SI VIS PACEM PARA BELLUM

MUSKETRY TRAINING IN THE BRITISH ARMY, 1884 – 1914

BY

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Abstract

Musketry training has defined the role and purpose of Infantry on the battlefield since the Seventeenth Century. This thesis examines the musketry training of the British Army from an educational perspective during the thirty year period prior to World War One. In doing so, it attempts to bridge the gaps between three distinct areas of historiography: military, social, and firearms history. The main sources used have been the Musketry Regulations, any interim amendments to these, and the Annual Reports of the School of Musketry's Commandant. Together they form the basis for an assessment of how the Army conducted rifle training, as well as a discussion of the opinions of the officers responsible for its creation and refinement, particularly their contemporary assessment of successes and failures.

The discussion examines the Individual training of the Infantry specifically, as distinct from the Cavalry and support arms, being the only group equipped with the rifle throughout this period. The Infantry's standards of marksmanship training were consistently the most rigorous of any arm of service, and their Individual training formed the universal foundations upon which all further training and tactics were built. These were the factors determining the point at which soldiers were considered 'trained men' in the eyes of the Army, and ready for combat service.

The period chosen includes changes and innovations made after both Boer Wars (1880-81, and 1899-1902), as well as the transition from single-shot rifles to magazine-fed designs. Many of these developments directly influenced the tactics and arms used at the beginning of World War One, and primary research has been conducted on specialist training, particularly the 'Mad Minute'. This was also the period when senior First World War officers were trained, and so can provide another perspective on training and combat later in their careers. Service histories for certain influential figures relevant to this study are included as an appendix, to demonstrate their personal career paths in relation to the areas covered in this thesis.

This study concludes that, when viewed over a thirty-year period, changes in training were generally evolutionary, and relied heavily upon existing training mechanisms and equipment. It demonstrates that the British Army was attempting to incorporate greater realism into Individual training in the 1880s, but using the existing educational framework. This approach changed with the introduction of the Lee-Metford rifle in 1891, and the perceived benefits of this new arm. This came full circle after 1902, with a far greater focus upon realistic and progressive Individual training, and with assessment separated from instruction for the first time. This became the blueprint for training over the course of the Twentieth century. This thesis therefore adds to our understanding of both the battle procedures of the Late Victorian and Edwardian Army, and the formation of what we could consider 'modern' firearm training from both a tactical and educational standpoint.

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Copyright Statement

Si Vic Pacem, Para Bellum[1]

Musketry Training in the British Army, 1884-1914

How did the British Army's approach to the marksmanship training of its soldiers evolve to meet changes in both tactics and technology over the course of the thirty years prior to the First World War?

Introduction

The British Expeditionary Force (B.E.F.) that went to war in 1914 was the smallest European army to enter that conflict, but it was also the only wholly volunteer force. This was due to two factors: the reliance of the British Empire upon its naval power as its primary defence, and the consequent lack of investment in its Army; and an inherent distrust of the compulsory service required to build a large standing army. Their description by Kaiser Wilhelm II as a 'contemptible little army',[2] which formed the source of so much pride for those who became known as the 'Old Contemptibles', has often been the basis for discussions as to whether that description was justified or not. The soldiers of the B.E.F. had all served for at least two years, and were led by officers who had experience of combat in Africa or on the North-West Frontier of India. This relatively long service allowed for training to be conducted throughout the year, rather than concentrated into a short period during the summer as conscript armies were often forced to do. This was particularly of benefit when it came to rifle training, allowing the Army to build the mechanical skill and muscle memory behind the training that the British felt necessary for the modern battlefield.

[1] 'If you want peace, prepare for war'. The statement is adapted from one made by the Roman author Vegetius, in the preface to Book 3 of his work *De Re Militari* ['Concerning Military Matters'], written in the 5th Century AD.

[2] This was based upon the translation of an Army Order, supposedly issued by Wilhelm on 19 August 1914 and captured during the Battle of the Marne (6-12 September 1914), the translation of which was included in the British Orders of the Day on 24 September. However, despite repeated efforts in the immediate post-war period, the original telegram was never found, and it has been suggested that it was purely the creation of the British propaganda machine. See Spencer Jones, 'Was the Kaiser's 'Old Contemptibles' telegram a fabrication?' (25 August 2013). Retrieved from http://blog.helion.co.uk/spencer-jones-was-the-kaisers-old-contemptibles-telegram-a-fabrication/, 2 September 2017.

But the training process needed more than just time, as had been demonstrated in two conflicts with the Boer settlers in Southern Africa. The First Boer War (1880-81) demonstrated the Afrikaners' superior marksmanship skills, and had actually ended in defeat of the British forces, leading to the creation of a committee in 1881 to examine musketry training.[3] Despite their work and seven subsequent issues of Musketry Regulations, when the British and Boer forces met again eighteen years later in the South African War (1899-1902), the Boer farmers still outshot professional British soldiers. The campaign, which many in Britain felt should have been over in a matter of months, became a three year conflict, and tied up a disproportionate amount of men and material. Although the British Army eventually emerged victorious, the campaign was an embarrassment, and was the catalyst for a reassessment of the Army as whole, conducted both internally by the senior commanders and externally by political committees. A large amount of work was required to improve their skills and reputation by the outbreak of the First World War.

The purposes of this study are threefold:

1. To examine how musketry training evolved between 1884 (the first manual issued after the First Boer War) and 22nd November 1914 (the end of the First Battle of Ypres, the last action of the First World War where significant numbers of pre-war Regular troops took part).
2. To examine how tactical and technological changes influenced that evolution, both at theoretical and practical levels.
3. To determine what other factors may have influenced training beyond the experiences of the Army itself.

[3] See HMSO, *Report of the Committee on Musketry Instruction in the Army, &c.; Together with Minutes of Evidence and Appendix, 1881*, (London, Harrison and Sons, 1881). Preserved in The National Archives (UK) [Hereafter cited as TNA], WO 33/37.

Justification for the Study Parameters:

The evolution of the British Army's musketry skills and tactics allows for a study of both the human and mechanical aspects of individual training, as well as a greater understanding of the motivation behind changes, in response to either tactical and/or technological pressures. The first rifle training manuals for the Army as a whole had appeared in the early 1850s, alongside the general introduction of rifle-muskets. These were eventually converted to breech-loaders in the early 1860s using the Snider breech design, although this was only intended as a stop-gap measure. The Martini-Henry which replaced them was the first purpose-built breech-loader in the British Army, but it was chambered for the relatively large .577/.450 cartridge, which used black powder as the propellant. Whilst it was comparable to most of its contemporaries, it represented a type of rifle which was quickly rendered obsolescent on the battlefield by faster loading magazine-fed designs. That the Martini-Henry remained in service for as long as it did was due to the rapidity with which further developments occurred in firearms and ammunition technology. Although the British originally intended to adopt a modification of the Martini action, designed around a smaller .402-inch cartridge, it quickly became clear that technology had moved past that design. The experiments that followed eventually led to the introduction of the Lee action and the .303-inch cartridge, a combination which was to serve both British and Imperial forces into the 1950s.

This is one of the three factors in choosing the period between 1884 and 1914. As referred to above, 1884 was the first manual issued after the First Boer War, and so allows for comparison to be made between the lessons learnt in the 1880s, and those gained nearly twenty years later. The mid-1880s were also formative years for many of those officers who occupied senior positions in both the South African and First World Wars, as it was the period where they either joined the Army or exercised their first commands. The experiences

gained during that period would continue to affect their approach to battle in later life, and so may offer a different insight into their perception of combat.

When developing training, the manuals had to maintain pace with changes in technology and its usage on the battlefield, both in the hands of the individual soldier and as part of a larger unit. The initial training focussed on individual skill, particularly marksmanship, as this was the foundation of the training that followed. Soldiers who passed then moved onto Sectional training, where they fired as part of their unit. This was where they practised the manoeuvres and drills they would need to operate together on the battlefield, a section being the smallest unit considered to be effective on the battlefield. However, the exact form that this sectional training took depended heavily upon the available training areas, which were severely limited in Britain, as well as the inclinations of the area commanders. Due to this variation, the primary focus of this thesis is the individual marksmanship training, as this was both relatively standardised and was also formally assessed.

The end date has been based upon the historical works of David Ascoli and Robin Neillands,[4] both of whom focussed on the original B.E.F., and whose studies ended with the close of the First Battle of Ypres on 22nd November 1914. After that date, what remained of the pre-war Regular Army was withdrawn from the front line, and the training system in use by the British Army had to be adapted to cope with a need to supply many more trained soldiers in as short a time as possible. The training which had developed in response to the small colonial wars was found impossible to sustain in the face of the demands of industrialised warfare. At the same time, from the beginning of 1915, there was a move away from an infantry based solely around the rifle, with the introduction of hand grenades and light machine guns to create an early form of combined-arms tactics. With these new

[4] D. Ascoli, *The Mons Star; The British Expeditionary Force, 1914*, (London, Harrap, 1981); Robin Neillands, *The Old Contemptibles*, (London, John Murray, 2004).

weapons introduced to the battlefield, the firepower of a unit could be supplemented by methods other than musketry efficiency, and the rifle was no longer the sole battlefield arm of the Infantry. The major changes that this required means that November 1914 represents a logical end date for the study, and the final manual to be considered is the amended 1909 Regulations issued in January 1914.

This thirty-year period has been divided across four chapters:

Chapter 1: 1884 – 1891

Chapter 1 examines the period from the first manual issued after the First Boer War, through to the introduction of the Magazine Rifle (later referred to as the Lee-Metford). Whilst the first of these were issued at the end of 1889, the musketry training that was issued for them was initially adapted from that used for the Martini-Henry, and they were taught in the same way until such time as the majority of units were in possession of them.

Chapter 2: 1892 – 1900

Chapter 2 covers the period between the first full manual for the Lee-Metford being issued, in 1892, until the end of the first full year of the South African War in 1900. During this period, manuals were issued every other year, and the four manuals form a distinct group in their own right, demonstrating the British Army's evolving understanding of the new rifle's capabilities, and how they wished to use them on the battlefield, as well as the introduction of 'smokeless' cartridges and the Lee-Enfield rifle to handle them. This period created the training and equipment of the soldiers in the South African War, which was so quickly called into question.

Chapter 3: 1901 – 1908

Chapter 3 considers the aftermath of the South Africa War, with the introduction of the 'Short' Lee-Enfield and the training overlap between the old and the new rifle. There were also lessons from both the South African War and the Tirah Campaign on the North-West Frontier, particularly in the level of independence entrusted to soldiers. This produced three completely distinct sets of provisional musketry classification tables between 1902 and 1904, before finally being superseded by the Musketry Regulations of 1905. This was the first set of regulations to utilise a truly progressive approach to training, with assessment conducted in a discrete series of tests at the end of training, rather than training and assessment being combined. This formed the pattern which would guide future manuals.

Chapter 4: 1909 – 1914

Chapter 4 looks at the Musketry Regulations of 1909, which built upon the foundations of those issued in 1905, and were perhaps the most successful of any included in this study. Not only did these regulations remain in service until 1924, but they were flexible enough to be adapted to the changing demands of training in wartime. This period also covers the expanding role of the machine gun, and contemporary debates as to the relative supremacy of the rifle or bayonet on the battlefield. These had an impact upon training, as whichever view won ultimately decided the direction of training, to best support the tactics it created.

Due to the nature of the subject, with several forces leading to the creation of the training manuals, both thematic and chronological approaches were considered. Given the nature of the manuals, it was felt that the themes that could be discussed were so inter-connected that it would be far more difficult and confusing to attempt to separate them and pursue them individually. A chronological approach allows for a better demonstration of how both theories and techniques evolved throughout the period. This has been complemented by

relying primarily upon contemporary sources when assessing data, as far as possible. This ensures a fairer evaluation of the information collected, rather than examining with hindsight, which could influence analysis of the knowledge and equipment of contemporaries.

Review of Sources:

Primary Sources – This research focusses primarily on practical training as its initial reference point, and is based upon a combination of training manuals and interim amendments, issued between 1884 and 1914. Nine distinct manuals were issued during the period under consideration. These were not issued on a fixed cycle, but as and when major changes to the training syllabus were required.[5] Whilst any of these were in force, amendments might be introduced, altering as little as the wording in a particular paragraph, or include completely new tables or paragraphs. These were promulgated through Army Orders, the method by which the Army Council announced developments to regiments, and depending upon its success an amendment might itself be amended or absorbed into subsequent training.

In order to assess contemporary opinion as to the state of training, the work and reports of the School of Musketry have also been examined. Based at Hythe in Kent, the School was founded in 1853, and incorporated both educational and experimental aspects. From an educational stand-point, its function was two-fold. The first was to train selected officers and non-commissioned officers (N.C.O.s) as instructors. These men would then return to their units as musketry instructors, and so needed to be properly equipped to train their men to the desired standard using current techniques. Its second role was to write the musketry manuals, and develop any amendments required to keep the system up to date and functioning as efficiently as possible. The fluctuating pace of change is reflected by the

[5] The Musketry Regulations examined in this thesis were issued in 1884, 1887, 1892, 1894, 1896, 1898, 1903, 1905, and 1909. The 1909 Regulations were reissued, incorporating interim amendments, in 1912 and 1914.

number of manuals issued over a given period.[6] Where possible, the School preferred for a manual to be in use for two years before any changes were made, as only then was it felt that the training was properly understood. In those cases, amendments could be issued instead. However, particularly after wars, there was a surge in the production of new manuals over a shorter period, as the Establishment responded to any lessons learnt. Alongside this work, the School's experimental role made it responsible for testing any new equipment and developing new training. This meant that the School's instructors were not only amongst the best marksmen in the British Army, but often experts in the weapon systems of other nations as well as their own, so well placed to develop their own ideas as to how training should evolve. The School's Commandant produced an Annual Report, in which he reviewed both the courses and experiments completed at Hythe, as well as analysing the musketry reports submitted by every battalion in the Army. These reports provide contemporary evidence on the perceived effectiveness of training for most of the years under discussion, allowing a greater understanding of both the Army's intentions and its own assessment and understanding of its efficiency.

Other contemporary sources have been used to provide wider context for changes, as well as contemporary opinions. The Victorian public took a strong interest in the Army, both in terms of technology and its efficiency. This is reflected in published works, newspaper articles, and questions in Parliament, often incorporating a high degree of technical detail. The most notable is the work of a young officer, Ian Hamilton, in 1885. His book, entitled *The Fighting of the Future*,[7] was a radical departure from contemporary training and drew heavily upon his experiences in both India and South Africa. Whilst not taken up in Britain, Hamilton was placed in charge of the musketry training of the Native Army in India, allowing him to demonstrate the potential of his ideas. This made him a counterpoint to what

[6] As seen in the previous footnote, four complete set of Regulations were issued in the 1890s, whereas from 1903 to 1914 only three were issued.
[7] Captain I. Hamilton, *The Fighting of the Future*, (London, Kegan Paul, Trench & Co., 1885).

some perceived as inaction on the part of the School of Musketry. He later went on to be Commandant at Hythe, as well as serving in both the South African and First World Wars. His papers, including scrap books of contemporary articles on musketry training, have been used to demonstrate the opinions of some of Hamilton's contemporaries as expressed in the public domain during the early part of this study.

Other officers also produced both articles and lectures discussing changes in tactics, training and equipment, often through organisations such as the Aldershot Military Society, the *Journal of the Royal United Services Institute*, and the *Army Review*. Where possible, these have been included to further expand both official and personal perspectives on particular matters.[8] The work of Colonel C.E. Callwell is noticeable in the scale of his work, providing a "tactical textbook" for soldiers faced with the varied conditions and demands of the numerous 'small wars' the British Army faced throughout this period.[9] Another notable writer in the latter part of this thesis is Norman McMahon, who developed ideas regarding both musketry tactics and the potential future of the machine gun whilst serving as Chief Instructor at the School. His work highlights the arguments surrounding the development of both arms and tactics in the years immediately prior to World War One.[10]

Secondary Sources – Historiography of the British Army in the late Victorian period can most readily be grouped into either campaign history, or as having a social or political focus. In terms of the former, a tendency to focus on the big campaigns has often meant that what happened in the period before is viewed with knowledge of its flaws, rather than from a contemporary perspective, a point noted by Nicholas Jones.[11] In terms of the larger conflicts

[8] Whilst copies of both the *Journal of the Royal United Services Institute* and the *Army Review* have been found, survival of copies of lectures given to the Aldershot Military Society appear to be rare in public collections, and so occasionally these have been referred to *via* other writers.
[9] Colonel C.E. Callwell, *Small Wars*, (reprint, London, Greenhill Books, 1990).
[10] See Lt-Col. N.R. McMahon, 'Fire-Fighting', *Aldershot Military Society*, XCV, (London, Hugh Rees, 1908).
[11] Nicholas Jones, *From Drill to Doctrine. Forging the British Army's Tactics 1897 – 1909*, (unpublished PhD thesis, King's College London, 2007), p. 7.

of this period, notable studies include the work of Joseph Lehmann and Thomas Packenham on the two Boer Wars,[12] as well as that of John Terraine and Barbara Tuchman on the opening battles of the First World War,[13] alongside those of Ascoli and Neilmann already cited above. In terms of the smaller conflicts, there are the works of John Fortescue, Byron Farwell, and Donald Featherstone, although these tend to be limited to simple campaign histories due to the sheer number of conflicts they cover.[14]

Studies of the South African War in particular have generally focussed upon one or more of three main areas: the overall campaign; the changing tactics during the three major phases of the war; or upon the commanders. This last area has allowed a direct comparison between the tactics of Redvers Buller and Frederick Roberts,[15] generals who came from two competing schools of theory and with vastly different experiences of war. However, few of these works continue beyond the end of the war. This leaves discussion of the changes that were enacted to address perceived failings of both equipment and tactics to those writing about the First World War, or larger tactical surveys such as that by Martin Samuels.[16] A similar statement is true of many of the histories of the First World War, in that they often restrict themselves to the confines of the war itself. Discussions of the B.E.F. have traditionally been focussed on either the period following the Haldane Reforms of 1908,[17] or based around the experiences of individual regiments or formations.[18] Whilst 1908 was the point at which the British Army was reorganised into the body which mobilised in 1914, the

[12] Joseph Lehmann, *The First Boer War*, (London, Buchan & Enright, 1985); Thomas Packenham, *The Boer War*, (London, Weidenfeld & Nicolson, 1979).
[13] John Terraine, *Mons*, (London, B.T. Batsford, 1960); Barbara Tuchman, *August 1914*, (London, MacMillan, 1962).
[14] John Fortescue, *The Empire and the Army*, (London, Cassell and Company, 1928); Byron Farwell, *Queen Victoria's Little Wars*, (London, Allen Lane, 1973); Donald Featherstone, *Colonial Small Wars, 1837-1901*, (Newton Abbott, David & Charles, 1973).
[15] Julian Symons, *Buller's Campaign*, (London, White Lion Publishers, 1974); Rodney Atwood, *Roberts & Kitchener in South Africa, 1900-1902*, (Barnsley, Pen & Sword Military, 2011).
[16] M. Samuels, *Command or Control? Command, Training and Tactics in the British and German Armies, 1888-1918*. (London, Frank Cass, 2003).
[17] Richard Holmes, *Tommy; The British Soldier on the Western Front, 1914-1918*, (London, Harper Collins, 2004).
[18] For example, J.M. Craster (ed.), *'Fifteen Rounds a Minute' – The Grenadiers at War, August to December 1914*, (London, Macmillan London, 1976.

Army was comprised of men whose range of experience often stretched back to the Victorian period. This was particularly true of those in higher ranks, and their experiences of the Second Boer War, twinned with opinions based upon observations of the Russo-Japanese War (1904-5), continued to exert an influence upon the approach of senior British officers to the issues they faced. The work of Robin Neillands is notable in this area, as his work on the 'Old Contemptibles' covers the period from 1870 to 1914, to better demonstrate the European political setting that dictated how the B.E.F. was deployed.[19] By contrast, the primary focus of recent work by Peter Hart is on the first five months of the war, from August to December 1914.[20] There have also been parallel discussions examining the command structure of the Army, focussing on particular officers,[21] or campaigns.[22] Again, there are outliers from these conventions, with historians such as Spencer Jones and Tim Travers examining changing tactical practices, both during campaigns and in peace time,[23] or technological evolution in this period.[24]

In terms of the army's relationship with society, its composition, recruitment and training has been examined in the work of Alan Ramsay Skelley, Edward Spiers, and Timothy Bowman and Mark Connelly,[25] as well as Richard Holmes' *Tommy*.[26] Whilst all include discussions on musketry training, they are limited by the scope of their respective works to discussing the debates over tactics rather than analysis of its development. Edward Spiers has also examined the role and work of the politician Richard Haldane, the Secretary

[19] Neillands *Op Cit*
[20] P. Hart, *Fire and Movement*, (Oxford, Oxford University Press, 2015).
[21] J. Lee, *A Soldier's Life: General Sir Ian Hamilton, 1853-1947* (2nd ed.), (London, Pan Books, 2001); B. Bond & N. Cave (ed.), *Haig: A Reappraisal 70 Years On*, (Barnsley, Leo Cooper, 1999).
[22] G. Sheffield, & D. Todman, *Command and Control on the Western Front*, (Staplehurst, Spellmount, 2004).
[23] Tim Travers, *The Killing Ground: The British Army, the Western Front & the Emergence of Modern War, 1900-1918*, (London, Allen & Unwin, 1987); Hew Strachan (ed.), *Big Wars and Small Wars*, (London, Routledge, 2006); S. Jones, *From Boer War to World War*, (Norman, OK, University of Oklahoma Press, 2013).
[24] S. Bidwell & D. Graham, *Fire-Power*, (London, Pen & Sword Military Classics, 1985).
[25] Alan Ramsay Skelley, *The Victorian Army at Home*, (London, Croom Helm, 1977); Edward M. Spiers, *The Army and Society, 1815-1914*, (London, Longman, 1980); Edward M. Spiers, *The Late Victorian Army*, (Manchester, Manchester University Press, 1992); Timothy Bowman and Mark Connelly, *The Edwardian Army: Recruiting, Training and Deploying the British Army, 1902-1914*, (Oxford, Oxford University Press, 2012).
[26] Holmes *Op Cit*

of State for War responsible for many of the organisational changes and reforms which the B.E.F. was to utilise in 1914.[27] These have all served to illustrate the difficulties associated with recruitment in peace time, particularly in terms of maintaining the required numbers for overseas detachments, often at the detriment of those battalions based at home. There is also a political dimension, as there was a drive from government to restrict expenditure on the army, something which Haldane was keenly aware of when laying out his reforms. These restrictions had a negative impact on training, as the low wages restricted the standard of recruit, and therefore the level of education they could reasonably be assumed to possess, and the demand for training to be completed as quickly as possible so that drafts could be sent out and numbers maintained. Whilst these discussions have included elements of musketry training, its inclusion as one element of a wider picture has meant that it has been given relatively little attention, beyond the changes in technology that occurred in the second half of the nineteenth century. As such, there has been little practical examination of how one of the most important parts of a soldier's training was carried out, and what impact the challenges referred to above had upon the design and application of training.

The drawback of many of these studies from a training perspective is that firearms were generally developed in peacetime, rather than for or during a particular war, and the relevant debates over procurement and training were subject to particular political pressures. There has also been a tendency, particularly in the drive to see soldiers as men rather than simply figures, to separate them from the weapons which formed their main battlefield implement. In the case of the Regular infantryman, who unlike his Continental counterparts had not been conscripted but had volunteered, a rifle was as much a part of his identity as any other element of his equipment. To consider him without it is to remove his primary role on the battlefield. Other writers have gone in a different direction, focussing on the development

[27] Edward M. Spiers, *Haldane: An Army Reformer*, (Edinburgh, Edinburgh University Press, 1980).

and evolution of a particular weapons system from a technical and political perspective. In the period covered by this thesis, the most notable works were produced by two men: E.G.B. Reynolds and Ian Skennerton.[28] These both provide a history of the invention and development of the Lee rifle in British service, together with technical information, across all of its various iterations. However, this allows very little space for consideration of how those rifles were used, save where it had a direct impact upon the form of the design. Similar works exist relating to the machine-gun, some of which were written by officers who served in World War One, and so occasionally include references to contemporary rifle training. These include the works of F.V. Longstaff and A.H. Atteridge, G.S. Hutchison,[29] and R.V.K. Applin's autobiography.[30] There is also John Ellis' work on the social history of the machine-gun, and Paul Cornish's wider history of the usage of machine-guns in World War One.[31] However, these works also include discussions of training and usage, whereas similar works do not exist for the rifle. This leaves a gap in the historiography between the factory and the battlefield; the point where a recruit was issued the rifle he was to wield in the service of his country, and carry for the rest of his service career. Although writers such as Skelley have discussed the educational level of recruits in the Victorian period, this is normally in the context of eligibility for promotion, rather than its impact upon the merits and usage of verbal or written instruction during this period. Education writers such as Eric Midwinter, whilst writing about the history of education, do so from the development of the education system, and do not look at its impact once pupils had left school.[32] Although contemporary education handbooks do exist, these were often written by soldiers to assist in the training of Territorial

[28] Maj. E.G.B. Reynolds, *The Lee-Enfield Rifle*. (London, Herbert Jenkins, 1960); Ian Skennerton, *The Lee-Enfield; A Century of Lee-Metford & Lee-Enfield Rifles & Carbines*, (Labrador, Ian D. Skennerton, 2007).
[29] Major F.V. Longstaff and A. Hilliard Atteridge, *The Book of the Machine Gun*, (London, Hugh Rees, 1917); Lt-Col. G.S. Hutchison, *Machine Guns , Their History and Tactical Employment*, (London, Macmillan, 1938).
[30] Col. R.V.K. Applin, *Across the Seven Seas*, (London, Chapman and Hall, 1937).
[31] J. Ellis, *The Social History of the Machine Gun*, (U.S.A., Purnell Book Services, 1975); P. Cornish, *Machine Guns and the Great War*, (Barnsley, Pen & Sword Military, 2009).
[32] Eric Midwinter, *Nineteenth Century Education*, (London, Longman, 1970).

or cadet units, and focus on the subject matter rather than training methods.[33] As such, whilst there are works which touch on aspects of this area, either directly or indirectly, this work seeks to combine elements of military history, firearms history, and military education within a single work.

Key Research Questions:

The training practices of the Victorian and Edwardian Army can be assessed by their approach both to what soldiers were taught, and the methods of instruction used. Historically, the classic training method of the army was rote instruction: carefully choreographed movements, taught as 'drills', which would be followed as an automatic reaction to orders given by a commander. The intention was that every soldier's reaction would be the same, and that in battle these drills would ensure that soldiers continued to perform their roles. This form of training, whilst effective in training conscript armies, carried with it a massive risk. Should the commander be wounded or killed, the soldiers would lose direction, having no understanding of when to act without those commands. Whilst at close quarters they would continue to fight, at longer ranges they would not necessarily be able to direct their fire effectively. By the 1880s, a form of reflective practice had been introduced, which is best described under a phrase still used by the military today: 'test and adjust'. This allowed an individual to choose the best position and sight alignment to meet the parameters of the fire order given by his commander. This was relatively low-level though, and battlefield tactics continued to assume the presence of a commander to direct a unit's fire. Whilst some form of control was always required to maintain discipline, there was a major change in how that was exercised around the turn of the century. The effects of accurate long-range fire, experienced both in South Africa and on the North West Frontier, led some officers to look at Light

[33] As an example, see W.A. Brockington, *Elements of Military Education*, (London, Longmans, Green and Co., 1916).

Infantry tactics developed during the Peninsular War. These had allowed individual soldiers a greater independence of operation, within a framework of objectives dictated by the larger plan. It was this approach which came to be the cornerstone of British training during the years prior to World War One.

The following four questions have been framed to ensure that reflective practice, repetitive instruction, and the level of independence in action assigned on the battlefield, are examined when analysing the training material throughout this study:

1. What teaching methods are being used, particularly rote learning or written teaching?
2. Are soldiers being taught to react automatically to orders or to have autonomy on the battlefield?
3. What impact do wider tactical and technological changes have upon teaching methods and priorities?
4. How do key personalities and events affect the direction of training?

These questions have been influenced by the work of Randall Wakelam of the Royal Military College of Canada,[34] whose analysis of Western military education frameworks suggests that civilian concepts of lifelong learning are integral to military training. He has also pointed out the need for a reactive branch of the military, particularly in wartime, to ensure that intelligence and experience are assimilated in a form of 'best practice' and incorporated into the training of new recruits. This was particularly critical to the British Army, whose training throughout this period was kept deliberately non-specific, providing a broad framework so as to allow for rapid adaptation to specific circumstances. This was due to the unique challenges posed by the British Empire, where the Army might be deployed to

[34] R. Wakelam, 'Educating for War: the Military and the Academy', unpublished paper presented at *Education, War & Peace*, International Standing Conference for the History of Education, 36 (2014).

fight in almost any part of the world at relatively short notice, and against vastly different opponents. It was these conflicts, both the small-scale colonial actions which occurred throughout the 1890s and the larger wars which Britain either participated in or observed, that were the proving ground for all training, including musketry, as well as being used as evidence for how training could be improved. This reactive approach can also be seen when new weapons systems, such as the machine gun or aeroplane, were deployed in combat for the first time. As experience was gained, and the deficiencies of the theoretical models of peacetime exposed, that knowledge had to be assimilated to ensure that every asset was used as effectively as possible. What is most interesting about the First World War is that pre-war theories relating to the machine gun, which had been more or less dismissed by the Establishment, were eventually accepted and assimilated, leading to the creation of the Machine Gun Corps in October 1915 and a wholly different approach to using their firepower in aid of assaults.

The question of teaching practices is fairly complex, although the methods themselves are deceptively simple at first. Whilst the process by which the Army advanced its tactics and training is best described as reflective practice, there does not appear to have been a particular educational theory to guide the conscious assessment and evaluation of training techniques. Indeed, contemporary studies of the Army tended to view its evolution as a continuous process from the creation of the Cromwellian New Model Army.[35] Attempts at reform in the late Victorian period, such as those suggested by Ian Hamilton in *The Fighting of the Future*, focussed upon changing the skills being taught by making the exercises more 'practical' in nature, rather than the underlying methods of instruction. The only major change during this period was the move away from rote instruction, both of the soldiers and of the officers when training as instructors. The latter had formed one of the major complaints against Hythe,

[35] Fortescue, *op cit*.

where a perfect memorisation of the training materials was valued above an understanding of their implications.[36] This move can be seen as part of wider changes in society at that time. The late Nineteenth Century saw the improvement of the basic literacy and numeracy of the population after the implementation of the 1870 and 1880 Education Acts. This became a factor in the training of new recruits, who would have potentially been capable of a greater understanding of instructional material, and which may have affected the way the Army approached instruction in general. The Army had already made inroads in this area with the formation of the Corps of Army Schoolmasters in 1845, and the introduction of the Army Certificate of Education in 1861, which had three 'classes'. This carried a level of incentive, as obtaining each certificate allowed a soldier to be considered for promotion. After the South African War, a definite attempt appears to have been made to change the way soldiers were taught musketry, reflecting the wider interest in Light Infantry methods of training. At the same time, the approach to monitoring musketry standards changed, from a system which combined instruction and classification to one where the two elements were separated. The training also became consciously 'progressive', where each practice either expanded a previous teaching point, or introduced a new element. It was this approach to training, referred to be some contemporaries as 'Monro Doctrine', which was seen as crucial in the instruction of the pre-war Army.

That description of a type of training as 'Monro Doctrine' also raises the consideration of the officers responsible for producing the training material. Whilst officers were drawn from the middle and upper classes, and generally educated to a better standard than the soldiery, it may only have been their desire to progress through the ranks that caused them to attend a course of instruction at the School of Musketry, as a condition of their holding the post of Adjutant. The instructors of the School were drawn from those who had

[36] A comment repeated in memoirs and later histories of the School. For one example, see Col. Lord Cottesloe, *The Englishman and the Rifle*, (London, Herbert Jenkins, 1945), p. 220.

previously attended a course, although the qualifications for being an instructor varied over time. Whilst the junior instructors often returned to the School within five years of their own course of instruction, there was often a far longer gap for those who held the senior posts of Commandant or Chief Instructor. From 1890 the roles of officer instructors also appear to have become fixed-term postings of four years, creating a continual turnover of experience and interests in the command, on top of a relatively stable foundation of long-serving N.C.O.s.[37] In the period between 1902 and 1914 the effect of this can be seen in the variation of opinions expressed by successive officers, particularly with regard to the potential applications of machine guns. Perhaps more worrying is that the eponymous Monro actually considered himself to be unqualified for the post of Chief Instructor when appointed in 1902.[38] Yet, in the course of his six year tenure at Hythe, he assisted in the creation of all of the musketry training issued from 1903 to 1905, which was the basis for training through the First World War and beyond. Although this is the only known case of an officer being recognised for his work in that way, it demonstrates that a particular officer could have a sizeable impact upon his field. In light of this, primary research has been conducted into several officers who feature in the history of the School during this period, including:

- John Hopton (Captain-Instructor, 1886-1890, Chief Instructor, 1896-1900)
- Jesse Wallingford (Sergeant-Instructor, 1894-1911)
- Ian Hamilton (Commandant, 1898-1899)
- Charles Etches (Instructor, 1899 & 1901-1905)
- Charles Monro (Chief Instructor, 1901-1903, Commandant, 1903-1907)

[37] Although N.C.O.s are rarely recorded, two pre-war instructors, Jesse Wallingford and C.W. Churcher, can both be seen in competition records to have served for much longer periods. Wallingford specifically is known to have served for seventeen years, which does not appear to have been unusual at the School.

