sappers. This was carried out from mid 1811 until the end of the war. There is also evidence that the senior Royal Engineer officers were mentoring the recently qualified officers and also sharing information with their peers both informally in letters and through the ‘Society’ mentioned above.

Did their training make a difference and was there was any improvement in performance during the war? There is no doubt that the engineer officers had limited practical experience of siege craft. Only a small number had been involved in previous sieges. But these officers knew the principles and applied them as well as circumstances permitted. There is no evidence that the results of the sieges were caused by repeated bad decisions by the engineers. The improvement in the supply of sappers and miners is evident in the number available in the later sieges and in the Waterloo campaign.

There is also no doubt that the training the engineer officers received was valuable in their wider staff roles supporting the army command structure. Their knowledge of survey and drawing was very useful for reconnaissance and intelligence work. Their mathematical and engineering training allowed them to work effectively on the construction of defensive works and on the making and breaking of river crossings. Their general intelligence and language skills made them useful as messengers, emissaries and liaison officers. The dairies and letters of the engineer officers make it clear that the officers were very enthusiastic to be involved in staff work and most of the senior generals in the peninsula speak kindly of the engineers who were allocated to them. Sources detail only one occasion when a request was made for an engineer officer to be removed from a particular post, but this officer was subsequently mentioned in despatches for other tasks he successfully completed.

In summary, the Royal Engineer officers played an important but often unseen role in the Peninsula. Their major contribution was not the sieges but in the various other roles which they performed to support the army on offensive and defensive operations. There is also clear evidence that there were improvements in the quantity of resources and the quality of resources through the Peninsular War.

SECTION 5. AFTER THE PENINSULAR WAR

5.1. Introduction

The end of the Peninsular War saw many of the officers from the Peninsula being transferred to the remaining operations in the Low Countries and America. The majority of engineer officers remained where they were continuing their work in the major garrisons around the world. After Waterloo, many engineer officers were involved in survey and reconstruction work in Europe until 1818. This section will outline the changes that occurred over the next forty years and describe how military reform and education fared during the peace. The next major conflict in the Crimea was not a success and the end of this war saw major changes in the structure of the military in this country with the end of the Board of Ordnance and the formation of a single military engineering corps.

5.2. 1814-15, Holland, America and Waterloo

The final stages on the Napoleonic Wars saw three more campaigns outside of the Iberian Peninsula each of which included the involvement of Royal Engineers and the Royal Sappers and Miners.

Following a request from the Dutch, a makeshift expeditionary force was sent to Holland under the command of Sir Thomas Graham. This force landed at Tolen on 17 December 1813[1] and included a complement of nine Royal Engineers commanded by Lieutenant-Colonel James Carmichael-Smyth and eighty-three artificers from the Royal Sappers and Miners.[2] All six junior engineer officers had spent time at the School of Military Engineering before their deployment.

These officers and men played an active part in the following campaign starting with the construction of a disembarkation point for the cavalry. A battery was built for the Prussians to protect the flying bridge at Tholen and another battery

[1] Aspinal-Oglander, *Freshly Remembered*, p. 264.
[2] Connolly, *History of the Royal Sappers and Miners,* vol. 1, pp. 206-207.

was repaired at Ford Frederick. A boat bridge was constructed using locally obtained boats at Zandwarbrieten on 31 December 1813.[3] In February 1814, batteries were constructed to bombard the French fleet in Antwerp using a range of antiquated guns that were found in the area. Five batteries were constructed, but the inferiority of the guns meant that no significant damage had been done when the bombardment had to be stopped on 6 December 1813 when the supporting Prussian troops were withdrawn. Without the Prussians, the Allied force was not strong enough to threaten Antwerp. Graham decided that a surprise attack on Bergen-Op-Zoom might succeed and launched an attack on the night of 8 March 1814. Whilst initially successful, the attackers were driven out in the morning by a counter-attack. Three Royal Engineers officers with forty sappers led the various columns forward, Captain Hoste, Lieutenants, Sperling and Abbey being involved with Abbey being killed during the night. Of the forty sappers, their officer, Sub-Lieutenant Adamson was killed, two artificers were killed, thirteen wounded and ten made prisoners. The skills and bravery of the sappers was recorded by both Graham and the commanding engineer, Carmichael-Smyth.[4] The first peace in Europe was declared soon after with the abdication of Napoleon, although many of the ordnance officers and artificers remained in Holland.

The cessation of hostilities in Europe enabled another expeditionary force to be put together to make an attack on the American mainland at New Orleans. The force collected was a mixture of locally based troops and some veteran regiments from the Peninsula commanded by Sir Edward Packenham. Included was twelve Royal Engineer officers and over one hundred artificers from the Royal Sappers and Miners all under the command of Burgoyne.[5] The attack on New Orleans was a failure with Packenham losing his life and the council formed to decide on the next action choosing to abandon any further attempt. Connolly wrote that 'both companies [of the Royal Sappers and

[3] Porter, *History of the Royal Engineers*, vol. 1, pp. 367-368.
[4] Connolly, *History of the Royal Sappers and Miners,* vol. 1, pp. 206-208.
[5] Porter, *History of the Royal Engineers*, vol. 1, pp. 359-360; Connolly, *History of the Royal Sappers and Miners,* vol. 1, pp. 210-212.

Miners] were of great service during the operations and assault',[6] but provided no details of their actions. One engineer officer, Lieutenant Wright was killed during the assault, which was ironic as he had been in the Peninsula since 1811 and had served at all the major sieges. The final event in the American war was the attack on Fort Bowyer near Mobile in February 1815. At this attack the two companies of artificers were present and their effective work in digging the approaches led to an early surrender of the fort.

The final event in the Napoleonic Wars was the one hundred days campaign which culminated in the battle of Waterloo. There were numerous Royal Engineer officers present, the total was about sixty in June 1815 along with seven companies of Royal Sappers and Miners. Many officers and artificers from the Royal Sappers and Miners were already in the Low Countries working on surveying and repairing fortresses and other engineering activities.[7] As the news of Napoleon's return spread efforts increased on preparing defences. For the first time, Wellington had proper engineer resources available and these were used extensively during the campaign.

> every division of the army had one engineer's brigade attached to it; each brigade consisting of a complete company of well-trained Sappers and Miners, with drivers horses, and wagons, carrying intrenching tools, sufficient to employ a working party of 500 men … A Captain and a number of subalterns were attached to each brigade, and were responsible for the discipline of the men and the efficiency of the horses etc … Five companies of Sappers and Miners were employed with the Pontoon train, which consisted of 30 pontoons … The number of Engineers officers serving with the army in France was only 41 ... They had under their command upwards of 800 Sappers and Miners, and 550 drivers, and had charge of 160 waggons (pontoon carriages included) and more than 1000 horses.[8]

At the battle itself, there were eleven Royal Engineer officers present. A number had been employed a few days before, sketching the ground to prepare maps for Wellington. As described above their role was to work as staff

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[6] Connolly, *History of the Royal Sappers and Miners,* vol. 1, p. 212.
[7] Connolly, *History of the Royal Sappers and Miners,* vol. 1, p. 216, says at least three companies were on the continent.
[8] Pasley, *A Course of instruction*, vol. 1, p. xii.

officers supporting the commanders but as they day wore on many were scattered across the battlefield. The commanding engineer, Carmichael-Smyth remained with Wellington through most of the battle.

The three campaigns outlined above demonstrate a material change in the quantity and quality of engineering resources available. Compared with the early years of the Peninsular War, there were greater numbers of engineers and artificers present. More importantly, the training received by both groups was beginning to show dividends in their capabilities. The scale of the engineering resources during the Waterloo campaign would have made a difference if they had been available in the Peninsula. This change was the culmination of effort over several years to highlight and then introduce much needed changes within the military engineering capability of the British army.

5.3. From the Napoleonic to Crimean wars

In the immediate aftermath on the Napoleonic Wars, large numbers of officers and artificers were engaged in surveying and repairing fortresses. Proposals were prepared by August 1815 and a budget of £6.5m was allocated for building and repair work. The budget was under the direct control of Wellington and he appointed John T. Jones R.E. as his assistant. Many engineers remained through to 1818 working on these projects.

In line with the army, the peace also brought the need to reduce the size of the corps. The first cut came in 1817 when the corps was reduced by twenty-nine to two hundred and thirty-three. 1819 saw a further cut down to one hundred and ninety-three. The reduction was made by the most junior officers at each rank being put on half-pay until a vacancy occurred. The establishment remained at this level until 1825 when it was increased to two hundred and fifty-one as part of the decision to undertake the ordnance survey in Ireland. The establishment remained at this level until 1846 when it was increase to two hundred and ninety-eight and on the threat of war in 1854 up to three hundred

and thirty-six.[9] The effect of the reductions in the establishment in 1817 and 1819 was to stifle any promotion prospects in the corps and officers had to face many years on the same rank with no prospect of promotion. There were no promotions to Captain or Lieutenant-Colonel between 1817 and 1824.

In that year it was decided that a one-off restructure was required. Nineteen officers were appointed to Lieutenant-Colonel. The number of cadets waiting for commissions had reached over one hundred. The problem was becoming impossible to manage. A decision was made to reduce the backlog by implementing a one-off commissioning, promoting twenty-eight to the Royal Artillery, twenty-six to the Royal Engineers and over fifty were transferred to the line regiments. Those who refused the offer of the transfer to the line had all allowances stopped.[10]

The reductions in the establishment also had an effect on the Royal Military Academy. As the number of cadets dropped, the fifth and sixth academies were abolished in 1820, and the fourth in 1823.[11]

There were similar reductions in the Royal Sappers and Miners. In 1816 the establishment was reduced from 2,861 to 2,061. Further reductions in 1817 took the establishment down to 1,258 and in 1819 down to 752.[12] Like the Royal Engineers, in 1824 the establishment was increased to 814 with the formation of an extra company for ordnance survey work in Ireland.

Although the reductions above made a significant impact in the size of the engineer and artificer corps, the key learning points were not lost. The Royal Military Academy continued to train cadets in the necessary skills before commissioning and the School of Military Engineering continued to train the artificers and provide post commissioning education for the newly qualified officers. The growth of the ordnance survey from 1824 had two advantages.

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[9] Porter, *History of the Royal Engineers*, vol. 1, pp. 406-408.
[10] Guggisberg, *The Shop,* p. 53.
[11] Guggisberg, *The Shop,* pp. 67-68.
[12] Connolly, *History of the Royal Sappers and Miners,* vol. 1, pp. 230-232

Firstly, it allowed officers to gain practical experience in surveying and secondly if increased the pool of engineer officers who could be called on in times of need. There were still concerns about the education given. The 1840's saw attacks on the syllabus as being 'too narrowly theoretical'.[13] Strachan's comment that it was only in 1846 that practical elements were added to the syllabus is misleading as cadets had been receiving practical instruction through the School of Military Engineering since 1812.[14]

The approach of the Crimean War, triggered an increase in the establishment of the Royal Engineers. Strachan's criticism of the 'inbuilt slowness to adjust to the demands of war' seems particularly harsh as the size of the Academy was constrained by the funding available.[15] The inbuilt slowness was the typical function of the government in having to balance the cost of the military in peace against the needs in war. The military engineering aspects of the Crimean War were not impressive and brought reminders about some of the problems faced during the Peninsular War. This must have been particularly galling for the senior engineer officers, some of whom were present forty years before.[16]

Rightly or wrongly, the Crimean War saw the end of the Board of Ordnance. They were judged responsible for some of the failures and in 1856 the Board of Ordnance was amalgamated with the War Department to form the War Office. At the same time the Royal Sappers and Miners were absorbed into the Royal Engineers to form a single military engineering corps, an action that Pasley had argued for forty years earlier.

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[13] H. Strachan, *Wellington's Legacy : The Reform of the British Army 1830-54* (Manchester, 1984), pp. 124-125.
[14] Strachan, *Wellington's Legacy*, p. 127, noted that in 1829 the Royal Sappers and Miners were providing practical instruction to army cadets at the Royal Military College. It is difficult to believe that the ordnance were providing this instruction to army cadets whilst not providing it to their own.
[15] H. Strachan, *Wellington's Legacy*, p. 125.
[16] Including Burgoyne, H.D. Jones and Tylden.

5.4. The Army's response to education

Britain came out of the Napoleonic wars with a small but highly effective army. The realities of peace soon led to the downsizing of the army with regiments disbanded and officers placed on half-pay.

The impacts were also felt in the Royal Military Academy and the size was cut back. By 1829 the size of the staff in the Junior Department was reduced to a point where they could not provide the education and it was only by becoming self funding that the college survived at all.[17] The Horse Guards view of military education was still undecided. The Royal Military College had only been in existence for fifteen years and Wellington was still not convinced of its value. Wellington firmly believed that officers should be educated, but his opinion was that the education should be that provided by public schools and appropriate for a 'gentleman' and that military education should be delayed until the officer had received his first commission. This was seen to give the best relationship between officer and soldier, the (country) gentleman knowing how to lead men whilst the noveau riche did not.

> The British Army provided those aristocrats with the temporary environment of camp life which was simply the continuation of life on a country estate. War was like any other outdoor sport, only rougher and more dangerous.[18]

The Victorian era saw this position gradually eroded and there was a greater demand for education led by publications like the United Service Journal. This pressure for military reform led to the growth of the relationship between the military and the public schools as described in Worthington's paper.[19]

It was just before the Crimean War when it was finally accepted that military education had a part to play and this saw the growth of the military colleges, the

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[17] Strachan, *Wellington's Legacy,* p. 125
[18] R.L. Blanco, 'Reform and Wellington's Post Waterloo Army, 1815-1854'. *Military Affairs*, vol 29, No. 3, p.128.
[19] I. Worthington, 'Antecedent education and officer Recruitment : the Origins and Early Development of the Public School – Army relationship'*. Military Affairs*, vol. 41, No. 4.

setting of minimum education standards for officers and ultimately the end of the purchase of commissions.