[38] See Gen. Sir G. Barrow, *The Life of General Sir Charles Carmichael Monro, Bt. G.C.B., G.C.S.I., G.C.M.G.*, (London, Hutchinson & Co., 1931), p. 31. His biographer also comments that the reason behind his selection for the post of Chief Instructor was 'not evident'.

- Norman McMahon (Chief Instructor, 1905-1909)

This has provided the basis for three peer-reviewed articles,[39] published during the course of this research, and a fourth which is due to be published in 2018.[40] These have included discussions of the British approach to the design and experimentation with firearms during the pre-war period, and a commentary on McMahon's 1907 lecture on fire tactics, described by one contemporary as '…a most important historical study…'.[41] These, together with a presentation to the Historical Breechloading Smallarms Association upon McMahon's life and career, have allowed for greater impact to be gained, particularly as they relate to the opening stages of the First World War, and thus tie in with the current commemorations of the centenary.

[39] Nicholas A. Harlow, 'British Army Rifle Trials: Sergeant-Major Wallingford and the London Olympics of 1908', in *The Journal of the Historical Breechloading Smallarms Association*, 4 (6), 2014, pp. 30-35; Nicholas A. Harlow, 'The Creators of the "Mad Minute"; The Careers of Brigadier-General N.R. McMahon and Major J.A. Wallingford', in *The Journal of the Society for Army Historical Research*, 94 (377), 2016, pp. 37-53; Nicholas A. Harlow, 'Beyond the Machine Gun: Re-interpreting McMahon's 'Fire Fighting' lecture of 1907', in *The Journal of the Historical Breechloading Smallarms Association*. 4 (8), 2016, pp. 30-45.
[40] Nicholas A. Harlow, 'The 'Mad Minute': Rapid Rifle Fire, and its place in the Edwardian Army', in *A Long, Long Trail A-Winding; Centenary Perspectives on the Great War*, Special Publication No. 18, 2018, pp. 9-32.
[41] Major F.V. Longstaff & A.H. Atteridge, *The Book of the Machine Gun*. (London, Hugh Rees, 1917), p. 287.

Chapter 1: 1884-1891 – The Transition to Small-Bore

The training promulgated during the 1880s was largely influenced by two major events. The first was a combination of the lessons learnt from two colonial wars: the Anglo-Zulu War (1879), and the First Boer War (1880-81). Both had seen serious defeats for the British Army, the latter being so embarrassing that *Punch* had published a cartoon commenting on the superior shooting of the Boers.[42] The aftermath saw the formation of a committee to examine musketry instruction, which delivered its response on 22 September 1881.[43] Their report made thirty recommendations, with the greatest number (thirteen) specifically relating to the training of the Infantry. These included an increase in ammunition for both recruits and trained soldiers, adding practical elements to the annual course, and a reorganisation of the responsibilities of training. They also recommended revising the regulations to simplify the theoretical section, and supported the adoption of a new rifle for the infantry, as well as raising the question of replacing the carbine with the rifle in cavalry service. Whilst the last point was not to become a reality until the introduction of the 'Short' rifle (an intermediate length between the full-length rifle and the carbine) in 1902, and the increase of ammunition allowance was never enacted, other suggestions, such as the inclusion of a practical element of training and the reassignment of duties and responsibilities, were taken up.

Whilst those changes were being made, the introduction of the new rifle for the infantry, which the committee had referred to, required further work before it was ready to issue. Although the testing of potential options had begun in 1879, the Army was forced to revise its requirements

[42] "The School of Musketry" in *Punch, or the London Charivari*, (7 May 1881) [No page number]. See Figure 1.
[43] See HMSO, *Report of the Committee on Musketry Instruction in the Army, &c.; Together with Minutes of Evidence and Appendix, 1881*, (London, Harrison and Sons, 1881). Preserved in The National Archives (UK) [Hereafter cited as TNA], WO 33/37.

Figure 1: Punch's satire of the failures of the British Army during the First Boer War. The Duke of Cambridge, Commander-in-Chief of the British Army, examines theories of musketry, with papers on his desk where the School of Musketry and its teachings lie in a pile under red tape, while a Boer farmer asks if the Duke would like a practical musketry instructor.

to keep pace with the innovations of Continental armies, and consequently spent almost a decade evaluating and refining various designs before a replacement was selected.[44] The final decision was also influenced by issues experienced with the existing Martini-Henry service rifle during the Egyptian campaign in 1885,[45] but that meant that, up until the beginning of the 1890s, the majority of the Army were still using the Martini-Henry. The combination of a Swiss-designed action (Friedrich von Martini) and the rifling profile of a Scottish gunmaker (Alexander Henry), the rifle had entered service in the 1870s. It was chambered for a bottle-necked cartridge that had become legendary for its punishing recoil,[46] and utilised the same propellant which had been used since the introduction of firearms: black powder. This was far from ideal for military purposes as it was hygroscopic, and could be rendered ineffective through storage in damp conditions. It also created large amounts of white smoke, which both obscured the aim of the individual firer and signalled his position, and in battle created a literal 'fog of war'.

Under these conditions, the concepts of camouflage and concealment in the modern sense were redundant, and uniforms retained their traditional bright colours for identification purposes. That is not to say that the ludicrous nature of watching soldiers attempting to conceal themselves during field exercises whilst wearing "red coats and huge busbies" was lost on any observers.[47] Yet despite these anachronisms, this period is crucial to understanding later developments, as it was during this period that men joined the Army who were later to influence the evolution of training between the South African War and World War One. It was the instruction and experiences received during this period that provided the

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[44] A full description of this process was provided by the Small Arms Committee during considerations of changes to be applied to the Lee-Metford Mark II. See [Unknown], *Précis of the steps which led to the introduction of a Magazine Rifle into the Imperial Service, and subsequent action relating thereto*. [Confidential Report, circa 1891], p. 1. Preserved in the Pattern Room Archive, Royal Armouries Library [Hereafter cited as RAL].

[45] Edward M. Spiers, *The late Victorian Army*, (Manchester, Manchester University Press 1992), p. 239.

[46] For two extreme examples of the effects of prolonged firing upon the firer, see Lt. C.B. Mayne, *Infantry Fire Tactics*. (1st Ed.), (Chatham, Gale & Polden, 1885), p. 217 (footnote).

[47] Maj-Gen. Sir E. May, quoted in Spiers, p. 264.

basis for their later careers. This was particularly true for Ian Hamilton, whose participation at the Battle of Majuba Hill (1881) left him physically scarred for the rest of his life, and with a passion for musketry that would influence the course of his career.

Regulations for Musketry Instruction (Issued Provisionally), 1884[48]

As with all military regulations, *Regulations for Musketry Instruction, 1884*, was designed to serve two primary functions:

1. To delineate the administrative framework by which all training of this type was governed, ensuring (as far as possible) consistency in instruction throughout an army that was spread around the world, and faced with variable access to training facilities, particularly firing ranges.
2. To provide a primary reference point for instructors and students, explaining the training and the reasoning that lay behind it.

It is necessary to consider them in that order to understand the system that a new recruit would enter upon enlistment, progressing through the various assessments until he was a "Trained Soldier", and considered ready for active service. During this period, recruitment was undertaken by individual regiments. Each regiment had two battalions, one of which was based in Britain at their depot, where new recruits were mustered and trained.[49] Musketry training began with the "Recruit Course", which was conducted by the administrative staff of the Battalion, and upon successful completion of which a soldier would be listed as a "Trained Recruit". They were then assigned to one of the battalion's four companies, which were responsible for conducting the second cycle of training, the "Trained

[48] H.M.S.O., *Regulations for Musketry Instruction (Issued Provisionally)*, (London, Harrison and Sons, 1884). [Hereafter *MR 1884*].
[49] For a discussion of army organization and its reform in this period, see Brian Bond, 'The Effect of the Cardwell Reforms in Army Organization, 1874-1904', *Journal of the Royal United Services Institution*, XV, 1960, pp. 515-524.

Soldier Course". It was only upon completion of this second course that a soldier was considered ready for active service.

In each battalion, with the nominal strength of thirty offices and nine hundred and seventy-seven men, five officers and six N.C.O.s were required to have undergone a course of instruction at Hythe. As officers were rotated through postings, the actual number of qualified personnel available fluctuated, a problem that was exacerbated by the unpopularity of musketry as a subject. This was noted by contemporary commentators, who felt that interest in training often failed to spread beyond those specifically charged with its execution.[50] The desire to address this may have driven a change noted by the Commandant of Hythe in his annual report on musketry for 1883; "The appointment of *Officer* Instructor in all corps has been abolished, as has also that of *Sergeant* Instructor in Corps not training recruits".[51] This meant that, rather than a single appointment of each per Corps, every "Company of a Corps [should] possess a duly qualified Officer and Sergeant to conduct its instruction in musketry".[52] The hierarchy of those entrusted with implementing recruit training, as laid out in the Regulations, was a three-tier system:

Recruit Course
*(conducted at battalion level)***:**

Battalion Adjutant (Q)
↓
Regimental Sergeant Major (RSM) (Q)
↓
Sergeant-Instructor of Musketry (SIM) (Q)
↓
Recruits

['Q' - post that required a formal musketry qualification]

[50] See Colonel E.C. Browne, 'On The Instruction of our Soldiers to Shoot Under Active Conditions of Service', *Journal of the Royal United Services Institution*, XLI, 1897, pp. 1268-1286.
[51] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1884*, (London, H.M.S.O., 1885), p. 4.
[52] *Ibid*, p. 4.

Of these three men, the adjutant was required to not only have passed the Hythe course, but to have achieved the higher 'Extra' standard. An officer who did not have this certificate could hold the post temporarily under special circumstances, but with the caveat that he should attend Hythe at the earliest opportunity to qualify, although this was not always adhered to.[53] This higher requirement was necessary because the adjutant was responsible for overseeing the training of the whole battalion, as well as maintaining and ensuring the accuracy of the battalion musketry records, which were prepared by the Sergeant-Instructor of Musketry (SIM). The SIM was also responsible for the practical training of recruits, as well as assisting the Quartermaster in maintaining the range equipment. The Regimental Sergeant Major was not formally allocated any specific role, suggesting that he was only intended to be able to assist in the programme where necessary, in addition to his other duties.

The musketry year within Britain ran from January to December, but if a recruit joined towards the end of the year, or completed his first course of instruction after 31 October, he would be held over to start at the beginning of the next cycle, as no range practices took place during the winter months. The Recruit course took eighteen days to complete, and incorporated a greater theoretical element than that for Trained Soldiers, to provide the foundations for future training. The first eight days were each taken up with six half-hour lessons:

- Aiming Drill (first six days) / Blank Firing Drill (last two days)
- Position Drill (two classes per day)
- Judging Distance Drill
- Theoretical Principles

[53] References to weakness in instruction were often made in the annual reports from Hythe. See particularly H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1886*, (London, Harrison and Sons, 1887), p. 19.

- Care of Arms and Ammunition

The Aiming Drill was intended to ensure that the recruit could achieve the correct alignment of the rifle's sights with a target, and was so crucial that two rows of small targets were painted onto the wall of the recruits' barracks to allow for further practise.[54] The Blank Firing Drill built on this by acclimatising recruits to the noise of firing, in an effort to reduce any tendency to flinch later on. The Theoretical Principles covered aspects of ballistics, in terms of the rifling and the bullet's trajectory, as well as the external factors acting on it such as wind and gravity. Although the details may have exceeded the educational level of the average recruit, every soldier required an understanding of the practical implications of these principles to ensure that they could allow for those effects by adjusting their aim accordingly. The pattern of evaluation and adjustment; with the soldier allowing for these factors, firing, evaluating the fall of shot, and adjusting his aim as necessary, formed a rudimentary Kolb Cycle. This approach was (and is) a cornerstone of basic marksmanship principles, and so had to be fully comprehended before the recruit could progress.

Having demonstrated their proficiency to a satisfactory standard, the recruits would then progress onto the next stage: ten days of live firing, for which one hundred rounds was issued per man, along with additional testing of their ability to judge distances. Range usage was divided into two periods – Sunrise to Midday, and 1pm to Sunset – with trained companies receiving priority for usage. As such, a practice 'day' described a period of between four and six hours, which was felt to be the maximum that soldiers could endure the Martini-Henry's recoil and remain focussed. As a later commentator noted:

[54] *MR 1884*, p. 78. This had been the basis for a cartoon in Punch six years previously, under the title "How We Learn Now", *Punch, or The London Charivari* (19 Jan 1878), p.15. See Figure 2.

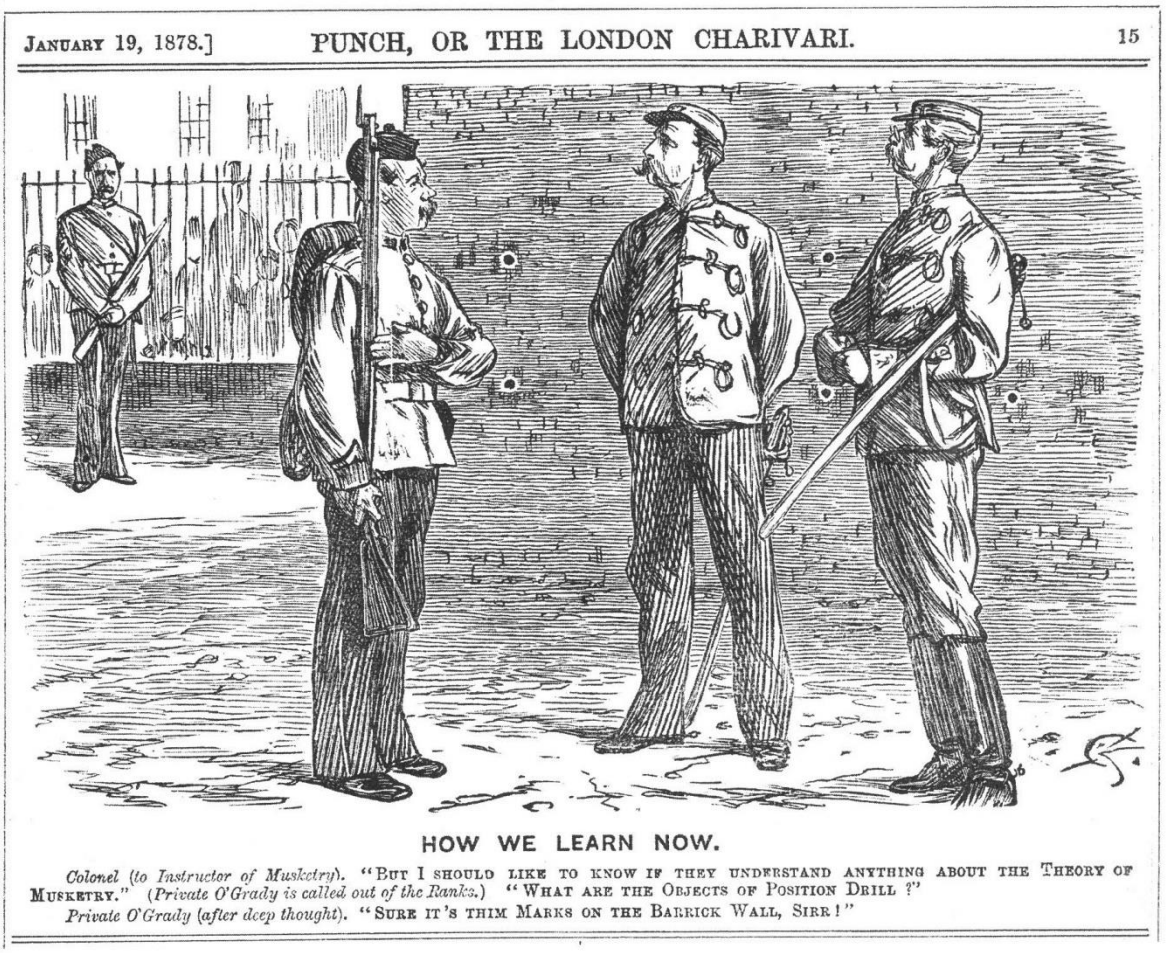


Figure 2: "How We Learn Now", printed in Punch in 1879, satirised the poor understanding of musketry on the part of soldiers by making reference to the aiming marks painted on the barrack walls, 'objects' that remained a part of training in MR 1884.

...the main defect of the Martini was its excessive recoil. Black powder is usually relatively gentle in operation but the Martini kicked like the proverbial mule and was the terror of recruits for this reason.[55]

The table for training laid out the basic requirements for each day's firing. The first six days were very basic, firing at bull's-eye targets from different distances. Whilst critics felt that these were the worst targets for soldiers to learn with, they did allow instructors to accurately assess how much of the theoretical training the recruits had learnt. Day seven

[55] Major F. Myatt, *History of the Small Arms School Corps*, (Unknown, Privately Printed, circa 1972), p. 29.

Table 1: Regulations for Musketry Instruction (Issued Provisionally), 1884. Table "A"

Day	TARGET PRACTICE					
	Class of Target.	Distances and number of Rounds.		Dress	Position	Sights
		yards	rounds			
9	Individual Practice. "Third"…{	100	10		Standing	Either the notch or level edge of the slide may be used. The Armourer to reverse it when necessary. Temporary marks are allowed on the slide with pencil colours, or any substance easily effaced.
10		150	"			
11		200	"		Kneeling	
12	"Second" {	300	"			
13		400	"		Lying down	
14	"First"	500	"			
15	"Figure Target"	Vide page 100	"	Drill order	Kneeling	
16{	"Independent" six targets	300	"		Cavalry, single rank kneeling Infantry, front rank kneeling	
	"Volley" "	300	"			
17	"Volley" Six targets Eight "	400	"		Lying down in extended order	
		500	"			
18	"Skirmishing"	{Between 400 and 200}	10		Any	

stands out as unique, as it was designed to demonstrate a very specific principle in a practical manner. As the Regulations described it:

The object of this practice is to train the soldier to fire with rapidity and effect at varying distances under 250 yards with the rifle, 235 yards with the carbine, using one sight only, when there is no time to adjust the back-sight for each shot.[56]

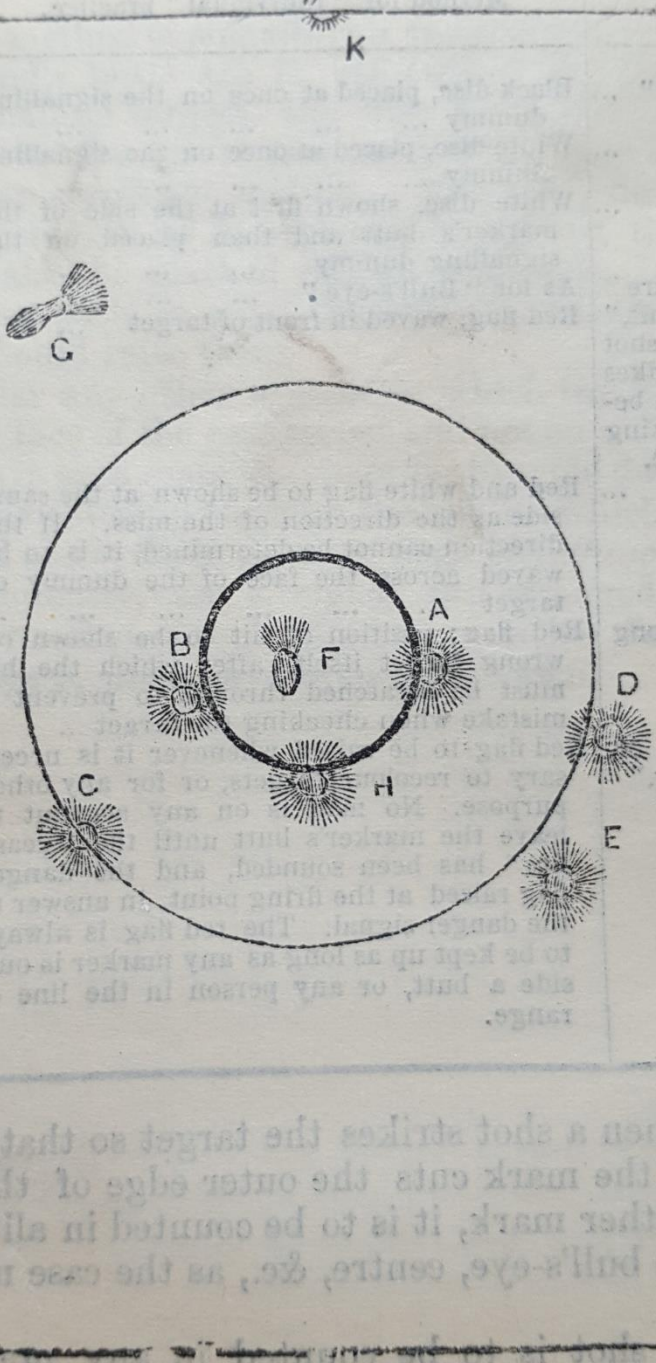
To make the practice slightly more realistic, a "figure" target was to be used – an iron panel, six feet high and two feet wide, painted with the rudimentary silhouette of a soldier in black on a white background. Each recruit started at 250 yards, his sights set to 'point blank' (the lowest possible elevation), advancing in ten short rushes to 140 yards and firing at each pause. The targets were only marked at the end of the practice, and ricochet hits were given a value, again both unique in the individual course. There was also no comparable practice within the trained soldier's course, most likely as it would have been incorporated into the more practical Field Firing scenarios.

[56] *MR 1884*, p. 110.

The next two days involved both ‘Independent’ and ‘Volley’ practices, all of which were fired by the section as a whole, rather than individually. ‘Independent’ did not, in the military sense, mean the same thing as ‘individual’ – the soldier would fire as part of his unit at a target defined by his commander, but in his own time, rather than all firing simultaneously in volley. Whilst these two practices may seem anachronous by modern standards, they served a variety of purposes. Despite presenting a large target for accurate rifle or artillery fire, a close formation allowed a unit to maximise its effectiveness at greater distances, and remained the best defensive arrangement against a cavalry attack whilst utilising its ‘shock’ value against a massed charge, particularly through the use of the volley. Before the era of machine gun warfare, mass rifle fire was also the only method of gaining fire superiority during the final phase of an assault. Extended order was utilised in the preliminary stages of an assault to reduce the potential impact of artillery fire, hence the practice being fired from a greater distance. Yet the best spacing between firers was a source of fierce debate, with concerns of how commanders would retain fire control in the noise of battle, and remained a point of discussion up to the First World War.

The final day involved a practice entitled ‘Skirmishing’, a practice combining fire with movement and in which any firing position could be used. Skirmishers had traditionally provided mobile advance and rear guards to the main force, and had been a feature of light infantry tactics during the Peninsular War. It was a style of fighting which devolved responsibility onto the individual soldier, allowing him to select both his targets and fire position, whilst operating as part of a wider effort to achieve a specific objective. However, this reliance on a soldier’s self-discipline was not popular amongst some senior officers, who believed in the need for the close proximity of a fire commander to ensure the most effective distribution of fire, forming another area of continued debate.

Fig. 1.



A and H, bull's-eyes; B and C, centre; D, E, and K, outer; F and G, ricochets.

Figure 3: Drawing showing the method of scoring from bullet marks on an iron target of the period, as depicted in MR 1887, p. 114.

If a Recruit had a bad practice on any day, they were to repeat that practice once before continuing, rather than until the required standard had been achieved. Upon completing these ten days, each recruit was classified according to his scores from the individual practices. The score from the figure target practice was separated, possibly to gauge the effectiveness of the new practice. The required marks were:

Classification	Range Practice	Figure Target (ex 30)
1st Class	100 and higher	15 and higher
2nd Class	75 to 99	12 to 14
3rd Class	Less than 75	Less than 12

Once these classifications had been made, the trained recruit would join a company, which would take him through the Annual Course. Depending upon when he completed his Recruit training, he could shoot with another unit as a 'casual' if doing so would ensure he completed the course before the end of the year, and his marks would then be sent back to his unit on a 'Transfer Return'. It was this course which was used to determine every soldier's military value, providing an annual assessment of the Army's marksmanship skills. The Regulations listed a number of awards and monetary prizes for the best shots, as incentives to practise throughout the year. Each company was responsible for its own training, conducted under a similar hierarchy to that used for recruits, but expanded to allow for the greater number of men to be trained:[57]

Trained Soldier Course
*(conducted by individual companies)***:**
Company Commanding Officer (Q)
↓
Subaltern
↓
Troop/Company Sergeant-Instructor (Q)
↓
N.C.O.s
↓
Soldiers

[57] A company's nominal full strength was two hundred and twenty-seven, although this would often only be reached immediately prior to deployment. This was then sub-divided into four platoons, and each platoon into four sections. However, the company was the main unit described in the regulations, and within which training was conducted and administrated.

Each company's commanding officer was required to ensure that at least one of his eight sergeants had qualified at Hythe, earning the same certificate as was required for the position of Sergeant-Instructor of Musketry. He was also to ensure that every new lance-corporal was properly instructed by the Sergeant-Instructor of Musketry in 'communicating' the firing exercise and position drill. Once the Adjutant had certified to the Commandant that the lance-corporal was proficient, the lance-corporal was issued a Form of Drill certificate, and would then be able to assist in instructing soldiers.

The first two days were remedial, and covered the basic principles. Each day incorporated:

- Aiming Drill (one drill, about one hour)
- Position Drill (two drills, half an hour each)
- Judging Distance Drill (one drill, about an hour and a half)
- Theoretical Principles and Care of Arms and Ammunition (half an hour)

This was followed by eleven days of range practices, with one hundred and sixty rounds allocated per soldier. The range practices were designed to be adaptable to local facilities, which could not always accommodate the complete course as set out. Some stations had no ranges in their vicinity, and not all ranges could accommodate the practices as intended, so alternatives were included to ensure that as many practices as possible could still be run. This was particularly true of Field practices, which called for unmeasured ground, and so could only be conducted in a limited number of locations.

The first eight days were arranged in a similar pattern to that for recruits, but covering a greater range of distances. The final three days of sectional practices could be compressed down to two or even one day at the field officer's discretion. They were also conducted with the soldiers wearing 'helmets and valises'; the same equipment as they would wear when in

Table 2: Regulations for Musketry Instruction (Issued Provisionally), 1884. Table "B

<table>
<tr><td colspan="7">PRELIMINARY DRILLS</td></tr>
<tr><td>Day</td><td>Aiming Drill</td><td colspan="2">Position Drill</td><td>Judging Distance Drill</td><td>Instruction in Theoretical Principles* and Care of Arms and Ammunition</td><td>Remarks</td></tr>
<tr><td>1</td><td>One drill, about one hour</td><td colspan="2">Two drills, of half an hour each</td><td>One drill, about one and a half hours</td><td>Half an hour</td><td rowspan="2">*By an Officer of the Troop or Company from the Lectures, Chapter III., Section 1.</td></tr>
<tr><td>2</td><td>Ditto</td><td colspan="2">Ditto</td><td>Ditto</td><td>Ditto</td></tr>
<tr><td rowspan="2">Day</td><td colspan="6">RANGE PRACTICE
The several Practices are to take place in the following order.</td></tr>
<tr><td>Class of Target</td><td colspan="2">*a*. Distances and number of Rounds</td><td>Dress</td><td>Position</td><td>Sights</td></tr>
<tr><td></td><td></td><td>yards</td><td>rounds</td><td></td><td></td><td rowspan="13">Either the notch or level edge of slide may be used, the Armourer to reverse it when necessary. Temporary marks are allowed on slide, with pencil, colours, or any substance easily effaced.</td></tr>
<tr><td>3</td><td>"Third," with 6-inch bullseye</td><td>150</td><td>10</td><td rowspan="8">Drill order</td><td>Standing</td></tr>
<tr><td>4</td><td rowspan="3">"Third"</td><td>250</td><td>"</td><td rowspan="2">Kneeling</td></tr>
<tr><td>5</td><td>300</td><td>"</td></tr>
<tr><td>6</td><td>400</td><td>"</td><td rowspan="5">Any military position</td></tr>
<tr><td>7</td><td rowspan="3">"Second"</td><td>500</td><td>"</td></tr>
<tr><td>8</td><td>600</td><td>"</td></tr>
<tr><td>9</td><td rowspan="2">"First"</td><td>700</td><td>"</td></tr>
<tr><td>10</td><td>800</td><td>"</td></tr>
<tr><td>11</td><td>*b*. "Volley," six targets</td><td>300</td><td>5</td><td>Infantry with helmets and valises</td><td>Cavalry, single rank kneeling
Infantry, front rank kneeling</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">*b*. "Volley," eight targets</td><td>400
600</td><td>"<br>"</td><td rowspan="2">Drill order</td><td rowspan="2">Any military position in extended order</td></tr>
<tr><td>800</td><td>"</td></tr>
<tr><td>13</td><td>*b*. "Independent," six targets</td><td>400</td><td>10</td><td>Infantry with helmets and valises</td><td>Cavalry, single rank kneeling
Infantry, front rank kneeling</td></tr>
</table>

combat. Any soldier with a particularly bad score was required to shoot that practice again, with the ammunition drawn from the remainder of his personal allotment, before moving onto the 'Field' practices.

At the end of the 'Range' section, each soldier had fifty rounds remaining, provided he had not repeated any practices. Of these, twenty were allocated to two individual practices: a head and shoulders target (practice "b"), and a figure target (practice "c"). These were painted onto the standard issue steel target, but no further details were given as to how the practices were to be conducted or over what distances. It appears that those details were left to the discretion of the commanding officer, in order that they would best suit the available ground. Two further individual practices were included, to be conducted where the facilities

were available: a moving target and a vanishing target (practices "d" and "e" respectively). [58] The manual acknowledged that the equipment required for them was not yet universally available, but their inclusion demonstrates an attempt to provide soldiers with more realistic practices.[59] The final three practices were:

- Skirmishing, at unknown distances if possible, and with each soldier adjusting his sights independently and choosing when to fire (practice "f");
- Volley firing at extreme ranges as if at massed groups of infantry or cavalry (practice "g");
- Field firing (practice "h").

The details of this last practice were left almost entirely to the discretion of the commander, but with the stipulations that the ground was to be unmeasured, and the targets made from condemned stores and dummies to give as realistic as possible simulation of combat. It was also crucial that proper battle procedures were followed, with the section working as a unit and ammunition expenditure controlled. The attack was then conducted in stages, allowing for the examination and evaluation of the targets. This was a key battle practice, and had to be conducted wherever possible, with an additional allowance of ammunition available to those units who were able to conduct the full range of practices. However, it remained a running complaint of the Commandant at Hythe that they were not always carried out where possible, or conducted properly when they were.

[58] Ian Hamilton suggested that, in the Madras Presidency at least, such ranges were created through private or local means rather than central funds. See Captain I. Hamilton, *The Fighting of the Future*, (London, Kegan Paul, Trench & Co., 1885), p. 26, footnote.
[59] For a list of where the targets had been fitted, together with details of the practices, see H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1885*, (London, H.M.S.O., 1886), pp. 4-5.