SECTION 6. CONCLUSIONS

In the introduction to this thesis the purpose was outlined and the three primary questions were listed :

- Were the Royal Engineer officers suitably trained and provided with the necessary resources to undertake their roles?
- If a small percentage of engineer time was spent on the sieges during the Peninsular War, what roles did the Royal Engineer officers perform for the remainder of the time?
- How well did they perform in their operational roles?

This thesis has provided answers to each of the questions set, although some difficulties were encountered during the study. One of the main difficulties was the limited information available on the Royal Engineers and its activities. In the early stages of the research a significant amount of time was spent building a comprehensive database on the Royal Engineers during the Napoleonic Wars. The number of officers was small enough to treat them as individuals and gather information at that level. There were two hundred and eighty officers in total and by combining published and unpublished material a comprehensive understanding has been developed of their careers and operational activities. The material collected includes several thousand digital images of original unpublished documents, which have been used extensively during the research. This information, which has been collected together for the first time, has enabled a thorough analysis to be carried out on the role of the Royal Engineers.[1] The availability of this information was a pre-requisite to completing the study.

Some unexpected findings have come out of the research.

- The common perception of the Allied sieges, that they were hampered by bad decisions and mismanagement, has been challenged and an

[1] A similar exercise had been undertaken by John Hancock the ex-Curator of the Royal Engineers Museum, but tragically the electronic copy has been mislaid. Two paper copies exist, but their value as a research tool is limited due to the inability to undertake any form of electronic analysis.

alternative suggested of poor results primarily through time and resource constraints;

- The role of the Royal Engineer officers was much wider than has been previously thought. They played a more active role in supporting the command structure than has been previously recognised;
- There were more engineers actively involved in the Napoleonic Wars than historians have appreciated. Many were involved in relatively unseen defensive activities across the Iberian Peninsula and the Mediterranean islands;
- There was a significant effort to maintaining communications for Wellington's operations. This involved improving road and river access and also the construction and destruction of river crossings. Previously, the perception was that much of this work was carried out by the Royal Staff Corps, but the facts do not support this position.

These points will be picked up below.

TRAINING

The education of the Ordnance officers had been developed over a period of fifty years since the formation of the Royal Military Academy in 1741. As shown by Appendix A, the syllabus was comprehensive providing a scientific rather than classical education. Up to 1812 the syllabus was primarily theoretical although there were limited opportunities to put some of the learning to practice. The main difference between army and ordnance officers was that it was possible for junior army officers to learn their trade under the supervision of more experienced officers in their regiment. An ordnance officer would be expected to know his trade when they were appointed and may not have had immediate access to other officers to provide advice and guidance. Generally the syllabus achieved this aim and the variances of knowledge in leaving the Academy were caused by the demands of the wars. Whilst the system was based on cadets passing examinations before commissioning, the state's demand for officers meant that examinations were suspended from 1794 to 1811. In difficult circumstances, the Governor of the Academy and his staff

tried to ensure that the cadets who were commissioned during this period still had sufficient knowledge to be able to carry out the basic functions of their role. In many cases the recently commissioned officers were placed in garrisons for a period to allow some practical experience to be gained. The suspension of examinations is one of the commonest criticisms of the Royal Military Academy, but it should be remembered that these officers were still much better trained than a typical army officer. It should also be noted that with the exception of Richard Fletcher all the well known Royal Engineer officers from this period passed through the Royal Military Academy when examinations had been suspended.[2]

The syllabus at the Royal Military Academy had remained relatively static for many years when with hindsight it could be argued that there was some need for change. The first half of the 18th century saw a reliance on European partners for providing specialist military engineering skills. The second half of the 18th century saw Britain primarily involved in colonial type campaigns in America and India where the need for formal siege skills was limited. The war in Europe presented new challenges, which the campaigns of 1793 and 1799 highlighted. The senior Royal Engineer officers had not been called upon to undertake major sieges and had limited practical experience of siege work. They were slow to appreciate the possible need for change. This applied even more so to the need to provide trained artificers to support engineer officers in the field. The criticism of the Board of Ordnance in this area has some justification, but it faced the same problem as the army in finding the funds to train and maintain such a body. Up to 1811 the artificers had the sole purpose of maintaining static garrisons where there was a clear need and budget available. Efforts had been underway since at least 1809 to change the nature of the artificers and the change in the structure of the Royal Military Artificers in mid 1811 predates Wellington's complaints by nearly a year. The performance of the Board of Ordnance should be contrasted with the performance of the Horse Guards in their attempts to introduce training and education in the army. The Royal Military College was nearly sixty years behind the Royal Military

[2] This included Birch, Squire, Burgoyne, Pasley, Jones and Elphinstone amongst many others.

Academy and it was another forty years before it was fully accepted as necessary.

Criticism of the training and education did not come only from outside of the Ordnance department. Several officers complained that the training they received did not prepare them for their duties. These complaints were typically from those officers who came through in the period when demand was at its greatest, and reflect their concern about their capabilities. The focus of these concerns was invariably on siege work. It is difficult to see what the Board of Ordnance could have done at that time because it was under intense pressure to produce officers quickly. In reality there were limited opportunities for officers to gain experience other than through the active operations. One question to consider is whether the situation was different in the army. There were similarly limited opportunities for officers to gain experience in operations on the European mainland. Apart from the minor campaigns in 1806 and 1807 there were no opportunities prior to the outbreak of the Peninsular War. Both groups were forced to learn the hard way.

The officers involved in active operations in the early 19th century worked hard to improve the situation. This included Pasley's tireless work in England to train artificers and subsequently to gain approval for the establishment of the School of Military Engineering. In the field there was clear evidence of the officers helping each other. The new breed of engineer officer, recognised the need to improve their skills and in the absence of outside help, looked for ways themselves. There is clear evidence of sharing of information both within the Royal Engineers and also with the Royal Staff Corps.

In a wider context, there were educational articles published in the *Royal Military Chronicle* and after the war in the *United Service Journal*. There was a significant focus on engineering work both for static and field defences. In comparison there was little published for the other functions, the infantry, cavalry or artillery.

The focus of many writers on education within the Board of Ordnance has been on the negative, the suspension of examinations, the poor discipline at the Academy, the perceived focus on theory rather than practical learning. This has overshadowed the positives, which whilst not perfect, were producing officers with a grounding of education that could be used to build competent officers when combined with practical experience. It is unrealistic to believe that practising siege work at Chatham would ever make an officer ready for the brutal realities of a real siege. It should also be taken into account that Royal Artillery officers were following the same syllabus at Chatham and there were few complaints about their competence. The main difference was that they were present in larger numbers which gave the junior officers more time to increase their experience.

Did the training the engineers received make a difference? The evidence suggests that it did. The formation of the School of Military Engineering benefited both artificers and recently commissioned officers. In addition, the results of seven years of continuous war meant that there were many officers with substantial military experience. The final stages of the Napoleonic wars and the American campaign of 1814-15 show a much more effective military engineering organisation in place. There is no doubt that in the Waterloo campaign, for the first time the British army had a proper military engineering establishment.

One final comment on the professionalism and training of the Royal Engineer officer is that there were no engineer officers sent home from the Peninsula for poor performance. There were no major complaints about their work. This was a much better record than that in the army.

OPERATIONS

One thing that has become apparent during this research is how little understood are the role and activities of the Royal Engineers. Haythornthwaite wrote as recently as 1988 that they ‘tended to be consulted only on special

occasions'.[3] This is the common but mistaken view of the role of the Royal Engineers in the Peninsular War, which completely undervalues their contribution. The analysis above describes the other work they did. This includes the static and field based defensive work, the work on road and river communications, the surveying and reconnaissance work and their supporting work as unofficial staff officers. This wider role has not been well understood and is where they made the major contribution to the Peninsular War. Like the Royal Navy they provided often unseen support to Wellington's campaigns. This support did make a significant contribution to the final success. Three areas of activity that are typically ascribed to other groups are surveying, bridging work and field defences. In each of these areas, the Royal Engineers played a larger role than has been previously thought. Particularly in the area of bridging, the analysis demonstrates that the Royal Engineers performed most bridging work during the Peninsular War. Although the formal responsibility for survey and reconnaissance work rested with the Quarter-Master-General's department, the journals, diaries and letters of the engineers show significant evidence of them being involved in this type of work. There is also a consistent level of involvement through the war in constructing field works, which would normally have been attributed to the Royal Staff Corps.

The comprehensive review of the sieges above shows a different picture from that normally found in history books. The typical complaints of poor decisions and poor execution by the engineers are not supported. There are some common themes running through the sieges, which typically show limited time and limited resources as being the primary contributory factors to the failures. The limited number of Royal Engineer officers and artificers had an effect but were not the main cause of failures. The criticism of the decisions made by the engineers appears to neglect the facts that invariably the senior army officers accepted the recommendations made. Whilst it is easy to criticise decisions with the benefit of hindsight, the senior officers present at the time were not advocating the alternative suggestions put forward by the historians of the war.

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[3] P. Haythornthwaite, *Wellington's Specialist Troops*, p. 22.

Section 6. Conclusions.

One common theme which has not been addressed fully by any writer is the progressive degradation of discipline in the army. The excesses after the assaults at Ciudad Rodrigo, Badajoz and San Sebastian along with the poor attitude displayed at Burgos do no credit to the British army. With the indiscipline shown after the battle of Vitoria, there is evidence that the behaviour of the troops put Wellington in unnecessary positions of risk. It is probable that had the French Governor at San Sebastian made a counter attack after the town was taken, the French would have successfully evicted the Allied army. The high casualties at the sieges were caused by two main reasons: the assaults being made before the defences had been sufficiently weakened, and the rash behaviour of troops following through attacks which served no purpose.[4]

There is no doubt that Wellington and his senior commanders gained hugely from the education and intelligence of the Royal Engineer (and Royal Staff Corps) officers. Apart from their engineering responsibilities, their contribution included :

- surveying and reconnaissance work;
- work as unofficial ADC's in battle and as part of a general's staff;
- work as staff officers;
- use as messengers / emissaries particularly in the early part of the Peninsular War;
- liaison officers with the Spanish armies;
- providing engineering support to the Spanish armies;
- language skills for communication with Spanish, Portuguese and French.

The evidence shows that the superior education of the engineer officers made a difference to the outcome of the war and that their education whilst not perfect did continue to improve through the Napoleonic Wars and after. The Royal Engineers contribution to the war needs re-evaluating by many writers. The research suggests that the lack of trained army officers available for staff duties

[4] I am particularly thinking of the counter-attack on San Christoval during the first siege of Badajoz and the attack on the convent at the first siege of San Sebastian. Wellington lost several hundred men for no purpose.

was masked by the availability of Ordnance officers (usually engineers) to carry out these roles in an unofficial capacity. Their role has been consistently undervalued with them contributing more than has been previously understood. Consideration of the trust that Wellington placed in officers like Dickson, Burgoyne, Sturgeon and Jones to show that he greatly valued the contribution of the 'Scientific soldiers' although he never really accepted that the education should be completed before an officer received his first commission.

The Napoleonic Wars were the first wars where the British army could field a number of officers who had received formal military training. These officers from the Royal Artillery, the Royal Engineers, the Royal Staff Corps with a small number of trained staff officers in the Quarter-Master-General's department made a significant contribution to the war effort. The experiences of the Peninsular War convinced the Board of Ordnance that changes were needed in the training and education of officer and artificer and these had been implemented before the end of the war. The Royal Engineer officers themselves recognised the need for improvements in their skills and the period following the Napoleonic wars saw the publication of many English language books and journals to encourage study in military engineering.

Whilst it was still a small step the engineers who served in the Peninsula made a demonstrable improvement to the professionalism of the British army and one that would be built upon over the next forty years.

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APPENDICES

APPENDIX A – ROYAL MILITARY ACADEMY SYLLABUS 1792.

Source : WD Jones, *Records of the Royal Military Academy*. (Woolwich, 1851).
p. 45, Detail of Course studies, 11th Feb 1792

The Lieut.-Governor transmitted the following detail of the course of studies, which a Gentleman Cadet is to go through, before he is reported fit for a public examination for a commission in the Royal Corps of Artillery and Engineers.

FORTIFICATION

1. The definitions and explanations of the works of both Regular and Irregular Fortification, correctly wrote and understood.
2. The construction of the 1st, 2nd and 3rd systems of M. De Vauban, described on paper.
3. The same of M. Coehorn's system
4. The same of M. de Cormontaigne's system
5. Irregular Fortifications described on paper.
6. The Attack and Defence of Fortified places
7. The art of Mining
8. The elements of Field Fortification
9. How to Trace on the ground, Permanent and Field Fortification, with and without mathematical instruments
10. To take Plans with and without instruments
11. Theory and practice of Levelling
12. How to estimate the works of a Fortification, viz., Revetements, Ramparts, Ditches, Batardeaux, Powder Magazines, turned and groined arches
13. To produce a fair copy of the book containing Calculations, Plans and Sections relative to the Estimates
14. To produce a complete course of the above neatly drawn, containing the Plans, Sections and Geometrical Elevations, composed of 68 plates.
15. To produce the Field Book containing the practice on the ground, the Tracing of Works of Permanent and Field Fortification, Surveying and Levelling.

Printed and manuscript books made use of in the above course

- The Course of Fortification from M. Landmann, comprised in 68 plates,
- The estimates from M. Landmann's manuscripts,
- Surveying and Tracing outworks on the ground, from M. Landmann's Manuscripts,
- Pleydell's Field Fortification.

ARTILLERY

1. The definitions and explanations of the several parts of Artillery; also, tables containing the general dimensions and construction of Guns and Mortars, correctly wrote and understood
2. The general construction of Brass and Iron Guns, Sea and Land Mortars and Howitzers, described on paper.
3. The general construction of Ship and Garrison carriages, Travelling carriages, Land and Sea Mortar beds, described as above
4. The same of the Iron Work for Ship, Garrison and Travelling carriages
5. The different kinds of wood made use of for the several sorts of gun carriages and Mortar Beds
6. How to find the weight of Guns, Mortars and Howitzers
7. To find the quantity of powder which a chamber contains
8. To find the diameter of Shot and Bores of guns
9. To find the weight of Shot and Shells
10. To find the number of Shot and Shells contained in a pile
11. To ascertain the number of horses necessary to draw the different natures of Ordnance
12. The number of men required to construct a Battery in one night
13. To produce a complete course of the above neatly drawn, containing the plans, sections, and Geometrical Elevations, composed of 57 plates.

Printed and manuscript books made use of in the above course

- The Course of Artillery from M. Landmann in 57 plates,
- The Construction of Artillery from Major Bloomfield, Inspector of Royal Artillery,
- Mullers Artillery.

MATHEMATICS

1. *Arithmetic*, in all its parts,
2. *Logarithms*, their nature, use and construction,
3. *Geometry*, the theory from Euclid's Elements 4 first books,
4. *Algebra*, from the first elements, to the solution of cubic and higher equations
5. *Trigonometry*, with heights and distances,
6. *Mensuration*, in Superfices and Solids, in Theory and Practice, with Surveying and Measuring of Artificers works, Buildings, Timber, etc,
7. *Conic Sections,*
8. *Mechanics*, including motions equable and variable, Forces, Constant, variable and percussive, Gravity, Sound and distances, Inclined Planes, Projectiles, Practical Gunnery, Pendulums, Centers [sic] of Gravity, Percussion, Oscillation and Gyration, Ballistic Pendulum, &c,
9. *Fluxions,*
10. *Hydrostatics and Hydraulics*, including the pressure, motion, and issuing of Fluids, the filling and exhausting of Vessels, &c, Specific Gravities of Bodies, Syphons, Pumps and Diving Bells, &c.,

11. *Pneumatics*, including the nature, properties, and effects of the Air and the Atmosphere, with the Air Pumps, Syringes, Condensing Engine, Thermometer, Barometer, with the method of measuring altitudes by the Barometer and Thermometer,
12. *Practical Exercises*, concerning these and various other branches, as the weight and dimensions, and piling of shot and shells, bulk or capacities of various vessels or figures to contain certain weights of powder, distances by the motion of sound, Concerning the effects of variable and constant forces &c.,
13. *Resistance of Fluids*, as water, Air, &c, with their action on bodies in motion, &c.,
14. *Gunnery*, Robin's new principles of gunnery, Experiments, particularly with the ballistic pendulum.

Printed and manuscript books made use of in the above course

Books – Dr Huttons's Arithmetic, Logarithms, Mensuration, Conic Sections and Select Exercises; Tracts; Mr Robin's Gunnery; the 1st volume of his works; Professor Simpsons (of Glasgow) Elements of Algebra; Rossignal's Geometry; Bonnycastle's Algebra; Simpson's Algebra for Application to Geometry.

The above course of mathematics is correctly wrote down by the Gentleman Cadets in their books, with Drawings, applicable to the several parts of it.

DRAWING
with the 2nd Drawing Master

Figure Drawing, the several parts of the human figure, from drawing by the Master.
Perspective, in Theory and Practice, 1st, Theory of Perspective, 2nd, Putting Planes in Perspective; 3rd, Elevations; 4th, Measures and Proportions of figures at different distances; 5th, Lights and Shadows; thus far with the Jesuits Perspective.

with the 1st Drawing Master

With Mr P Sandby, putting perspective in practice by copying from Drawings, which Qualifies them for Drawing from Nature, teaches them the effects of Light and Shade, and makes them acquaint also with Aerial Perspective; then to proceed to take views about Woolwich and other places, which teaches them at the same time to break ground, and forms the eye to the knowledge of it.

THE FRENCH LANGUAGE

Grammar and Pronunciation, thoroughly learned, and the practical application of it.
Translation, from English into French, and from French into English, the translation wrote down and made correct.
Exercises, particular exercises to be given them to perform in the language, chiefly on the subjects that have a military tendency.

CHEMISTRY

The Gentlemen Cadets generally attend two, and often three course of lectures in Chemistry, the theory and practice of it, they make notes during the Lectures, which are thirty-two in number, then they enter into fair books, which are given them for that purpose, and which are most copious on the heads relative to Artillery, as gun powder, the materials that compose it, metals, &c.

The Gentlemen Cadets are also taught Fencing and Dancing, the exercises of small arms, and light field pieces.

APPENDIX B

Royal Engineer Operational Experience prior to the Peninsular War

Action	Arnold JR	Birch J	Bonnycastle	Boothby	Boteler R	Bridges G	Brown A	Bryce A	Bruyeres R	Burgoyne JF	Calder	Cardew G	Chapman SR	Colby	Collyer G	D'Arcy R	De Butts A	Dickens S T	Dickenson S	Douglas W	Durnford EW	Elphinstone	Evatt H	Fanshaw E	Fletcher R
Holland 1793		0							0																
West Indies 1794																				0	0		0		0
Corsica 1794																	0								
Capture of Cape 1795						0																			
Minorca 1798		0														0									
Holland 1799									0				0										0		
Siege of Malta 1800	0									0								0							
Egypt 1800/1	0	0						0				0										0			0
Surinam 1804	0																								
Cape 1805																								0	
Weser 1805-6		0																		0					
Naples Bay 1805-6				0																					
Egypt 1807										0															
Copenhagen 1807		0											0		0	0									0
Buenos Ayres 1806																									
Monte Video 1807					0														0			0		0	
Sweden 1808										0															
Walcheren 1809		0	0		0		0			0	0			0		0		0						0	
No of Operations	3	6	1	1	2	1	1	1	2	4	1	1	2	1	1	3	1	2	1	2	1	2	2	3	3

Action	Ford WH	Fyers W	Goldfinch H	Gossett W	Handfield J	Holloway C	Hoste CG	Hughes P	Hutchinson	Johnston W	Jones HD	Jones JT	Jones R	Kersteman W	Lacy T RIP	Lascelles	Lefebure C	Lewis GG	Longley	Marlow B	Mann G	McDonald	Mcleod G	Nepean T	Nicholas W
Holland 1793	0																0				0				
West Indies 1794										0				0											
Corsica 1794								0																0	
Capture of Cape 1795																									
Minorca 1798																									
Holland 1799				0	0																				
Siege of Malta 1800																									
Egypt 1800/1	0				0	0									0										
Surinam 1804																									
Cape 1805																									
Weser 1805-6			0																						
Naples Bay 1805-6							0					0					0	0					0		0
Egypt 1807							0																		0
Copenhagen 1807			0																	0					
Buenos Ayres 1806																									
Monte Video 1807													0												
Sweden 1808																									
Walcheren 1809		0							0		0	0				0	0		0			0	0		
No of Operations	2	1	2	1	2	1	2	1	1	1	1	2	1	1	1	1	3	1	1	1	1	1	2	1	2

Action	Parker E	Pasley CW	Payne WR	Pilkington	Power	Rawlinson	Rhodes CS	Ross G C	Rowley J	Rudyerd CW	Rutherford J	Smart H	Smyth JC	Squire J	Thackeray FR	Trench	Twiss W	Vavasour H	Wells	TOTAL
Holland 1793									0	0	0									8
West Indies 1794																				6
Corsica 1794																				3
Capture of Cape 1795																				1
Minorca 1798																				2
Holland 1799										0	0			0			0			9
Siege of Malta 1800																				3
Egypt 1800/1														0						11
Surinam 1804																				1
Cape 1805												0	0					0		4
Weser 1805-6																				3
Naples Bay 1805-6		0																		8
Egypt 1807	0														0					5
Copenhagen 1807		0					0													9
Buenos Ayres 1806																				0
Monte Video 1807			0											0						7
Sweden 1808														0						2
Walcheren 1809		0		0	0	0		0		0				0		0			0	28
No of Operations	1	3	1	1	1	1	1	1	1	3	2	1	1	5	1	1	1	1	1	

NOTE : Only contains engineers who were alive at the commencement of the Peninsular War in 1808

Total	69
0 campaigns	0
1 campaign	44
2 campaigns	15
3 campaigns	7
4 campaigns	1
5 campaigns	1
6 campaigns	1

Appendix C - Engineers in the Peninsula 1808-1814

	1808												1809												1810											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Barou Richard John																																				
Barry Philip																																				
Birch James																																				
Birch John Francis									0	0	0	0	0																							
Blanshard Thomas																																				
Bolton Daniel																																				
Boothby Charles								0	0	0	0	0	0			0	0	0	0																	
Boteler Richard								0	0	0	0	0	0																							
Burgoyne John Fox								0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
By John																																				
Chapman Stephen Remnant															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cheyne Alexander										0	0	0	0																							
Collyer George (K)																																				
Davy Henry (K)										0	0	0	0																							
De Salaberry Edward (K)																																				
Dickens Thomas Mark																																				
Dickenson Sebastian (K)																											0	0	0	0	0	0	0	0	0	0
Ellicombe Charles Grene																																				
Elliot Theodore Henry																																				
Elphinstone Howard							0	0																												
Elton Isaac Marmaduke																																				
Emmett Anthony															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
English Frederick								0	0	0	0	0	0																							
Fanshaw Edward								0	0	0			0																							
Fletcher Richard (K)								0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Forster William Frederick (K)								0	0	0	0	0	0					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fyers Edward															0	0	0	0	0	0	0															
Fyers Thomas										0	0	0	0																							
Gilbert Francis Yarde																																				
Gipps George																																				
Goldfinch Henry															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grierson Crighton																																				
Hamilton George (K)																0	0	0	0																	
Harding George Judd																																				

Appendix C - Engineers in the Peninsula 1808-1814

	1808												1809												1810											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Henderson George H																																				
Holloway William Cuthbert																											0	0	0	0	0	0	0	0	0	0
Hulme John Lyon																												0	0	0	0	0	0	0	0	0
Hunt Richard (K)																																				
Hustler Robert Samuel																														0	0	0				
Hutchinson Thomas Kitchingham										0	0	0	0																							
Jones Harry David																																				
Jones John Thomas									0	0	0	0	0															0	0	0	0	0	0	0	0	0
Jones Rice															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmann George Thomas								0	0	0	0	0	0	0																						0
Lascelles Thomas (K)																																				
Lefebure Charles (K)								0	0	0	0	0	0																							
Lewis Griffith George																																				
Macaulay John Simcoe																																				
MacCulloch William																																				
Machell Lancelot (K)																																				
Macleod George Francis																																				
Marshall Anthony																																				
Matson Edward																																				
Melhuish Samuel Camplin																																				
Melville David (K)																																				
Mercer Cavalier Shorthouse							0	0	0	0																										
Mudge Richard Zachary															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Mulcaster Edmund R (K)							0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nicholas William (K)																																				
Ord William Redman																																				
Parker Edward (K)																																				
Pasley Charles William										0	0	0	0																							
Patton Peter (K)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piper Robert Sloper																											0	0	0	0	0	0	0	0	0	0
Pitts Thomas James Heblethwayt (K)																																				
Power Robert																																				
Pringle John Watson																																				
Reid William																											0	0	0	0	0	0	0	0	0	0
Rhodes Charles Steech																																				

Appendix C - Engineers in the Peninsula 1808-1814

	1808												1809												1810											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Rivers Charles																																				
Robe Alexander Watt																																				
Roberts Thomas																																				
Ross George Charles (K)																			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Savage Henry John																																				
Scott Richard Evans																																				
Skelton Thomas (K)																																				
Slade William Henry																																				
Smith Charles Feli0																																				
Smith Henry Nelson																																				
Smith William Davies								0	0	0	0	0	0																							
Smyth James Carmichael										0	0	0	0																							
Squire John (K)							0	0	0	0	0	0	0														0	0	0	0	0	0	0	0	0	0
Stanway Frank								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tapp Hammond Astley																											0	0	0	0	0	0	0	0	0	0
Thackeray Frederick Rennell																																				
Thomson Alexander															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tinling George Vaughan																																				
Trench Samuel (K)																											0	0	0	0	0	0	0	0	0	0
Vetch James																																				
Victor James Conway																																				
Ward William Cuthbert																																				
Wells John Neave								0	0	0	0	0	0																							
West George Innes Perry																																				
Williams John Archer (K)							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wortham Hale Young																																				
Wright Peter																																				
York Frederick August										0	0	0	0																							
Total by month	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**18**	**19**	**26**	**24**	**24**	**25**	**4**	**10**	**15**	**15**	**16**	**16**	**15**	**15**	**14**	**14**	**14**	**14**	**14**	**21**	**23**	**23**	**23**	**23**	**23**	**22**	**22**	**22**	**22**
Annual average												19												14												21
Average length of time months)																																				
Longest (months)																																				