At the end of these practices the scores were collated, and 'Figures of Merit' were calculated for both the individual soldiers and for the unit as a whole on the following system:

- **The figure of merit of an individual** used an aggregate of the "individual" range practices plus "b" and "c" of the "field" practices.
- **The figure of merit of a troop, company or section** was based on the aggregate of the averages of all "individual" and "section" practices in both parts, with the exception of section "a", "g" and "h".[60]

Those practices that were omitted were those which were intended to simulate battlefield conditions, and as such were too reliant upon the local facilities to provide a consistent basis for analysis. Prizes were then awarded based on the figures of merit, consisting of both badges and monetary rewards in most cases. The accolade of 'marksman' was the most general reward, awarded to a maximum of 10% of the N.C.O.s and men in each company, with each man receiving £1 and (if not a prize winner) a badge of crossed rifles in worsted to be worn on the lower left sleeve. In cases where more than the quota had achieved the necessary scores, they were allowed to wear the badge but did not receive any money. The highest scoring private in the regiment received £5, together with a gold badge of crossed rifles beneath a crown which was worn on the lower left sleeve. Prizes were also awarded for the second best shot (£3), best corporal (£3), and the best shot in each company (£2 10s or £2 depending on the size of the company). No individual could win more than one prize in any one year, and all winners had to have classified as marksmen to be eligible. These all appear

[60] *MR 1884*, p. 23.

to be one-off payments, but represented a significant supplement to the average soldier's wage of 7s per week.[61]

The value of awards also represented a potential weakness of the system at an administrative level. References made in the Annual Reports from Hythe show that the School attempted to address the issue by adjusting the classification bands to ensure that no more than 10% of those firing classified as marksmen.[62] There are also occasional reports of results being 'fixed' by various methods, leading to tighter guidelines on marking to ensure that the abuses could not be repeated.[63] There were also more practical issues, most obviously with the reliance upon the black bull's-eye target, clearly contrasted on a white background. This gave an unrealistically clear aiming mark, useful for basic instruction but not in training soldiers for combat. Even the silhouette targets for battle practices, whilst attempting to introduce humanoid targetry, used the same colour scheme. This was partially due to the reliance upon a standardised method of target construction: an iron sheet, six feet high and two feet wide, designed to be linked together to create the target size required, and then painted accordingly. The Martini's hardened lead bullet would flatten on impact, marking the paintwork without producing splinters that could endanger the marker. The usage of such unrealistic colour schemes would remain an issue into the 1890s.

Whilst the training scheme introduced in 1884 included a number of small innovations, some contemporary officers felt that they did not go far enough.[64] The inability to implement the training uniformly created minor flaws, which were then exacerbated by the tendency to use musketry as a demonstration of a soldier's abilities with his rifle, rather than

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[61] [Anon.], *The British Almanac and Companion for the Year of our Lord 1894*, (London, The Stationers' Company, 1894), p. 75. However, stoppages and other deductions often meant that soldiers received a fraction of their nominal pay, despite attempts to remedy this. See Alan Ramsay Skelley, *The Victorian Army at Home*, (London, Croom Helm, 1977), pp. 181-195.

[62] H.M.S.O., *Annual Report…1884*, p. 17.

[63] An untitled article, preserved amongst Ian Hamilton's papers, refers to a court-martial recently held at a station, "…to warn non-commissioned officers against attempting to cook returns of shooting at the ranges". There are also references to other methods which were used to ensure favourable conditions. Preserved in HAM 17/4, KCL Liddell Hart.

[64] Browne, *On The Instruction of our Soldiers*, p. 1272.

a unit's training for battle. Almost all of the practices were over measured ground, and against highly visible targets, whilst those intended to simulate combat more closely were left at the discretion of the commanding officer. These could well have been men trained prior to the introduction of the breech-loading rifle,[65] with variable opinions of the value of musketry instruction on the battlefield. Perhaps one of the more extreme examples of this was a letter sent by a Rifle Brigade officer in 1890 to Ian Hamilton, whilst the latter was serving as Assistant Adjutant-General of Musketry in India. The writer advocates a focus on the standing position, to allow units to advance and fire continuously, maintaining constant suppressing fire.[66] Whilst he is undoubtedly well-intentioned, he seems naïve and out of touch with lessons learnt both in British campaigns and through observation of wars in Europe.

General Order 38 of 1885

The reports and concerns mentioned above led to a small committee being formed to assess both the reports of General Officers and the training itself, to see what improvements could be made.[67] Their report was delivered on 25 October 1884, listing out the comments made in the reports and then making recommendations as to whether they should be proceeded with or not. Some of their recommendations were incorporated during that same year, with the removal of the scoring divisions on the figure targets, whilst the score for that practice was combined into the overall classification score.[68] The more drastic changes recommended by the Committee, and that were accepted by the Army, were promulgated in General Order

[65] According to an article in a later military periodical, the last classes at Hythe to use muzzle-loaders were taught in 1867. See [Anon.], 'Old Hythe', *The Navy and Army Illustrated*, 6 September 1902, p. 616.
[66] Preserved in HAM 17/3/2, KCL Liddell Hart. Indications in the letter suggest that the officer had been trained at Hythe in about 1869.
[67] See HMSO, *Report of the Committee on the Musketry Instruction of the Army*, (London, Harrison and Sons, 1884). Preserved in TNA WO 33/42.
[68] H.M.S.O., *Annual Report…1885*, p. 13.

(G.O.) 38, 'specially issued' on 13th March 1885.[69] These set out new editions of both Table "A" and "B", as well as replacing the bull's eye target (although the central scoring ring retained that title) with figure targets for all practices. Further changes in detail included:

- The theoretical training was to be conducted throughout the year, to remove the necessity for preliminary drills in the musketry table, and each occasion was to be recorded in a special diary
- The ammunition fired at both 150 and 250 yards was halved, from 10 rounds to 5
- The 400 yard practices were replaced with individual fire and movement practices, in the manner of skirmishing exercises
- Practices were to be conducted from more than one position.

There are further specific instructions relating to recruit training. A recruit was to have received a set minimum number of lessons and drills, and would only be allowed to progress to range practices once his commanding officer passed him as 'thoroughly proficient'. These were similar to the eight days of lessons conducted prior to the range practices in *MR 1884*, but had been altered slightly so that they could be organised into the recruit's wider training.[70]

For the range practices, the limit of 10 rounds per day remained, except in unusual circumstances. A note included underneath Table "A" stated that this was both to avoid rushing, and was considered the maximum a recruit could fire comfortably in a single day. The same limit was also placed on trained soldiers, but in that case was tied more strongly to the desire to avoid rushing, which would otherwise prevent proper supervision and training of poorer shooters.

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[69] H.M.S.O., *General Orders by His Royal Highness the Field-Marshal Commanding in Chief, 1874 to 1886*, (London, Eyre and Spottiswoode, 1887), p. 64 and 67-88 (Hereafter referred to as *G.O. 38*).
[70] See Table 3.

Table 3: Recruit Lessons and Drills, as described in G.O. 38

Care of Arms and Ammunition.		Four lessons to be taught to the recruit as soon as a rifle is issued to him.
Position drills.		16 drills} To be combined with the first lessons imparted
Aiming drills.		6 drills} to the recruit in the firing exercises.
Theoretical principles.		Four lessons.
Blank firing practice.		Four drills, viz.
	1.	Individual practice, standing, 10 rounds.
	2a.	Individual practice, kneeling (or sitting for Cavalry), 5 rounds.
	2b.	Individual practice, lying down, 5 rounds.
	3.	Independent firing, 10 rounds, front rank kneeling (Cavalry single rank, kneeling or sitting).
	4.	Volleys, 10 rounds, of which 5 rounds front rank kneeling (Cavalry single rank, kneeling or sitting), and 5 rounds, single rank, lying down.
Judging-distance drills.		Eight drills, as detailed in para. 80, "Musketry Regulations, 1884".[71]

For trained soldiers, perhaps the most important new individual practices were the 'Defence' and 'Attack Practices'. These were the first occasions that fire and movement were included into the individual training of soldiers on an annual basis, and similar practices were also included on days 4 and 5 of Table "A". They all incorporated the usage of 'fixed sights', as had been used in the 'Figure Target' practice for Recruits the previous year. The 'Defence' simulated an advancing enemy, albeit by advancing the men towards their targets, which was why the starting distance was greater and the firing positions more exposed than those used in the 'Attack'. The advances during the 'Attack' were also conducted in rushes, such as would be used in battle, rather than the orderly paced advance used in the 'Defence'.[72] The field practices had been slightly altered as well, and were listed in the order in which they were felt to have the greatest value:

[71] *G.O. 38*, p. 70.
[72] As these were more fully described in *Musketry Regulations, 1887*, they are discussed in greater detail below.

o. Attack and defence practice.

p. Skirmishing for Infantry, dismounted practice with horses (or without horses if the rifle range does not permit their use) for Cavalry.

q. Individual firing at 'vanishing' targets, including timed rapid firing of a succession of shots.

r. Individual firing at 'moving' targets.

s. Rapid 'section volleys' (timed) under the proper section leaders.

t. Long-range volleys at lines of 'figure' targets or screens, dummies, &c.[73]

These built on the practices of *MR 1884*, strengthening the emphasis on their being combat simulations rather than simple range exercises, at least as far as facilities would allow. The classification scoring was also altered to reflect these changes. In 1884, soldiers had to achieve a score of 200 or higher from the range practices, together with an aggregate of 42 from the field practices, to classify as Marksmen. Those that classified as First Class would have scored the same on the range, but achieved only 33 in the field practices, with the Second Class scoring between 150 and 199, and 24 points respectively. These figures were achievable – a soldier required an average score of 2.5 points per round to achieve Marksman, with the maximum possible score of 320 in the range practices. In 1885 the classification score had been simplified, using only the 80 rounds fired in individual practices as the basis for evaluation. Whilst this meant that it assured some men did not miss out if they were stationed in an area where field firing was impossible, it also removed some of the emphasis from these practices. The scoring for the two "fire with movement" practices reduced the maximum possible score to 300, with a score of 170 or better required to classify as marksman. This needed an average score of 2.1, although this was made more difficult through the two movement phases being laid out as a "hit or miss" practice, with each hit

[73] *G.O. 38*, p. 72.

Table 4: Regulations for Musketry Instruction, 1884 (as per G.O. 38, 1885). Table "A"

Day	Description of Target	Distances and Number of Rounds		Dress	Position, &c.	Sights	Classification
		Rds	Rds				
1	3rd Class (but with white bull's eye)	100	10	Drill Order	5 rounds kneeling and then 5 rounds standing	With the proper sights for the distance	Those who with the 80 rounds in individual practice obtain : 130 points and upwards…1st Class 100 points and upwards…2nd Class Less than 100 points…3rd Class
2		150	10				
3		200	10	"	5 rounds lying down and then 5 rounds kneeling		
4	3rd Class (but without bull's eye or centre)	100	10	"	2 rounds at each distance: standing at 100; kneeling at 150 & 200; lying at 250 & 300 yds.	Sight "fixed" at 200 yds. (carbine 250 yds.). *See* para. 78	
		150		"			
		200		"			
		250		"			
		300		"			
5	Target, 6ft. x 4ft., with head and shoulders' target 1ft. from bottom	150	10	"	4 rounds at 150, 2 rounds at each remaining distance lying down		
		200		"			
		250		"			
		265		"			
6	2nd Class	300	10	"	5 rounds lying down, and then 5 rounds kneeling at each distance	Proper sight for the distances	
7		400	10	"			
8	1st Class	500	10	"	Lying down		
9	Volley, 6ft. x 12ft.	300	5	"	Cavalry, single rank kneeling or sitting Infantry, bayonets fixed, front rank kneeling		
	Independent, 6ft. x 12 ft.	300	5	"			
10	Volley, 6ft. x 12ft.	400	5	"	Lying down in extended order		
	Volley, 6ft. x 16ft.	500	5	"			

Table 5: Regulations for Musketry Instruction, 1884 (as per G.O. 38, 1885). Table "B"

Annual Course of "Range" Practice for Cavalry and Infantry							
Letter of practice	Description of Target	Distances and Number of Rounds		Drill	Position	Sights	Classification
a	3rd Class	yds. 150	rds. 5	Drill Order	3 rounds kneeling and then 2 rounds standing	Proper for these distances	Those who with the 80 rounds in individual practice – Infantry…170 and upwards – marksmen Infantry…145 " – 1st Class Infantry…110 " – 2nd Class Infantry, less than 110 … – 3rd Class
b		250	5				
c		300	10		5 rounds kneeling and then 5 rounds standing		
d	3rd Class, but without centre and bull's eye	Defence Practice (320-100)	10		*4 rounds lying down, then 4 rounds kneeling, then 2 rounds standing*	"Fixed" at 200 yards (250 carbine)	
e	Head and shoulders on a target, 6ft. x 4ft.	Attack Practice (265-150)	10		*10 rounds lying down, two at each halt*		
f	2nd Class	500	10		5 lying down then 5 kneeling at each distance	Proper for the several distances	
g		600	10				
h	1st Class	700	10		Any military position		
i		800	10				
(The above practices to be fired in the order named)							
k	"Volley," 6ft. by 12ft.	300	5	Marching Order	Infantry close order, bayonets fixed, front rank kneeling. Cavalry, single rank kneeling, or sitting		
l	Independent, 6ft. by 12ft.	400	5				
m	"Volley," 6ft. by 16ft.	600	5		Extended order, any military position		
n		800	5				

awarded 3 points.

These amendments appear to be a direct response to the full report of the musketry committees, and are much more battlefield-orientated, as well as very similar to each other – the only real difference between Tables A and B were the distances the later practices were shot over, but they are otherwise almost mirror images of each other. Colonel Gurnell Tongue, then Commandant of Hythe, commented in his report that these were 'important alterations,' and whilst he felt that the standards may have been set high upon introduction, he was positive that the Army's shooting would improve once the practices were more familiar.[74] These changes were allowed to run for two cycles, which was the minimum length of time required to assess their effectiveness, before they were published as a manual in their own right.

Regulations for Musketry Instruction, 1887 [75]

These regulations were fittingly described by one contemporary as the formalisation of the 1884 Committee's recommendations.[76] Using *MR 1884* as the basis, it incorporated both the 1885 amendments and further changes based upon subsequent experience. At a basic level, much continued unaltered. The organisational structure remained unchanged in terms of the allocated duties and qualifications of the various instructors, as did the amount of ammunition provided for training. There was one additional instructor; an Assistant Adjutant, who was also to hold the "Extra" qualification, and assist the Adjutant in the training of young officers and recruits where necessary. However, he was barred from involvement in the teaching of the annual course for trained soldiers, presumably to ensure that company officers did not avoid their responsibilities.

[74] H.M.S.O., *Annual Report…1886*, p. 16.
[75] H.M.S.O., *Regulations for Musketry Instruction, 1887*, (London, Harrison and Sons, 1887). [Hereafter referred to as *MR 1887*].
[76] Browne, *On The Instruction of our Soldiers*, p. 1272.

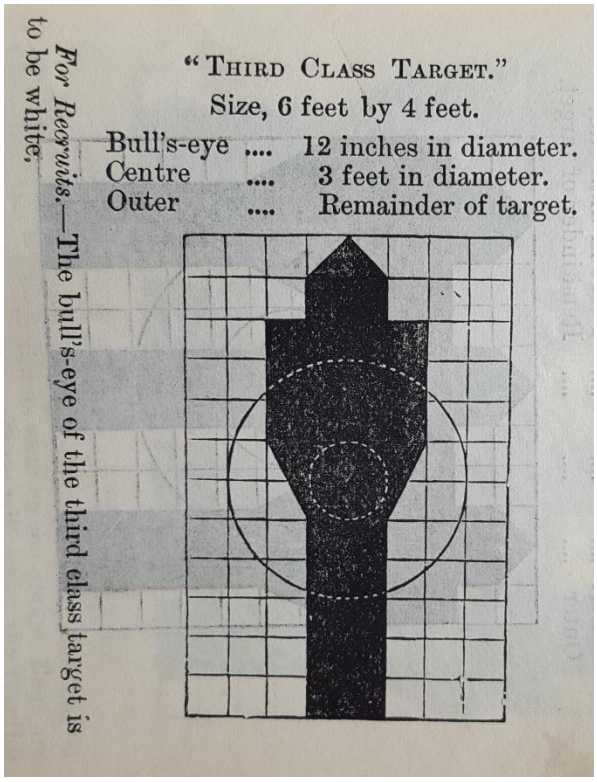
On the practical side, there was a new type of practice for recruits: miniature cartridge drill. This utilised a Morris Tube sub-calibre conversion – a rifled barrel liner and chamber, which could be fitted into service rifles. This meant that they retained the weight and handling characteristics of the Martini-Henry for training purposes, but without any recoil or the need for a full-size range. Recruits could then receive their first live-firing training in the relative comfort of an enclosed gallery range, with twenty rounds divided equally between the four firing positions, prior to the commencement of range practice proper. The ammunition was also less expensive, and so provided a second method of private training through the regimental rifle clubs, which were to be given "All possible encouragement…"[77]

In keeping with the 1885 amendments, the bull's-eye target was all but eliminated from training, apart from their use in aiming instruction. Instead, the black-on-white figure target was to be painted over the old targets as appropriate, with "…the lines describing the bull's-eyes and centres…scratched, so as to be invisible to the firer".[78] This led to anomalies between the scoring area and the painted target: the First Class target depicted four figures, but the bull's-eye actually occupied the space between the two inner figures.[79] The Regulations recognised that these designs were flawed, and intended as interim designs; "The following targets…will be used till better designs can be introduced".[80] Recruits were also provided with a more distinct aiming mark, by painting the central scoring ring white for the first three days of practices.[81]

It had become compulsory for Infantry recruits who passed Table "A" by September 30th in their first year to complete Table "B" within the same year, to ensure that they were

[77] *MR 1887*, sec. 21.
[78] *MR 1887*, para. 131.
[79] *MR 1887*, para. 152 onwards. See also Figures 4 to 8.
[80] *MR 1887*, para. 152.
[81] *MR 1887*, para. 152.

Figure 4 – 8: Targetry, as described in MR 1887

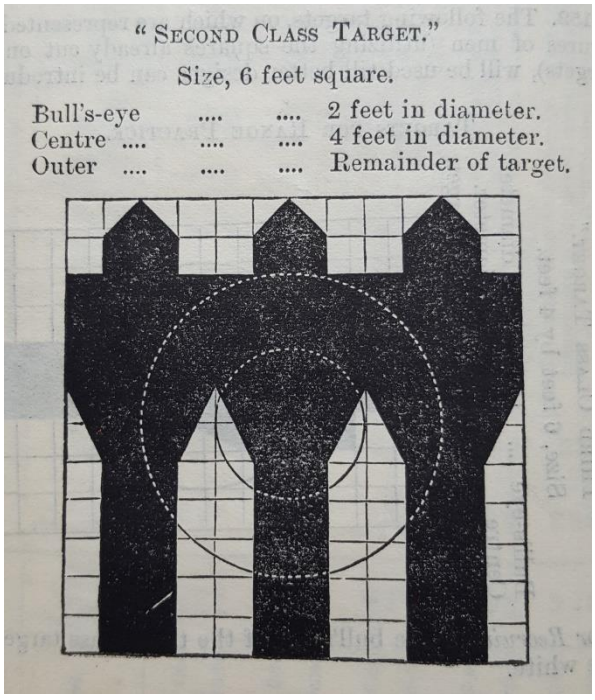

"THIRD CLASS TARGET."

Size, 6 feet by 4 feet.

Bull's-eye .... 12 inches in diameter.
Centre .... 3 feet in diameter.
Outer .... Remainder of target.

For Recruits.—The bull's-eye of the third class target is to be white.

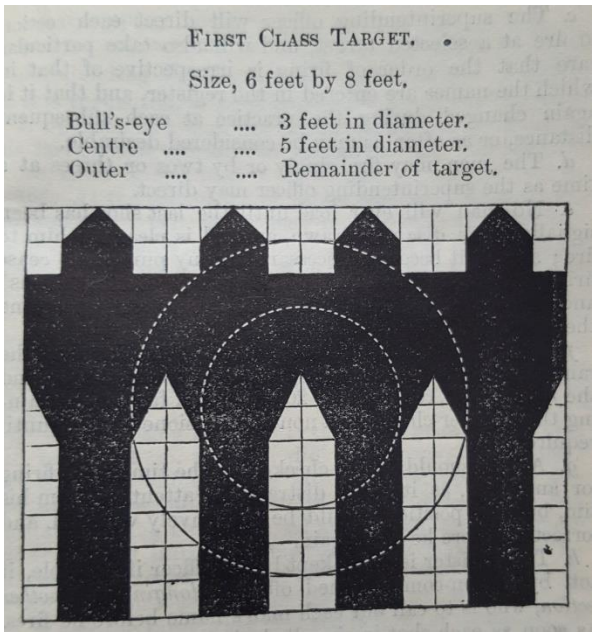
Figure 4: Third Class Target


"SECOND CLASS TARGET."

Size, 6 feet square.

Bull's-eye .... 2 feet in diameter.
Centre .... 4 feet in diameter.
Outer .... Remainder of target.

Figure 5: Second Class Target


FIRST CLASS TARGET.

Size, 6 feet by 8 feet.

Bull's-eye .... 3 feet in diameter.
Centre .... 5 feet in diameter.
Outer .... Remainder of target.

Figure 6: First Class Target

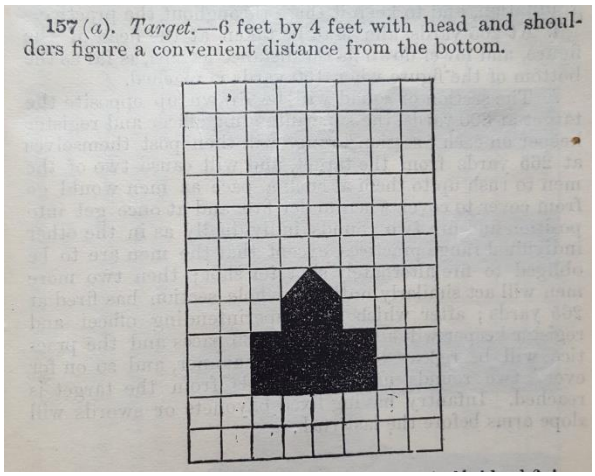
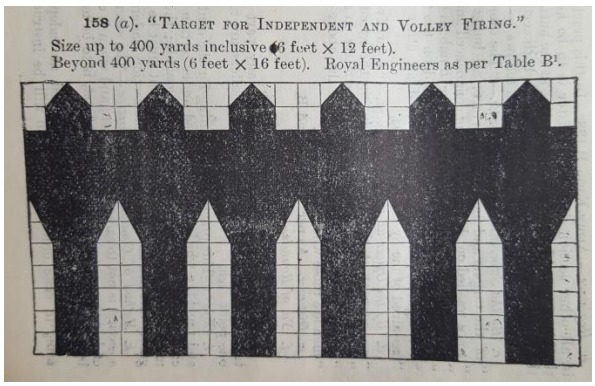

157 (*a*). *Target.*—6 feet by 4 feet with head and shoulders figure a convenient distance from the bottom.

Figure 7: Head and Shoulder Target


158 (*a*). "TARGET FOR INDEPENDENT AND VOLLEY FIRING."

Size up to 400 yards inclusive (6 feet × 12 feet).
Beyond 400 yards (6 feet × 16 feet). Royal Engineers as per Table B[1].

Figure 8: Volley Firing Target

ready for active service in case of emergencies.[82] Cavalry and Royal Engineers recruits were exempted from this rule, unless their commanding officer decided otherwise.[83] The theoretical section of the course had also been compressed from eight days to six, but without a noticeable reduction in any particular lessons except for "Firing Exercises", which were reduced to one lesson on each of the last two days, but supplemented by both miniature cartridge and/or blank firing practice (depending on the availability of ranges).

Table "A" generally followed the table issued in 1885, with the largest visible changes actually being a revised layout rather than particular amendments to the actual description of the practices themselves. Days 1 to 3 were intended purely "to teach exactitude of aim",[84] ensuring that recruits were familiar with their rifles' handling characteristics before the fixed sight practice on day 4. As noted above, this was a simplified version of the "Individual Defence Practice" in Table "B", which was,

> *...to train the soldier to fire with rapidity and effect at an advancing enemy between 320 and 100 yards, when there would be no time to adjust the back-sight for each shot.* [85]

The practice was given more structure for the recruits, who started at 300 yards and moved forward in a steady progression of fifty yard intervals, rather than making ten unmeasured advances, towards full-height figure targets. Day 5 was also based upon another practice from the Annual Course: the "Individual Attack Practice".[86] This used a head and shoulders target to represent a defender behind cover, in place of the full body of an attacker. Again, this was to be fired by adjusting the point of aim, rather than altering the sight elevation. Pairs of men were to rush into position, firing in turn, with the whole squad firing at each distance before

[82] *MR 1887*, sec. 28.
[83] *MR 1887*, sec. 28.
[84] *MR 1887*, para. 50.
[85] *MR 1887*, para. 156.
[86] *MR 1887*, para. 157.

Table 6: Musketry Regulations 1887, Table "A"

Day	Description of Target	Practices and Number of Rounds		Position, &c.	Sights	Classification	Judging Distance Practice
		Yds	Rds				
1	3rd Class (but with white bull's eye)	100	10	5 rds kneeling, then 5 rds standing	The sights are to be adjusted for the distance fired at, except on the 4th and 5th days and at independent firing, when the "fixed sight" will be used.	Those who with the 80 rounds in individual practice obtain : 135 points and upwards…1st Class 95 points and upwards…2nd Class Less than 95 points…3rd Class	Six exercises only of four answers each between 50 and 800 yards. Not more than one exercise to be executed in a day.
2		150	10				
3		200	10	5 rds lying down, then 5 rds kneeling			
4	3rd Class (but without centre or bull's eye)	100	10	2 rds at each distance, standing at 100; kneeling at 150 & 200; lying at 250 & 300			
		150					
		200					
		250					
		300					
5	Head and Shoulders on a target 6ft. x 4ft	150	10	4 rds at 150 and 2 rds at each remaining distance, lying down			
		200					
		250					
		265					
6	2nd Class	300	10	5 rds lying down, then 5 rds sitting			
7		400	10	5 rds lying down, then 5 rds kneeling			
8	1st Class	500	10	5 rds lying down, then 5 rds sitting			
9	Independent, 6ft. x 12 ft.	300	5	Cavalry, single rank kneeling or sitting Infantry, close order, bayonets fixed, front rank kneeling			
10	Volleys{ 6ft. x 12ft.	300	5				
	do.	400	5	Lying down in extended order			
	6ft. x 16ft.	500	5				

advancing to the next. Once again, the recruits had specified distances to cover, rather than moving in unmeasured rushes. Together, these replaced the figure target and skirmishing practices of 1884, resulting in a greater emphasis on close-range individual shooting, as well as providing recruits with some preparation for those elements of the Annual Course. Few changes were made to the sectional practices, and those were minor: days 6 and 8 were now fired from the sitting position, rather than kneeling; the Independent practice on day 9 now only had a single practice on it, which was also to be shot using the 'fixed' sight as well. All three volley practices were now conducted on day 10; and there had been a revision of the classification scoring bands, widening that for 2nd class.

Table "B" had seen even fewer changes from that issued in 1885. The practices were no longer lettered to indicate some sort of order, although even in 1885 this had been left at the discretion of the commanding officer. Certain details had also been altered in four of the

practices. In the first two practices, 'fixed' sights were to be used, as in the Defence and Attack practices, rather than altered to the respective distances. In the third practice, the standing position had been replaced by the sitting one, and in the sectional practices the Independent practice was to be fired from 300 yards using the 'fixed' sight, and before the Volley practices, as had been the case for Recruits. This may well have been done so that the practice order was more logical, and encourage commanders to carry it through in that sequence, whilst not restricting them to carrying out practices in a set number of days. Indeed, this was only to be guided by the number of rounds that could be fired per day:

Note.-1. As a rule, only 10 rounds a day should be fired. Commanding Officers may, however, use their discretion in allowing any number not exceeding 20 rounds to be fired on one day.[87]

As noted in the 1885 amendments, this was considered the maximum that soldiers could fire without being discomforted by the cumulative recoil. The course of fire appears to have been laid out with these figures in mind, so that either could be used with the minimum disruption. If no more than ten rounds were fired per day, the full course would be the same length as that for recruits - ten days. However, practices requiring the same targets had been grouped together, meaning that if a commanding officer chose to fire the maximum twenty rounds per day, the course could be compressed into six days without having to stop to change targets, or five days if the defence and attack practices were run as half days. This had also been made possible through two other changes implemented in 1885: halving the ammunition allotment for the first two practices; and the removal of the 400 yard practice on day 6. This allowed the "Defence" and "Attack" practices to be included without requiring extra days being added to the course.

[87] *MR1887*, Table facing p. 30.

Table 7: Musketry Regulations 1887, Table "B"

<table>
<tr><td colspan="10">Annual Course of "Range" Practice for Cavalry and Infantry</td></tr>
<tr><td colspan="2" rowspan="2">Description of Target</td><td colspan="2">Distances/Number of Rounds</td><td rowspan="2">Dress</td><td rowspan="2">Position</td><td rowspan="2">Sights</td><td colspan="2" rowspan="2">Classification</td></tr>
<tr><td>Yds</td><td>Rds</td></tr>
<tr><td colspan="2" rowspan="3">3rd Class</td><td>150</td><td>5</td><td rowspan="13">Drill order, excepting at independent and volley firing in close order when helmets will be worn. COs will nominate dress for all other field practices</td><td>3 kneeling then 2 standing</td><td>Fixed at 200 yards (250 for carbine)</td><td colspan="2" rowspan="3">Those who in the 80 rounds in individual practice obtain:-</td></tr>
<tr><td>250</td><td>5</td><td>do.</td></tr>
<tr><td>300</td><td>10</td><td>5 sitting then 5 kneeling</td><td>Proper for the distance</td></tr>
<tr><td colspan="2" rowspan="2">3rd Class, but without centre and bull's eye</td><td rowspan="2">Defence Practice (320-100)</td><td rowspan="2">10</td><td>[4 prone, next 4 kneeling, last 2 standing]*[88]</td><td rowspan="2">Fixed at 200 yards (250 for carbine)</td><td rowspan="2">Infantry 165+ Cavalry 155+</td><td rowspan="2">Marksmen</td></tr>
<tr><td colspan="2" rowspan="2">Head and shoulders on a target, 6ft. x 4ft.</td><td rowspan="2">Attack Practice (265-150)</td><td rowspan="2">10</td><td>[10 prone]*</td></tr>
<tr><td colspan="2" rowspan="2">2nd Class</td><td>500</td><td>10</td><td rowspan="2">5 lying down then 5 kneeling at each distance</td><td rowspan="6">Proper for the several distances, except for independent firing when the "fixed" sight will be used</td><td rowspan="2">Infantry 140+ Cavalry 130+</td><td rowspan="2">1st Class</td></tr>
<tr><td>600</td><td>10</td></tr>
<tr><td colspan="2" rowspan="2">1st Class</td><td>700</td><td>10</td><td rowspan="2">Any military position</td></tr>
<tr><td>800</td><td>10</td><td rowspan="2">Infantry 105+ Cavalry 95+</td><td rowspan="2">2nd Class</td></tr>
<tr><td colspan="2">Independent Firing, field practice e, 6ft. x 12ft.</td><td>300</td><td>5</td><td>Infantry, close order with bayonets or swords fixed, front rank kneeling. Cavalry, single rank kneeling or sitting</td></tr>
<tr><td rowspan="3">Volleys, field practice f</td><td>6ft. x 12ft.</td><td>400</td><td>5</td><td rowspan="2">Extended order, any military position</td><td rowspan="2">Infantry 105- Cavalry 95-</td><td rowspan="2">3rd Class</td></tr>
<tr><td rowspan="2">6ft. x 16ft.</td><td>600</td><td>5</td></tr>
<tr><td>800</td><td>5</td><td></td><td></td></tr>
</table>

The details of the "Defence" and "Attack" practices remained broadly unchanged from 1885, but each was laid out in greater detail. In the "Defence" practice, the unit started at a distance of 320 yards with bayonets fitted, advancing together, with each man firing at individual "Third Class" targets of a single standing figure. The "Attack" practice started at 300 yards, with a pair of firers rushing to 265 yards, finding cover as they would in an assault and firing two rounds at head and shoulders targets. These would be marked, and the rest of the section would then fire in the same manner, before the conducting officer moved forward

[88] Asterisked entries: In the original, these boxes refer the reader to two paragraphs where the full practice is described, respectively paras. 156 and 157. The ammunition figures have been included here for ease of reference.

"about 36 paces".[89] The process would then begin again, until they finished 150 yards from the target.

The field firing exercises also remained broadly unchanged, but incorporated explanations of the purpose of the practices. The "Independent" practice, now being fired first and from 300 yards, was designed to demonstrate "…the continuous and rapid fire which may be required under certain special circumstances, such as previous to an assault…"[90] It functioned as a test of both the section commander's orders and soldiers' individual judgement. Once the order to open fire was given, each soldier acted without further orders until he had fired the number of rounds specified, but they were "…not to fire, except when fair aim can be obtained as the smoke of the firing permits".[91] The final volley practices, whilst included within the unit's Figure of Merit, were more focussed on practising the section commanders in their duties, and that of the section in operating cohesively, rather than simple accuracy.