Note : This covers mainland and East coast campaigns, but does not include Engineers in the Mediterranean, Cadiz and Gibraltar
(K) denotes killed in the Peninsula

Appendix C - Engineers in the Peninsula 1808-1814

	1811												1812												1813											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Barou Richard John																										0	0	0	0	0	0	0	0	0	0	0
Barry Philip																					0	0	0	0	0	0	0	0	0	0	0	0				
Birch James																									0	0	0	0	0	0	0	0	0	0	0	0
Birch John Francis																																				
Blanshard Thomas																																				
Bolton Daniel																																				0
Boothby Charles																																				
Boteler Richard			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burgoyne John Fox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
By John				0	0	0	0	0																												
Chapman Stephen Remnant																																				
Cheyne Alexander																0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Collyer George (K)																																0				
Davy Henry (K)																																				
De Salaberry Edward (K)						0	0	0	0	0	0	0	0	0	0	0																				
Dickens Thomas Mark																																	0	0	0	0
Dickenson Sebastian (K)	0	0	0	0	0																															
Ellicombe Charles Grene												0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elliot Theodore Henry							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Elphinstone Howard																										0	0	0	0	0	0	0	0	0	0	0
Elton Isaac Marmaduke																															0	0	0	0	0	0
Emmett Anthony	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																	0
English Frederick																																				0
Fanshaw Edward																																				
Fletcher Richard (K)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0				
Forster William Frederick (K)	0	0	0	0	0	0																														
Fyers Edward																																				
Fyers Thomas																																				
Gilbert Francis Yarde																								0	0	0	0	0	0	0	0	0	0	0	0	0
Gipps George					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldfinch Henry	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grierson Crighton																															0	0	0	0	0	0
Hamilton George (K)																																				
Harding George Judd																		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C - Engineers in the Peninsula 1808-1814

	1811												1812												1813											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Henderson George H																					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holloway William Cuthbert	0	0	0	0																																
Hulme John Lyon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt Richard (K)			0	0	0	0																														
Hustler Robert Samuel																				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hutchinson Thomas Kitchingham																																				
Jones Harry David															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jones John Thomas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
Jones Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0																						
Landmann George Thomas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																					
Lascelles Thomas (K)							0	0	0	0	0	0	0	0	0	0																				
Lefebure Charles (K)																																				
Lewis Griffith George																										0	0	0	0	0	0					
Macaulay John Simcoe																		0	0	0	0	0	0	0												
MacCulloch William						0	0	0	0	0	0	0	0	0	0	0	0																			
Machell Lancelot (K)																								0	0	0	0	0	0	0						
Macleod George Francis				0	0	0	0	0	0	0	0	0	0	0	0	0																				
Marshall Anthony			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Matson Edward																								0	0	0	0	0	0	0	0	0	0	0	0	0
Melhuish Samuel Camplin						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Melville David (K)			0	0	0																															
Mercer Cavalier Shorthouse																																				
Mudge Richard Zachary																																				
Mulcaster Edmund R (K)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																					
Nicholas William (K)															0	0																				
Ord William Redman													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parker Edward (K)																								0	0	0	0	0	0	0	0	0	0	0	0	0
Pasley Charles William																																				
Patton Peter (K)	0	0	0	0	0	0																														
Piper Robert Sloper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pitts Thomas James Heblethwayt (K															0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Robert																									0	0	0	0	0	0	0	0	0	0	0	
Pringle John Watson			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reid William	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhodes Charles Steech																					0	0	0	0	0	0	0	0	0	0	0	0	0			

Appendix C - Engineers in the Peninsula 1808-1814

	1811												1812												1813											
Name	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Rivers Charles																																				0
Robe Alexander Watt																																				0
Roberts Thomas													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ross George Charles (K)	0	0	0	0	0	0	0	0	0	0	0	0	0																							
Savage Henry John																																				
Scott Richard Evans																				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Skelton Thomas (K)	0	0	0	0	0	0	0	0	0	0	0	0	0																							
Slade William Henry																0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smith Charles Feli0																											0	0	0	0	0	0				
Smith Henry Nelson																											0	0	0	0	0	0	0	0	0	0
Smith William Davies																																				
Smyth James Carmichael																																				
Squire John (K)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																			
Stanway Frank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tapp Hammond Astley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thackeray Frederick Rennell																				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thomson Alexander	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																			
Tinling George Vaughan																																				0
Trench Samuel (K)	0	0	0	0	0	0																														
Vetch James															0	0																				
Victor James Conway																										0	0	0	0	0	0	0	0	0	0	0
Ward William Cuthbert																			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Wells John Neave													0	0	0	0																	0	0	0	0
West George Innes Perry																								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Williams John Archer (K)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Wortham Hale Young																															0	0	0	0	0	0
Wright Peter			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
York Frederick August																																				
Total by month	**23**	**23**	**29**	**31**	**31**	**32**	**30**	**30**	**29**	**29**	**29**	**30**	**33**	**30**	**33**	**33**	**27**	**26**	**28**	**30**	**33**	**32**	**32**	**37**	**37**	**41**	**42**	**43**	**43**	**43**	**45**	**45**	**42**	**40**	**39**	**44**
Annual average												29												31												42
Average length of time months)																																				
Longest (months)																																				
Note : This covers mainland and Eas																																				
(K) denotes killed in the Peninsula																																				

Appendix C - Engineers in the Peninsula 1808-1814

	1814												
Name	J	F	M	A	M	J	J	A	S	O	N	D	**TOTAL (months)**
Barou Richard John	0	0	0	0	0	0	0	0	0				**20**
Barry Philip													**12**
Birch James	0	0	0	0									**16**
Birch John Francis													**5**
Blanshard Thomas			0	0									**2**
Bolton Daniel	0	0	0	0	0	0	0	0					**9**
Boothby Charles													**10**
Boteler Richard	0	0	0	0	0	0	0						**47**
Burgoyne John Fox	0	0	0	0	0	0							**69**
By John													**5**
Chapman Stephen Remnant													**21**
Cheyne Alexander													**25**
Collyer George (K)													**1**
Davy Henry (K)													**4**
De Salaberry Edward (K)													**11**
Dickens Thomas Mark	0	0	0	0									**8**
Dickenson Sebastian (K)													**15**
Ellicombe Charles Grene	0	0	0	0	0	0	0						**32**
Elliot Theodore Henry													**26**
Elphinstone Howard	0	0	0	0	0	0	0						**20**
Elton Isaac Marmaduke	0	0	0	0	0	0							**12**
Emmett Anthony	0	0	0	0	0	0							**48**
English Frederick	0	0	0	0	0	0							**13**
Fanshaw Edward													**4**
Fletcher Richard (K)													**56**
Forster William Frederick (K)													**31**
Fyers Edward													**7**
Fyers Thomas													**4**
Gilbert Francis Yarde	0	0	0	0	0	0							**19**
Gipps George	0	0	0	0	0	0							**38**
Goldfinch Henry	0	0	0	0	0								**58**
Grierson Crighton	0	0	0	0									**10**
Hamilton George (K)													**4**
Harding George Judd	0	0	0	0	0								**24**

Appendix C - Engineers in the Peninsula 1808-1814

	1814												
Name	J	F	M	A	M	J	J	A	S	O	N	D	**TOTAL (months)**
Henderson George H	0	0	0	0	0								**21**
Holloway William Cuthbert													**14**
Hulme John Lyon	0	0	0	0	0	0							**51**
Hunt Richard (K)													**4**
Hustler Robert Samuel	0	0	0	0									**24**
Hutchinson Thomas Kitchingham													**4**
Jones Harry David	0	0	0	0	0	0							**28**
Jones John Thomas													**40**
Jones Rice													**36**
Landmann George Thomas													**23**
Lascelles Thomas (K)													**10**
Lefebure Charles (K)													**6**
Lewis Griffith George													**6**
Macaulay John Simcoe													**7**
MacCulloch William													**12**
Machell Lancelot (K)													**8**
Macleod George Francis													**13**
Marshall Anthony													**32**
Matson Edward			0	0	0	0							**17**
Melhuish Samuel Camplin	0	0	0	0									**35**
Melville David (K)													**3**
Mercer Cavalier Shorthouse													**4**
Mudge Richard Zachary													**15**
Mulcaster Edmund R (K)													**43**
Nicholas William (K)													**2**
Ord William Redman	0	0	0	0	0	0	0	0	0				**33**
Parker Edward (K)	0	0											**15**
Pasley Charles William													**4**
Patton Peter (K)													**35**
Piper Robert Sloper	0	0	0	0	0	0							**52**
Pitts Thomas James Heblethwayt (K	0	0											**24**
Power Robert													**11**
Pringle John Watson	0	0	0	0	0	0							**40**
Reid William	0	0	0	0	0	0							**52**
Rhodes Charles Steech													**13**

Appendix C - Engineers in the Peninsula 1808-1814

	1814												
Name	J	F	M	A	M	J	J	A	S	O	N	D	**TOTAL (months)**
Rivers Charles	0	0	0	0	0	0							**7**
Robe Alexander Watt	0	0	0	0	0	0							**7**
Roberts Thomas	0	0	0										**27**
Ross George Charles (K)													**30**
Savage Henry John	0	0	0	0	0	0							**6**
Scott Richard Evans	0	0	0	0									**21**
Skelton Thomas (K)													**13**
Slade William Henry	0	0	0	0	0	0	0	0					**29**
Smith Charles Feli0													**6**
Smith Henry Nelson	0	0	0	0									**14**
Smith William Davies													**6**
Smyth James Carmichael													**4**
Squire John (K)													**34**
Stanway Frank	0	0	0	0	0	0	0	0					**73**
Tapp Hammond Astley	0	0	0	0	0	0							**52**
Thackeray Frederick Rennell	0	0	0										**20**
Thomson Alexander													**39**
Tinling George Vaughan	0	0	0	0	0	0							**7**
Trench Samuel (K)													**16**
Vetch James													**2**
Victor James Conway	0	0	0	0	0	0							**17**
Ward William Cuthbert													**15**
Wells John Neave	0	0	0	0	0	0							**20**
West George Innes Perry	0	0	0	0	0								**18**
Williams John Archer (K)													**51**
Wortham Hale Young	0	0	0	0	0	0							**11**
Wright Peter	0	0	0	0	0	0							**40**
York Frederick August													**4**
Total by month	**43**	**43**	**43**	**41**	**33**	**29**	**8**	**5**	**2**	**0**	**0**	**0**	
Annual average												21	
Average length of time months)													**20.7**
Longest (months)													**73.0**
Note : This covers mainland and Eas													
(K) denotes killed in the Peninsula													

APPENDIX D - PAY AND ALLOWANCES

Source – Haldane H. *Official Letters written by Lieut-Col. Henry Haldane to the Masters-General of his Majesty's Ordnance since the year 1802*. (London, 1807), p. 125.

'We have therefore thought proper, and do hereby direct, that the following Allowances of extra pay shall in future be granted to the officers of Our Corps of Royal Engineers, viz. . . . To each of Our Royal Engineers, who shall be employed with our armies in the field, or in any part of Our Foreign Dominions , Gibraltar excepted, an Allowance equal to the pay which, according to his Rank in Our Corps of Royal Engineers, he is entitled to receive on the establishment above ordered to take place'.

At Gibraltar, or the UK or Ireland, or the islands of Jersey, Guernsey or the Isle of Man, an allowance equal to half of his pay.

On the coast of Africa, where a higher extra pay than usual has been commonly granted, and allowance of 20 shillings per day.

Allowance start when an officer received his orders, subject to a certificate being signed saying that the officer 'lost no time' in proceeding to his station. Foreign allowance are paid until the officer returns to England. Allowances are stopped when on leave of absence.

Pay Rates

	Royal Engineers 1802	**Cavalry 1800 (no change in 1815)**	**Infantry 1800 (1815)**
2 Col-Comm	44s		
2 Colonel	24s	32s 10d	22s 6d
2 Colonel	20s		
4 Lt-Colonel	17s	23s	13s 11d (17s)
2 Lt-Colonel	15s		
20 Captains	10s	14s 7d	9s 5d (10s 6d)
20 Capt-Lieut	7s		
40 1st Lieutenant	6s	9s	4s 8d (6s 6d)
20 2nd Lieutenant	5s		

APPENDIX E – ROYAL ENGINEER COMMISSIONS BY YEAR, 1758-1822

Year	Still active	Totals	Year	Still active	Totals
1758	1	8	1794	5	6
1759	1	16	1795	3	5
1760		4	1796	1	5
1761		1	1797	4	9
1762		3	1798	9	13
1763	2	6	1799	4	5
1765		3	1800	2	3
1766		1	1801	13	13
1769		2	1802	3	5
1770		5	1803	6	6
1771	3	6	1804	17	20
1772		2	1805	6	7
1773	1	1	1806	20	20
1774		4	1807	13	14
1775		3	1808	26	26
1776	7	11	1809	18	18
1777		1	1810	14	14
1779	1	4	1811	19	18
1780	2	6	1812	13	13
1781	1	5	1813	24	24
1783	0		1814	23	23
1787	1	4	**Total**	**279**	**391**
1788	2	2	1815		22
1789	2	2	1816		23
1790	2	5	1817		2
1791		1	1820		1
1792	1	3	1822		3
1793	9	15			

NOTES

1. Nearly 60% were commissioned between 1800-14.
2. A third of total were commissioned between 1808-14.
3. The figures are from the actual Corps Returns in have been used
4. ‘Still active’ means number who served during the Peninsular war.

APPENDIX F - TIME TAKEN TO REACH LIEUTENANT-COLONEL.

	Avge (yrs)	RM (133)	AM (145)	GM (165)	WT (168)	JE (170)	BF (180)	CS (181)
2L-1L	5.1	1.6	3.3	8.1	7.4	5.3	4.9	4.9
1L-2C	7.7	3.7	8.8	5.9	7.7	8	9.5	10
2C-C	8.2	12.6	8	8.5	7.3	7.7	6.7	6.6
C-LC	6.6	7.3	8.4	8.3	6.3	5.7	4.8	5.1
Total	27.5	25.2	28.5	30.8	28.7	26.7	25.9	26.6
Age-LC		40	46e	46	49	41e	43e	45e
Year LC		1783	1787	1793	1794	1794	1797	1798

	Avge (yrs)	TN (183)	WF (188)	WJ (194)	WK (195)	CH (197)	JH (199)	RD (203)	GB (206)
2L-1L	6.8	2.9	5.5	7	7	7	7	8.7	9.3
1L-2C	8.6	7.9	7.9	7.3	9.3	10	10	8.8	7.5
2C-C	4.5	6.4	6.6	6.4	3.6	2.9	2.8	3.7	3.5
C-LC	7.7	4.6	6.7	7.7	8.6	8.6	9.3	8	8
Total	27.6	21.8	26.7	28.4	28.5	28.5	29.1	29.2	28.3
Age-LC		49?	45e	44e	46e	55	47e	47e	47e
Year LC		1797	1800	1802	1804	1804	1805	1805	1805

	Avge (yrs)	STD (217)	JM (218)	RHB (223)	JR (226)	ADB (228)	WF (229)	AB (230)	RP (231)
2L-1L	5.9	9	8.7	8.4	4.7	4.3	4.5	3.8	3.5
1L-2C	4.5	5.6	4	5.6	4.1	4.3	3.7	4.2	4.4
2C-C	3.9	3.8	5.2	3.6	3.9	3.3	3.9	3.9	3.9
C-LC	6.7	6.6	6.9	7	4.2	6	6.4	8.3	8.2
Total	21.0	25	24.8	24.6	16.9	17.9	18.5	20.2	20
Age-LC		43e	46	41	37e	36	37e	38e	44
Year LC		1805	1805	1806	1806	1806	1807	1809	1809

	Avge (yrs)	RF (233)	HE (235)	GH (239)	FWH (241)	FWM (243)	WG (244)	CWR (248)	HE (254)
2L-1L	1.4	2.5	2.5	0.8	0.8	0.8	0.8	1	2.3
1L-2C	5.1	4.5	5.5	4.9	4.7	4.8	5.6	6.1	4.4
2C-C	3.8	3.7	3.2	3.7	3.9	4	3.4	4.2	3.9
C-LC	8.1	8	7.7	7.8	8.8	8.6	8.4	7.6	8.1
Total	18.4	18.7	18.9	17.2	18.2	18.2	18.2	18.9	18.7
Age-LC		40	37	36	36	39	36e	37e	40
Year LC		1809	1809	1810	1811	1811	1811	1812	1813

Appendix F - Time Taken To Reach Lieutenant-Colonel.

	Avge (yrs)	EWD (255)	GW (256)	FRT (258)	HAM (259)	JFB (260)	SRC (261)	JH (263)	GN (264)
2L-1L	2.5	2.3	2.1	2.4	2.9	2.9	2.9	2.4	2.2
1L-2C	5.0	5	5	4.8	4.4	5.6	5.6	4.6	5
2C-C	3.1	3.9	4.1	3.3	3.9	0.7	0.7	3.9	4.3
C-LC	8.1	8.3	8.3	8.3	8.3	8.3	8.3	7.8	7.2
Total	18.7	19.5	19.5	18.8	19.5	17.5	17.5	18.7	18.7
Age-LC		39	38	39e	39	38	37	34e	34e
Year LC		1813	1813	1813	1813	1813	1813	1813	1813

	Avge (yrs)	JCS (265)	GL (266)	CM (271)	GW (278)	JH (280)	CWP (283)	HG (285)	JRA (287)
2L-1L	1.8	2	2.1	2.5	0.9	1.5	1.3	2	2
1L-2C	5.2	5.3	5.1	4.3	5.7	5.8	5.5	4.8	4.8
2C-C	3.3	4	4	3.7	3.3	3.3	2.6	2.7	2.8
C-LC	7.4	7.3	7.8	8.3	7.4	7.1	7	7	7
Total	17.6	18.6	19	18.8	17.3	17.7	16.4	16.5	16.6
Age-LC		34e	34	36	35e	35e	34	33	33
Year LC		1813	1814	1814	1814	1814	1814	1814	1814

	Avge (yrs)	JFB (288)	BM (289)	JTJ (290)	GC (292)	WG (293)	JB (298)	TF (300)	HMV (302)
2L-1L	1.7	2	2	2	2.3	2.3	1.3	0.9	0.8
1L-2C	4.4	4.7	4.7	4.5	4	3.9	3.9	4.4	5.3
2C-C	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	3.8
C-LC	10.0	5.5	6.5	7.5	7.5	7.7	15.5	14.9	14.8
Total	20.4	16.5	17.5	18.3	18.1	18.2	25	24.8	24.7
Age-LC		32	35e	33	36e	37e	45	45e	52
Year LC		1814	1815	1816	1816	1817	1824	1825	1825

NOTE 1. Column references are officers initials and the Roll reference in Connolly & Edwards Roll of the Royal Engineers.
NOTE 2. There were no appointments to LC between Feb 1817 and Dec 1824. 19 were appointed in the next year (as part of the clear up of ranks). The average time gradually increased from 25 years to 35 years for the last commissions during the Napoleonic wars.
NOTE 3. Same for Captains. No appointments between 1817 and 1825. Then 25 were appointed in 1825, with a further 2 in 1826.

Appendix F - Time Taken To Reach Lieutenant-Colonel.

As a comparison :

Time to reach Lieut.-Colonel in the Army (years)

	Horse	Foot
1773	19.0	29
1777	25.0	30
1785	28.5	26.5
1789	27.5	23
1791	28.0	30

Taken from J.A.Houlding , *Fit for service. The training of the British Army*, (Oxford, 1981).

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Abbey Charles	01/02/1810	432
Alderson Ralph Carr	14/12/1811	463
Alexander Charles Carson	20/07/1813	496
Arnold James Robertson	29/08/1798	287
Baddeley Frederick Henry	01/01/1814	509
Barney George	11/07/1808	402
Barou Richard John	01/06/1810	441
Barry Philip	10/02/1809	417
Battersbee Thomas	20/03/1813	480
Beague Charles Heard	01/08/1814	515
Bennett William	20/12/1798	294
Berrington Charles	07/10/1806	366
Birch James	12/07/1809	424
Birch John Francis	18/09/1793	260
Biscoe Vincent Joseph	01/08/1814	520
Blackiston Thomas Henry	01/08/1814	514
Blanshard Thomas	28/09/1807	386
Boldero Henry G	01/08/1814	517
Bolton Daniel	14/12/1811	459
Bonnycastle Richard Henry	28/09/1808	407
Boothby Charles	01/01/1804	331
Boteler Richard	01/01/1804	334
Brandreth Henry R	20/03/1813	486
Bridges George	01/12/1776	206
Briscoe Henry	20/07/1813	494
Brown Alexander	01/02/1808	389
Bruyeres Ralph Henry	22/12/1781	223
Bryce Alexander	12/03/1789	230
Buchanan Gilbert	01/07/1801	305
Buckeridge Henry Mark	01/01/1814	504
Bugden Thomas	01/08/1814	518
Burgoyne John Fox	29/08/1798	288
Burt Charles	01/08/1814	512
By John	20/12/1799	298
Calder Patrick Doull	01/08/1806	361
Cardew George	20/12/1798	292
Cardew Henry	01/10/1808	408
Catty James Patrick	01/07/1812	471
Chapman Stephen Remnant	01/01/1794	261
Cheyne Alexander	01/05/1806	360
Clavering Rawdon Forbes	01/08/1814	521
Colby Henry Augustus	12/07/1808	403
Colby Thomas Frederick	21/12/1801	314
Cole Pennel	01/02/1810	433

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Collyer George	01/11/1806	368
Cooper Robert Henry Spencer	20/03/1813	481
Covey Edward	20/03/1813	493
Cox William N	21/07/1813	483
Cunningham Thomas	02/07/1801	311
Dalton George	01/01/1814	511
D'Arcy Robert	17/01/1776	203
Davy Henry	01/11/1807	387
Dawson William Francis	01/04/1807	375
De Butts Augustus	11/07/1788	228
De Salaberry Edward	27/07/1810	442
Dickens Samuel Trevor	15/03/1780	217
Dickens Thomas Mark	15/03/1803	323
Dickenson Sebastian	01/10/1804	344
Dixon Charles	01/09/1806	363
Dixon Matthew Charles	02/04/1806	359
Douglas William	01/07/1801	310
Duplat Gustavus Charles	01/08/1814	516
Durnford Elias Walker	17/10/1793	255
Duvernet William Henry	01/02/1810	434
Ellicombe Charles Grene	01/07/1801	306
Elliot Francis Edward	01/08/1814	523
Elliot Theodore Henry	07/05/1810	437
Elphinstone Howard	17/10/1793	254
Elton Isaac Marmaduke	14/12/1811	453
Emmett Anthony	16/12/1808	391
English Frederick	08/09/1807	384
Evatt Henry	01/07/1790	235
Evelegh John	01/04/1771	170
Eyre James William	01/07/1812	475
Fanshaw Edward	01/07/1801	307
Faris William	01/01/1814	506
Fenwick Thomas Howard	21/07/1810	444
Fenwick William	12/07/1788	229
Figg Edward	21/12/1801	313
Fisher Benjamin	17/01/1776	180
Fletcher Richard	29/06/1790	233
Ford William Henry	16/01/1793	241
Forster William Frederick	21/07/1807	381
Fraser Alexander	02/07/1804	343
Fyers Edward	23/04/1808	396
Fyers Thomas	02/05/1800	300
Fyers William	11/11/1773	188
Gilbert Francis Yarde	01/05/1811	450
Gipps George	11/01/1809	416
Goldfinch Henry	24/06/1798	285
Gordon James A	11/07/1808	401

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Gosset William Matthew	14/12/1811	454
Gossett William	20/12/1798	293
Graham Charles	01/01/1797	275
Grant John	20/12/1806	373
Gravatt William	16/01/1793	244
Graydon George	01/06/1804	341
Gregory William	20/07/1813	495
Grierson Crighton	01/06/1810	440
Haigh William Preston	11/07/1808	399
Halberton Richard Rosdew	10/05/1805	348
Hall Louis Alexander	21/07/1810	445
Hamilton George	07/05/1803	325
Handfield John	09/10/1794	263
Harding George Judd	01/10/1802	319
Harper John	10/11/1806	369
Harris John Brenchley	07/10/1806	365
Hassard John	03/03/1797	280
Hayter George	21/11/1792	239
Hayter Thomas Baskerville	14/12/1811	462
Head Francis Bond	01/05/1811	448
Heath Macclesfield William	01/08/1814	519
Henderson Alexander	20/03/1813	479
Henderson George H	20/12/1799	299
Henryson John	02/04/1806	357
Hobbs Henry	01/01/1804	327
Hobbs John	01/01/1804	328
Holloway Charles	16/01/1776	197
Holloway William Cuthbert	01/01/1804	333
Hoste George Charles	20/12/1802	320
Hughes Philip	25/09/1793	253
Hulme John Lyon	24/06/1809	422
Humfrey John	17/01/1776	199
Hunt Richard	01/10/1808	411
Hunt Robert	01/07/1812	468
Hustler Robert Samuel	01/03/1806	355
Hutchinson Thomas	15/01/1808	388
Kitchingham		
Jebb Joshua	01/07/1812	476
Johnston William	17/01/1776	194
Jones Harry David	17/06/1808	406
Jones John Thomas	30/08/1798	290
Jones Rice	01/02/1806	354
Jones William Herbert	06/04/1808	394
Kay Arthur	20/07/1813	498
Kelsall Roger	12/07/1809	426
Kerr John	20/07/1813	492
Kersteman William	17/01/1776	195

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Kilvington Henry Medley	01/07/1801	304
Kitson John Sykes	01/02/1810	435
Lancey Thomas Furbor	14/12/1811	456
Landmann George Thomas	01/05/1795	266
Lascelles Thomas	05/05/1807	377
Lawson Hugh	01/08/1806	362
Lefebure Charles	25/09/1793	252
Lewis George Charles Degen	01/08/1814	513
Lewis Griffith George	15/03/1803	322
Lewis Thomas Locke	20/03/1813	487
Longley Joseph	11/07/1808	400
Luxmoore Thomas Coryndon	01/01/1814	503
Macaulay John Simcoe	12/07/1809	425
MacCulloch William	01/08/1805	349
Machell Lancelot	21/07/1810	443
Mackelcan John	15/03/1780	218
Mackenzie Colin	20/07/1813	501
Macleod George Francis	01/07/1801	308
Mann Cornelius	05/02/1796	271
Mann Gother	27/02/1763	165
Marlow Benjamin	30/08/1798	289
Marshall Anthony	01/10/1808	409
Matson Edward	07/05/1810	438
M'Donald Donald	12/09/1808	404
Melhuish Samuel Camplin	25/04/1809	420
Melville David	12/07/1809	427
Mercer Alexander	17/03/1759	145
Mercer Cavalier Shorthouse	01/03/1805	342
Minchin Charles Humphrey	01/01/1814	505
M'Lauchlan James	01/11/1803	326
Moody Thomas	01/04/1806	356
Morse Robert	08/02/1758	133
Morshead Henry Anderson	01/01/1794	259
Mudge John	20/03/1813	489
Mudge Richard Zachary	04/05/1807	376
Mulcaster Edmund R	01/03/1804	337
Mulcaster Frederick William	16/01/1793	243
Nepean Thomas	01/04/1771	183
Nicholas William	21/12/1801	312
Nicolls Gustavus	04/01/1795	264
Oldfield John	02/04/1806	358
Ord William Redman	25/04/1809	421
Page George Curry	20/07/1813	499
Parker Edward	01/01/1804	332
Pasley Charles William	01/04/1798	283
Patten Edward Bullock	01/01/1814	508
Patton Peter	01/04/1799	295