The emphasis on these two final practices had seemingly been increased by a memorandum issued by the Duke of Cambridge in November 1886, which stated that 'Independent firing in the attack formation should be discontinued altogether, and that in future volley-firing should be employed during all stages of the attack'.[92] These appear to have been connected to wider fears that Independent firing allowed men too much latitude in action, and created the potential for wastage of ammunition, comments which were echoed in a contemporary description of the magazine rifle trials.[93] Despite the Duke's position as Field-Marshal Commanding in Chief, his comments appear to have been taken as a tactical matter, rather than immediately altering the course of training, as seen in the consistency

[89] *MR 1887*, para. 157.
[90] *MR 1887*, para. 158.
[91] *MR 1887*, para. 158.
[92] Quoted in War Office, *Trial of Magazine Rifles in England from 1879, and a Memorandum by Colonel C.G. Slade, Rifle Brigade, on the General Question of Magazine Rifles. Dated 13th January 1887*, (London, Harrison and Sons, 1887), p. 32.
[93] *Ibid*, pp. 32-33.

between G.O. 1885 and *MR 1887*. However, the relative merits of both styles of firing, and the logistical issues they might raise, would remain a topic of debate for many years to come.

The relative consistency in the practices was also reflected in the classification scores. The scores for Marksman and Second Class had been reduced by five points, and that for First Class was raised by the same amount, to better balance the numbers of each. With regards to prizes, those laid down in *MR 1884* appear to have caused problems, possibly due to the complexity of determining the order of merit. It also focussed very narrowly on individual skill, rather than on ensuring unit efficiency. In *MR 1887*, the system was altered so as to place the responsibility of allocating prizes firmly in the hands of Commanding Officers. A grant was made based upon the number of firers, at the rate of 1*s* per recruit and 2*s* 6*d* per trained soldier. From this, those individuals forming the top ten percent of marksmen in the unit were issued 10*s* each. The remaining amount was then placed at the discretion of the Commanding Officer. That allocated for the recruits was to be divided amongst them as the Corps commander saw fit, subject to the approval of the area commander. The money allocated for trained soldiers went firstly towards the ten shillings noted above, and the remainder;

...shall be paid in such awards for the additional encouragement of recruits, trained soldiers, and non-commissioned officers, and for proficiency in range and field practices, as may be deemed most conducive to efficiency.[94]

Whilst this might appear to leave marksmanship at the whim of individual commanding officers, the regulations also stated that prizes would not be issued, "…to regiments or battalions which do not attain a satisfactory standard of efficiency". This obliged commanding officers to ensure the standard of musketry training was maintained as a

[94] *MR 1887*, para. 211.

measure of the regiment's overall efficiency, with the prize money used to focus the efforts of soldiers at the weakest points. This was particularly referred to in the Hythe Report for 1888, where the Commandant hoped that more prizes would be given for field practices, which were generally the weaker ones.[95] To bolster this, and ensure that the prizes were awarded purely on merit, the practice registers and each unit's annual return were to remain the sole basis for estimating the proficiency of the men. The badges, which had previously been issued with the monetary prizes, became "Honorary Awards", and were only issued in three categories. All those classifying as "Marksman" were to receive a badge of crossed rifles in worsted, which was to be issued as soon as the individual range firing had been completed so as to drive interest in the recognition, and worn on the left forearm. The best marksman in the company was to receive a gold braid version of the same badge, worn in the same location, and every sergeant of the best shooting company was issued a gold braid badge of crossed rifles and crown, displayed on the right forearm.

The remaining funds were specifically barred from being used to finance prizes for the regimental rifle clubs, particularly as basic target competitions were often seen as counterproductive to battlefield efficiency. However, these clubs appear to have been the main opportunity for soldiers to practise outside of the annual course. An enlightened solution to this problem came from the Rifle Brigade, which in the latter half of the 1880s excused soldiers early morning parades for shooting practice, provided they paid for their ammunition.[96] This, together with internal and inter-unit competition, seems to have been effective in stimulating rifle shooting. The 4th Battalion's team won the Young Soldiers' Cup

[95] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1888*, (London, Harrison and Sons, 1889), p. 28.
[96] Lt-Col. J.L. Sleeman, 'Prince of Riflemen', *Chambers's Journal*, (164), 1924, p. 505.

in both 1890 and 1891,[97] and a sizeable number of the instructors at the School of Musketry were drawn from the regiment.

Overall, the 1887 Regulations seem oddly contradictory; advancing the training of the individual soldier with more realistic practices, yet leaving the sectional volley fire practices almost entirely unchanged, save for targetry. This may be reflective of the Duke of Cambridge's memorandum, but this alone does not account for why the individual standard was higher than that for the section. It may be attributable to the need to first raise the level of training imparted to the individual, so that those skills could then be better utilised as part of a fire unit. In terms of prizes, the focus on the individual was identified by a contemporary as a flaw in the promising advances made after the musketry committee's recommendations.[98] Yet the Army's experience of combat during this period may have disproven such sentiments. The British Army had been involved in conflicts on two different continents: the Sudan Expedition (1884-5); and the Third Burmese War (1885-1891). Whilst it is arguable that evaluation of the lessons from Burma was not yet seriously underway, it is worth noting that both had required very different styles of warfare from that which the British were trained to use. In Burma, after the British force had taken control of Mandalay at the end of 1885, gangs of 'dacoits' had sprung up.[99] These were only eventually suppressed by the use of small columns under the command of junior officers, leading one historian to refer to it as the "Subaltern's War".[100] This can be seen as an early example of small unit tactics, something which favoured independent action and was a style of warfare which was to receive greater attention towards the end of the century. The conflict in Sudan, by contrast, had been a disaster, with the British Government deciding to abandon the country. Tactically, it was a more conventional war than Burma, with open terrain within which to manœuvre a large

[97] L.R. Stopford Sackville, 'Sergeant-Major J.A. Wallingford', *The Rifle Brigade Chronicle for 1904*, 1905, p. 116.
[98] Browne, *On The Instruction of our Soldiers*, p. 1273.
[99] Fortescue, *The Empire and the Army*, p.300.
[100] *Ibid*, p. 300.

force, and with a greater focus on issues with the Martini-Henry rifle, although these were eventually put down to defective ammunition. Both seemed to support the flexibility of training which the British Army favoured, to adapt to the very different situations it could find itself facing, even though it also required that the focus was far broader than its contemporaries on the Continent.

In the Hythe Annual Reports during this period, the Commandant repeatedly noted several issues, most notably the favouring of fixed distance range practices over field practices, despite the latter having, "…for their object…the training of officers, non-commissioned officers, and men in all kinds of fire which would be used against the enemy".[101] Range practices, by contrast, were simply to steady the soldier in shooting, and give him familiarity with the sighting of his rifle prior to the field practices,[102] which were still restricted by a lack of space. Towards the end of the decade the Commandant's reports do note a slow, if somewhat patchy, progress, and he was hopeful that his advice was reaching a wider audience. This can particularly be seen in the opening comments of the 1890 Report, where the Commandant stated that:

Musketry training is gradually emerging from the somewhat narrow groove in which it has heretofore been too rigidly confined, and it is to be hoped that the hard and fast line which formerly separated musketry (in the usual sense of the term) from the practical field training of the soldier will shortly cease to exist.

[101] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1888*, (London, Harrison and Sons, 1889), p. 29.
[102] *Ibid*, p. 29.

We have hitherto in our musketry training laid far too much stress on slowly aimed individual shooting at a fixed mark at known distances; and the greater value of more rapid collective shooting is not yet fully recognised.[103]

He hoped that these concerns would be addressed by changes that would be implemented with the new small-bore rifle, including the loss of many of the current practices, together with iron targetry, but with the reintroduction of some form of 'definite visible mark to aim at' for preliminary range practices.[104] It just so happened that the Commandant was Colonel C.G. Slade. With the finalisation of the new rifle's design, he had taken up the post of Commandant at Hythe at the end of January 1890, and his remarks were published only a month after the issue of the first rifles. It is interesting that he should be placed in such a position, but as the chief advocate of the move to small-bore rifles, he was now handed the challenge of creating the training to best utilise them.

Army Order 47 and 160, 1890

With the announcement of the "Magazine Rifle, Mark I", in December 1889,[105] the Army required a training programme which would best exploit the advantages of the new rifle. The changeover between the two designs was not instantaneous though – only 13,000 rifles had been manufactured by November 1889, with the first of these issued to the Aldershot battalions in December, followed by the Guards regiments in February 1890.[106] This meant that the Martini-Henry remained the service weapon for many Infantry units into the early 1890s, which were exchanged in order of priority. In the case of support troops, the Martini

[103] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1889*, (London, Harrison and Sons, 1890), p. 1.
[104] *Ibid*, p. 2.
[105] The nomenclature was changed to 'Magazine Rifle, Lee-Metford' on 8th April 1891, in List of Changes §6476. See I.D. Skennerton, *List of Changes in British War Material in relation to Edged Weapons, Firearms and Associated Ammunition and Accoutrements, Volume II, 1886-1900*, (Margate, Ian D. Skennerton, 1977), p. 59.
[106] *Ibid*, p. 65.

action remained the service rifle for far longer, so as to reduce those units' requirements for ammunition. Martini-Enfield rifles remained on issue to colonial troops at the outbreak of the South African War in 1899,[107] and some Royal Artillery units appear to have retained them even later than that.[108] In terms of training, variations from the Infantry 'standard' were already being issued for the Cavalry, Artillery and Engineers. The additional challenge during the transition period from Martini-Henry to Lee-Metford was to create training which was reasonably interchangeable between two completely different weapons systems. The first training written for the new rifle was issued with Army Orders on 1st February 1890.[109] This was a modification of the Preliminary Drills in sections 1, 2 and 3 of Chapter III, *MR 1887*, and specifically covered:

1. Care of Arms and Ammunition
2. Firing Exercise
3. Aiming Drill

This ensured that the recipients of the new rifles could be trained in how to maintain them, and begin their basic drills in preparation for the commencement of the next musketry 'season'. It also includes a very firm note as to who was able to order the use of the magazine, and when:

Magazine fire must not be ordered by any Section Commander (except when he is acting independently) unless a distinct order to use it has been given by a superior

[107] Spiers, *The late Victorian Army*, p. 241. These were Martini-Henry rifles which had been re-barrelled to fire the same ammunition as the Lee-Metford.
[108] The author's collection contains a postcard, posted from Stanhope Lines, Aldershot, in March 1907, showing a Royal Engineer unit holding Martini-Enfield carbines. See Appendix 8.
[109] H.M.S.O., *Army Orders issued by order of the Commander-in-Chief with the approval of the Secretary of State for War*, (London, Harrison and Sons,1891), p. 17. This was announced in Army Order 47, dated 1st February 1890.

officer; nor is any individual soldier when acting with other men in a formed body to resort to it without orders.[110]

This was in keeping with concerns relating to the potential wastage of ammunition by soldiers, and the failure of the command structure to exert its control over them. The same section also discussed the procedure for exchanging magazines, swapping the one attached to the rifle with the spare magazine with which the first rifles were issued.[111] However, as the spare magazines were withdrawn from service in October 1890,[112] this drill was quickly rendered obsolete. Another example of items with a short service life can be seen in a reference to the usage of the 'Safety Bolt', which was fitted to the left side of the receiver in a similar position to that later issued on the 'Short' rifle, but which was removed when the Mark I* design was brought in two years later.[113] Overall, whilst there is some description of aiming practices, particularly on the new distances to be used for the 'Fixed Sight', the musketry program was not altered significantly beyond that required to accommodate the mechanical differences inherent in the new rifle.

Later that same year, an amended Table "A" was issued for the use of recruits of the Infantry, Cavalry and Royal Engineers.[114] Although the title referred to the Martini-Henry rifle, a paragraph at the bottom of the table gave instructions 'For Troops issued with the .303-inch Magazine Rifle';

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[110] H.M.S.O., *Magazine Rifle. Care of Arms and Ammunition. Firing Exercise. Aiming Drill*, (London, Harrison and Sons, 1890), p. 24. [Preserved in the British Library, 8823.a.70].
[111] *Ibid*, pp. 24-25.
[112] List of Changes 6235 (dated 3 Oct 1890). See Skennerton, *List of Changes*, Vol. II, p. 45.
[113] List of Changes no. 5877 (dated 19 Jan 1892). *Ibid*., p. 76
[114] H.M.S.O., *Army Orders…1891*, pp. 11-14. This was Army Order 160, specially issued on 3rd April 1890.

Table 8: Musketry Regulations, 1887. Table "A" (as per A.O. 160, 1890)

Day	Description of Target		Practices and Number of Rounds		Position, &c.	Sights	Classification	Judging Distance Practice
			Yds	Rds				
1	3rd Class (but with white bullseye)		100	10	5 rds kneeling and then 5 rds standing	The sights are to be adjusted for the distance fired at, except on the 4th and 5th days and at independent firing, when the "fixed sight" will be used.	Those who with the 90 rounds in individual practice obtain : 145 points and upwards…1st Class 105 points and upwards…2nd Class Less than 105 points…3rd Class	Six exercises only of four answers each between 50 and 800 yards. Not more than one exercise to be executed in a day.
2			150	10				
3			200	10	5 rds lying down and then 5 rds kneeling			
4	3rd Class (but without centre or bullseye)		100	10	2 rds at each distance, standing at 100; kneeling at 150 & 200; lying at 250 & 300. Hits as in paragraph 156*f*			
			150					
			200					
			250					
			300					
5	Head and Shoulders on a target 6ft. x 4ft		150	10	4 rds at 150 and 2 rds at each remaining distance, lying down. Hits as in paragraph 157*f*			
			200					
			250					
			265					
6	2nd Class		300	10	5 rds lying down, then 5 rds sitting			
7			400	10	5 rds lying down, then 5 rds kneeling			
8	1st Class		500	10	5 rds lying down, then 5 rds sitting			
9			600	10	Lying down			
10	Independent, 6ft. x 12 ft.		300	5	Cavalry, single rank kneeling or sitting Infantry, close order, bayonets fixed, front rank kneeling			
11	Volleys	6ft. x 2ft.	300	5				
			400	5	Lying down in extended order			
		6ft. x 6ft.	500	5				
			600	5				
12	*(d.)* Rapid individual firing		200	10	*See* paragraph 163, Musketry Regulations			
13	*(g.)* Vanishing target		150	10	*See* paragraph 164			
14	*(h.)* Skirmishing		450 to 200	10	*See* paragraph 165, (Cavalry, 166)			
15	*(i.)* Running practice (timed)		600 to 400	10	*See* paragraph 167, Musketry Regulations			
16	*(l.)* Rapid volleys (timed)		300 and 400	10	*See* paragraph 170			
17	*(k.)* Section attack		600 to 150	20	*See* paragraph 168, (Cavalry, 169)			
	Repetition practice, or as Commanding Officer may direct			*15*				

Table "A" as amended above, except that the sights are to be adjusted to the distance, except when firing at or under 300 yards, or in volley firing at or under 400 yards, when the "fixed sight" will be used. Swords [bayonets] will be fixed under and at 200 yards, and for independent and volley firing in close order.[115]

In terms of alterations, the existing practices had seen relatively few changes: A target practice at 600 yards had been added, together with an additional volley practice at the same distance, which had extended the table by an additional day. The classification scores had also been raised by ten points, to account for the additional target practice. However, the table no longer ended there, but contained an additional six days of field practices. Whilst all of these were practices which had appeared in *MR 1887*, they had never been part of Table "A". This also required a significant increase in the ammunition allowance, to 185 rounds per recruit, with a further 15 rounds per man held at the Commanding Officer's discretion. Including the discretionary ammunition, this represented a doubling of the annual allowance for recruits, and yet very little appears to have been said about this change. No explanation was included with the Order as to why this change had been made, and no direct reference to this table was made in the Commandant's report for that year. The closest reference was a comment that field firing practices were 'of a more practical nature than the "range" practices and therefore more important.'[116] He also noted that forty-nine regiments and battalions failed to perform any field practices due to 'want of suitable ground'.[117] Those that were able to undertake such training would often have been below their 'establishment' strength, due to the need to supply drafts for battalions serving overseas. As such, they would have needed to combine units to make up numbers, an issue that was exacerbated on larger scale

[115] *Ibid*, p. 13.
[116] H.M.S.O., *Annual Report on the instruction Carried on at the School of Musketry, Hythe, during 1890, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1891*, (London, Harrison and Sons, 1892), p. 15.
[117] *Ibid*, p. 19.

manoeuvres.[118] They were also run on relatively unrealistic lines, both in terms of a failure to use cover or entrenchments, leading to the farcical situation described by Major-General May (see above), or that which Ian Hamilton faced when he advanced beyond the regulation distance to use cover (see below). However, there is little indication that the Commandant felt that this was the greatest obstacle to proper training from a musketry perspective, citing instead issues which suggest the attacks practised lacked speed and focus, rather than manpower and realism.[119] As such, the inclusion of these six practices may well have been part of a drive to encourage their practise on rifle ranges, although this did not entirely compensate for the lack of field firing space. Interestingly, given that this was the first year of issue, and only 10,000 men were practised with the magazine rifle (already being referred to by the Commandant as the 'Lee-Metford'), the scores achieved averaged 4% better than those of units armed with the Martini-Henry rifle.[120]

Amendments in the Regulations for Musketry Instruction, 1887 (1891)[121]

The final amendments of the 1887 Regulations were issued as Army Orders 32 and 33 in February 1891.[122] The tables that were included reversed the previous table's bias towards the Martini-Henry, incorporating both rifles in the title, and appear to represent the point at which the magazine rifle had at least reached a par with the Martini-Henry in terms of numbers on issue.

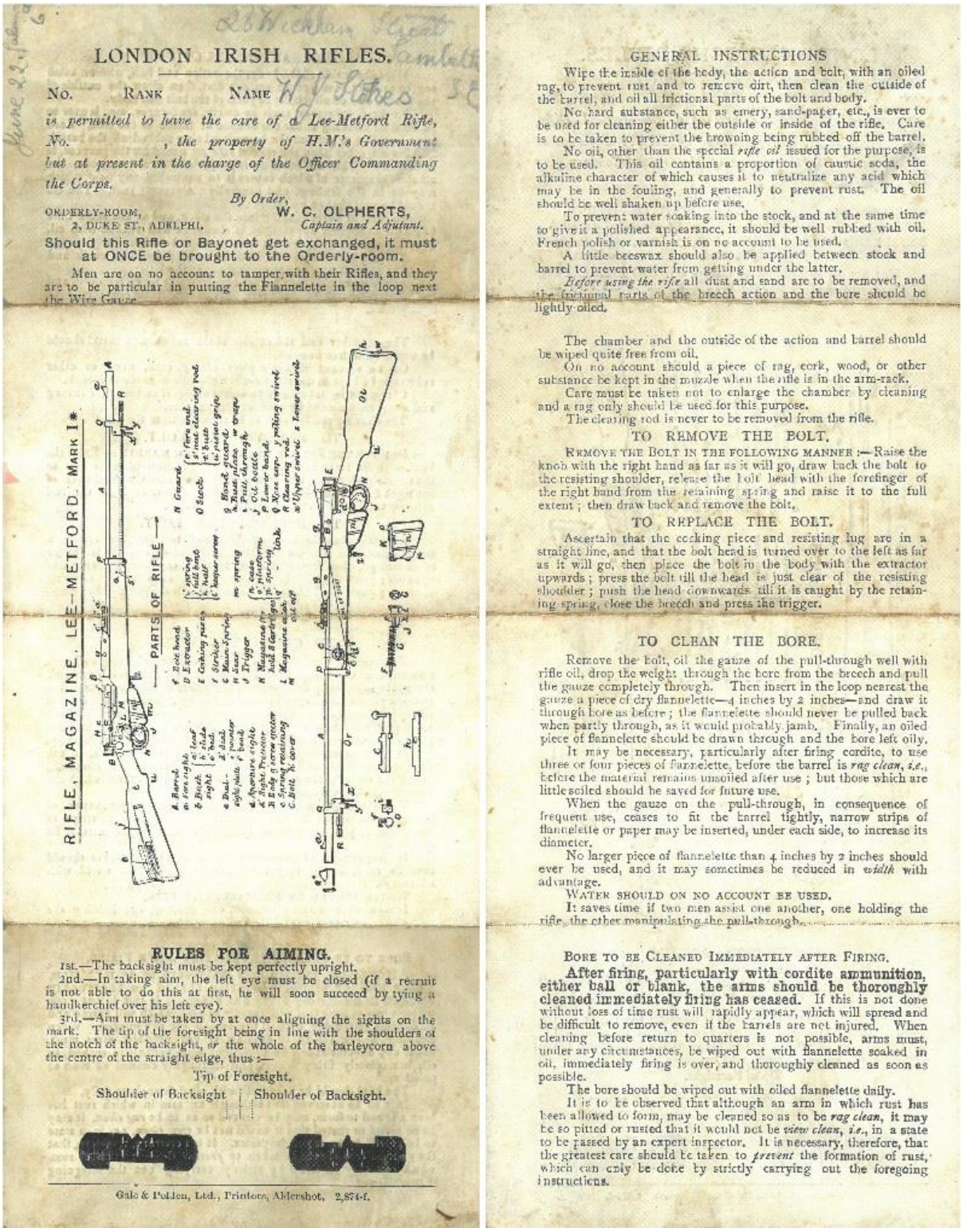
That it was a compromise was inevitable for several reasons: not only was there still the disparity in operation between a magazine-fed rifle and a single-shot one, but the reduced recoil of the new cartridge allowed the maximum number of rounds that could be

[118] For a discussion of how this problem continued in a later period, see T. Bowman and M. Connelly, *The Edwardian Army…*, pp. 66-68.
[119] *Annual Report…1890*, p. 19.
[120] *Ibid*, pp. 14-15.
[121] H.M.S.O., *Amendments in the Regulations for Musketry Instruction, 1887 [Issued with Army Orders dated 1st February, 1891]*, (London, Harrison and Sons, 1891), preserved in the RAL. [Hereafter *Amendments, 1891*].
[122] H.M.S.O., *Army Orders Issued by order of the Commander-in-Chief with the approval of the Secretary of State for War*, (London, Harrison and Sons, 1892), p. 12.

comfortably fired in practice to be raised from twenty to thirty. As such, the training for both recruits and trained men had to be flexible enough to allow for the Martini-Henry's "vicious recoil",[123] whilst not handicapping those already issued with the Lee-Metford. Intriguingly, there is no mention of the disparity in sighting between the two rifles. The Lee-Metford Mark I was fitted with sights based on the design of a Major Lewes.[124] These had been introduced just as the rifle's design was being agreed, and were highly unusual in using a bar of light as the foresight. Although they were meant to be easy to teach, they had been poorly understood, and proved difficult to mass-manufacture to the required tolerances. They were discontinued in 1892, in favour of a modified version of the Martini's sights, and existing examples were altered to the same pattern. Their late introduction, and limited lifespan, may have resulted in a failure to produce training material, as only one contemporary aiming exercise has been located, together with that in the List of Changes entry for the rifle's introduction, but no diagrams to demonstrate their usage. As such, they represent not only a technical cul-de-sac, but a training anomaly which does not appear to have been fully addressed.

In terms of changes, the ammunition allotment of 182 rounds represented a minor reduction from the previous year, and was due to the unusual number of rounds now allocated per practice – seven rather than ten. Whilst this corresponds with the original magazine capacity of the Troop Trials rifles,[125] the Mark I rifle as issued held eight rounds,[126] and all rifles from the Mark II onwards had a capacity of ten.[127] Despite these changes, seven remained the base figure for ammunition allotment for all firing until 1896, and for individual

[123] Spiers, *The late Victorian Army*, p. 230.
[124] For full details of the Lewes sights, see Appendix 3.
[125] See H.M.S.O., *Magazine Rifles, 1888: Memorandum Relating to Rifles about to be Issued for Trial*, (London, Harrison and Sons, 1888), p. 5.
[126] Ian Skennerton, *The Lee-Enfield: A Century of Lee-Metford & Lee-Enfield Rifles & Carbines* (3rd ed.), (Labrador, Ian D. Skennerton, 2007), p. 441.
[127] Skennerton, *The Lee-Enfield*, p. 444.



LONDON IRISH RIFLES.

No. Rank Name

is permitted to have the care of a Lee-Metford Rifle, No. , the property of H.M.'s Government but at present in the charge of the Officer Commanding the Corps.

By Order,
W. C. OLPHERTS,
Captain and Adjutant.

ORDERLY-ROOM,
2, DUKE ST., ADELPHI.

Should this Rifle or Bayonet get exchanged, it must at ONCE be brought to the Orderly-room.

Men are on no account to tamper with their Rifles, and they are to be particular in putting the Flannelette in the loop next the Wire Gauze.

RIFLE, MAGAZINE, LEE-METFORD, MARK I*

PARTS OF RIFLE

RULES FOR AIMING.

1st.—The backsight must be kept perfectly upright.

2nd.—In taking aim, the left eye must be closed (if a recruit is not able to do this at first, he will soon succeed by tying a handkerchief over his left eye).

3rd.—Aim must be taken by at once aligning the sights on the mark. The tip of the foresight being in line with the shoulders of the notch of the backsight, or the whole of the barleycorn above the centre of the straight edge, thus :—

Tip of Foresight.

Shoulder of Backsight | Shoulder of Backsight.

Gale & Polden, Ltd., Printers, Aldershot. 2,874-f.

GENERAL INSTRUCTIONS

Wipe the inside of the body, the action and bolt, with an oiled rag, to prevent rust and to remove dirt, then clean the outside of the barrel, and oil all frictional parts of the bolt and body.

No hard substance, such as emery, sand-paper, etc., is ever to be used for cleaning either the outside or inside of the rifle. Care is to be taken to prevent the browning being rubbed off the barrel.

No oil, other than the special *rifle oil* issued for the purpose, is to be used. This oil contains a proportion of caustic soda, the alkaline character of which causes it to neutralize any acid which may be in the fouling, and generally to prevent rust. The oil should be well shaken up before use.

To prevent water soaking into the stock, and at the same time to give it a polished appearance, it should be well rubbed with oil. French polish or varnish is on no account to be used.

A little beeswax should also be applied between stock and barrel to prevent water from getting under the latter.

Before using the rifle all dust and sand are to be removed, and the frictional parts of the breech action and the bore should be lightly oiled.

The chamber and the outside of the action and barrel should be wiped quite free from oil.

On no account should a piece of rag, cork, wood, or other substance be kept in the muzzle when the rifle is in the arm-rack.

Care must be taken not to enlarge the chamber by cleaning and a rag only should be used for this purpose.

The cleaning rod is never to be removed from the rifle.

TO REMOVE THE BOLT.

REMOVE THE BOLT IN THE FOLLOWING MANNER :—Raise the knob with the right hand as far as it will go, draw back the bolt to the resisting shoulder, release the bolt head with the forefinger of the right hand from the retaining spring and raise it to the full extent ; then draw back and remove the bolt.

TO REPLACE THE BOLT.

Ascertain that the cocking piece and resisting lug are in a straight line, and that the bolt head is turned over to the left as far as it will go, then place the bolt in the body with the extractor upwards ; press the bolt till the head is just clear of the resisting shoulder ; push the head downwards till it is caught by the retaining spring, close the breech and press the trigger.

TO CLEAN THE BORE.

Remove the bolt, oil the gauze of the pull-through well with rifle oil, drop the weight through the bore from the breech and pull the gauze completely through. Then insert in the loop nearest the gauze a piece of dry flannelette—4 inches by 2 inches—and draw it through bore as before ; the flannelette should never be pulled back when partly through, as it would probably jamb. Finally, an oiled piece of flannelette should be drawn through and the bore left oily.

It may be necessary, particularly after firing cordite, to use three or four pieces of flannelette, before the barrel is *rag clean*, *i.e.*, before the material remains unsoiled after use ; but those which are little soiled should be saved for future use.

When the gauze on the pull-through, in consequence of frequent use, ceases to fit the barrel tightly, narrow strips of flannelette or paper may be inserted, under each side, to increase its diameter.

No larger piece of flannelette than 4 inches by 2 inches should ever be used, and it may sometimes be reduced in *width* with advantage.

WATER SHOULD ON NO ACCOUNT BE USED.

It saves time if two men assist one another, one holding the rifle, the other manipulating the pull-through.

BORE TO BE CLEANED IMMEDIATELY AFTER FIRING.

After firing, particularly with cordite ammunition, either ball or blank, the arms should be thoroughly cleaned immediately firing has ceased. If this is not done without loss of time rust will rapidly appear, which will spread and be difficult to remove, even if the barrels are not injured. When cleaning before return to quarters is not possible, arms must, under any circumstances, be wiped out with flannelette soaked in oil, immediately firing is over, and thoroughly cleaned as soon as possible.

The bore should be wiped out with oiled flannelette daily.

It is to be observed that although an arm in which rust has been allowed to form, may be cleaned so as to be *rag clean*, it may be so pitted or rusted that it would not be *view clean*, *i.e.*, in a state to be passed by an expert inspector. It is necessary, therefore, that the greatest care should be taken to *prevent* the formation of rust, which can only be done by strictly carrying out the foregoing instructions.

Figure 9: Instructions issued to the London Irish Rifles upon the issue of their Lee-Metford Mark I rifles, c. 1891 (Author's Collection).*

practices until 1905. This may have originally been a practical choice, both in terms of not over-stressing the magazine springs in the rifles, as well as accommodating recruits firing the Martini-Henry, who would then not be too far over the previous limit of ten rounds per day during the Individual practices. This concern was echoed in a note printed above the table, stating that "With the Martini-Henry Rifle, *carbine* instead of *rifle* ammunition must be used at the first two distances" [original emphasis]. Carbine ammunition was loaded with a reduced charge and lighter bullet, producing less recoil and so less uncomfortable for new recruits on their first day firing live ammunition.

This consideration did not carry into the section practices, where 21 rounds were fired on both days 15 and 16, and 28 rounds on day 17 – punishing for those firing the Martini-Henry. This could explain a comment in the notes below the table, which stated that it might be necessary to fire, "…a less or a greater number of rounds than is laid down for each day's work".[128] This was the first time that it had been possible to extend the time taken for the course, and placed the initiative in the hands of commanding officers to best judge the situation. Another compromise had to be made with regard to distances, as the new rifle had a flatter trajectory than its predecessor, leading to the definition of "fixed sight" being raised from 300 to 400 yards.[129] Despite this, the maximum distance practised over was 800 yards – the greatest distance at which the trajectory of the Martini rifle created a danger zone for both cavalry and infantry, and which had previously been described as the furthest distance "at which…aimed rifle fire becomes very deadly".[130] These then were the areas where the training had to work hardest to balance the conflicting abilities of both rifles.

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[128] Note 1 beneath 'Table A. Magazine and Martini-Henry Rifle.', in *Amendments, 1891*.
[129] 'Fixed sights' exploited the same principle that was the foundation of the 'fire with movement' practices included in 1884 and 1887 – that, based upon the trajectory of a bullet, a particular elevation on the backsight ensured that a soldier's fire was dangerous throughout a given area. However, this differed from the rifle's announcement in the List of Changes (§5877), which stated that the fixed sight was 300 yards, giving a danger zone from 150 to 375 yards on a head and shoulders target, and up to 500 yards on a 6ft standing figure. See Skennerton, *List of Changes*, Vol. II, p. 62.
[130] Appendix II, *MR 1887*, p. 244.

Under these amendments, Table "A" was to be preceded by eight days of preliminary drills, which were numbered as part of the table, seemingly in contradiction to the previous desire to have training practised throughout the year. The expansion was due to an increase in the number of "Care of Arms and Ammunition" lessons from two to eight, reflecting the relative complexity of the new rifle, the need for new cleaning techniques to maintain it, and a desire to thoroughly familiarise recruits prior to beginning the firing course proper. This was further assisted by four additional firing exercises, and a practice where eight live rounds were fired from between 100 and 200 yards at any target, and from any military position. There was also a corresponding decrease in both miniature cartridge and blank firing practices.