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Payne William Robert	01/04/1804	340
Peake Loyalty	16/02/1808	390
Phillpotts George	01/05/1811	449
Phipps George William	21/04/1779	211
Pilkington George	01/04/1805	347
Pilkington Robert	05/06/1789	231
Piper Robert Sloper	10/01/1809	414
Pitts Thomas James Heblethwayt	21/09/1807	385
Portlock Joseph Ellison	20/07/1813	491
Power Robert	10/01/1809	415
Prince Charles Edward	07/10/1809	431
Pringle John Watson	23/08/1809	428
Rawlinson Lawrence Rawstone	22/03/1808	393
Reid William	10/02/1809	419
Renny Henry Laws	20/07/1813	490
Rhodes Charles Steech	01/07/1801	303
Rivers Charles	01/07/1812	467
Robe Alexander Watt	14/12/1811	461
Roberts Thomas	02/11/1804	346
Robertson Charles	21/03/1808	392
Rogers William	01/01/1814	510
Romilly Samuel	01/04/1804	339
Ross George Charles	01/07/1799	297
Ross John C	12/09/1808	405
Rowley John	23/08/1787	226
Rudyerd Charles William	14/06/1793	248
Rutherford James Hunter	20/07/1813	497
Salkeld William James	01/01/1814	507
Sanders Christopher Knight	01/01/1814	502
Sandham Henry	20/07/1813	500
Savage Henry John	30/09/1809	429
Scott Richard Evans	22/02/1811	446
Selwyn Charles Jasper	01/05/1811	452
Shipley Charles	01/04/1771	181
Shipley Robert John	09/12/1806	371
Skelton Thomas	01/10/1808	412
Skene Philip Orkney	14/12/1811	455
Slade William Henry	01/11/1806	367
Smart Henry	15/03/1803	324
Smith Charles Felix	01/10/1802	318
Smith Henry Nelson	01/03/1810	436
Smith John Marke Frederick	01/12/1805	353
Smith Robert	21/12/1801	315
Smith William Davies	10/08/1807	383
Smyth James Carmichael	13/03/1795	265
Smyth John	01/07/1812	477
Sperling John	14/12/1811	457

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Squire John	01/01/1797	273
Stanway Frank	01/06/1807	378
Stewart Matthew	01/03/1804	338
Stocker Ives	14/12/1811	464
Streatfield Charles Ogle	20/03/1813	488
Tait George	20/03/1813	485
Tapp Hammond Astley	10/02/1809	418
Thackeray Frederick Rennell	01/01/1794	258
Thompson Arthur	01/05/1811	451
Thompson George Forbes	01/10/1808	413
Thomson Alexander	12/04/1808	395
Thomson Francis Ringler	01/07/1812	469
Thomson Robert	01/11/1804	345
Tinling George Vaughan	01/07/1812	473
Trench Samuel	10/05/1808	398
Tweed James Thomas	01/08/1814	524
Twiss William	01/11/1763	168
Tylden William Burton	19/11/1806	370
Vavasour Henry William	01/02/1804	336
Vetch James	01/07/1807	379
Vicars Richard John	20/03/1813	484
Victor James Conway	01/06/1810	439
Vigoureux Henry Mordaunt Gage	01/07/1800	302
Wade Peter	01/07/1801	309
Walker Archibald	21/07/1807	380
Walpole Arthur	20/03/1813	482
Ward William Cuthbert	10/05/1808	397
Waters Marcus Antonius	30/09/1809	430
Watson George	07/10/1806	364
Watson George O	01/10/1808	410
Wells John Neave	20/12/1806	372
West George Innes Perry	01/05/1812	465
Whinyates Frederick William	14/12/1811	460
White Andrew Douglas	01/07/1812	474
Whitmore George	01/01/1794	256
Williams John Archer	01/01/1804	330
Williams Montgomery	24/03/1815	525
Williams Sherburne Hodgkinson	21/07/1807	382
Willson Henry Hill	20/03/1813	478
Worsley James White	01/07/1812	472
Wortham Hale Young	01/07/1812	470
Wright Charles	01/07/1812	466
Wright George	27/09/1797	278
Wright John Ross	01/03/1803	321
Wright Peter	24/06/1809	423
Wulff Henry Powell	01/08/1814	522
York Frederick August	01/09/1805	350

Appendix G - Royal Engineers by Name.

Name	*Commissioned*	*C&E Ref*
Young Richard Sparkman	14/12/1811	458
Yule Patrick	01/05/1811	447

NOTE : C&E reference is the position of the officer in Connolly and Edwards *Roll of Officers in the Royal Engineers*.

Appendix H - *Seniority in Royal Engineers 1808-1815*

Name	*Commissioned*	*C&E Ref*
Morse Robert	08/02/1758	133
Mercer Alexander	17/03/1759	145
Mann Gother	27/02/1763	165
Twiss William	01/11/1763	168
Evelegh John	01/04/1771	170
Fisher Benjamin	17/01/1776	180
Shipley Charles	01/04/1771	181
Nepean Thomas	01/04/1771	183
Fyers William	11/11/1773	188
Johnston William	17/01/1776	194
Kersteman William	17/01/1776	195
Holloway Charles	16/01/1776	197
Humfrey John	17/01/1776	199
D'Arcy Robert	17/01/1776	203
Bridges George	01/12/1776	206
Phipps George William	21/04/1779	211
Dickens Samuel Trevor	15/03/1780	217
Mackelcan John	15/03/1780	218
Bruyeres Ralph Henry	22/12/1781	223
Rowley John	23/08/1787	226
De Butts Augustus	11/07/1788	228
Fenwick William	12/07/1788	229
Bryce Alexander	12/03/1789	230
Pilkington Robert	05/06/1789	231
Fletcher Richard	29/06/1790	233
Evatt Henry	01/07/1790	235
Hayter George	21/11/1792	239
Ford William Henry	16/01/1793	241
Mulcaster Frederick William	16/01/1793	243
Gravatt William	16/01/1793	244
Rudyerd Charles William	14/06/1793	248
Lefebure Charles	25/09/1793	252
Hughes Philip	25/09/1793	253
Elphinstone Howard	17/10/1793	254
Durnford Elias Walker	17/10/1793	255
Whitmore George	01/01/1794	256
Thackeray Frederick Rennell	01/01/1794	258
Morshead Henry Anderson	01/01/1794	259
Birch John Francis	18/09/1793	260
Chapman Stephen Remnant	01/01/1794	261
Handfield John	09/10/1794	263
Nicolls Gustavus	04/01/1795	264
Smyth James Carmichael	13/03/1795	265
Landmann George Thomas	01/05/1795	266
Mann Cornelius	05/02/1796	271

Appendix H - Seniority in Royal Engineers 1808-1815

Name	*Commissioned*	*C&E Ref*
Squire John	01/01/1797	273
Graham Charles	01/01/1797	275
Wright George	27/09/1797	278
Hassard John	03/03/1797	280
Pasley Charles William	01/04/1798	283
Goldfinch Henry	24/06/1798	285
Arnold James Robertson	29/08/1798	287
Burgoyne John Fox	29/08/1798	288
Marlow Benjamin	30/08/1798	289
Jones John Thomas	30/08/1798	290
Cardew George	20/12/1798	292
Gossett William	20/12/1798	293
Bennett William	20/12/1798	294
Patton Peter	01/04/1799	295
Ross George Charles	01/07/1799	297
By John	20/12/1799	298
Henderson George H	20/12/1799	299
Fyers Thomas	02/05/1800	300
Vigoureux Henry Mordaunt Gage	01/07/1800	302
Rhodes Charles Steech	01/07/1801	303
Kilvington Henry Medley	01/07/1801	304
Buchanan Gilbert	01/07/1801	305
Ellicombe Charles Grene	01/07/1801	306
Fanshaw Edward	01/07/1801	307
Macleod George Francis	01/07/1801	308
Wade Peter	01/07/1801	309
Douglas William	01/07/1801	310
Cunningham Thomas	02/07/1801	311
Nicholas William	21/12/1801	312
Figg Edward	21/12/1801	313
Colby Thomas Frederick	21/12/1801	314
Smith Robert	21/12/1801	315
Smith Charles Felix	01/10/1802	318
Harding George Judd	01/10/1802	319
Hoste George Charles	20/12/1802	320
Wright John Ross	01/03/1803	321
Lewis Griffith George	15/03/1803	322
Dickens Thomas Mark	15/03/1803	323
Smart Henry	15/03/1803	324
Hamilton George	07/05/1803	325
M'Lauchlan James	01/11/1803	326
Hobbs Henry	01/01/1804	327
Hobbs John	01/01/1804	328
Williams John Archer	01/01/1804	330
Boothby Charles	01/01/1804	331
Parker Edward	01/01/1804	332
Holloway William Cuthbert	01/01/1804	333

Appendix H - Seniority in Royal Engineers 1808-1815

Name	*Commissioned*	*C&E Ref*
Boteler Richard	01/01/1804	334
Vavasour Henry William	01/02/1804	336
Mulcaster Edmund R	01/03/1804	337
Stewart Matthew	01/03/1804	338
Romilly Samuel	01/04/1804	339
Payne William Robert	01/04/1804	340
Graydon George	01/06/1804	341
Mercer Cavalier Shorthouse	01/03/1805	342
Fraser Alexander	02/07/1804	343
Dickenson Sebastian	01/10/1804	344
Thomson Robert	01/11/1804	345
Roberts Thomas	02/11/1804	346
Pilkington George	01/04/1805	347
Halberton Richard Rosdew	10/05/1805	348
MacCulloch William	01/08/1805	349
York Frederick August	01/09/1805	350
Smith John Marke Frederick	01/12/1805	353
Jones Rice	01/02/1806	354
Hustler Robert Samuel	01/03/1806	355
Moody Thomas	01/04/1806	356
Henryson John	02/04/1806	357
Oldfield John	02/04/1806	358
Dixon Matthew Charles	02/04/1806	359
Cheyne Alexander	01/05/1806	360
Calder Patrick Doull	01/08/1806	361
Lawson Hugh	01/08/1806	362
Dixon Charles	01/09/1806	363
Watson George	07/10/1806	364
Harris John Brenchley	07/10/1806	365
Berrington Charles	07/10/1806	366
Slade William Henry	01/11/1806	367
Collyer George	01/11/1806	368
Harper John	10/11/1806	369
Tylden William Burton	19/11/1806	370
Shipley Robert John	09/12/1806	371
Wells John Neave	20/12/1806	372
Grant John	20/12/1806	373
Dawson William Francis	01/04/1807	375
Mudge Richard Zachary	04/05/1807	376
Lascelles Thomas	05/05/1807	377
Stanway Frank	01/06/1807	378
Vetch James	01/07/1807	379
Walker Archibald	21/07/1807	380
Forster William Frederick	21/07/1807	381
Williams Sherburne Hodgkinson	21/07/1807	382
Smith William Davies	10/08/1807	383
English Frederick	08/09/1807	384

Appendix H - Seniority in Royal Engineers 1808-1815

Name	*Commissioned*	*C&E Ref*
Pitts Thomas James Heblethwayt	21/09/1807	385
Blanshard Thomas	28/09/1807	386
Davy Henry	01/11/1807	387
Hutchinson Thomas Kitchingham	15/01/1808	388
Brown Alexander	01/02/1808	389
Peake Loyalty	16/02/1808	390
Emmett Anthony	16/12/1808	391
Robertson Charles	21/03/1808	392
Rawlinson Lawrence Rawstone	22/03/1808	393
Jones William Herbert	06/04/1808	394
Thomson Alexander	12/04/1808	395
Fyers Edward	23/04/1808	396
Ward William Cuthbert	10/05/1808	397
Trench Samuel	10/05/1808	398
Haigh William Preston	11/07/1808	399
Longley Joseph	11/07/1808	400
Gordon James A	11/07/1808	401
Barney George	11/07/1808	402
Colby Henry Augustus	12/07/1808	403
M'Donald Donald	12/09/1808	404
Ross John C	12/09/1808	405
Jones Harry David	17/06/1808	406
Bonnycastle Richard Henry	28/09/1808	407
Cardew Henry	01/10/1808	408
Marshall Anthony	01/10/1808	409
Watson George O	01/10/1808	410
Hunt Richard	01/10/1808	411
Skelton Thomas	01/10/1808	412
Thompson George Forbes	01/10/1808	413
Piper Robert Sloper	10/01/1809	414
Power Robert	10/01/1809	415
Gipps George	11/01/1809	416
Barry Philip	10/02/1809	417
Tapp Hammond Astley	10/02/1809	418
Reid William	10/02/1809	419
Melhuish Samuel Camplin	25/04/1809	420
Ord William Redman	25/04/1809	421
Hulme John Lyon	24/06/1809	422
Wright Peter	24/06/1809	423
Birch James	12/07/1809	424
Macaulay John Simcoe	12/07/1809	425
Kelsall Roger	12/07/1809	426
Melville David	12/07/1809	427
Pringle John Watson	23/08/1809	428
Savage Henry John	30/09/1809	429
Waters Marcus Antonius	30/09/1809	430
Prince Charles Edward	07/10/1809	431

Appendix H - Seniority in Royal Engineers 1808-1815

Name	*Commissioned*	*C&E Ref*
Abbey Charles	01/02/1810	432
Cole Pennel	01/02/1810	433
Duvernet William Henry	01/02/1810	434
Kitson John Sykes	01/02/1810	435
Smith Henry Nelson	01/03/1810	436
Elliot Theodore Henry	07/05/1810	437
Matson Edward	07/05/1810	438
Victor James Conway	01/06/1810	439
Grierson Crighton	01/06/1810	440
Barou Richard John	01/06/1810	441
De Salaberry Edward	27/07/1810	442
Machell Lancelot	21/07/1810	443
Fenwick Thomas Howard	21/07/1810	444
Hall Louis Alexander	21/07/1810	445
Scott Richard Evans	22/02/1811	446
Yule Patrick	01/05/1811	447
Head Francis Bond	01/05/1811	448
Phillpotts George	01/05/1811	449
Gilbert Francis Yarde	01/05/1811	450
Thompson Arthur	01/05/1811	451
Selwyn Charles Jasper	01/05/1811	452
Elton Isaac Marmaduke	14/12/1811	453
Gosset William Matthew	14/12/1811	454
Skene Philip Orkney	14/12/1811	455
Lancey Thomas Furbor	14/12/1811	456
Sperling John	14/12/1811	457
Young Richard Sparkman	14/12/1811	458
Bolton Daniel	14/12/1811	459
Whinyates Frederick William	14/12/1811	460
Robe Alexander Watt	14/12/1811	461
Hayter Thomas Baskerville	14/12/1811	462
Alderson Ralph Carr	14/12/1811	463
Stocker Ives	14/12/1811	464
West George Innes Perry	01/05/1812	465
Wright Charles	01/07/1812	466
Rivers Charles	01/07/1812	467
Hunt Robert	01/07/1812	468
Thomson Francis Ringler	01/07/1812	469
Wortham Hale Young	01/07/1812	470
Catty James Patrick	01/07/1812	471
Worsley James White	01/07/1812	472
Tinling George Vaughan	01/07/1812	473
White Andrew Douglas	01/07/1812	474
Eyre James William	01/07/1812	475
Jebb Joshua	01/07/1812	476
Smyth John	01/07/1812	477
Willson Henry Hill	20/03/1813	478

Appendix H - Seniority in Royal Engineers 1808-1815

Name	*Commissioned*	*C&E Ref*
Henderson Alexander	20/03/1813	479
Battersbee Thomas	20/03/1813	480
Cooper Robert Henry Spencer	20/03/1813	481
Walpole Arthur	20/03/1813	482
Cox William N	21/07/1813	483
Vicars Richard John	20/03/1813	484
Tait George	20/03/1813	485
Brandreth Henry R	20/03/1813	486
Lewis Thomas Locke	20/03/1813	487
Streatfield Charles Ogle	20/03/1813	488
Mudge John	20/03/1813	489
Renny Henry Laws	20/07/1813	490
Portlock Joseph Ellison	20/07/1813	491
Kerr John	20/07/1813	492
Covey Edward	20/03/1813	493
Briscoe Henry	20/07/1813	494
Gregory William	20/07/1813	495
Alexander Charles Carson	20/07/1813	496
Rutherford James Hunter	20/07/1813	497
Kay Arthur	20/07/1813	498
Page George Curry	20/07/1813	499
Sandham Henry	20/07/1813	500
Mackenzie Colin	20/07/1813	501
Sanders Christopher Knight	01/01/1814	502
Luxmoore Thomas Coryndon	01/01/1814	503
Buckeridge Henry Mark	01/01/1814	504
Minchin Charles Humphrey	01/01/1814	505
Faris William	01/01/1814	506
Salkeld William James	01/01/1814	507
Patten Edward Bullock	01/01/1814	508
Baddeley Frederick Henry	01/01/1814	509
Rogers William	01/01/1814	510
Dalton George	01/01/1814	511
Burt Charles	01/08/1814	512
Lewis George Charles Degen	01/08/1814	513
Blackiston Thomas Henry	01/08/1814	514
Beague Charles Heard	01/08/1814	515
Duplat Gustavus Charles	01/08/1814	516
Boldero Henry G	01/08/1814	517
Bugden Thomas	01/08/1814	518
Heath Macclesfield William	01/08/1814	519
Biscoe Vincent Joseph	01/08/1814	520
Clavering Rawdon Forbes	01/08/1814	521
Wulff Henry Powell	01/08/1814	522
Elliot Francis Edward	01/08/1814	523
Tweed James Thomas	01/08/1814	524
Williams Montgomery	24/03/1815	525

APPENDIX I - KEY ENGINEER OFFICERS DURING THE PERIOD 1808-1815

Name	Involvement
Burgoyne, John	Present for most of the war. Trusted by Wellington. Present at most of the sieges during the war, commanding at the siege of Burgos in 1812. Commanded the engineers in the America campaign of 1814-15.
Chapman, Stephen	Took initial command of building of Lines of Torres Vedras. Went home in 1811 to take up position as Secretary to the Master General of Ordnance. He was a friend of Henry Torrens and was liked by Wellington.
Chatham, Earl of	Master General of Ordnance, 1807-1810
Dickson, Alexander	Organised much of the artillery for the sieges. Given command of the artillery in 1813, even though he was not most senior artillery officer. Trusted by Wellington.
Elphinstone, Howard	Commanded briefly at the start of the campaign before being wounded at the battle of Vimiero. Took command when Fletcher killed in 1813
Fletcher, Richard	Commanded the Royal Engineers from August 1808 until he was killed in August 1813.
Fyers William	Deputy Inspector General of Fortifications
Handfield, John	Brigade Major for Royal Engineers – based at headquarters
Jones, John Thomas	In Peninsula until being wounded at Burgos in 1812. Took over final stages of the construction of the Lines of Torres Vedras after Chapman left. Author of definitive journal of the sieges. Engineer Brigade Major for much of the war.
Mann, Gother	Inspector General of Fortifications from 1811-1830
Morse, Robert	Inspector General of Fortifications from 1801-1811
Mulgrave, Earl of	Master General of Ordnance, 1810-1819
Nepean, Thomas	Secretary to the Master General of Ordnance up to 1811

Appendix I - Key Engineer Officers during the period 1808-1815

Pasley, Charles	Served in Corunna campaign before being wounded at Walcheren. Highly critical of the organisation of the Board of Ordnance. Pushed for establishment of the School of Military Engineering and was its first commander. Kept up regular correspondence with officers on campaign.
Rowley, John	Secretary to the Inspector General of Fortifications
Squire, John	Present from 1810 until he died in May 1812. Commanded at the siege of Olivenza, present at all other sieges until his death. Wrote many letters home which give an insight into the activities and feelings of the engineers.

APPENDIX J - TIME TO REACH BREVET RANKS - SAMPLE

Name	Comm - issioned	Major	Time to Major (years)	Lt-Col	Time to Lt-Col (years)	Colonel	Time to Colonel	Maj-Gen	Time to Maj-Gen (years)
Morse R	1758							1793	35
Mann G	1763			1797	34	1797	34	1803	40
Twiss W	1763	1794	31			1800	37	1805	42
Fyers W	1773	1795	22	1800	27			1811	38
D'Arcy	1776	1802	26			1813	37	1819	43
Dickens ST	1780	1805	25			1813	33	1819	39
Mackelcan J	1780	1794	14	1798	18	1808	28	1811	31
Mulcaster FW	1793	1810	17					1825	32
Elphinstone H	1793	1812	19					1837	44
Thackeray FR	1794	1810	16					1837	43
Birch J	1794	1811	17					1837	43
Chapman SR	1794	1810	16	1812	18			1837	43
Carmichael Smyth J	1795	1813	18	1813	18	1815	20	1825	30
Pasley CW	1798	1812	14	1813	15	1830	32	1841	43
Goldfinch H	1798	1812	14	1813	15	1830	32	1841	43
Burgoyne JF	1798	1812	14	1812	14	1830	32	1838	40
Jones JT	1798	1812	14	1812	14	1825	27	1837	39

APPENDIX K – SIEGES DURING THE PENINSULAR WAR.

Sieges during the Peninsular War

Place	Besiegers	Besieged	Start Date	End date	Duration (days)	Taken?	Outcome
Almeida	French	Portuguese	15/8/1810	29/8/1810	14	Y	Surrendered after magazine exploded (Es, P323)
Almeida (Blockade)	British	French	7/4/1811	10/5/1811	34	Y	Blockaded, garrison escaped and blew up fortress
Astorga	French	Spanish	21/3/1810	22/4/1810	30	Y	Surrendered after breech practicable. Assaulted and running out of ammunition
Badajoz	French	Spanish	27/1/1811	10/3/1811	42	Y	Surrendered (too soon)
Badajoz 1	British	French	6/5/1811	15/5/1811	11	N	Lifted, to fight Soult at Albuera
Badajoz 2	British	French	29/5/1811	10/6/1811	12	N	Lifted after failed assault
Badajoz 3	British	French	16/3/1812	6/4/1812	21	Y	Stormed, and sacked
Burgos	British	French	19/9/1812	19/10/1812	30	N	Lifted
Cadiz	French	Spanish/British	1809	1812		N	Lifted
Campo Mayor	French	Portuguese	14/3/1811	21/3/1811	7	Y	Surrendered, after breach practicable
Castro-Urdiales	French	Spanish	4/5/1813	12/5/1813	8	Y	Garrison escaped
Ciudad Rodrigo	French	Spanish	26/4/1810	9/7/1810	75	Y	Surrendered, when breach practicable
Ciudad Rodrigo	British	French	8/1/1812	19/1/1812	12	Y	Stormed. And sacked (new iron siege train)

APPENDIX K – Sieges during the Peninsular War.

Place	Besiegers	Besieged	Start Date	End date	Duration (days)	Taken?	Outcome
Figueras	Spanish	French	9/4/1811	9/4/1811	0	Y	Taken; let in at gate
Figueras	French	Spanish	10/4/1811	19/8/1811	130	Y	Surrendered, starved out. O.V.p538
Gerona 1	French	Spanish	20/6/1808	23/6/1808	3	N	Lifted, insufficient resources
Gerona 2	French	Spanish	22/7/1808	16/8/1808	25	N	Lifted, relief approaching
Gerona 3	French	Spanish	24/5/1809	11/12/1809	200	Y	Stormed
Hostalrich	French	Spanish	16/1/1810	12/5/1810	86	Y	Governor Estrada broke out and 800 of 1100 garrison escaped after supplies exhausted.
Lerida	French	Spanish	13/4/1810	14/5/1810	7	Y	Surrendered, after French bombarded civilian population
Mequinenza	French	Spanish	15/5/1810	18/6/1810	34	Y	Surrendered after breech practical.
Olivenza	French	Spanish	11/1/1811	21/1/1811	10	Y	Surrendered, after breach practical.
Olivenza	British	French	9/4/1811	15/4/1811	6	Y	Surrendered, after breach practicable
Pamplona (Blockade)	British	French	25/6/1813	31/10/1813	128	Y	Blockade, surrendered when supplies ran out
Pensicola	French	Spanish	20/1/1812	2/2/1812	13	Y	Surrendered (by Governor to obtain good personal terms)
Rosas	French	Spanish	7/11/1808	5/12/1808	28	Y	Surrendered after breach made
Salamanca Forts	British	French	17/6/1812	27/6/1812	10	Y	Surrendered
Santander	Spanish	French	14/8/1811	15/8/1811	0	Y	Stormed by Porlier

APPENDIX K – Sieges during the Peninsular War.

Place	Besiegers	Besieged	Start Date	End date	Duration (days)	Taken?	Outcome
							O.IV,p472
Saguntum	French	Spanish	23/9/1811	26/10/1811	33	Y	Surrendered, walls crumbling
San Sebastian 1	British	French	14/7/1813	25/7/1813	11	N	Lifted after failed assault. Ran out of ammunition.
San Sebastian 2	British	French	26/8/1813	8/9/1813	12	Y	Stormed town 31 Aug; castle held out until 8 Sep 1813.
Saragossa 1	French	Spanish	15/6/1808	14/8/1808	60	N	Lifted
Saragossa 2	French	Spanish	20/12/1808	20/2/1809	62	Y	Stormed
Tarifa	French	Spanish/British	20/12/1811	4/1/1812	15	N	Lifted, insufficient resources.
Tarragona	French	Spanish	3/5/1811	28/6/1811	56	Y	Stormed and sacked
Tarragona 2	British	French	3/6/1813	15/6/1813	12	N	Abandoned by Murray
Tarragona 3 (Blockade)	British	French	30/7/1813	15/8/1813	16	N	Blockade by Bentinck
Tortosa	French	Spanish	19/12/1810	2/1/1811	14	Y	Surrendered, with no good reason
Valencia	French	Spanish	25/12/1811	8/1/1812	14	Y	Surrendered, starved out

APPENDIX L - GLOSSARY OF ENGINEERING TERMS.