As Colonel Slade had speculated,[131] there had also been a reversion to bull's-eye targets, although these were to be used for all individual practices,[132] rather than just for the preliminary ones. This appears to have been done in preparation for the new Sectional target, which was far less distinct than any previously issued. Certainly, Slade was keen that senior officers should not continue to value the "Wimbledon" bull's-eye ahead of sectional training,[133] and it seems likely that the intention was for soldiers to be able to familiarise themselves with their new rifles before moving onto the more challenging section practices, with the individual practices intended to provide the means to ensure greater unit efficiency. The new targets had all been re-scaled as well. The "Third Class" target was reduced in height by 2ft., to 4ft. square, with the diameters of the scoring rings adjusted accordingly. The "Second Class" and "First Class" targets retained their overall dimensions from 1887, but the

[131] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1889, and of the Progress of Musketry Instruction in the Army, During the Year ending 31st March, 1890*, (London, Harrison and Sons, 1891), p. 2.
[132] *Amendments, 1891*, p. 3: 'In future, the 3rd, 2nd and 1st Class targets will be white with black bulls-eyes and without figures.'
[133] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1890, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1891*, (London, Harrison and Sons, 1892), p. 1.

Table 9: Musketry Regulations (Amendment) 1891, Table "A"

Day	Description of Firing	Description of Target	Distance in Yards	Number of Rounds	Position	Sights	Remarks
9th	Individual	3rd class	200	7	Standing	Sights at 300 yards with bayonet fixed	*These paras. refer to the Musketry Regulations:*
"	"	"	"	7	Kneeling		
10th	"	2nd class	300	7	Standing	Sight to be adjusted for the distance fired at	
"	"	"	"	7	Kneeling		
11th	"	"	400	7	"		
"	"	"	"	7	Lying Down		
12th	"	1st class	500	7	Kneeling		
"	"	"	"	7	Lying Down		
13th	"	"	600	7	Kneeling		
"	"	"	"	7	Lying Down		
14th	Individual Attack	*6ft. x 6ft.	500 to 200	14	Kneeling or Standing	"Fixed sight" at and after 400 yards	See para. 157
15th	Individual firing by word of command	* "	400	7	Kneeling	"Fixed sight"	See para. 157*a*
"	Volleys	*6ft. x 8ft.	300	7	Single rank, standing	"	See para. 159
"	"	* "	"	7	Single rank, kneeling	"	See para. 159
16th	Volleys, magazine fire	* "	"	7	Two ranks, front rank kneeling	"	See para. 159
"	Volleys	*6ft. x 12ft.	500	7	Single rank, kneeling	Sight for distance	See para. 159
"	"	* "	600	7	Single rank, lying down	"	
17th	Independent, Magazine Fire	*6ft. x 8ft.	200	7	Single rank, kneeling	"Fixed sight"	See para. 158
"	" , "	* "	"	7	Two ranks, front rank kneeling	"	
"	Section Attack	* "	600 to 200	14	Any military position up to 500 yards, kneeling or standing after that distance	"Fixed sight" at and after 400 yards	See para. 168
18th	"	16 head & shoulders, not less than 2ft. apart	"	14			
19th	Skirmishing	3ft. high x 2ft. wide	"	14	Any military position	As preferred	See para. 165

**In these practices the lower 4ft. of the target may be coloured at discretion, or any figure or figures painted on it. Hits on the lower 4ft. to count 2 points each, and on the upper 2ft. 1 point each.*[134]

[134] Note beneath 'Table A. Magazine and Martini-Henry Rifle.', in *Amendments, 1891*.

intermediate "Centre" scoring ring was slightly reduced on each. Those for the "Individual Attack" and "Individual firing by word of command" practices were different: "6 ft. x 6ft. The lower 4 ft. may be coloured at discretion, or may have any figure or figures painted on it".[135] This was intended, "To train the individual soldier to aim at the ground line or feet, preparatory to collective firing".[136] The design seems based on a field firing target trialled in India in the late 1880s, which simulated a trench obscured by smoke, and was designed to make soldiers take a full sight and aim low.[137] However, that described in 1891 differed in awarding points for shots striking the top band of the target

The distances that recruits fired over had also been revised. The first five days of instructional practices progressed from 200 yards back in hundred-yard intervals to 600 yards, but without practices at intermediate distances, as had been the case the previous year. This may have been due to a combination of three factors: the additional preliminary firing practices; the new round's flatter trajectory; and the additional time needed to allow four more rounds to be fired per distance. The regrouping of practices, whereby all of the instructional shoots were conducted prior to the "Individual Attack", allowed recruits to familiarise themselves with their rifle's sighting at all distances prior to combining fire and movement. Finally, there is no mention of the sitting position, although this was primarily associated with the cavalry, who had a separate Table "A".

The "Individual Attack" practice itself was slightly modified from that introduced in *MR 1887*. It was now virtually identical to that for trained soldiers, advancing from 500 to 200 yards, and with the recruits firing from the kneeling or standing positions, rather than lying down. As noted above, the target was of a more challenging design, with recruits required to adjust their sights between 500 and 400 yards, but thereafter using a fixed sight and adjusting their point of aim as per the original practice.

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[135] *Amendments, 1891*, p. 4.
[136] *Ibid*, p. 4.
[137] Untitled article in *The Pioneer* (10 Aug 1889), preserved in HAM 17/2 KCL Liddell Hart.

The final five days had a revised set of section firing practices, mostly based upon pre-existing field firing exercises. The first practice on day 15 was the only totally original one, and provided a transition to the section practices. The recruit was trained specifically in responding to words of command, firing from 400 yards in the kneeling position and with a fixed sight at the same target used the previous day, practising both firer and commander. Of the five volley practices, four were conventional and applicable to both rifles, fired from a single rank in different positions as the distance increased. The final volley practice at 300 yards was fired in two ranks, and was also the first to specifically mention the use of the magazine: "Volleys, magazine fire". This suggests that, for the individual practices, the Lee-Metford was operated as a single-loader, and with the magazine cut-off closed. This would mean that this and the following two "Independent, magazine fire" practices were the only occasions where recruits loaded from the magazine rather than from a belt pouch, which would correspond with contemporary thought on retaining the magazine as a reserve of fire.[138] For those still issued with the Martini-Henry, "Rapid" fire was to be used instead. Whilst rapidity of loading had been discussed in 1884, rapid firing first appeared in field practices in 1887, designed, "To train men to the habit of loading, aiming, and firing as quickly as possible consistently with accuracy".[139] There was no specific rate of fire to be achieved other than the best the firer could attain, with a minute given for up to ten rounds to be fired at a figure target. It was to be used "under certain special circumstances…but must be intelligently directed and controlled by the section leaders".[140] This created a temporary increase in the volume of fire at decisive moments, such as immediately prior to an assault, which would explain why all three practices were fired from close range.

[138] Col. C.G. Slade included a comment in his report to the Small Arms Committee in 1886 as point "22. (a1): Rapid firing through the magazine would probably only be resorted to in the final stage of delivering or sustaining an attack." See War Office, *Trial of Magazine Rifles in England from 1879*, p. 32.
[139] *MR 1887*, para. 163*h*.
[140] *MR 1887*, para. 158*i*.

The final three practices were the most ambitious; two section attacks and one of skirmishing, which had first appeared the year before. The two section attacks differed only in the targetry used. The first utilised a single 6ft. by 8ft. target, painted as described above, representing a large target such as enemy artillery or transport. The second used sixteen "head & shoulders" targets, each separated by at least two feet, to simulate advancing infantry. These were also intended to challenge the fire commander, who would have to ensure that both types of target were engaged effectively. As an additional consideration, the unit was to advance in a very specific manner. The whole line would fire the first volley together and advance eighty yards, from where the left section fired a volley before the right section rushed forward forty yards. When the right section fired a volley, the left would advance to re-form the line, and the procedure would then be repeated until 180 yards was reached. From here they would rush to 150 yards and receive the order to fire the remaining six rounds independently, before bayonets were fixed for the charge. The final skirmishing practice was conducted over the same distances, but fired from "Any military position" at a 3ft. by 2ft. target, the smallest encountered by recruits, who were given the freedom to adjust their sights as they saw fit. Completion of the full course would have given recruits grounding in all of the necessary basic training for combat, making the term "Trained Recruit" far more comprehensive than it had perhaps been previously, and may have been intended to prepare them for overseas deployment without the need for further training.

By comparison, the Annual Course was more succinct. It commenced with a two day preliminary course, with two lessons on care of arms, one lesson on theoretical principles, two firing exercises (which were to include both individual and sectional instruction), and one aiming drill each day. Once this was complete, they then progressed to the firing section of Table "B". Although not as long as the program for recruits, trained soldiers fired 126

Table 10: Musketry Regulations (Amendment) 1891, Trained Soldier's Course

Day	Description of Firing	Description of Target	Distance in Yards	Number of Rounds	Position	Sights	Remarks
3rd	Individual	3rd class	200	7	Standing	300 yards with bayonets fixed	† Hits not to be signalled until the conclusion of each man's rounds
"	Rapid individual magazine fire, 7 rounds in once minute	"	"	7†	"		
4th	Individual	"	300	7	Kneeling	Sights to be adjusted for the distance	
"	Rapid individual magazine fire, 7 rounds in once minute	"	"	7†	"		
5th	Individual	2nd class	500	7	"		
"	"	"	600	7	"		
6th	"	1st class	700	7	Any Military		
"	"	"	800	7	"		
7th	Individual attack	*6ft. x 6ft.	500 to 200	14	"	"Fixed sight" at and after 400 yards	See para. 157
8th	Volleys, making a rapid advance from 800 to 700 and from 700 to 600 yards	*6ft. x 12ft.	800 700 600	7 7 7	Single Rank, lying down Single Rank, lying down Single rank, kneeling	Sights for Distance " "	See para. 170
9th	Rapid volleys, 7 rounds in 70 seconds	*6ft. x 8ft.	500	7	"	"	" "
"	"	* "	400	7	"	"Fixed Sight"	
"	Volley and independent, 4 volleys and 3 independent	* "	300	7	Two ranks, front rank kneeling	"	" 158 & 159
10th	Section attack	16 head & shoulders, not less than 2ft. apart	600 to 200	14	Any military to 500 yards, standing or kneeling after that distance	"Fixed sight" at and after 400 yards	See para. 168

rounds over eight days, a slight increase in ammunition if not necessarily in time. An additional 64 rounds were allocated for use in further practices, facilities permitting.[141] If none of them were practicable, then the Commanding Officer was permitted to devise other practices as he saw fit, although the Hythe Annual Reports suggest that this was either ignored, or badly executed.[142]

Unlike previous manuals, there seems to have been an attempt to integrate the training of both courses in a progressive manner, rather than standing alone. There was less revision of basic principles, with only four close-range practices, the first two being executed with fixed bayonets. This lowered the point of impact, hence the stipulation that a 300-yard setting should be used. The two rapid fire practices, despite being the only ones to use the magazine, allowed eight seconds per round, and were each preceded by an untimed practice under the same conditions to familiarise soldiers with the sighting of their rifles. All of the long-distance practices fired over the following two days had reverted to firing from a single position, with kneeling favoured over prone, perhaps attempting to prevent an advance faltering behind cover. Aside from time constraints, the course remained relatively unchanged from the previous regulations. The "Individual Attack" practice was now shot from 500 to 200 yards, the same distances as those in Table "A", using a slightly larger target to compensate for the longer distance, and with soldiers selecting their firing positions.

This was the last of the practices to count towards the individual classification score, and the remaining three days were entirely section-based, all of which were expanded versions of field practices from 1887, and appear to have been fired without use of the magazine. That for Day 8 – three sets of seven volleys, punctuated by two rapid advances –

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[141] The practices were: *Field-Firing (company and battalion or brigade), long-range volleys, skirmishing, running practice, vanishing target, moving target. Of these the field-firing and long-range volleys must be executed whenever the ground will permit.*

[142] See H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1891, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1892*, (London, Harrison and Sons, 1892), pp. 14-17.

had originally seen the unit advancing from 400 to 300 yards, firing five volleys from any military position in a minute at each distance. It had now been given additional complexities: longer distances, requiring sight adjustments, and assuming a nominated firing position at each distance. Seventy seconds was now allowed at each distance, although an officer could fire six volleys if he felt that doing so would be more effective.[143]

Day 9 was conducted from shorter ranges, first practising rapid volleys at both 500 and 400 yards, and with the final exercise of the day combining two former practices, firing four short-range volleys followed by three rounds independently. The final day was identical to the "Section Attack" practice which recruits had undergone on their penultimate day. The classification scores had been raised, with an additional twenty-five points required to classify as a marksman but from ten fewer rounds. Combined with the reduction of the targets and scoring areas, this would appear to have made that classification very difficult to achieve. This was due to overcompensation after the adoption of the new rifle, and indeed there is a note in the Annual Report for this year that, "…the classification table [had] been fixed too high. It has since been lowered".[144] In all other respects, it would appear that the award and prize scheme remained unaltered from 1887.

The Fighting of the Future:

Throughout this period, the Army's musketry training faced criticism from both serving and former officers. Many published their thoughts as short articles in the service press, often under pseudonyms, which appear to have had little direct impact. However, one writer is particularly notable for his proactive and detailed suggestions for an alternative approach to training. Ian Hamilton had demonstrated his abilities as a 'thinking officer' early in his career during a field exercise, extending a rush beyond the regulation distance to take advantage of

[143] *MR 1887*, para. 170, as amended by *Amendments, 1891*, p. 7.
[144] See H.M.S.O., *Annual Report…1892*, p. 14.

the cover of a brick wall – a move which (to his mortification) was singled out for special praise by the inspecting officer during the subsequent "Officer's Call".[145] In 1878, whilst on leave in Britain, he attended the instructor's course at Hythe; he passed with an 'Extra First' certificate, and was appointed battalion musketry instructor upon his return. Through hard work, perseverance, and extra ammunition purchased with his own personal funds, his battalion became the best shooting unit in India. Between 1879 and 1881 they served in both the Second Anglo-Afghan War and the First Boer War, and in the latter fought at the Battle of Majuba Hill, where the British were defeated by Boer irregulars. Despite their training, Hamilton's battalion fared badly, a fact he blamed upon their not having practised whilst being on campaign. Hamilton himself was shot through the left wrist during the battle, a wound which crippled his hand for the rest of his life, and drove him to consider ways that musketry training and practices could be improved. After recuperating in Britain, he returned to India in June 1882 to take up the post of aide-de-camp to Lord Frederick Roberts, then Commander-in-Chief of the Madras Army. Roberts was an experienced soldier, who understood the value of good musketry training and the challenges of those expected to teach it, the latter demonstrated in comments he made in 1888:

Musketry has had a hard struggle to assert its position in the Army. When it was first introduced it was looked upon as a dangerous innovation, likely to interfere with many old traditions; such as, for instance, that it was a sheer waste of time to keep soldiers on the range longer than was necessary to fire off the limited number of rounds sanctioned by the regulations of those days. The musketry instructor was voted a nuisance by everyone, and unless he was possessed of an unusual amount of tact and was popular in the regiment, he often experienced great difficulty in carrying out his duty.[146]

[145] J. Lee, *A Soldier's Life: General Sir Ian Hamilton, 1853-1947* (2nd ed.), (London, Pan Books, 2001), p.9.
[146] Myatt, *History of the Small Arms School Corps*, p. 17.

With the sympathetic ear of a senior commander, Hamilton started to set out his own ideas of how a modern musketry course should be organised. As a skilled shot with both rifle and revolver, having competed as part of Lord Roberts' staff team with great success, he was able to write from personal experience of the entire process at a time when an officer's shooting skills were not formally tested.[147] The resulting paper was shown to Roberts in 1884, who suggested it be published, and when the formal work, *The Fighting of the Future*,[148] appeared a year later, it was radically different from the Musketry Regulations.

Hamilton started from a very simple idea: that every army in the world thought, trained, and fought the same way. Under those circumstances, it was believed battlefield superiority could only be achieved through superior numbers, as all other factors were roughly equal. However, he felt that this overlooked other areas which would make a given volume of fire as effective as possible, offsetting any numerical disadvantage and allow a force to overcome a numerically superior adversary. This would be particularly useful in modern warfare, as centralised command had been rendered increasingly difficult by the sheer noise of battle. The close formations that such control required had also become more dangerous, due to the increased range and accuracy of modern rifles that Hamilton had witnessed first-hand in South Africa. His solution was simple but radical: the British Army should alter its recruitment criteria, as the basis of a more proactive system of training. With recruits selected to higher standards, drill could be reduced to a bare minimum, allowing more time to focus on creating a new style of fighting. His reasoning was simple, and eloquently stated:

[147] Several articles in Hamilton's archive record his victories in individual and team competitions, with both rifle and revolver. See HAM 17/2 KCL Liddell Hart.
[148] Captain I. Hamilton, *The Fighting of the Future*, (London, Kegan Paul, Trench & Co., 1885).

Drill was devised to secure unreasoning obedience. We now want reasoning obedience…[149]

In pursuit of this, he proposed that once soldiers had completed their basic training the official allocation of "10 days" per year of musketry should instead be turned over to drill,[150] with the majority of the year used for musketry training. Each soldier would be allocated four hundred rounds, two and a half times the amount issued for trained soldiers under *MR 1884*, to be used for five types of practice:

a) *50 rounds fired at 200 yards, standing: the rifle used as a gun, hand and eye working together, without looking along the barrel or through the sights.*

b) *60 rounds fired from 800 to 1200 yards, where space permitted, any position, and according to the old style.*

c) *60 rounds for practising "Celerity and Precision"*

d) *140 rounds at moving objects*

e) *100 rounds for field-firing*[151]

Hamilton chose to describe only the individual practices in detail, as he felt these had to be mastered before field firing would be of serious benefit.[152] He described a less rigid form of shooting, rather than simple rote mastery; as he noted, only practice *b* was to be conducted "according to the old style".[153] However, even this was innovative: individual shooting at distances over 800 yards had never been included before, and 1200 yards was nearing the maximum sighted range for the Martini-Henry.[154] Practices A, C and D all

[149] *Ibid*, p. 22.
[150] *Ibid*, p. 27. Although Table "B" in *MR 1884* laid down eleven days, the tendency for practices to be compressed or facilities to be lacking seem to have led him to estimate actual range time as between eight to ten days.
[151] *Ibid*, pp. 30-31.
[152] *Ibid*, pp. 33-34 (footnote).
[153] *Ibid*, p. 31.
[154] The maximum sighted range on the Martini-Henry was 1,400 yards, although an improvised sight was described in *MR 1887* which increased the maximum range to 1,800 yards. See *MR 1887*, para. 60.

incorporated elements of snap-shooting practices. The first practised instinctive aiming, which C expanded by emphasising rapidity and accuracy in shooting. Whilst the two overlap, he justified it by stating that C was "a more deadly style than A, but requires a shade more time, as most men would make use of their sights".[155] Together, they covered both very close-quarter situations and longer range encounters with fleeting targets. D combined the two using an unusual form of moving target called "Jumping Jemmies", which were less predictable in their movement than the regulation targets. They were described as being shaped as the head and shoulders of a man, which would "rise up out of the ground, remain upright for, perhaps, two seconds, and then fall forward on its face".[156] This was not the only change to the targetry; those for practice C were described as having dark brown figures painted on a light brown background, the result having much less contrast than contemporary service targets, and being correspondingly nearer to service conditions. The only circumstances that the course did not cover was that of an enemy advancing, for which he proposed adapting a practice used by Indian hunters, originally designed to simulate firing at a charging tiger, of rolling barrels or kerosene drums down a slope towards the soldier, giving him greater confidence in controlling his aim at a critical moment.[157]

However, Hamilton did not support all change simply for its own sake. He was very clear that he did not support the introduction of the magazine rifle simply to maintain parity with Continental powers, at least under the existing training system. He felt that soldiers should first be taught, "…to look on each bullet as an enemy's life in prospective…",[158] ensuring they took the time to aim, rather than simply exhausting their magazines in an un-aimed barrage. This was compounded by the tendency of inexperienced soldiers to be caught up in the moment, something which he had himself witnessed, where physical intervention

[155] Hamilton, *The Fighting of the Future*, p. 32.
[156] *Ibid*, p. 33.
[157] *Ibid*, pp. 34-35.
[158] *Ibid*, p. 39.

had been required to force a soldier to cease fire.[159] To avoid this, contemporaries had suggested that the magazine would only be fitted to the rifle when ordered, but this was unacceptable to Hamilton for two reasons: in his opinion, soldiers should be more than simple machines; and parade square obedience could not be relied upon in the heat of battle, as a soldier under fire might decide to attach the magazine without being ordered to do so. The only solution he felt practicable was to ensure that each soldier "regulates his fire of his own accord",[160] and in doing so fire control was transferred from a pro-active role of the commander to an innate function of the soldier's training. Rather than firing in volleys, each soldier was to utilise a self-assessment cycle with two outcomes:

- Selecting his target,
- Firing,
- Adjusting his aim if necessary, or observing the area for other targets if he had hit
- Repeating the process.

In doing so he acted individually, yet still operated as part of his unit's effort towards a nominated objective. Once that level of training had been attained, then "the new weapon could not be issued too quickly".[161]

If enacted completely, it would have created an army that was capable both of harassing an enemy at long range, such as was faced in Africa and India, and of engaging them in close cover such as was encountered in Burma. Contemporary reviewers generally agreed that reform was necessary, and that Hamilton included elements that were lacking in

[159] *Ibid*, pp. 41-2.
[160] *Ibid*, p. 44.
[161] *Ibid*, p. 47.

the Regulations, but also felt that his proposal was not without deficiencies of its own.[162] In particular, they disagreed that reform needed to be quite so radical, or that drill was irrelevant. In terms of official implementation, Hamilton's plan faced two major problems. The first was that of money: the British Army in the 1880s was subject to severe budget restrictions. No large-scale annual manœuvres had been held since 1873 due to "Parliamentary economy",[163] and the cost of the additional ammunition would have been a serious issue. The other problem was that, whilst India had the space to accommodate these types of exercises, even normal range practices were severely restricted in some areas of Britain due to safety concerns, and few areas were able to host battalion field-firing exercises, let alone greater numbers. This was another reason why large-scale manœuvres were not conducted during this period, and was only partially resolved by the purchase of large areas of Salisbury Plain in 1898.[164]

Fighting of the Future is an extremely rare book today, suggesting that it originally had a fairly limited print run.[165] As such, it would be unsurprising if such a work had failed to achieve any impact upon the military establishment. However, whilst its suggestions were never directly adopted, it did raise the profile of its author. When Lord Roberts was made Commander-in-Chief, India, in November 1885, he appointed Hamilton as Assistant Adjutant-General for Musketry. This gave him responsibility for the training of the Native Army, a role he fulfilled with great success according to contemporaries. One article, published in *The Pioneer* in 1889, suggested that Hamilton had managed to achieve the main objectives he had outlined four years earlier, as well as revising the field firing practices. The article makes reference to a target he had introduced that was "painted drab or khaki colour

[162] Hamilton maintained several scrap-books, which contain examples of contemporary reviews. See HAM 17/4 KCL Liddell Hart Military Archives.
[163] These had originally been instituted as part of the Army reforms instituted by Edward Cardwell, Secretary of State for War between 1868 and 1874. See Brian Bond, *The Victorian Army and the Staff College, 1854-1914*, (London, Eyre Methuen, 1972), p. 123.
[164] Spiers, *The late Victorian Army*, p. 263.
[165] Only six copies are known to survive in the United Kingdom, all in national/academic collections.

with a narrow white band at the top", designed to simulate a trench obscured by smoke; "Hits upon the white band are not to count, the object being to force the men to aim low with a full sight at the bottom of the target…The results are to count in the figure of merit…"[166]

However, his aim had been to change the British Army, something which he could only do indirectly through the demonstrable success of his training of the Native Army. This was highlighted in a series of three articles preserved in Hamilton's scrap book, apparently printed in 1890, suggesting that the new British regulations had been delayed another year despite the success of the Native Army's training regime. The writer blamed this upon the introduction of the new magazine rifle, but also implied that jealousy at Hythe had played a part.[167] Yet, in contradiction of this, the Commandant pointed out in his Report for 1890 that the new rifle would, "cause many changes of more or less importance in the details of our musketry training". On the same page, he also mentions that Lord Roberts had submitted proposals for changes, some of which the Commandant felt would probably be adopted very soon. Whether the suggestions were Roberts' alone, or were being passed on from Hamilton, is impossible to confirm, but the comments do show that Hythe were not being as deliberately obstructive as was being implied.[168] Hamilton also influenced training through a second route. His paper had been read by another critic of the British Army's approach to training: Captain C.B. Mayne, a professor at the Royal Military College in Kingston, Canada. Mayne's own work, *Infantry Fire Tactics*, was praised by a contemporary instructor as one of the very few serious musketry text books of its time,[169] and the second edition listed Hamilton's paper as one of the reference works consulted.[170] Mayne's book went on to become required

[166] Untitled article in *The Pioneer* (10 Aug 1889), preserved in HAM 17/2 KCL Liddell Hart.
[167] Three articles (publication details removed) preserved in HAM 17/2, KCL Liddell Hart.
[168] See H.M.S.O., *Annual Report…1890*, p. 2.
[169] Browne, *On The Instruction of our Soldiers*, p. 1272.
[170] Captain C.B. Mayne, *Infantry Fire Tactics*, (2nd ed.), (London, Gale & Polden, 1888), p. vii.

reading for the Officer's "Extra" certificate at Hythe from 1892,[171] six years before Hamilton returned to Hythe as its new Commandant.

Summary:

Over the period 1884 to 1891, the British Army continued a long-standing and relatively continuous process of assessment and adjustment of its training techniques. This can be seen by the issuance of training manuals at intervals of between three and four years since the first in 1853, with the longest interval being five years.[172] Each manual incorporated significant changes from its predecessor, formalising interim amendments as well as incorporating new alterations where necessary. These affected both the recruits' and trained soldiers' courses, particularly as the two became more closely linked, but this was done with the knowledge that, with units based around the world, the courses only dictated what was ideally desirable, and had to remain flexible enough to adapt to whatever facilities were available locally.

There are several important trends in the evolution of training during this period:

- In terms of advances, the most notable is the training of recruits. Simplistic marksmanship exercises were slowly replaced with those more closely related to battlefield practices, if necessarily idealised in design. There was also growing usage of the miniature rifle and/or blank firing practices to familiarise them with basic techniques in controlled environments. Both courses began to incorporate what had previously been optional field firing practices for trained soldiers. This can be viewed as both an attempt to reinforce the practical applications of their training, and as a way of ensuring that those commanding officers, who did view musketry as a "sheer waste

[171] Army Orders, 1892, quoted in H. Bailes, 'Technology and Tactics in the British Army, 1866-1900', in R. Haycock, & K. Neilson (Eds.), *Men, Machines and War*, (Waterloo, Wilfrid Laurier University Press, 1988), p. 27.

[172] Two years without any changes was the minimum period required to form a comparative assessment. See H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1892, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1893*, (London, Harrison and Sons, 1893), p. 12. The average was three, with the longest gaps falling between 1859-64, 1874-79, and 1879-84.

of time", could not escape them all. Finally, soldiers were given more autonomy in adapting to circumstances, particularly selection of firing positions, and setting sights independently which, though minor, were a definite step away from "unreasoning obedience".

- There were reverses too: Individual targetry, in particular, is notable for the swing from the bull's-eye to the figure target and back over the course of only seven years. However, the reversal seems to have been implemented to allow the Sectional target to be made more realistic. The various changes necessitated the corresponding adjustments in the classification scheme, but may also have had an influence on the allotment of funds to incentivise and reward success, which Hythe consistently hoped would be diverted from rewarding individual prowess to focussing on the work of the section as a unit.
- There was also, in the case of the 1890 and 1891 amendments, the unavoidable tension created by taking the first uncertain steps towards introducing new technology alongside the existing equipment, resulting in necessary compromises in training that made certain practices more physically demanding on recruits than would have been permissible previously.

It is worth stressing that all of these changes were underpinned by theoretical and administrative consistency. The methods by which recruits were taught during the preliminary drill phase remained unchanged throughout this period, as did the forms of control used during sectional practices. The number of instructors per company was slightly increased and the required qualification standards were maintained, ensuring relative consistency of training across the Army as a whole. The focus appears to have been on increasing both the breadth of knowledge within the command structure, and the effectiveness of the practical application of these lessons.

These regulations also show how musketry had a political dimension, having to respond to fiscal and foreign policies whilst trapped between different schools of tactical thought, and attempting to incorporate new technologies in the best way to both appease and serve these interests. In particular, the amendments of 1891 seem designed to satisfy the roles of the Army as defined by the Secretary of State for War, Edward Stanhope, in a memorandum written in December 1888.[173] By raising recruits to a higher level of training in a shorter period of time, the army were better placed to provide trained soldiers for the draft for India, as well as overseas garrisons – sections b and c of the memorandum. However, the net result of this was often to leave the home battalions comprised solely of 'ineffectives'.[174] These were men who were either too young or otherwise unfit to serve, and whose status was often in part due to their relative lack of musketry skill, meaning that field practices in particular were even less likely to be carried out correctly or even usefully. They were also therefore of no real use to the civil power in the United Kingdom, which was listed in the memorandum as the army's primary role.[175]

The suggestions of the Army's critics were normally incompatible with the realities of a military serving a democracy. Whilst Ian Hamilton could very well have become part of that group, he appears to have achieved a successful compromise in the eyes of his contemporaries. However, the British Army had very different requirements and constraints from the Native Army, and it was unlikely that Hamilton would enjoy the same freedom and support that he had enjoyed under Lord Roberts, a challenge he would face when he took command of Hythe in 1898.

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[173] This has come to be known as the Stanhope Memorandum, which was reissued in June 1891 but not formally published in the public domain until 1901. For the text of the original memorandum, see Appendix 3 in Spiers, *The late Victorian Army*, p. 337.

[174] See Bond, ' The Effect of the Cardwell Reforms', pp. 521-522.

[175] For a discussion of the political dimension of the memorandum, and its impact on the Army, see Ian F.W. Beckett, 'The Stanhope Memorandum of 1888: A Reinterpretation', *Bulletin of the Institute of Historical Research*, vol. LVII, Issue 136 (1984), pp. 240-247.

As was stated at the beginning of this chapter, this period was also to prove important for the future of musketry training in the first decade of the Twentieth Century. Men like Norman McMahon, a future Chief Instructor at Hythe (1905-09), and Jesse Wallingford, its Experimental Warrant Officer (1894-1911), joined the Army during this period, meaning that these regulations governed their first experiences of rifle training. They were amongst the last generation to handle the Martini-Henry, and some of the first to handle both the Lee-Metford and the Maxim Gun.[176] In many senses they grew alongside the new technology, rather than coming to it later in their careers. This accident of timing was perhaps their greatest gift: much of the equipment that was to reach its pinnacle during the First World War was introduced and refined during their early years. They were exposed to it at a practical level, and so when they were in positions to influence training their technological knowledge still retained a degree of relevance that would not have been the case if they had started a few years earlier. But the force which was to drive the next change was again technological: the introduction of the first smokeless powder cartridge at the end of 1891, together with the new problems that it created.[177] These smokeless powders, most famously Cordite in British service, would come to define the Twentieth Century battlefield by its emptiness, in the same way that black powder had previously obscured it in smoke.

[176] Introduced in 1890. See Major F.V. Longstaff & A.H. Atteridge, *The Book of the Machine Gun*. (London, Hugh Rees, 1917), p.136.
[177] Skennerton, *The Lee-Enfield*, p. 89.

Chapter 2: 1892-1900: The Dawn of the Empty Battlefield[178]

Whilst the 1880s had been a process of technological development, particularly of the new rifle, the 1890s focussed on the refinement of both rifle and training to suit the Army's requirements. In 1893, after three years in service, the design of the Lee-Metford was updated to the Mark II, incorporating improvements based upon lessons learnt from practical experience. Perhaps the most important of these was a larger ten-round magazine,[179] which required new actions to be made wider to accommodate it, and so could not be retrofitted to existing rifles. The new magazine had the benefits of being slightly shallower than the original design, so less likely to catch on equipment, whilst also being easier to load, and a larger capacity than the contemporary German and French designs.[180] The new rifle also incorporated the revised barleycorn sights, and other minor alterations to simplify the manufacturing process.

Perhaps the most important change made in this decade was the introduction of smokeless propellants for service ammunition. The first of these had been developed in Prussia in the 1860s, but had only been used commercially for sporting purposes as 'Schultze' powder. It was not until 1884, and the invention of 'Poudre B' by French chemist Paul Vielle, that a smokeless powder suitable for military service was created. The first rifle to use this new propellant was the revolutionary Lebel rifle, which entered service with the French Army in 1886. The British Army were slow to follow suit, as there was uncertainty over the stability of smokeless powder in long-term storage.[181] This had led to a Committee on Explosives being formed in 1888, and the first .303 rounds being loaded with black

[178] "The adoption in 1892 of smokeless cordite improved visibility and accuracy, but also kept an adversary concealed. The era of the empty battlefield had dawned..." See J. Laband, 'Sub-Saharan Military Response to European Invasion', in D. Coetzee& L.W. Eysturlid (Eds.), *Philosophers of War: The Evolution of History's Greatest Military Thinkers*, (Santa Barbara, Praeger, 2013), 382-389, p. 384.
[179] List of Changes no. 7404 (dated 12 Apr 1893). See Skennerton, *List of Changes*, Vol. II, p.102.
[180] These were the 'Gewehr 1888' and the 'Lebel Model 1886' rifles, with capacities of five and eight rounds respectively.
[181] Sir H. Halford, 'Lecture upon the New Service Rifle', *Aldershot Military Society*. (Aldershot, Divisional Printing Office, 1888), p. 5.

powder as an interim measure.[182] It was only in 1892 that 'Cordite' was formally introduced as the new propellant.[183] A blend of nitroglycerine and guncotton, it produced an increased velocity, resulting in a flatter trajectory and slightly longer range. However, it also burned at a much higher temperature, resulting in rapid erosion of the relatively shallow Metford rifling and significantly reducing the average service life of a barrel.[184] This had led to further experimentation with rifling designs by both William Metford and the Royal Small Arms Factory at Enfield Lock, with the resulting 'Enfield' pattern being introduced in November 1895 in the new 'Magazine Lee-Enfield' rifle.[185] These served alongside the older Lee-Metford in the South African War, and the latter remained in use in secondary roles and with Colonial troops into the twentieth century. The visible effect of these changes was minimal: as the announcement of the Lee-Enfield's introduction stated, 'The only part special to this rifle is the barrel'.[186] From a marksmanship perspective, the only modification was that the foresight was offset slightly to the left of centre, 'to compensate for the drift of the bullet to the left',[187] which would not have been obvious to the firer. It was this design which, with only one very minor alteration,[188] would serve until 1903, when it was replaced by the first charger-loading model in the aftermath of the South African War.

From a training standpoint, the stability provided by this relatively limited change to the rifle itself allowed judgements of 'best practice' to be made, driving changes in other areas. Four manuals were issued between 1892 and 1898, the most intensive cycle of whole-

[182] War Office, *Committee on Small-Arm., Progress Report No. 4*, (London, Harrison & Sons, 1889), pp. 3-4.
[183] List of Changes no. 6682 (dated 2 Mar 1892). See Skennerton, *List of Changes*, Vol. II, p. 70. Whilst the bullet design was changed on several occasions, Cordite (so named for its string-like appearance) underwent only one major modification, and remained the main service propellant for rifle ammunition until the changeover to 7.62x51mm in 1954.
[184] According to a question asked in Parliament, the Lee-Metford became 'unfit for accurate shooting' after just 3,000 rounds of Cordite ammunition. See Hansard, HC Deb (1893) 12 col. 638-9.
[185] List of Changes no. 8117 (dated 11 Nov 1895). See Skennerton, *List of Changes*, Vol. II, p. 139.
[186] *Ibid*, p.139.
[187] *Ibid*, p.139.
[188] The change to the Lee-Enfield Mk. I* was purely related to the removal of the clearing rod, with new rifles no longer fitted to hold them. See List of Changers no. 9700 (dated 19 May 1899) in Skennerton, *List of Changes*, Vol. II, p. 182.

scale revisions since the general introduction of the first rifle-musket in the 1850s. Whilst this drove innovation, it meant that it became almost impossible to accurately gauge the Army's relative overall efficiency, with the result that Hythe abandoned its tabulation of this after 1894. Indeed, throughout this period the Reports attempted to avoid averages where possible: with up to 150 battalions submitting annual returns, the resulting figure was rarely truly indicative, and often concealed subjects or units in need of remedial training.

Regulations for Musketry Instruction, 1892[189]

The amendments of 1891 were replaced the following year with two new sets of Regulations, one issued for each rifle. As before, the new regulations both formalised the amendments, and introduced new changes. Whilst the training hierarchy had been maintained unchanged from previous years, the section discussing 'Tactics as Influenced by Fire' had been seriously altered.[190] This had originally been Appendix II in 1887; a twenty-one page treatise covering every phase of an assault, going into such detail as to lay down the methods by which Infantry could render artillery pieces inoperable when captured. By *MR 1892*, this had become 'Infantry Tactics as Influenced by Fire', and covered just two pages.[191] Ideas that had previously been discussed in much greater detail were compressed together, seemingly with the sole purpose of justifying why volley fire was to be utilised for as long as possible in an attack, as per the Duke of Cambridge's memoranda in November 1886.[192] The argument was summed up in the third paragraph:

[189] H.M.S.O., *Regulations for Musketry Instruction. 1892. Lee-Metford Rifle*, (London, Harrison and Sons, 1892). [Hereafter *MR 1892*].
[190] *MR 1887*, pp. 243-264.
[191] *MR 1892*, pp. 70-71.
[192] See Chapter 1.

Volley fire allows of complete control of direction and of concentration of fire, it also admits of correction of elevation and direction, enables the expenditure of ammunition to be regulated, keeps men well in hand, and is an aid to discipline.[193]

This implies that volley firing formed the core of the army's operation in battle, having both disciplinary and logistical benefits which did not exist when firing was conducted independently, or even individually. It is in keeping with the comments of men like Colonel Slade,[194] who stated that:

With the easy loading and rapid fire of modern military breech-loaders, cases of individual marksmanship will become more and more rare, the tendency of modern fire tactics being to favour rapid volleys in preference to individual skill.[195]

It was feared that it would be much harder for an attacking force to gain superiority of fire during the final stages of the attack if soldiers were not properly directed, particularly against fortified positions. As such, the magazine was only to be used at distances of less than 300 yards, when a sudden increase in fire would have the most effect. There were also fears that the increased rate of fire would create logistical difficulties, with troops expending their ammunition more quickly, although this was an idea that Slade dismissed.[196] Given the suggestion that the days of individual marksmanship were finished, the Army's solution to this was perfectly logical, aiming to develop volley fire and ensure maximum fire control during the attack. This was reflected in the Hythe Annual Reports, which stressed that too

[193] *MR 1892*, p. 70.
[194] Colonel C.G. Slade produced a paper for the Small Arms Committee discussing the potential merits of the new magazine rifle in 1888, which was reproduced in an amended form as a talk for the R.U.S.I. the following year. Intriguingly, the comment referred to above was removed from the latter, although it is unclear if this was due to it being a definite statement, or a change of opinion. For the latter, see Col. C.G. Slade, 'Modern Military Rifles and Fire Tactics', *Journal of the Royal United Service Institution, XXXII,* 1889, pp. 899-917.
[195] Col. C.G. Slade, *Magazine and Small-Bore Rifles*, (London, Harrison and Sons, 1888) [Internal paper], p. 8, preserved in the Pattern Room Archives, Royal Armouries Library, Leeds.
[196] Slade, *Magazine and Small-Bore Rifles*, p. 8.

Table 11: Regulations for Musketry Instruction. 1892. Lee-Metford Rifle. Table "A"

Day	Description of Firing		Description of Target	Distance in yards	Number of rounds	Position	Sights	Remarks
1st	Individual "		3rd Class "	200 "	7 7	Standing Kneeling	Sights adjusted for distance	*These paras. refer to the Musketry Regulations.*
2nd	Individual "		2nd Class "	300 "	7 7	Standing Kneeling		
3rd	Individual "		2nd Class "	400 "	7 7	Kneeling Lying down		
4th	Individual "		1st Class "	500 "	7 7	Kneeling Lying Down		
5th	Individual "		1st Class "	600 "	7 7	Kneeling Lying Down		
6th	Individual "		1st Class "	700 800	7 7	Lying Down "		
7th	Individual Attack Volleys "		*6ft. by 8ft. *" *"	500 to 200 300 "	7 7 7	Kneeling or standing Single rank, standing Single rank, kneeling	Fixed sight	See para. 126 See para. 126 See para. 126
8th	Volleys " "		*6ft. by 8ft. *" *"	400 500 800 to 600	7 7 14	Single rank, kneeling Single rank, lying down Any military as suited to the ground	Fixed sight Sight for distance	See para. 126 See para. 126 See para. 126
9th	Section Attack		4ft. high by 6ft. wide	600 to 200	21	Any military to 500 yds. Kneeling or standing after	Fixed sight at and after 500	See para. 132
10th	With Magazines	Volleys	*6ft. by 8ft.	400	7	Two ranks, front rank kneeling	Fixed sight	See para 133.
		Independent	*"	200	7	Single rank, kneeling		See para. 127
		"	*"	"	7	Two ranks, front rank kneeling		See para. 127
11th	Skirmishing		4ft. high by 2ft. wide	600 to 200	14	Any military	As preferred	See para. 130

much emphasis was being made upon individual range training, when it was actually the field practices, and particularly the larger scale ones, that were the most useful training for battle.

Both tables had been altered, incorporating elements from both the 1887 and 1891 regulations in a simplified layout, and with the maximum range that recruits fired extended to 800 yards. The 'Fixed Sight' distance was now 500 yards, and whilst there was still flexibility in how firing was conducted, the maximum to be fired in any one day had been reduced from thirty to twenty-eight rounds. Given that all practices were now allocated

ammunition in multiples of seven,[197] this seems to have been an administrative point rather than due to concerns over recoil. There was also a note placed at the top of Table "A", to the effect that recruits were to fire eleven service rounds, from any position and at any target, between 100 and 200 yards, prior to undertaking the course. If any scored badly, they could be sent back once to repeat the firing drills, after which they would fire a few more rounds (if available) before commencing the practical course. This was a slight expansion of the final preliminary drill introduced the year before, which had not included the requirement to repeat the drills before continuing to the full course.

The duration of the training schedule remained the same, but there were three new practices: two long-range practices on day six, and the advancing volleys on day eight. There had also been an increase of ammunition allowed for the 'Section Attack', resulting in an overall increase of thirty-five rounds. This had been reduced to a nett rise of just seven rounds, by removing the 'words of command' practice, as well as the second 'Section Attack', and halving the ammunition used for the 'Individual Attack' practice, with the total allowance now 189 rounds. The table also completed the grouping of practices by the type of fire, with the volleys and section attack now placed together, followed by a day of magazine practices, and concluding with skirmishing as before. This created a logical progression under the requirements of the period, with the individual phase practising recruits in two positions per distance under 'ideal' conditions, before moving onto individual movement with fire.

This approach was then repeated for sectional practices, teaching unit fire discipline at three distances prior to the advancing volley practice, which had first appeared in Table "B" only the year before. Of the magazine practices, the volley had been moved back to 400 yards, but otherwise all three were conducted under the same conditions as laid down in 1891. These alterations were possible after the separation of training for the Martini-Henry,

[197] In *Amendments, 1891*, the final practice for Recruits had been allocated ten rounds.

Table 12: Regulations for Musketry Instruction. 1892. Lee-Metford Rifle. Table "B"

Day	Description of Firing	Description of Target	Distance in yards	Number of rounds	Position	Sights	Remarks
1st	Individual Individual with magazines in one minute	3rd Class "	200 "	7 7†	Standing "	Sights adjusted for distance	†Hits not to be signalled until the conclusion of each man's rounds *See Footnote 182 for description of targets
2nd	Individual Individual with magazines in one minute	3rd Class "	300 "	7 7†	Kneeling "		
3rd	Individual Individual with magazines in one minute Individual	2nd Class " "	500 " 600	7 7† 7	Kneeling " Any Military		
4th	Individual "	1st Class "	700 800	7 7	Any Military "		
5th	Individual Attack ‡Volleys	*6ft. by 8ft. "	500 to 200 800 to 600	7 14	Kneeling or Standing Any military as suited to the ground	"Fixed sight" Sights for distance	See para. 125 See para. 126
6th	Section Attack	4ft. high by 6ft. wide	600 to 200	21	Any military to 500 yds., kneeling or standing after that distance	"Fixed sight" at and after 500 yards	See para. 132
7th	Volleys, with magazines in one minute " Independent with magazines	*6ft. by 8ft. *" *"	500 400 300	7 7 7	Single rank kneeling " Two ranks, front rank kneeling	"Fixed sight"	See para. 133 See para. 133 See para. 127

as grouping of the magazine practices in 1891 would have meant those recruits firing twenty-one rounds under 'rapid' conditions. This could have been extremely uncomfortable, and would have had a concurrent effect on accuracy and morale.

Table "B" had undergone fewer changes, and used the same ammunition allocation of 126 rounds, but this had been redistributed within the course of fire. The amounts used in the 'Individual Attack' and the advancing volley practice were reduced by seven rounds in each case. This allowed for a new rapid fire practice at 500 yards, and an increase in the allotment for the Section Attack, which was now conducted against a single large target rather than using head and shoulders targets. The reduction of the ammunition used for the 'Individual Attack' meant that this could now be fired on the same day as the advancing volleys, shortening the overall duration of the range course to just seven days. The 'Volley and

Independent' practice had been retitled 'Independent with Magazines', but was otherwise to be fired under the same conditions. The only change to the order from 1891 was that the 'Section Attack' was conducted before the magazine volley practices. Sixty-four rounds were still allocated for field practices, with the note that long-range volleys and large scale field-firing were to be undertaken 'wherever the ground will permit'.[198]

For targetry, those relating to the individual targets remained true to the designs included in 1891. However, in sectional practices, the 6ft. x 12ft. target was no longer used for long-range practices, with the 6ft. x 8ft. now the main target, used for all except the section attack. Whilst the scoring system remained unaltered, with hits on the lower 4ft. scoring two points and on the upper 2ft. one point, the design painted on the target had changed. In 1891, the targets, '...may be coloured at discretion, or may have any figure or figures painted on it'.[199] In 1892, it appears to have been felt necessary to provide more detailed instructions:

**In these practices a bull's-eye must not be painted; the lower 4 feet may be white with black figures, see para. 126, or all black, or brown, or a field gun may be painted on the target.*[200]

The "black figures" referred to were a variation of those introduced in 1887, but whilst they had originally shown the silhouettes of four soldiers advancing upright, they had now adopted a kneeling position, with their right leg at an angle to the side.[201] This pattern was also to be repeated on the 4ft. x 6ft. targets which were used in the 'Section Attack' practice, although in this case there was no blank space above the figures.

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[198] *MR 1892*, Note 1, p. 34.
[199] *Amendments, 1891*, notes below both Tables "A" and "B".
[200] *MR 1892*, p. 34.
[201] *MR 1892*, p. 111.

The prize funds were scaled and allocated under similar conditions as they had been in 1887, with each commanding officer deciding the most effective way to award prizes that would promote interest in musketry, and the General Officer Commanding having final approval. The regulations did suggest categories for prizes, with those for individuals being 'Individual range practices', 'Rapid individual firing', and 'Moving target practice'. The first, whilst it did allow commanders to address specific weaknesses, would appear to have been a difficult choice given how uniform the majority of individual practices had become, with the exception of the 'Individual Attack'. Its inclusion seems counter to the principles guiding the rest of the regulations, particularly that of attempting to turn the focus of commanding officers away from individual achievements under ideal conditions, towards the sectional practices.

In his Annual Report for 1892, the Commandant of Hythe commented that, 'The changes in the annual course have all been in the direction of making it more practical and in simplifying the details…'[202] This simplification was made possible through the division of the training system, focussing on each rifle separately, rather than continuing a compromise course to cover both. The duality was reflective of the Infantry as a whole, with slightly more battalions issued with Martini-Henry rifles than Lee-Metfords when the course was introduced.[203] The course itself continued the trend of using the individual practices as purely preliminary to those for sections and field firing, demonstrated by the continued usage of bull's-eye targets for the former, and the minor refinement of the target design used for the latter. This was stated explicitly in the Annual Report for 1894:

[202] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1892, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1893*, (London, Harrison and Sons, 1893), p. 19.
[203] *Ibid*, p. 13 – Of the 144 Infantry battalions who completed the course in that first year, 70 had Lee-Metfords, against 74 with Martini-Henrys.

The practices are carried out each year by the soldier in order that he may know the shooting of his rifle at a fixed target at a known distance, without which knowledge he cannot be expected to shoot with any success at moving or vanishing objects or at unknown distances.[204]

These seem to have had the desired effect, and the Commandant also noted that the inclusion of the three timed practices had 'been productive of much good', to the point that some companies actually fired better under timed conditions than in normal practices.[205]

The Annual Reports for this period also record the Commandant's optimism that, after many years of complaining, the general interest of all involved in training was increasing; a change which he felt could only be to the Army's benefit.[206] This had perhaps been helped by a new requirement that subalterns fire the individual practices of Table "B" alongside their companies, with their scores included in the unit's figure of merit.[207] However, the experience of subalterns in musketry may well have been somewhat limited prior to joining their regiments. Whilst a contemporary history states that musketry was included as part of the cadets' course at the Royal Military College, Sandhurst, from 1893,[208] evidence presented to that Committee in 1902 suggested that it had ceased to be taught by 1900.[209] This meant that, unless individual officers chose to join the College's rifle club, their

[204] H.M.S.O., *Annual Report on the Instruction Carried on at the School of Musketry, Hythe, during 1893, and of the Progress of Musketry Instruction in the Army, During the Year ended 31st March, 1894,* (London, Harrison and Sons, 1895), p. 14.
[205] *Ibid*, p. 15.
[206] H.M.S.O., *Annual Report…1893*, p. 11.
[207] *MR 1892*, p. 9.
[208] Major A.F. Mockler-Ferryman, *Annals of Sandhurst: A Chronicle of the Royal Military College from its Foundation to the Present Day,* (London, William Heinemann, 1900), pp. 214-5. This was corroborated by Lord Denham during the House of Lords debate regarding the Akers-Douglas committee's findings in 1902. See Hansard, HL Deb (17 July 1902) 111 col. 494-5.
[209] Ian Beckett, Timothy Bowman and Mark Connelly, *The British Army and the First World War,* (Cambridge, Cambridge University Press, 2017), pp. 22-23. Musketry was reintroduced to the Sandhurst syllabus in 1904, see Timothy Bowman and Mark Connelly, *The Edwardian Army: Recruiting, Training and Deploying the British Army, 1902-1914*, (Oxford, Oxford University Press, 2012), pp. 19 and 25.

amount of practical experience with the main arm of the infantry was likely to be highly variable, at best, before receiving their commission.

In parallel with these changes, the School ran its first 'course for senior officers' in 1892. This was aimed primarily at company commanders, and was designed to demonstrate how effective rifle fire from trained men could be under service conditions.[210] It was hoped that this would in turn raise their interest in the subject, and so have a corresponding effect on training standards.[211] Whilst this interest was growing, however, the Army faced a serious practical problem. Due to concerns over public safety from the greater range of the Lee-Metford, so many rifle ranges had been deemed unsafe that training within Britain was severely restricted, compounding the long-standing lack of field practice areas. In the worst example, eleven battalions in Ireland were noted as having no practical experience with the Lee-Metford, but remained liable for active service.[212] To address these concerns, and to allow units to continue using those ranges that could not be extended, a 'Short Range Practice' cartridge was introduced in 1895,[213] which was usable 'on any range safe for the M.H. rifle.'[214] The drawback was that it had a maximum range of only 500 yards, but it did at least allow for some practical training to be undertaken.

Regulations for Musketry Instruction, 1894[215]

Despite having only been in use for two years, and with the scores included in the musketry returns showing progress, a new manual was issued. This meant that there was no basis on

[210] H.M.S.O., *Annual Report…1893*, p. 1. Although it was primarily intended for those holding ranks between major and colonel, a major-general was noted amongst the thirty-four attendees that year.
[211] Five Senior Officer Courses were run between 1892 and 1895, but were then discontinued until 1904. See Hon. Lt. J. Oborn, 'The School of Musketry, Hythe', *The Army Review, VI* (1), 1914, 53-66, p. 57.
[212] H.M.S.O., *Annual Report…1893*, p. 18.
[213] List of Changes no. 7930 (dated 26 Mar 1895). See Skennerton, *List of Changes*, Vol. II, p. 132.
[214] H.M.S.O., *Regulations for Musketry Instruction. Lee-Metford Rifle and Carbine, 1896*, (London, Harrison and Sons, 1896), para. 122.
[215] H.M.S.O., *Regulations for Musketry Instruction. Lee-Metford Rifle and Carbine. 1894*, (London, Harrison and Sons, 1894) [Hereafter *MR 1894*].

which to compare classification standards, as noted in the Annual Report for 1892.[216] The new manual also coincided with several changes at Hythe. A new Commandant was appointed in July 1894,[217] and the scope of his Annual Reports was altered. Rather than covering all British forces, they were now limited to those serving within Britain. This also reduced the period they covered from fifteen months, to cover tropical stations where training ran from April to March,[218] to just twelve.[219] This appears to have caused a gap in the sequence, with no Report found that covers the period from May to December 1894. The format had also been revised, with a greater focus on field firing and incorporating more statistics, which was in keeping with the move to place sectional practices at the heart of training.

Despite the formality of issuing a new manual, the changes were, as far as range practices were concerned, fairly minimal. The tables had been condensed, both by removing details and using new terminology, including the first usage of the term 'Individual rapid' in Table "B". Recruits still received the same amount of preliminary training, including the eleven rounds fired from between 100 and 200 yards in preparation for Table "A". The targetry had undergone more significant changes. Those used in the Individual practices, whilst of the same overall dimensions, had all had their layout altered. One scoring ring had been removed from each target, leaving three scoring areas: a bull's eye; one outer ring; and the remainder of the target. The bull's eye on the Third Class target, and the 'centre' ring on the First Class target, had also been expanded slightly to balance the relative proportions of the scoring areas. For the Sectional practices, the height of the scoring area on all screen

[216] 'As regards the percentage of marksmen and 3rd class shots it is entirely a question of classification. Of late years the conditions of shooting up the range have been frequently changed and it is not possible to fix a definite standard of any comparative value until all the conditions of shooting...have been in use unchanged for at least two years.' See H.M.S.O., *Annual Report…1893*, p. 12.
[217] Colonel George Paton CMG (1841-1922), who served as Commandant from 17 Jun 1894 to May 1898
[218] H.M.S.O., *Annual Report…1894*.
[219] H.M.S.O., *Report on the School of Musketry and on the Musketry Training of the Regular Forces serving at Home during the year 1895*, (London, Harrison and Sons, 1896).

Table 13: Regulations for Musketry Instruction. 1894. Lee-Metford Rifle. Table "A"

Day	Description of Firing		Description of Target	Distance in yards	No. of rounds	Position	Sights	Remarks
1st	Individual		3rd Class	200	7	Standing	Sights adjusted for distance	
	"		"	"	7	Kneeling		
2nd	Individual		2nd Class	300	7	Standing		
	"		"	"	7	Kneeling		
3rd	Individual		2nd Class	400	7	Kneeling		
	"		"	"	7	Lying Down		
4th	Individual		1st Class	500	7	Kneeling		
	"		"	"	7	Lying Down		
5th	Individual		1st Class	600	7	Kneeling		
	"		"	"	7	Lying Down		
6th	Individual		1st Class	700	7	Lying Down		
	"		"	800	7	"		
7th	Individual Attack		4ft. by 6ft.	500 to 200	7	Kneeling or standing	Fixed sight	See para. 134
	Volleys		4ft. by 8ft.	300	7	Single rank, standing		See para. 136
	"		"	"	7	Single rank, kneeling		See para. 136
8th	Volleys		4ft. by 8ft.	400	7	Single rank, kneeling	Fixed sight	See para. 136
	"		"	400	7	Single rank, lying down		See para. 136
	"		"	800 to 500	14	Any military as suited to the ground	Sight for distance	See para. 136
9th	Section Attack		4ft. by 6ft.	600 to 200	21	Any military to 500 yds. kneeling or standing afterwards	Fixed sight at and after 500	See para. 137
10th	With Magazines	Volleys	4ft. by 8ft.	400	7	Two ranks, front rank kneeling	Fixed sight	See para. 136
		Independent	"	200	7	Single rank, kneeling		See para. 140
		"	"	"	7	Two ranks, front rank kneeling		See para. 140
11th	Extended order practice		4ft. by 2ft.	600 to 200	14	Any military	As preferred	See para. 143

targets was reduced to four feet (the height of the figures depicted), with hits on the upper two feet no longer counted. This brought them into line with that previously used for the 'Section Attack', although the target was to be either six or eight feet wide depending on the practice. For recruits, the final 'Skirmishing' practice had been renamed 'Extended order practice'. Whilst the text describing the practice had been slightly altered from 1892, this did not appreciably alter how it was to be conducted, or the overall reasoning behind it.

Table 14: Regulations for Musketry Instruction. 1894. Lee-Metford Rifle. Table "B"

Day	Description of Firing	Description of Target	Distance in Yards	No. of Rounds	Position	Sights	Remarks
1st	Individual " rapid	3rd Class "	200 "	7 7	Standing "	Sights adjusted for distance	See para. 133
2nd	Individual " rapid	3rd Class "	300 "	7 7	Kneeling "		"
3rd	Individual " rapid Individual	2nd Class " "	500 " 600	7 7 7	Kneeling " Any Military		"
4th	Individual "	1st Class "	700 800	7 7	Any Military "		
5th	Individual attack ‡ Volleys	4ft. by 6ft. 4ft. by 8ft.	500 to 200 800 to 500	7 14	Kneeling or Standing Any military as suited to the ground	"Fixed sight" Sights for distance	See para. 134 See para. 136
6th	Section attack	4ft. by 6ft.	600 to 200	21	Any military to 500 yds., kneeling or standing after that distance	"Fixed sight" at and after 500 yards	See para. 137
7th	Volleys, rapid " " Independent with magazines	4ft. by 8ft. " "	400 400 300	7 7 7	Single rank kneeling Two ranks, front rank kneeling "	"Fixed sight" " "	See para. 139 " See para. 140

Table 14a: Regulations for Musketry Instruction. 1894. Table "B", with pencil annotations

6th	Section attack	4ft. by 6ft.	600 to 200	20
7th	Volleys, rapid	4ft. by 8ft.	300	10
	" "	"	400	10
	Independent with magazines	"	300	10

With the exception of the changes to the targetry, Table "B" remained generally unaltered from 1892 at a practical level. The simplification of terms had been continued here, creating a much neater presentation. However, some interim changes do appear to have been made prior to the course's replacement in 1896. A copy held in the Royal Armouries Library has had the last four practices amended in pencil.[220] These were the first changes to the ammunition allowance since 1891, and seem designed to exploit the full capacity of the Mark II's ten-round magazine, although this placed those issued with the Mark I* rifle, which held only eight rounds, at a slight disadvantage. The change of distance on day seven may have been made to provide practice of rapid volleys over two distances. Unfortunately, these are the only changes found in that copy, and are undated. There is also no reference to them in

[220] See Fig. 14a. The annotations are shown in blue.

the Annual Report for 1895, so it is unclear what the motivation behind the changes was, or even whether they were only made at a local level. Whilst they do prefigure alterations that were introduced in 1896, none of these exact changes appeared in the next Table "B".

Whilst silent on the alterations above, the Annual Report for 1895 does include several comments on how training was proceeding. The Commandant noted that, 'The course for the infantry is a very difficult one compared with that of a few years ago'.[221] This seems to relate to the greater practicality of the course, mentioned in the Report for 1892, rather than the introduction of any particularly complex ideas. Whilst the Infantry were generally felt to be shooting better, there were still units who saw it purely as something to 'be got over as quickly as possible'. At the same time, Cordite had now completely replaced black powder in service use,[222] which was much more satisfactory than a combination of the two, as those issued with black powder had felt themselves to be at a disadvantage.[223] The focus of instructor training was widening: from 1896, the Hythe course was extended from six weeks to two months' duration, to ensure that new equipment such as the Maxim gun could be properly covered.[224] The Commandant also singled out the success of the rule, introduced in 1892 (see above), obliging subalterns to fire Table "B" alongside their companies:

The regulation by which subaltern officers were obliged to fire a trained soldier's course annually has already caused a vast improvement of the knowledge of the rifle possessed by those officers, and has moreover resulted in rifle shooting being taken up as a

[221] H.M.S.O., *Report on...1895*, p. 12.
[222] *Ibid*., p. 11.
[223] '...it is hoped that the stock of black powder may soon be used up, since there is a general dislike to it, and the men feel they are shooting at a disadvantage when compared with those who have cordite.' See H.M.S.O., *Annual Report…1894*, pp. 21-22.
[224] The original Hythe course had lasted eight weeks, which had been reduced to seven weeks between 1883-7, extended back to eight weeks (1888-90), shortened to seven weeks (1891-2), then to six weeks (1893-95), before returning to eight weeks again in 1896. This remained the case until it was shortened again to six weeks in 1901 as a war expedient, being further shortened to five in 1903 by extending the working day and the introduction of a separate course for the Maxim gun. See Oborn, 'The School of Musketry', p.62.

recreation by considerable numbers, whereas a few years back such a thing was unknown, except in very rare cases.[225]

Perhaps the foremost example of an officer shooting recreationally during this period was Captain Charles Etches. He first competed with the Sandhurst rifle team whilst a cadet,[226] before receiving his commission in November 1892.[227] Within a year, he had qualified as an instructor with an 'Extra' certificate, as well as earning a special mention in the Commandant's report for achieving the highest score in the Individual practices at the School that year.[228] He returned to the School as an Assistant Instructor in 1899, serving both at Hythe and in South Africa during his six-year posting, and was described by his last Commandant as 'one of the most accomplished rifle shots in England'.[229] His competitive record supports that claim: between 1895 and 1902 he appeared as one of the Army's top three marksmen on five occasions, and was the only officer to win the Army Sixty's 'Gold Jewel' in two consecutive years during this period.[230] Etches resigned his commission only four months after leaving Hythe, but in his fourteen years of service did much to show that officers could be the equal of their soldiers on the ranges, and perhaps served as an inspiration to others.

Musketry Regulations, 1896[231]

The revised regulations that appeared in 1896 are remarkably succinct by comparison to those which had come before. This appears to have been achieved by creating a separate

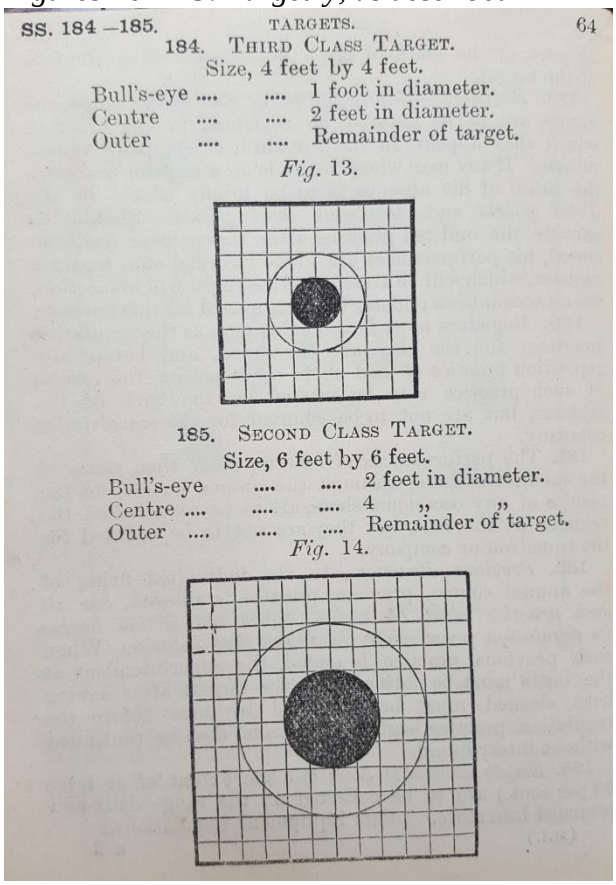
[225] H.M.S.O., *Report on... 1895*, p. 4.
[226] Mockler-Ferryman, *Annals of Sandhurst*, p. 219.
[227] For his basic service history up to the end of his term at Hythe, see TNA WO 76/356.
[228] Etches actually scored 208, the highest of any soldier firing with the Lee-Metford that year. See H.M.S.O., *Annual Report…1894*, p.7.
[229] Unnumbered report, dated 7 Jun 1905, on comparative accuracy trials conducted between February and June 1905. See TNA WO140/9.
[230] *Army Jewel Winners* boards, Army Rifle Association, Bisley Camp, Surrey. The feat was only repeated in 1931 and 1932 by Captain (later Brigadier) J.A. Barlow, one of the foremost shots of the inter-war period.
[231] H.M.S.O., *Regulations for Musketry Instruction. Lee-Metford Rifle and Carbine, 1896*, (London, Harrison and Sons, 1896). [Hereafter *MR 1896*].

manual to cover the descriptions of 'firing exercises' (the drills used to teach soldiers the firing positions).[232] The brevity is also noticeable in the tables, where the descriptions of the firing to be carried out only fill a single page, the other side listing which practices were to be carried out by the various arms, the number of rounds allocated, and the classification scores. The hierarchy around which training was based remained unaltered, and this may go some way towards explaining why so many changes could be made during this period – they were mostly of a practical, and relatively minor, nature within the overall scheme. In contrast, the underlying doctrine remained largely unchanged, resulting in relative consistency when it came to applying the training in the field. This inter-changeability also applied to technology, with the inclusion of the 'Enfield' rifling pattern in the technical section of the manual, although there was a note that the pattern for the Lee-Enfield rifle had 'not yet been sealed'.[233]

Recruit training had undergone significant alteration from 1894, bringing it much closer to Table "B". The ammunition allowance was now only 174 rounds, a reduction of fifteen rounds due to a reconfiguration of the practices. However, the rules regarding repeat practices for the poorest shots had been changed. Whilst the preliminary practice had been removed, recruits could be put back to another squad for remedial training at any time during the preliminary phase, or even during the first instructional practices. If a soldier could still not achieve the requisite score, they were to be allowed to either fire lying or from a rest. This was accompanied by a strict warning against placing the desire to get the highest possible figure of merit above proper training in firing standing or kneeling. If they then achieved the qualifying score from the rest, they could then continue the course, and could be put back 'as often as may be necessary, until they are fitted to take their places in the ranks as trained

[232] H.M.S.O., *Rifle and Carbine Exercises (Lee-Metford) Manual Exercise, Firing Exercise, Bayonet Exercise, and Firing Exercise for Webley Pistol. 1896*, (London, Harrison and Sons, 1896). [Hereafter *RCE 1896*].
[233] *MR 1896*, para. 398.