Bastion
Towers placed at regular intervals around a fortress

Chevaux-de-Frize
Large pieces of timber studded with blades and spikes, designed to block breaches in walls against attackers

Curtain
Wall connecting bastions in a fortress perimeter

Fascines
are rough bundle of small branches used for strengthening an earthen structure or marking out ground.

Gabions
are round baskets with open tops and bottoms, made from wickerwork and filled with earth for use as military fortifications. These were used to protect artillery batteries of troops in trenches.

Glacis
is an artificial slope of earth constructed to keep attackers under the fire of the defenders until the last possible moment. The glacis consists of a slope with a low grade inclined towards the top of the wall. This gave defenders a direct line of sight into the assaulting force right up to the walls of the fortress.

Parallel
Trenches dug by attacking forces near fortresses to protect themselves from defenders fire

Platform
Wooden flooring within a battery on which the artillery pieces were placed

Sap
Trenches dug forward from the main parallels to advance nearer the defenders position

Note : with thanks to Wikipaedia and Fletcher's *In Hell before daylight*, pp. 129-130.

Appendix M. **British activities on River Crossings in the Peninsular War 1808-14**

Name	Action	BY	Year	Month	Day	Event	Campaign	Reference
Landmann George Th	B	RE	1808	12	0	Assisted in building boat bridges at Abrantes and Punhete and flying bridge at Villa Velha	Strategic	RMC, v.5, p. 27; REM, 4201-305, 10 Feb 1809; ADD57544, f.204.
Davy Henry	D	RE	1808	12	10	Destroyed bridge at Betanzos. Killed in process.	Retreat to Corunna	Porter, p. 247
Burgoyne John Fox	D	RE	1808	12	26	Blew bridge over River Esla at Benavente.	Retreat to Corunna	Wrottesley, v1, p. 30
Williams John Archer	R	RE	1809	4	0	Examined bridge across Vonga which had been destroyed by Portuguese milita.		Wrottesley, v.1, p. 38
Fletcher Richard	B	RE	1809	5	12	Built bridge across the River Douro at Oporto		Shore, p.22; Wrottesley, vol.1, p.41; Connelly, vol.1, p.165.
	B	RSC	1809	6		Built temporary bridge over River Tietar	Talavera campaign	Garwood, p. 83.
Stanway Frank	D	RE	1809	6	0	Mined bridge at Alcantara; blown 10/6/1809 when French advanced.	Talavera campaign	Shore, p. 29.
	B	RSC	1810	???		Built flying bridge across River Tagus at Villa Velha	Strategic	Garwood, p. 85. See Wd, to Stuart, 31 Mar 1811, suggests Portuguese made bridge not RSC
	B	NK	1810	???		Built bridge of country boats across River Tagus at Abrantes	Strategic	Garwood, p. 86.
	B	NK	1810	???		Flying bridge across River Tagus at Villa Velha replaced by bridge of country boats.	Strategic	Garwood, p. 86.
	B	NK	1810	???		Built bridge of boats across River Zezere at Punhete.	Strategic	Garwood, p. 86.
Burgoyne John Fox	D	RE	1810	7	28	Destroyed bridges at Ponte de Murcella, Val des Pinos on the Alva, Foz d'Aronce and Espinhal.	Retreat to Lines of Torres Vedras	Wrottesley, v1, p. 97
Burgoyne John Fox	D	RE	1810	8	0	Mined several bridges on likely routes of french advance	Retreat to Lines of Torres Vedras	REM, 4201-68, Burgoyne's diary 1810-11
Mulcaster Edmund R	D	RE	1810	9	19	Ordered to accompany Brig-Gen Pack to destroy bridges of Santa Combadao and Criz	Retreat to Lines of Torres Vedras	Wrottesley, v.1. p. 108
		NK	1810	10		Removed bdridge at Punhete	Retreat to Lines of Torres Vedras	
		NK	1810	10		Removed bridge at Villa Velha	Retreat to Lines of Torres Vedras	
Reid William	D	RE	1810	12	15	Mined bridge over Rio Gingo at Miahaldas	Retreat to Lines of Torres Vedras	REM - JTJ MS Journal
Forster William	B	RE	1811	1		Built bridge of boats across the river at Benavente	Retreat to Lines of Torres Vedras	WD, To Beresford & Berkeley 18 Jan 1811
	R	RSC	1811	3		Repaired bridge at Pirnes	Pursuit of Massena	Garwood, p. 86.
	B	RSC	1811	3		Built trestle bridge over River Ceira near Foz d'Arance[sp?]	Pursuit of Massena	Garwood, p. 86.
	B	RSC	1811	3	18	Built flying bridge across River Alva at Ponte Murcella	Pursuit of Massena	Garwood, p. 86.
	R	RSC	1811	3		Repaired bridge over River Coa at Almeida	Pursuit of Massena	Garwood, p. 87.
			1811	3		Replaced bridge at Villa Velha		
			1811	3		Replaced bridge at Punhete		
Squire John	B	RE	1811	4	0	Constructed bridges across the River Guadiana at Jerumenha. First combined trestle/pontoon bridge; second, flying bridges when river rose and swept away bridge; third, bridge fo casks for infantry only.	First siege of Badajoz	
	B	RE	1811	5	25	Flying bridge constructed across Guadiana near Badajoz	Second siege of Badajoz	Jones, vol. 1, p. 34.
	B	RSC	1811	5	5	Built two temporary bridges over Coa to provide retreat route for Wellington at Battle of Fuentes d'Onoro	Fuentes campaign	Garwood, p. 89.
	B	OTH	1811	6		Col. Austin built bridge across Guadiana at San Lucar for Spanish force under Penne Villemur to cross		WD, To Liverpool, 11 Jul 1811.
Macleod George Fran	R	RE	1811	8	0	Repaired bridges at Val des Pinos and Ponte Murcella.		Porter, p. 294; WD, 30 Jun 1811
Piper Robert Sloper	P	RE	1811	8?		Laid Pontoon bridge over River Tagus at Almarez.	Siege of Cidad Rodrigo	Webber, p. 65.
Reid William	D	RE	1811	11	12	Mined bridges on the Veltes river to secure the flank of Don Carlos D'Espana.		REM, 5501-59-2
Sturgeon Henry	B	RSC	1811	11	18	Built trestle bridge over Agueda at Marialva for siege of Cuidad Rodrigo	Siege of Cidad Rodrigo	Garwood, p. 86.

Appendix M. **British activities on River Crossings in the Peninsular War 1808-14**

Piper Robert Sloper	P	RE	1812	3	14	Laid pontoon bridge across River Guadiana above Badajoz. Washed away 22 Mar 1811 and eleven pontoon sunk.	Third siege of Badajoz	Jones, Sieges, vol. 1, p. 148
	B	RE	1812	3	15	Flying bridge constructed across Guadiana using two Spanish boats	Third siege of Badajoz	Jones, Sieges, vol. 1, pp. 148, 168.
Lascelles Thomas	P	RE	1812	3	22	Sent to 're-establish' bridge of communication over Tagus at Villa Velha when pontoon bridge at Badajoz swept away by floods.	Third siege of Badajoz	Porter, p. 297; 5501-59-3.
Burgoyne John Fox	P	RE	1812	4	10	Ordered to go to Villa Velha and take up pontoon bridge if French approach	Third siege of Badajoz	4601-72 f. 1812/5
Sturgeon Henry	R	RSC	1812	4		Constructed suspension bridge across River Tagus at Alcantara	Strategic	Garwood, p. 91.
Squire John	R	RE	1812	5	0	Repaired bridge at Merida, Two fallen arches of stone bridge replaced with timber.		BL, Add63106 ff. 57-8
Sturgeon Henry	R	RSC	1812	???		Constructed suspension bridge across River Tagus at Almarez	Strategic	Garwood, p. 90.
Goldfinch Henry	R	RE	1812	10	0	Repaired bridge at Royal Palace, Madrid		Webber, p. 84
Pitts Thomas James H	D	RE	1812	10	25	Destroyed bridge at Duenas Tariego (which had been mistaken reported as in French possession the previous day). First attempt failed due to being rushed by the French. A later attempt blew out 13 feet of the arch.	Retreat from Burgos	Wrottesley, v.1, pp. 241-2
Burgoyne John Fox	D	RE	1812	10	26	Mined bridge on the River Piseurga at Cabezon .	Retreat from Burgos	Wrottesley, v.1, p. 242
Goldfinch Henry	B	RE	1812	10	27	Constructed temporary bridge across Tagus near Aranjuez	Retreat from Burgos	Webber, p. 98
Pitts Thomas James H	D	RE	1812	10	28	Blew bridge on the River Douro at Tordesillas.	Retreat from Burgos	Wrottesley, v.1, p. 243
Reid William	D	RE	1812	10	28	Blew bridge on the River Pisuerga at Simancas.	Retreat from Burgos	Wrottesley, v.1, p. . 243
Reid William	D	RE	1812	10	29	Mined bridge over River Douro at Quintanilla (above Tudela). Wooden arch destroyed in the evening.	Retreat from Burgos	Wrottesley, v.1, p. . 243
Pitts Thomas James H	D	RE	1812	10	29	Mined bridge at Zamora	Retreat from Burgos	Wrottesley, v.1, p. 243
Barney George	D	RE	1812	10	29	Destroyed bridge at Valladolid on Piseurga.	Retreat from Burgos	Wrottesley, v.1, p. 243
Burgoyne John Fox	D	RE	1812	10	29	Destroyed bridge over River Piseurga at Cabezon	Retreat from Burgos	Wrottesley, v.1, p. 243
Jones Harry David	D	RE	1812	10	30	Destroyed repaired arch of bridge at Castronuno (near Toro)	Retreat from Burgos	RE JNL Jan 1890, p. 3
Pitts Thomas James H	D	RE	1812	10	31	Destroyed bridge at Zamora	Retreat from Burgos	Wrottesley, v.1, p. 244
Pitts Thomas James H	D	RE	1812	11	8	Mined bridge over River Tormes at Congosta	Retreat from Burgos	Wrottesley, v.1, p. 245
Barney George	D	RE	1812	11	8	Mined bridge over River Tormes at Barco de Avila	Retreat from Burgos	Wrottesley, v.1, p. 245
Slade William Henry	D	RE	1812	12	0	Went to destroy bridge at Merida		WD, 20 Dec1812
Matson Edward	R	RE	1813	0	0	Repaired bridge over Toro	Vitoria campaign	Connelly, vol.1, p.194.
West George Innes Pe	R	RE	1813	0	0	Repaired bridge at Puente de Douro de Simancas and five other bridges	Vitoria campaign	Shore, p. 96
Wright Peter	B	RE	1813	2	0	Built bridge of trestles over River Alagon at ford of Las Campanas near Galisteo		REM, 4201-68, Burgoyne Bridges. P. 19.
	P	RE	1813			Laid a number bridges for passage of army, including over the Esla. RSC also present.	Vitoria campaign	Connelly, vol.1, p.193.
Piper Robert Sloper	P	RE	1813	10	7	Laid pontoon bridge across River Bidassoa near Irun	Campaign in Pyrenees	Connelly, vol.1, p.197.
	R	RE	1813	10		Repaired wooden bridge at Irun	Campaign in Pyrenees	REM, 4201-68, Burgoyne Bridges. p. 14.
Dickens Thomas	B	RE	1813	10		Built trestle bridge over River Bidassos near Irun	Campaign in Pyrenees	Connelly, vol.1, p.197.
Pitts Thomas James H	B	RE	1813	11	11	Built trestle bridge over River Bidassos near Sarre	Campaign in Pyrenees	Connelly, vol.1, p.198.
Hendersen	B	RE	1813	12		Laid bridge of 11 bays? over River Nive at Ustaritz	Campaign in Pyrenees	Connelly, vol.1, p.198.
	B	RE	1813	12		Built bridge of wine barrels and skiffs	Campaign in Pyrenees	Connelly, vol.1, p.198.
Boteler Richard	P	RE	1813	12		Laid Pontoon bridge over River Nive at Ustaritz	Campaign in Pyrenees	Oman. Vol. 7, p.228; Connelly, vol.1, p.198.
	R	RE	1813	12		Repaired old wooded bridge at Ustaritz	Campaign in Pyrenees	Oman. Vol. 7, p.228.
	P	RE	1813	12		Laid pontoon bridge over River Nive at Villefranque.	Campaign in Pyrenees	Oman. Vol. 7, p.262.

Appendix M. **British activities on River Crossings in the Peninsular War 1808-14**

	B	RE	1814	1		Built cask bridge across the River Nive near Cambo	Campaign in France	Connelly, vol.1, p.202.
Tod Alexander	B	RSC	1814	2		Built bridge of boats over River Adour	Campaign in France	Garwood, p. 90.
	R	RE	1814	26		Repaired bridge at Berenx	Campaign in France	Connelly, vol.1, p.202.
	P	RE	1814	3		Laid pontoon bridge over River Garonne at ???	Campaign in France	Burnham, pp. 266-269.
	P	RE	1814	3		formed several pontoon and flying bridges on march from Orthez to Toulouse	Campaign in France	Connelly, vol.1, p.203.
			INDEX	24	**B**	**Build bridge**		
				21	**D**	**Destroy bridge**		
				9	**P**	**Lay/move/lift Pontoon bridge**		
				13	**R**	**Repair bridge**		
				67				
				52		**Carried out by Royal Engineers (RE).**		
				11		**Carried out by Royal Staff Corps (RSC).**		
				5		**Not known who carried out work**		
				1		**Built by other corps**		
				69				