Figures 10 – 13: Targetry, as described in MR 1896



SS. 184—185. TARGETS. 64

184. THIRD CLASS TARGET.

Size, 4 feet by 4 feet.

Bull's-eye	....	1 foot in diameter.
Centre	....	2 feet in diameter.
Outer	....	Remainder of target.

Fig. 13.

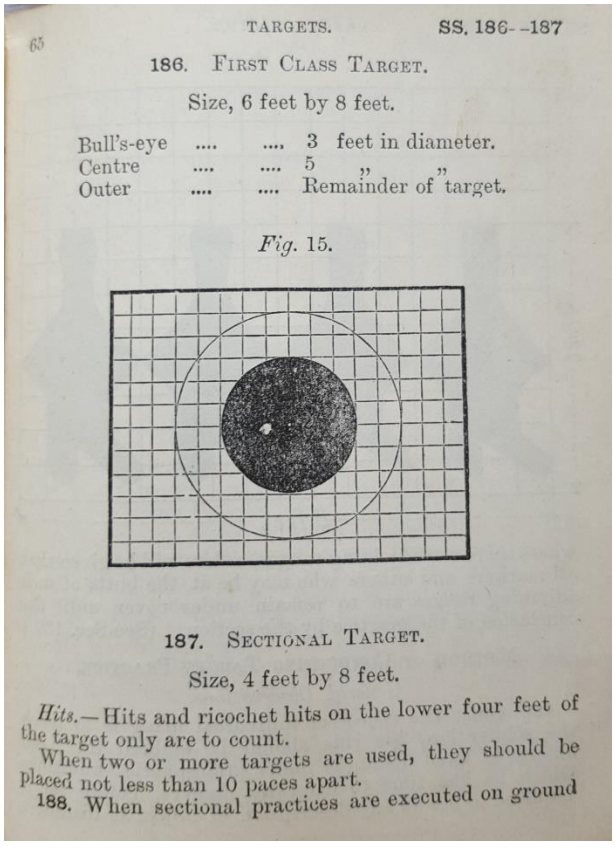
185. SECOND CLASS TARGET.

Size, 6 feet by 6 feet.

Bull's-eye	....	2 feet in diameter.
Centre	....	4 ,, ,,
Outer	....	Remainder of target.

Fig. 14.

Figure 10: Third and Second Class Targets



65 TARGETS. SS. 186—187

186. FIRST CLASS TARGET.

Size, 6 feet by 8 feet.

Bull's-eye	....	3 feet in diameter.
Centre	....	5 ,, ,,
Outer	....	Remainder of target.

Fig. 15.

187. SECTIONAL TARGET.

Size, 4 feet by 8 feet.

Hits.—Hits and ricochet hits on the lower four feet of the target only are to count.

When two or more targets are used, they should be placed not less than 10 paces apart.

188. When sectional practices are executed on ground

Figure 11: First Class Target

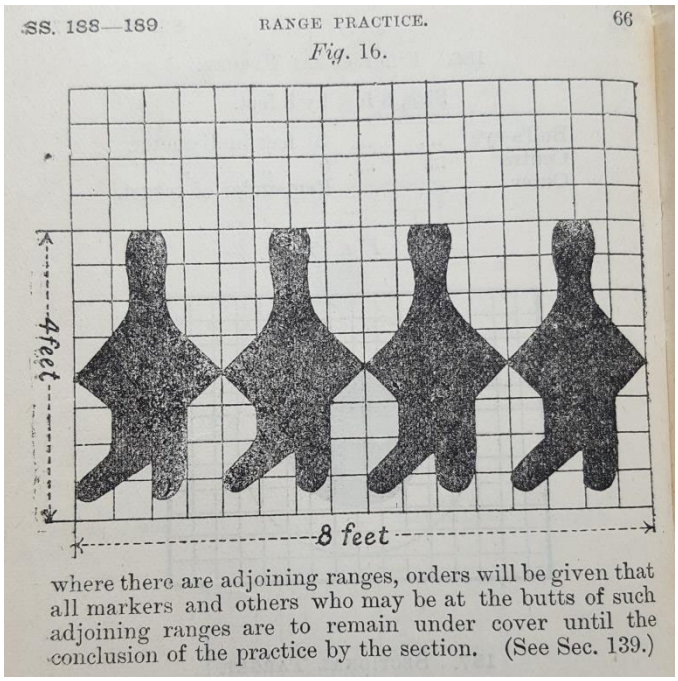

SS. 188—189 RANGE PRACTICE. 66

Fig. 16.

where there are adjoining ranges, orders will be given that all markers and others who may be at the butts of such adjoining ranges are to remain under cover until the conclusion of the practice by the section. (See Sec. 139.)

Figure 12: Sectional Target

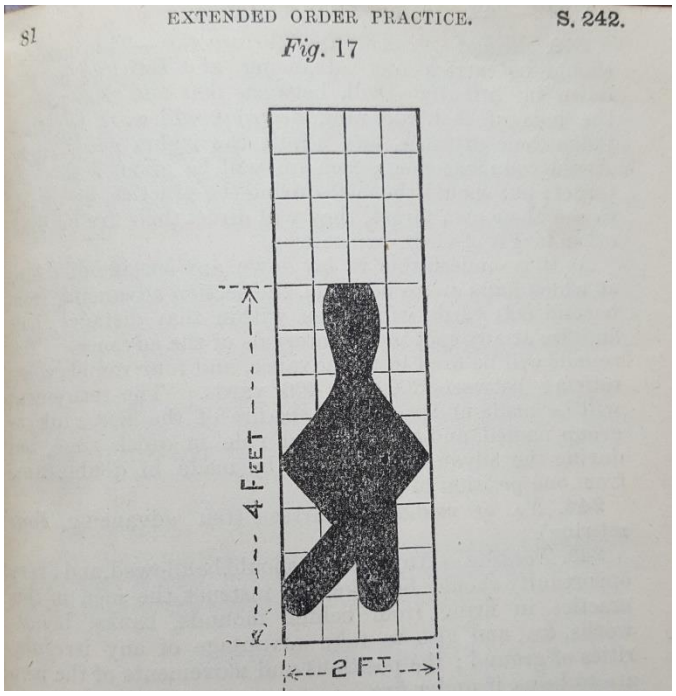

81 EXTENDED ORDER PRACTICE. S. 242.

Fig. 17

Figure 13: Extended Order Target

soldiers.'[234] If they classified as third-class shots, the Assistant Adjutant was to give further aiming and firing instruction, and make them fire twenty rounds at any distance and target. This gave a level of attention to the worst performers which had not been allowed before, and may only have been possible through the reduction of ammunition formally allocated to practices.

The most obvious major change in the Individual practices was that, as had been the case in the previous Table "B", one practice at each distance was now a 'rapid'. These were to be fired loading from the magazine, whereas deliberate practices appear to have still been fired loading individually from the pouch or bandolier. The kneeling practice at 600 yards had been replaced by a third practice at 200 yards, which allowed recruits to practice both the kneeling and standing positions in separate deliberate practices first. To provide a larger aiming mark, the Third Class target was no longer used at 200 yards, with the larger Second Class target used for all practices up to 400 yards. These changes had all been achieved without the need to alter the balance of the Individual training, covering almost all the same positions and distances, and using the same amount of ammunition, as had been prescribed in 1894.

The changes made to the Sectional practices went further. The one practice marked as 'Rapid' was to be conducted using the magazine, and would 'be only employed when sudden or close contact with the enemy takes place', but could be used at longer ranges 'in rare cases'.[235] To overcome the disparity between rifles, those soldiers issued with the Mark I* rifle were instructed to load the first two rounds individually, before using the magazine for the remainder of the practice. Three practices had been removed: 'Individual Attack', 'Extended order practice', and the advancing volley practice. With the ammunition allowed for the 'Section Attack' reduced to twenty rounds, there was an overall saving of thirty-six

[234] *MR 1892*, para. 25.
[235] H.M.S.O., *Infantry Drill, 1896*, (London, Harrison and Sons, 1896), p. 138.

Table 15: Musketry Instruction; Lee-Metford Rifle and Carbine, 1896. Table "A"

No. of Practice.	Description of Fire.		Class of Target.	Distance in Yards.	No. of Rounds.	Position.
1	Individual	Deliberate	2nd	200	7	Kneeling
2	"	"	2nd	200	7	Standing
3	"	Rapid	2nd	200	7	Kneeling
4	"	Deliberate	2nd	300	7	Standing
5	"	Rapid	2nd	300	7	Kneeling
6	"	Deliberate	2nd	400	7	"
7	"	Rapid	2nd	400	7	"
8	"	Deliberate	1st	500	7	Lying down
9	"	Rapid	1st	500	7	" "
10	"	Deliberate	1st	600	7	" "
11	"	"	1st	700	7	" "
12	"	"	1st	800		" "
13	Independent		Sectional	300	10	Single rank kneeling
14	"			300	10	Front rank kneeling
15	Volleys	Deliberate		300	10	"
16	"	Rapid		300	10	"
17	"	Deliberate		400	10	Single rank kneeling
18	"	"		500	10	"
19	"	"		600	10	"
20	Section Attack			800 to 200	20	"

Table 16: Musketry Instruction; Lee-Metford Rifle and Carbine, 1896. Table "B"

No. of Practice.	Description of Fire.		Class of Target.	Distance in Yards.	No. of Rounds.	Position.
1	Individual	Deliberate	3rd	200	7	Standing
2	"	Rapid	3rd	200	7	"
3	"	Deliberate	3rd	300	7	Kneeling
4	"	Rapid	3rd	300	7	"
5	"	Deliberate	2nd	500	7	"
6	"	Rapid	2nd	500	7	"
7	"	Deliberate	2nd	600	7	Any military
8	"	"	1st	700	7	" "
9	"	"	1st	800	7	" "
10	Independent		Sectional	300	10	Two ranks, standing
11	Volley	Deliberate		300	10	" front rank kneeling
12	"	Rapid		300	10	" "
13	"	"		400	10	Single rank, kneeling
14	"	Deliberate		500	10	" "
15	"	"		600	10	" "
16	Section Attack			800 to 200	20	" "

rounds, part of which had been redistributed amongst the remaining independent and volley practices to provide them all with ten rounds each. This extended the principle incorporated in the changes made in Table "B" of the Royal Armouries copy of *MR 1894*.

Of the eight remaining sectional practices, the first 'Independent' practices had simply been moved to 300 yards, but the Volley practices had undergone more alterations. Three of the practices, those fired at 300 and 500 yards, followed formats that had last appeared in 1891, and whilst a 600-yard practice had also been included in that table, it had been fired lying down rather than kneeling. This left the practice for 400 yards as the only one to remain unaltered from 1894. Finally, the 'Section Attack' had been extended to 800 yards, incorporating the longer distances previously included in the advancing volley practice.

The course for trained soldiers had undergone fewer alterations, with the Individual practices left unchanged from 1894. As for recruits, the Sectional practices had been reorganised, with the 'Individual Attack' and advancing volley practices replaced with three deliberate volley practices. These were identical in execution to those adopted in Table "A", as was the 'Section Attack'. Unlike recruits, trained soldiers fired only one Independent practice, as this was a type of fire only to be used 'in certain special circumstances, such as previous to an assault'.[236] The position, 'Two ranks, standing', is also unusual as it had never been specified before. The subsidiary manual of firing exercises described it as one to be used 'Should circumstances render it desirable', but also stated that firing would normally be conducted with the front rank kneeling, and that if both were standing the rear rank must 'close well up to the front rank'.[237] They also executed a second rapid volley practice, but firing from 400 yards and conducted in the same manner as the comparable deliberate practice from Table "A". The extra ammunition provided for Sectional practices, along with

[236] *MR 1896*, para. 221.
[237] *RCE 1896*, para. 79.

the additional practice, raised the total allocated for range practices to 143 rounds, the first increase since 1891.

When it came to the time allowed for completing the tables, this was the first manual since 1887 where the left-hand column only numbered the practices, rather than listing days.[238] Instead, the course duration was based upon the number of rounds fired per day, extending the flexibility permitted in previous tables. The recommended daily amount was fourteen rounds for Individual practices, rising to twenty for Sectional practices. However, if necessary this could be increased to twenty-one and thirty respectively for recruits, or twenty-eight and thirty for trained soldiers. [239] Under the normal daily rate, this gave ten days for Table "A" (although this required thirty rounds being fired on the last day), and eight days for Table "B", which matched that allowed in 1894. This could be compressed to seven and five days respectively, although trained soldiers would fire the last individual practice and the first two sectional practices on the same day.

When it came to awarding prizes, the money allocated was left unchanged, but it was noted that 'sectional practices are of greater importance than the individual practices'.[240] This was a slight change in wording from 1894,[241] strengthening the importance of sectional practices, perhaps in acceptance that not all units could undertake field practices. In the list of suggestions for individual prizes, the 'vanishing target practice' was added to those from 1894. This had previously been hampered by the need for special apparatus to operate the targets, but an improvised design had now been sanctioned that could fulfil the same purpose.[242] The suggestion seems designed to guide commanding officers towards including

[238] This had only been the case for Table "B" in *MR 1887*.
[239] *MR 1896*, para. 42.
[240] *MR 1896*, para. 336.
[241] '...the field practices are of greater importance than the practices laid down for classification.' See *MR 1894*, para. 194.
[242] *MR 1896*, para. 237.

the practice, particularly where it might previously have been impracticable, perhaps as preliminary to field exercises.

The Annual Reports for this period do not comment on the introduction of this set of regulations, only noting that they had been followed correctly. The Report for 1897 did include a note that 'This year all regiments and battalions will carry out the new course'.[243] However, this was a reference to the next set of regulations, which had been in development since 1896, when the Commandant had made the following remark:

It has now become a matter for consideration whether too much time is not given to individual shooting and too little to collective firing.[244]

Given the increasing emphasis on Sectional practices, this was the next logical step, but to accomplish it required significant alterations to both tables. In the outline that followed Table "A" was to be divided into two parts, with recruits undergoing a longer period of individual instruction, and having to demonstrate competency in the first part before progressing to the second. As the table was already laid out in this manner, it would simply formalise the transition between the two halves. The intention was that, once this first course had been completed, subsequent training would only have to include:

...a short course of careful individual practice at a few fixed distances up to 800 yards when the <u>exact</u> position of each shot fired can be shown...to enable him to keep in touch with

[243] H.M.S.O., *Report on the Musketry Training of the Regular Forces serving at Home, including the School of Musketry, and also on the Musketry Training of the Militia, Yeomanry Cavalry and Volunteers during the year 1897*, (London, Harrison and Sons, 1898), p. 3.
[244] H.M.S.O., *Report on the Musketry Training of the Regular Forces serving at Home, including the School of Musketry, and also on the Musketry Training of the Militia, Yeomanry Cavalry and Volunteers during the year 1896*, (London, Harrison and Sons, 1897), p. 3.

the sighting of his rifle, and to give him some practice previous to his taking part in the annual collective firing...[245]

The unallocated ammunition could then be divided, with one half placed at the discretion of the company commander, and the other expended during the musketry inspection of the battalion or regimental commander, normally during the field-firing exercises. In his following report, the Commandant specifically noted that these ideas had undergone practical testing in an experimental course, conducted at Aldershot. A relatively high proportion of the soldiers who participated had classified as third-class shots, but this did not worry the Commandant, who pointed out:

...now that very much greater attention is to be given to the training of recruits and further training of third-class shots, it will soon be found that the standard required to pass out of the third-class is none too high and that the percentage of third-class shots will come down again.[246]

As such, the experimental course appears to have been considered satisfactory, and it became the basis for the next set of musketry regulations.[247]

The Musketry Regulations, 1898[248]

Whilst the plan outlined in the Annual Report for 1896 had suggested that the new Regulations were to be organised differently, particularly in their focus and layout, this was not achieved by starting afresh, but by further adaptation of the existing layout. Practices were still grouped by distance, with different positions practised at each distance. The ammunition allocated for sectional practices was reduced to seven again, but this appears to

[245] *Ibid*.
[246] H.M.S.O., *Report on... 1897*, p. 4.
[247] *Ibid*, p. 4.
[248] H.M.S.O., *The Musketry Regulations, 1898*, (London, Harrison and Sons, 1898). [Hereafter *MR 1898*].

have been done purely to simplify how many practices could be undertaken in any one day. Recruits fired fourteen rounds per day, which could be increased to twenty-one rounds only 'under exceptional circumstances'.[249] For trained soldiers this was fourteen for Individual practices, and twenty-one for all others. The maximum fired per day was never to exceed twenty-one and twenty-eight rounds respectively, with a specific note that twenty-eight was also permissible 'when individual and collective practices are fired on the same day'.[250] This may have applied to those who had to fire a remedial practice at the end of Part 1, as under normal circumstances that should not have been required.

The table for recruits is divided into four parts, rather than the two originally discussed, and noticeably enlarged from 1896, in keeping with the desire to ensure preliminary training was more comprehensive. Nine practices had been added, most of which were basic instructional practices, making Part I almost as long as the entire Individual section had been in 1896, despite only covering half the distances. The largest change was the repetition of all three practices at 200 yards, using the smaller Third Class target on the second occasion. The prone position, which had not been taught at distances under 400 yards since 1887, was now included at every distance, with an extra kneeling practice added at 400 yards. Together, these made Part I the most comprehensive short-range training ever designed. If their scores were satisfactory, the recruit would then pass onto Part II, which comprised the five long-range practices that would complete his instructional training. Part III moved the focus towards more practical training. The rapid practices were now paired, rather than being spread over all four distances, allowing two positions to be taught at both one short and one medium distance. The relatively flat trajectory of the bullet, which the 'fixed sight' practice had exploited, meant that the training would also cover any intermediate distances. This approach had only previously been used in Table "B", albeit in a minor way,

[249] *MR 1898*, p. 22.
[250] *MR 1898*, p. 28.

Table 17: The Musketry Regulations, 1898. Table "A"

Number of Practice	Description of Fire	Class of Target	Distance in Yards	Number of rounds	Position
	PART I.				
1	Deliberate individual	2nd	200	7	Lying
2	" "	2nd	200	7	Kneeling
3	" "	2nd	200	7	Standing
4	" "	3rd	200	7	Lying
5	" "	3rd	200	7	Kneeling
6	" "	3rd	200	7	Standing
7	" "	2nd	300	7	Lying
8	" "	2nd	300	7	Kneeling
9	" "	2nd	300	7	Standing
10	" "	2nd	400	7	Lying
11	" "	2nd	400	7	Kneeling
	PART II.				
12	Deliberate individual	1st	500	7	Lying
13	" "	1st	500	7	Kneeling
14	" "	1st	600	7	Lying
15	" "	1st	700	7	"
16	" "	1st	800	7	"
	PART III.				
17	Rapid individual	2nd	200	7*	Kneeling
18	" "	2nd	200	7*	Standing
19	" "	1st	500	7*	Lying
20	" "	1st	500	7*	Kneeling
	PART IV.				
21	Deliberate volleys	Sectional	300	7	Front rank, kneeling
22	" independent		300	7	" " "
23	Rapid "		300	7*	Single rank, kneeling
24	Deliberate volleys		500	7	" " "
25	" "		600	7	Single rank, lying
26	Rapid volleys		300	7*	Front rank, kneeling
27	" "		500	7*	Single rank, kneeling

Table 18: The Musketry Regulations, 1898. Table "B"

Number of Practice	Description of fire	Class of target	Distance in yards	Number of rounds	Position
	PART I.				
1	Deliberate individual	3rd	200	7	Kneeling
2	" "	3rd	200	7	Standing
3	" "	2nd	‡500	7	Lying
4	" "	2nd	500	7	Kneeling
5	" "	2nd	600	7	Lying
6	" "	1st	800	7	"
	PART II.				
7	Deliberate volleys	Sectional	†300	7	Front rank, kneeling
8	Rapid volleys		300	7	" " "
9	" independent		†300	7	" " "
10	Deliberate volleys †		†500	7	Single rank, kneeling
11	Rapid volleys		500	7*	" " "
12	" independent †		†500	7*	" " "
13	Deliberate volleys		600	7	Single rank, lying
14	Rapid volleys		600	7*	" " "
15	Attack practice		800 to 200	21	As found necessary

through the omission of 400 yards for individual shooting after 1885.

Part IV was the only section where practices had been removed, with the loss of one deliberate volley practice,[251] and the 'Section Attack'. The loss of the latter meant that recruits no longer received any training in combining fire and movement. Two 'rapid' practices had been included in their place, which created a more complete foundation for Table "B" to then expand into a practical training system. The reduction of the ammunition issued per practice meant that the whole course only required a net increase of fifteen rounds, and the rifle was to be loaded from the belt pouch unless a practice was designated as 'rapid'.

As had been suggested in 1896, Table "B" was now almost identical to Table "A". Part I comprised a reduced selection of purely instructional deliberate practices, which allowed for two positions to be practised at both 200 and 500 yards, along with the inclusion of the prone position, which was another revival from 1887. There were no longer practices at 300 and 700 yards, but the six remaining practices provided the chance for soldiers to re-familiarise themselves with their rifles over all of the distances included in Part II, and ensure they were of a competent standard. There were then nine sectional practices, although these now copied Part I in being organised by distance rather than type of practice. After the removal of the 400-yard rapid practice, they now only covered three distances, but included three extra rapid practices, both independent and volley fire. The position of 'Two ranks, standing' was no longer practised, although it was still taught,[252] and both practices at 600 yards were fired from the lying position, something which had not appeared in any previous tables.[253] The final practice was the 'Attack practice', the only one to be allocated more than

[251] Practice 17 in *MR 1896*.
[252] H.M.S.O., *Rifle and Carbine Exercises. Manual Exercise, Firing Exercise, Bayonet Exercise, Firing Exercise for Webley Pistol, and Instructions of Cleaning Arms. 1898*, (London, Harrison and Sons, 1898), para. 79.
[253] Although practices from 600 yards had previously been listed as being fired from 'any military position', this was the first table to specify the lying position for sectional practices.

seven rounds, and which was conducted along the same lines as the 'Section Attack', in preparation for the field exercises.

The 1898 Regulations were certainly successful in creating a different direction for musketry training, very much in the spirit of the plan outlined in 1896. As had been intended, Table "A" was now a thorough grounding in all of the basic types of fire that a soldier would need, whilst Table "B" was far more focussed on sectional practices than had previously been the case. It also served as a preliminary course for the field exercises, integrating the whole training process rather than the latter being almost a separate entity. These changes were attributed to Ian Hamilton by a recent biographer, as Hamilton took up the post of Commandant in May 1898,[254] stating that 'Realistic battle conditions and individual accuracy summed up the revolution in training instituted by him'.[255] Certainly, his Annual Report for 1898 displays a different approach in assessing the capabilities of the Army as a whole, bringing a remarkable amount of energy to the role, particularly as there were competing demands on his time.[256] However, as described above, there is clear evidence that *MR 1898* was conceived and developed during his predecessor's tenure, and the trend towards 'realistic battle conditions' had arguably begun in 1885, the same year that Hamilton's book was published. Moreover, many of the changes attributed to him are actually very much in keeping with the published opinions of previous Commandants.

Given that it appears to have taken two years to develop and implement new ideas or processes, Hamilton's time at Hythe was far too brief.[257] Whilst his two predecessors had both served four year terms, Hamilton held the position for just sixteen months before being

[254] Ian Hamilton became Commandant on 11 May 1898, and was gazetted as AAG, Natal as of 15 September 1899. He was not formally replaced as Commandant until February 1901.
[255] J. Lee, *A Soldier's Life*, p. 44.
[256] Winston Churchill's account of Hamilton's Boer War service notes that he was withdrawn from Hythe twice during his period of service to participate in manœuvres. See W.S. Churchill, *The Boer War: London to Ladysmith via Pretoria and Ian Hamilton's March*, (London, Bloomsbury Academic, 2013), p. 257.
[257] See J.P. Jones, *Johnny: The Legend and Tragedy of General Sir Ian Hamilton*, (Barnsley, Pen and Sword Military, 2012), pp. 81-82.

appointed Assistant Adjutant General on the staff of Sir George White, the new General Officer Commanding Natal.[258] Intriguingly, shortly before leaving Hythe, he wrote to a fellow officer who was apparently joining the staff of Sir Redvers Buller,[259] recommending that Buller request the issue of 100 rounds per man for use in additional practices at 'moving and vanishing targets etc'. He also recommended undertaking a full, field-firing practice 'with 50 rounds of ball in pouch'. These suggestions, to give the soldiers some practise under battlefield conditions, may in part have been spurred by his own experiences during the First Boer War. Unfortunately, there is no evidence that his suggestion was taken up, but the letter represents a moment of foresight, prefiguring the alterations that were made only three years later.

Although it appears that he failed to achieve the ideas he had presented in the 1880s, the British Army had taken a very different direction from that which he had suggested in 1885, one which he was perhaps too early to alter. It would take the external impetus of the South African War, together with the appointment of Lord Roberts as Commander-in-Chief in 1901, before training began to move in a direction much closer to Hamilton's ideas from the 1880s. However, he did have a role in deciding the direction that the design of the rifle would evolve in the coming decade. In 1895 there had been a discussion as to whether the Army wished to adopt the new Cavalry carbine as the standard Infantry weapon, due to having comparable accuracy, whilst being lighter and handier. Whilst it was turned down on the grounds that the barrel was not long enough to make full use of the pressure generated by the cartridge, the question was resurrected in 1898. Lord Wolseley, the then Commander-in-Chief, stated that he wished to lighten the existing rifle, although he did not wish to see it shortened. A committee of four officers, led by Ian Hamilton,[260] oversaw comparative trials

[258] J. Lee, *A Soldier's Life,* pp. 43-46.
[259] A full transcript and discussion of the letter's contents are included in Appendix 4.
[260] According to Earl Roberts, the other three officers were 'Col. The Hon. F. Stopford, and the Col. W.N. Lockyer; Secretary, Captain Lloyd.' See HL Deb 23 February 1905 vol. 141 cc1037.

between four designs. In spite of Wolseley's directive, their findings favoured a shortened design, and they requested that twelve be made to that pattern, together with a further twelve which were to be even further lightened. These were ordered, but the trials were interrupted by the South African War and never completed. However, the matter was brought back to the fore in 1900, and at Earl Roberts' suggestion the design selected by Hamilton's committee was used as the basis for the subsequent trials.[261] These would eventually lead to the introduction of the 'Short' rifle, whose successors would go on to serve successfully through both world wars.

The National Rifle Association

The National Rifle Association (NRA), although in operation throughout the period of study, were at their most involved with military affairs during the 1890s. The Association was founded in 1859 'for the encouragement of Volunteer Rifle Corps, and the promotion of Rifle-shooting throughout Great Britain'.[262] Whilst its main competitions could only be entered by members of the volunteer forces, and shot using service rifles and ammunition, the NRA also offered prizes open to all-comers aimed at stimulating the development of both firearms and ammunition technologies. Metford rifling had been a product of that process, achieving great success in long-range Match Rifle competitions during the 1870s. This had given the Association the unofficial role of secondary experimental centre after Hythe, focussed on creating the most accurate combination of rifle and ammunition possible, both driving development and demonstrating the failings of designs. This was seen at the 'Imperial Meeting' in 1899, when the new Mark IV bullet proved to be disastrously flawed.[263] In

[261] HL Deb 23 February 1905 vol. 141 cc1034-39.
[262] Lord Elcho's Letter to the Times, quoted in [Anon.], *The National Rifle Association. Official Jubilee Souvenir.* (London, Gale & Polden, 1909), p. 94.
[263] L.R. Tippins, *Modern Rifle Shooting in Peace, War, and Sport*, (London, J.S. Phillips, 1902), p. 169. The Mark IV was designed to expand on impact, but was constructed in such a manner that the lead core of the bullet could separate from its cupro-nickel envelope in the barrel. It remained in service during the early stages of the South African War, together with the nearly identical Mark V round, until both were withdrawn over

recognition of their technical expertise, the NRA had a representative on the Small Arms Committees. This post was originally filled by Colonel Sir Henry Halford,[264] followed later by his protégé, Thomas Fremantle,[265] both of whom were noted target shots. Between them, they participated in every committee from the Magazine Rifle Trials of the 1880s through to the First World War.

The competitions of the Army Rifle Association, despite having the Commandant of the School of Musketry serving as its president,[266] were run along NRA lines, much to the annoyance of the military authorities as this went against their drive for greater realism. In response to assurances from 'the highest opinion in the Army' that the standing position, 'was in fact the only position of importance for fighting', the NRA redesigned its competitions for the Imperial Meeting of 1900. These were now shot from the standing position at 200 yards, with the kneeling position used at 500 and 600 yards. However, this move was universally unpopular amongst competitors, and the meeting was poorly attended. Against the background of defeats in South Africa, where the British Army's poor performance was blamed upon the soldiers' 'failure to conceal themselves when in action', the experiment was abandoned, and all future attempts at change were stiffly resisted.[267]

The School of Musketry had been linked to the NRA from its inception, as it was at a training course at Hythe in 1859 that the idea for the Association was first raised. The then Commandant, Major-General Hay, held a place on the Council and was invited to act as chief

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concerns they contravened the Hague Declaration. They were replaced temporarily with the Mark II design, until the new Mark VI pattern was introduced in January 1904. For a discussion about the political debate surrounding usage of the Mark IV bullet, and the contemporary Dum Dum bullet, see E.M. Spiers, 'The Use of the Dum Dum Bullet in Colonial Warfare', *The Journal of Imperial and Commonwealth History*, 4 (1), 1975, pp. 3-14.

[264] Colonel Sir Henry St. John Halford (1828-1897), who joined the Committee when it was formed in 1883.

[265] The Hon. T.F. Fremantle, later 3rd Baron Cottesloe (1862-1956), joined the Committee in 1905, eventually becoming Chairman, serving for over 30 years. See S. Cornfield, *The Queen's Prize: The Story of the National Rifle Association*, (London, Pelham Books, 1987), p. 139.

[266] Oborn, 'The School of Musketry', p. 61.

[267] Colonel Lord Cottesloe, *The Englishman and the Rifle*, (London, Herbert Jenkins, 1945), p. 81

umpire at their first meeting.[268] The strong representation of Hythe staff members, both in providing administrative assistance and in the prize lists of the army and all-comers competitions, also ensured that there were many with strong individual ties. Perhaps this is best represented by Colonel John Hopton, who served in most of the officer roles at Hythe, including acting as Commandant after Ian Hamilton's departure.[269] He was also a highly active competitive shot, captaining the Army Eight between 1891 and 1907, and representing England in the 'Elcho Shield' thirty-six times, with an illustration of him shooting for that competition used as the frontispiece to Halford's book on target shooting.[270] However, the professional relationship between the two bodies was not always smooth, and there were those who felt that the NRA influenced the direction that training took during the 1890s. A history of the School of Musketry, written in 1914 by Joseph Oborn (the School's Adjutant),[271] is notable for its criticism of training prior to the South African War:

To the desire to secure kudos for the Army at Bisley has been attributed the concentration of effort to train a few superlative bull's-eye shots, to the neglect of the majority, and the consequent indifference to other forms of shooting, in which, we were told, our opponents in South Africa were superior.

The successive editions of the Musketry Regulations afford an indication of the trend of army training in shooting. If this be so, a study of the little book of 1898 will show the extent to which what may be described as the Bisley tradition had taken hold. In Table "B" the trained soldier fired only at 200, 500, 600, and 800 yards- Bisley ranges. The

[268] [Anon.], *The National Rifle Association*, p. 96.
[269] Between 1886 and 1900, Hopton held the positions of: Lieutenant-Instructor; Captain-Instructor; District Inspector of Musketry; Deputy Assistant Adjutant-General; Chief Instructor and Staff Officer; and Acting Commandant.
[270] Colonel H.St.J. Halford, *The Art of Shooting with the Rifle*, (London, "Land and Water", 1888), frontispiece.
[271] Joseph Oborn joined the Army in 1888, and was the Superintending Clerk at the School of Musketry before being appointed its Quartermaster and Acting Adjutant, with the rank of Honorary Lieutenant, in December 1907. He held this post until July 1916, when he was transferred to the Machine Gun Corps. Due to the limited information available, it is unclear whether he served the entirety of his career at Hythe, and if so whether the opinions in the article were derived from his own experience, or formed from his colleagues.

shooting was all deliberate and at bull's-eye targets. In collective practices he fired only at known distances and at a large target of known size. It is true one or two other practices were described in the book and a section was devoted to field firing. The former were permissive, the latter designed for large bodies and only practicable in the few places where range accommodation was extensive. A comparison of this work with its predecessors suggests that the fundamental necessities of military training had to a great extent been lost sight of in the effort to produce a body of experts in that kind of shooting which is useful only as a means to an end. Devotion to the means had eclipsed the end.

The energies of the Army Rifle Association were applied in a direction indicated by the programme of the National Rifle Association. District and regimental meetings naturally followed suit.[272]

In contrast, the opinion of another contemporary, speaking in 1897, was more positive:

...it will be admitted on all hands that the last decade has seen considerable improvement in our "system" of instruction–apart altogether from the question of the efficacy of this rifle or that, or this cartridge or that–which are subjects in themselves. Much pedantry has been left behind, and the tendency has been towards practical efficiency.

Why, then, should we not hope for further progress during the next decade?[273]

This second writer, Colonel E.C. Browne,[274] had been linked with musketry training since the 1860s, and written in favour of training more closely representing 'Active Service

[272] Oborn, 'The School of Musketry', p. 62.
[273] Browne, 'On The Instruction of Our Soldiers', p. 1273.
[274] Colonel Edmond Charles Browne (1843-1910) had been taught at Hythe in 1866, and during his career served as both an inspector of musketry and chief instructor of a musketry school in India.

Conditions' in 1889.[275] As such, he seems well placed to judge the evolution of musketry training during this period from a contemporary perspective, and his comments suggest that he felt it to be improving, even if it was not yet perfect, reflecting the opinions given in Hythe's Annual Reports. As noted above, *MR 1898* was both in line with, and atypical of, training across the decade, with combinations of positions and distances that had not been included since the 1880s included in a layout that had been evolving since 1891. Critics of both the NRA and the Army during the 1890s tended to focus their complaints on areas such as technology or declining standards of marksmanship, rather than on the pursuit of realism.[276] Oborn's comments are coloured by hindsight; the knowledge that training in the 1890s had essentially failed in its primary function of preparing the Army for the war to come. However, he ignored the relatively progressive nature of the training when judged by the standards of its time, and the aims of the men who created it.

There is another area which suggests the more direct influence of the NRA: the inclusion of the 'Back Position' as a military position in *MR 1892*.[277] This was a firing position that, whilst it had seen limited use during the Peninsular War, had been almost entirely the preserve of long-range competitive shooters since its re-introduction in the 1870s.[278] Indeed, *Punch* had already satirised its military shortcomings in a cartoon published during the Zulu War,[279] and no reference to either its inclusion or subsequent omission appears in the Hythe Annual Reports of the period. It was a complicated position to achieve, and the description makes it clear that whilst it might be found 'advisable or necessary on service to...assume the back position...it is unnecessary to teach him [this] as a regular

[275] E.C. Browne, *A More Complete Assimilation of our System of Instruction in Rifle Exercises and Fire Discipline to Active Service Conditions*, (London, Harrison & Sons, 1889), referenced in Browne, 'On The Instruction of Our Soldiers', p. 1273.
[276] See W.A. Baillie-Grohman, 'Rifle-Shooting as a National Sport', *Nineteenth Century, 46*, 1899, pp. 367-74, reproduced in M. Polley, *The History of Sport in Britain, Volume V; British Sport and the Wider World*, (London, Routledge, 2004), pp. 103-118.
[277] *MR 1892*, pp. 60-61.
[278] See D.B. Minshall, *Long Range Rifle Fire: The Back Position*, (2015), retrieved from http://www.researchpress.co.uk/index.php/longrange/181-backposition (viewed 4 Nov 2015).
[279] "A Position in Practice", *Punch, or The London Charivari* (30 Aug 1879) [no page number].

Drill'.[280] In the opinion of Colonel Halford, it was the 'only steady position' for firing downhill, as prone was uncomfortable and sitting required 'as much practice as…standing'.[281] That is not to say there was only one supine position,[282] but that depicted in *MR 1892* is the one which Halford described as being 'the one in general use'. The only major impediment he saw was that the soldier's campaign equipment tended to make the position uncomfortable, if not impossible; something he hoped would be rectified in the future. T.F. Fremantle cited this as the most likely reason why the position had only made one appearance, as well as the difficulty of mastering the position initially.[283] Another contemporary book on sharpshooting, printed during the Boer War, suggested that the position had been included to allow the N.R.A. to list the position amongst those permitted in competitions shot under military conditions. At the same time, the writer chose to depict and describe a different variation to that which the military laid down.[284] Whatever the reasons, and faults, subsequent manuals dispensed with it in favour of the more practical, and comfortable, kneeling and seated positions. The manual's illustration was adopted by the civilian target-shooting community, and was still being used in works on target shooting well into the next decade.[285]

What does become clear, from histories of both the School of Musketry and the NRA, is that both had very different opinions as to the best method of training riflemen. The NRA focussed upon the perfection of the individual marksman, whereas Hythe, as Oborn put it, was concerned with creating 'an Army in which every man who carries a rifle may rightly be

[280] *MR 1892*, p. 61.
[281] Halford, *The Art of Shooting*, pp. 32-33.
[282] As many as nine variations were possible when using the service rifle, all of which were depicted in H. Andrews, *Andrews' Score Register and Notes on Rifle-Shooting*, (18th ed.), (London, T. Andrews, 1902), pp. 27-28, 33, 36-38, 40-42.
[283] T.F. Fremantle, *Notes on the Rifle*, (London, Vinton & Co., 1896), pp. 21-22.
[284] W.W. Greener, *Sharp Shooting for Sport and War*, (London, R.A. Everett & Co., 1900), pp. 67-68.
[285] See A.G. Parker, *Parker's Rifle Shots' Register*, (17th ed.), (Birmingham, A.G. Parker, 1905), p. 8; Tippins, *Modern Rifle Shooting*, p. 69.

regarded as a good shot'.[286] Whilst an army of marksmen might have been the ideal, the authorities were realistic enough to understand that they would be unwieldable in battle without a discipline and command structure, and so focussed on raising the average proficiency as high as possible. However, the standards and context within which this was assessed were about to be challenged by the practical experience of another war in South Africa. As *Punch* had remarked in 1881, the Boers had previously proven to be a 'practical musketry instructor',[287] and it quickly became apparent that they were to teach the British Army a second lesson.

Summary:

The four manuals issued between 1892 and 1898 represent a committed approach to refining training to best suit both the new rifle and ammunition, as well as building on existing trends. This meant that the changes were often more subtle than those seen in the previous decade, particularly regarding the content of the training programme. The most notable changes were:

- Simplification of the table layout, with all but the most basic details removed. This resulted in a table which was far better suited for rapid reference, although the practices themselves remained relatively consistent throughout the period.
- The balance between Individual and Sectional practices, with the focus of training moving away from individual achievement and towards ensuring unit efficiency. This culminated in the sub-division of both tables in 1898, requiring soldiers to attain a minimum standard before progressing to the next part.

[286] Oborn, 'The School of Musketry', p. 62.
[287] See Figure 1.

- The greater breadth of recruit training, both to ensure that they could be ready for overseas service as quickly as possible, and reduce the time required for individual practices during subsequent annual courses. As with the previous decade, this incorporated a greater number of 'realistic' practices, with certain elements of recruit training much closer to that for trained soldiers than had previously been the case. This also led to a corresponding expansion of sectional practices for trained soldiers, with four added over the course of the decade.
- Whilst the targetry had remained relatively similar, formal training had become more static after the loss of the 'Individual Attack' and advancing volley practices. However, this appears to have been in part a response to difficulties with providing suitable areas for training, as well as being compensated for by allowing more time for field firing practices, which would fulfil the same roles.

This new approach to training, particularly separating the tables into parts to assess the progress of training, was to become the standard format for all tables issued up to the First World War. Whilst the Army were confident that the training system in 1898 was the most comprehensive and practical that had ever been issued, it is worth noting that in other areas matters had remained relatively stable. Whilst the styles of training had been expanded, the ammunition allowance for Table "A" was almost identical between 1892 and 1898, with a temporary reduction in 1896. This was the reverse of the pattern for Table "B", the allowance for which had been substantially increased in 1896, before being heavily cut back in 1898, although this then allowed for more ammunition to be used for field practices. The Hythe Annual Reports do make several references to a need for more ammunition to be allocated for training purposes, but almost in the same sentence admit that there are reports that the current

allocation was going unused due to failure or inability to undertake the field exercises. This was a problem throughout the Army as a whole. As was noted in the previous chapter, it wasn't until 1898 that Salisbury Plain was purchased and large scale exercises were finally undertaken. During these 'Grand Combined Manœuvres', which involved 50,000 men, Ian Hamilton commanded a brigade under Sir Redvers Buller. Although Buller's force was defeated, Hamilton had used raiding parties to effectively disrupt the opposition's command structure, an approach which anticipated the mobile guerrilla-like attacks of the Boer 'commando'. However, in a worrying statement on British contemporary tactical thought, Hamilton was reprimanded for using unorthodox tactics during the debriefing.[288]

At the beginning of the South African War, the opinions of the Army hierarchy, as well as of men like Hamilton and Browne (both former critics), appear to have been that training was evolving in a positive direction, if not yet perfected. Hamilton's Report as Commandant in 1898, whilst generally positive regarding basic training, highlighted many issues with carrying out sectional practices. He took particular issue with the fire control of officers, who he found using the incorrect words of command and giving poor descriptions of targets. He was also worried by the hesitation of soldiers in responding to orders during field practices. In many ways, this was reflective of the relative neglect of sectional training and field exercises, which the new Regulations were designed to address. The section on 'Marksmanship' was more positive, and ended with the following comment:

I have, indeed, no hesitation in saying that, whoever our enemy may be, the marksmanship of our men may in the future be relied upon to compensate to a very great extent for our presumptive inferiority of numbers.[289]

[288] J. Lee, *A Soldier's Life*, pp. 44-45.
[289] H.M.S.O., *Report on the Musketry Training of the Regular Forces serving at Home, including the School of Musketry, and also on the Musketry Training of the Militia, Yeomanry Cavalry and Volunteers during the year 1898*, (London, Harrison and Sons, 1899), p. 3.

This was echoed in the pronouncement given in the next Report by John Hopton, as acting Commandant, that 'The results generally may be regarded as 'very satisfactory'.[290] He also included a section entitled *Value of South African Campaign from Musketry Point of View*.–

Undoubtedly much useful musketry knowledge will be gained from the war now in progress in South Africa; already, from information received of the shooting by our men in this war, musketry generally must have made vast strides in the interval that has elapsed since the last time we were engaged with an enemy in that part of the world. No doubt some of this improvement is due to the better shooting powers of the Lee-Metford and Lee-Enfield rifles as compared with the Martini-Henry, but the chief improvement is due to the far greater care and trouble now taken with musketry training throughout the Army, and to the great advance made in the fire discipline of all ranks. Many points will be most interesting to note in this connection. For instance, what kind of fire was most generally used and found most effective, whether "individual," "independent," or "volley"; also what were the most generally adopted "positions," i.e., "standing," "kneeling," "sitting," or "lying"; at what distances most of the firing took place, and whether long range fire was much used and found effective; the uses to which machine guns were put, and their general behaviour; what revolvers were found the most suitable; also whether the present bayonet was much used and found to answer well, &c.

Any alterations that may be thought necessary in Tables A and B, and in the musketry course generally, can conveniently be submitted when a new edition of the Musketry Regulations is required.[291]

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[290] H.M.S.O., *Report on the Musketry Training of the Regular Forces serving at Home, including the School of Musketry, and also on the Musketry Training of the Militia, Yeomanry Cavalry and Volunteers during the year 1899*, (London, Harrison and Sons, 1900), p. 3.
[291] *Ibid.*, p. 4.

These were sentiments which Ian Hamilton had also expressed in the letter discussed above.[292] It should be noted that the Report was formally signed on 30th December 1899, and so may well have been written without knowledge of what came to be known as 'Black Week'.[293] However, by the end of 1899 it certainly did not seem that the British were quite the effective force that Hamilton had described only a year previously, and that far more reassessment was necessary than Hopton could have anticipated. What the Army did come to understand very quickly was that the style of warfare that smokeless ammunition created was unlike anything that had ever been encountered before. With no tell-tale smoke to reveal a soldier's position, locating the enemy had become almost impossible, and the distances over which battles could now take place made this an even more difficult matter. The battlefield was no longer something hidden under a cloud of smoke, with units dressed and operating in a manner that would have been recognisable to troops from the beginning of the nineteenth century, but was now a more anonymous space, witnessing the beginnings of camouflage and concealment, and challenging almost all of the ideas which the British Army had operated under since the mid-1880s.

The last Annual Report of this period was published in 1901,[294] which, due to the full mobilisation of the Army, provided only a very basic collection of figures to describe the training conducted between 1 November 1899 and 31 October 1900. Thereafter, no further reports appear to have been produced by Hythe until 1903, by which time the Army had undergone a series of investigations into the failings seen in South Africa, the results of

[292] See Appendix 4.
[293] These were the triple defeats of Stormberg, Magersfontein and Colenso, all occurring between 10 and 17 December, and proving highly embarrassing for the British Army as its worst series of defeats since the First Boer War. See J. Rickard, 'Black Week, 10-17 December, 1899', (20 February 2007), retrieved from http://www.historyofwar.org/articles/concepts_black_week.html (viewed 27/11/2015). It should be noted that the dates in the title of the article are incorrect, and Black Week is normally dated from 10-15 December.
[294] H.M.S.O., *Report on the Musketry Training of the Regular Forces serving at Home, including the School of Musketry, and also on the Musketry Training of the Militia, Yeomanry Cavalry and Volunteers during the year 1899-1900*, (London, Harrison and Sons, 1901).

which would come to define the direction of the British Army during the decade prior to World War One.

Chapter 3: 1900-1908 – Mastering the art of taking cover[295]

The South African War marked a watershed for the British Army, being the first major conflict in which it faced an opponent armed with modern European weapons.[296] There were also a number of other firsts, including the first major usage of khaki uniforms, marking the beginning of the Army's move towards camouflage, and providing the possibility to conceal the movement of troops on the battlefield.[297] However, despite the various changes made to British training during the eighteen years since they had last fought, the Boer forces still possessed a superior level of both marksmanship and fieldcraft.[298] Although the British eventually won the war, with the assistance of Imperial forces, it exposed major issues with their equipment, tactics, and training. These caused the War Office to initiate an evaluation exercise in May 1900,[299] surveying the opinions of commanding officers regarding every piece of equipment issued.[300] This was followed, in September 1902, by the 'Royal Commission on the War in South Africa', otherwise known as the Elgin Commission, which was formed to:

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[295] 'The Boers, however, taught us a new lesson in this war. They were masters of the art of taking cover…' See Maj. C.H.B. Pridham, *Superiority of Fire*. (London, Hutchinson's Scientific and Technical Publications, 1945), p. 45.

[296] The Boer forces were mostly militia, organised into 'commandos'. As they were responsible for providing their own firearms, a variety of Mauser, Krag-Jorgensen and other rifles were originally used, with those who did not have their own rifle being supplied one by the Government. During the latter part of the war, they also used captured Lee-Metford and Enfield rifles, resupplying from captured ammunition or that dropped by British patrols.

[297] Khaki uniforms were first introduced in India by Lieutenant (later Lieutenant-General Sir) Harry Lumsden in December 1846 for the Corps of Guides, and were dyed locally on an *ad hoc* basis by various units throughout the second half of the nineteenth century. It was only formally adopted by the British Army as overseas service dress in 1896, although the last battle fought wearing red tunics was the Battle of Ginniss in 1885. The original cotton fabric was found to be unsuitable for South Africa, with 40,000 condemned as 'too thin', replaced with the woollen and worsted serge which formed the basis of the 1902 Service Dress. It also entered popular usage as the 'gentleman in Kharki' (sic), a line taken from Rudyard Kipling's fund-raising poem 'The Absent-minded Beggar', first published in the *Daily Mail* (31 October 1899).

[298] *Fieldcraft (noun): The techniques involved in living, travelling, or making military or scientific observations in the field, especially while remaining undetected.* J.A. Simpson & E.S.C. Weiner (ed.), *Oxford Dictionary of English*. (Oxford, Oxford University Press, 2003), p. 641, col. 2.

[299] See Maj E.G.B. Reynolds, *The Lee-Enfield Rifle*, (London, Herbert Jenkins, 1960), pp. 56-58.

[300] See War Office, *Extracts from Reports by Officers Commanding Units in South Africa During 1899-1901*, (10 Vols). (London, War Office, 1901).

...inquire into the Military preparations for the War in South Africa, and into the supply of men, ammunition, equipment, and transport by sea and land in connection with the campaign, and into the Military operations up to the occupation of Pretoria;[301]

Their recommendations, together with those of the Esher Committee, formed the basis for the modernisation of the British Army, and made the British Expeditionary Force that sailed to France in 1914 a very different one to that sent to South Africa only fifteen years before.[302]

From a training standpoint, the first changes to be overcome were technological, as any changes to the rifle would have a direct impact upon the training revisions. The Lee-Enfield had proven to have several serious manufacturing flaws, not least that some 25,000, 'owing to bad sighting, threw [the bullet] eighteen inches to the left at 500 yards'.[303] The answers to the survey of commanding officers concurred that the rifles were capable of grouping, but that 'the group was not often where it was intended'.[304] Cavalry units had also complained of issues with the accuracy of their Lee-Metford and Lee-Enfield carbines at long range,[305] and felt that a rifle would be of greater use to them.[306] Field-Marshal Lord Roberts' own opinion, as expressed to the Secretary of State for War whilst he was Commander-in-Chief in South Africa, was that the Lee-Enfield could be improved 'by shortening, lightening,

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[301] H.M.S.O., *Minutes of Evidence taken before the Royal Commission on the War in South Africa*, (2 vols.), (London, Wyman and Sons, 1903), p. iii.
[302] For a discussion of reforms made to the Infantry during this period, see Edward M. Spiers, Reforming the Infantry of the Line, 1900-1914, *Journal of the Society for Army Historical Research*, Vol. 59 (1981), pp. 82-94.
[303] [Anon.], 'The Report of the Royal Commission on the War', *The Spectator*, 29 August 1903, p. 301. This disagrees with responses to the survey that the deviation was to the right. During the inquiry, it was discovered that, whilst the inspection guidelines laid down the size of group required for accepting a rifle, no stipulation was made as to where the group should be relative to the point of aim. The Army had 265,000 rifles in hand to be altered, achieved by adjustment of the relative alignment of the sights. See Reynolds, *The Lee-Enfield Rifle*, p. 62, pp. 55-6, and p. 63 respectively.
[304] Reynolds, *The Lee-Enfield Rifle*, p. 57.
[305] The 'Magazine Lee-Metford Cavalry Carbine Mark I' had been introduced into service in 1894 specifically for use by the cavalry. In line with changes to the rifling, they had then received the 'Magazine Lee-Enfield Cavalry Carbine Mark I', with an Enfield-rifled barrel, in 1896. Both were ten inches shorter and 2lbs lighter than the equivalent Infantry rifle, both to lighten the load of the cavalryman and make the rifle more easily controlled in the saddle. Although the rearsight was graduated to 2,000 yards, some units felt that their maximum practical range was nearer 800 yards. See Skennerton, *The Lee-Enfield*, pp. 446 and 451.
[306] Reynolds, *The Lee-Enfield Rifle*, pp. 56-57.

and adding a clip'.[307] The 'clip', a system to facilitate rapid loading, was seen as one of the key advantages of the Boer fighters, and had already been recommended in 1898 by units armed with the Lee-Metford Mk.I*, fighting on the North-West Frontier of India.[308] The tests of four patterns of shortened and lightened rifles, conducted by Ian Hamilton at Hythe that same year, appear to have been unrelated to this recommendation. The committee eventually recommended a design 'reduced in weight to 7lbs. 12½oz., and with the barrel shortened by 6¼ inches',[309] but the outbreak of war had prevented further trials. With a new Small Arms Committee convened to examine the various issues raised with both the rifle and carbine, the authorities began to consider the potential of a single rifle to fulfil the requirements of both Cavalry and Infantry, and at Earl Robert's suggestion turned to this shortened design as the basis for new trials.

The pattern rifle was finally created in January 1901, incorporating all of the desired changes, and this became the guide for the manufacture of a thousand 'Short' rifles for extended trials alongside the existing 'Long' Lee-Enfield rifle. Steps were taken to ensure that they were both shot under as similar conditions as possible, along with a stipulation that 'Volley firing will not be used'.[310] Eight tests were carried out, designed to evaluate not only the new rifle's accuracy, but also to compare the two designs under a variety of conditions, with three of the practices based on the training issued for 1902.[311] After the trial reports were submitted,[312] the rifle underwent minor alterations before being introduced into service in

[307] Quoted by Roberts during a House of Lords debate regarding the suitability of the new 'Short' rifle. See HL Deb 23 February 1905 vol. 141 cc1036.
[308] Reynolds, *The Lee-Enfield Rifle*, p. 51.
[309] HL Deb 23 February 1905 vol. 141 cc1037.
[310] HL Deb 23 February 1905 vol. 141 cc1038.
[311] HL Deb 23 February 1905 vol. 141 cc1039-40.
[312] For the trial reports, together with Robert's comments, see [Unknown], *Report of Small Arms Committee on the Short Rifle*, preserved in TNA WO 32/6339.

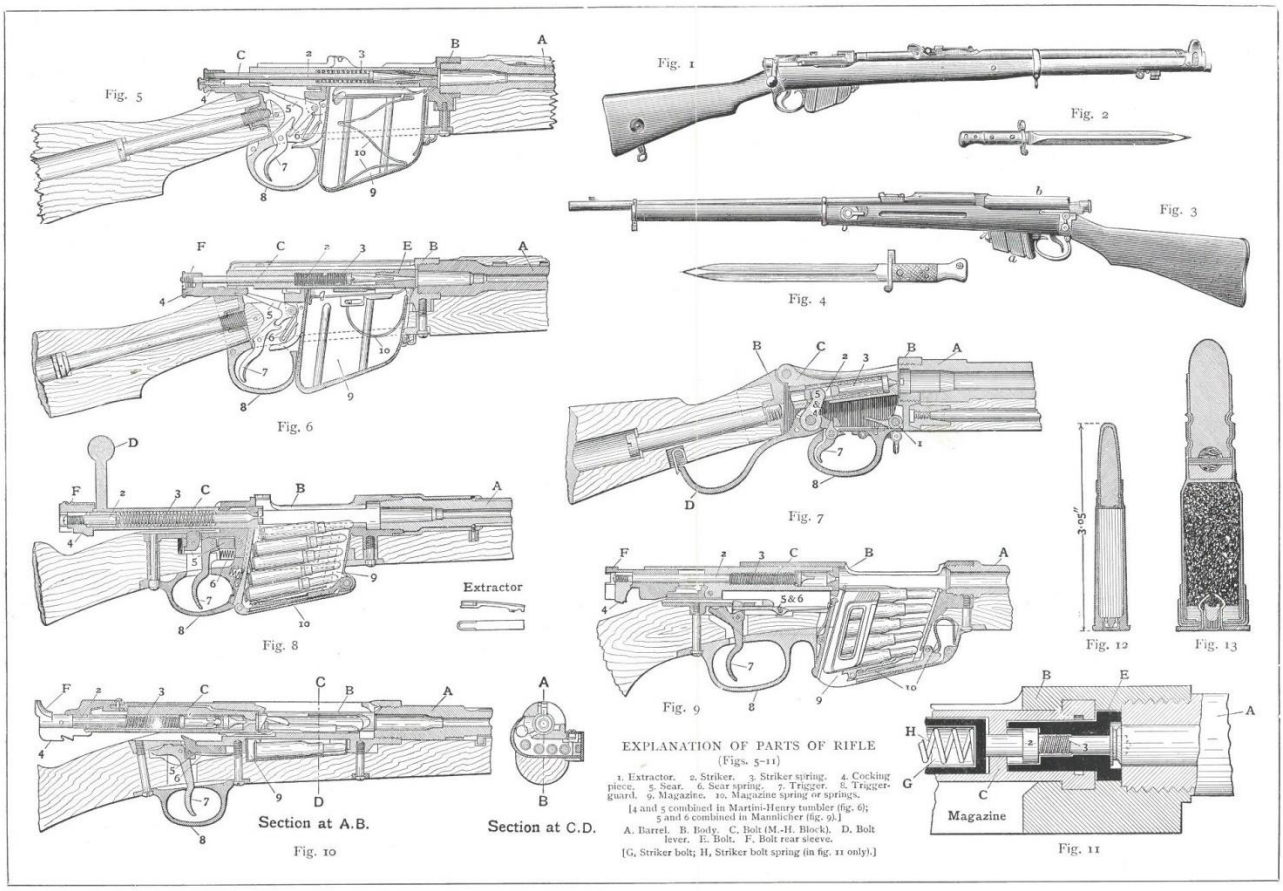

Fig. 1. Short Lee-Enfield Rifle. Fig. 2. Sword Bayonet (for short rifle). Fig. 3. Lee-Metford Rifle. Fig. 4. Sword Bayonet (for Lee-Metford Rifle). Figs. 5–11. Sections, showing various patterns of Breech-loading Mechanism: 5, Short Lee-Enfield Rifle; 6, Lee-Metford Rifle; 7, Martini-Henry Rifle; 8, Mauser Rifle; 9, Mannlicher (straight-pull) Rifle; 10, Krag-Jörgensen Rifle; 11, Automatic Rifle. Fig. 12. Section of .303 Cartridge (⅔ths scale). Fig. 13. Section of Martini Cartridge (⅔ths scale).

Figure 14: Comparison of British and European service rifles, circa 1903

December 1902.[313] It was introduced as the 'Rifle, short, magazine, Lee-Enfield (Mark I)', which gave rise to the acronym by which it is still more commonly known – the SMLE.

However, the design was unpopular with target shooters, who felt it was a retrograde step. Independent tests, conducted at Bisley in early 1905 by seven experienced firers, pitted their own 'Long' rifles (with and without windage-adjustable sights) against three SMLE rifles. Their conclusions placed the SMLE last, which they described as poorly balanced, badly sighted for snap-shooting, inaccurate, and with greater recoil than the previous design. These conclusions were reported in the *Times*, leading to questions being asked in both the

[313] List of Changes no. 11715 (dated 23 Dec 1902). See I.D. Skennerton, *List of Changes in British War Material in relation to Edged Weapons, Firearms and Associated Ammunition and Accoutrements, Volume III, 1900-1910*, (Margate, Ian D. Skennerton, 1987), pp. 53-58.

national press and Parliament as to the suitability of the design,[314] and used in support of a motion in the House of Lords to prevent the issue of the SMLE rifle to the Infantry. There were also claims made that the Committee had been too narrow in its investigations, and predisposed to the new design, fuelled by accusations of hidden agendas. During the debate, Lord Roberts quoted from a letter written by the Commandant who had overseen the original trials, where he stated that the Hythe Staff had actually started 'with a bias in favour of the long barrel'. He was also assured that the trials were conducted with 'rigid impartiality',[315] and that the conclusion in favour of the 'Short' rifle was purely evidence-led.[316] Roberts' distrust of rifle meetings also appears in his comments to the Prime Minister in private correspondence the previous year.[317] The disparity between the conditions under which the Bisley test was shot and battlefield conditions were also highlighted in a review of the *Times* article, written by Colonel R.J. Marker for the Secretary of State for War, H.O. Arnold-Forster. Marker pointed out that Bisley was no guide for war, and that the rifle was intended for use by men who were not necessarily marksmen.[318] Arnold-Forster privately distrusted the new rifle, but admitted to the Prime Minister that his opinions were not based upon expert opinion.[319]

Further tests into the accuracy, handling, and recoil of the two rifles were conducted by John Hopton, as Chief Inspector of Small Arms, in February 1905.[320] The comments state that, although the Short rifle gave a slightly lower muzzle velocity, attributable to the shorter barrel, the rifle was still felt to answer the brief as had been set down by the Director-General

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[314] There were two debates in the House of Lords specifically regarding the 'Short Rifle'. See HL Deb 14 July 1904 vol 138 cc8-18, and HL Deb 23 February 1905 vol 141 cc1019-39. During the latter debate, references were made to articles printed in *The Times*. For these, see [Anon.], 'The New Short Rifle', *The Times (London)*, 3 February 1905, p. 10; and [Anon.], 'The New Short Rifle', *The Times (London)*, 20 February 1905, pp. 6-7.
[315] Colonel R.A.L. Pennington, quoted by Earl Roberts. See HL Deb 23 February 1905 vol. 141 cc1040.
[316] HL Deb 23 February 1905 vol. 141 cc1040-41.
[317] See Lord Roberts to Balfour, 5 November 1904, Balfour MSS, BL, Add. Mss. 49725, ff. 96-103.
[318] See Col. R.J. Marker, 'The New Rifle', n.d., Arnold-Forster MSS, BL, Add. Mss. 50315, ff. 38-9.
[319] See Arnold-Forster to Balfour, 10 October 1905, Balfour MSS, BL, Add. Mss. 49723, ff. 179-182.
[320] See [Unknown], *Tests of Long rifle with Short rifle rifling*, TNA WO 32/9077.

of Ordnance. Although the motion in the House of Lords was defeated, the debate demonstrated what Ralph Hely-Hutchinson, the Under-Secretary of State for War, described as the dissent between the 'Army' and 'Sporting' schools of thought,[321] due to the different requirements of the two. The gap which had already formed between the Army and the NRA over the conduct of competitions would only increase during this period.

In terms of training itself, this period appears to have been heavily influenced by one man; Charles Monro, who joined the School as Chief Instructor in February 1901, and served as Commandant between 1903 and 1907. This was the longest that a single officer had served at the School since the 1870s, and meant that he was involved in every set of regulations issued throughout this period. The style of training that appeared in this period was given the title 'Monro Doctrine',[322] although his role in the process was later disputed by Ian Hamilton, who claimed the idea originated from Hamilton's mentor, Lord Roberts.[323] Roberts' remained a vocal supporter of musketry training throughout this period, speaking publicly at Bisley in 1901 of 'the necessity of making soldiers good shots and of developing their individual intelligence'.[324] He was also in the perfect place to transform his ideas into action, having succeeded Lord Wolseley as Commander-in-Chief of the British Army in December 1900.[325] It is thus entirely possible that at least some of the ideas came from him, but whilst he took a proactive role in the promotion and enforcement of the new training, it was left to Monro, first as Chief Instructor under Richard Pennington, and then as Commandant, to create and revise the practical training in response to both tactical demands and the abilities of the new rifle.

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[321] Richard Hely-Hutchinson, 6th Earl of Donoughmore (1875-1948), served as Under-Secretary of State for War in Arthur Balfour's government between 1903 and 1905.
[322] ['Our Military Correspondent'], 'Company Training', *The Times*, 5 May 1911, p. 6.
[323] Unpublished letter to the Editor of *The Times*, dated 12 Oct 1931. See KCL Liddell Hart, HAM 17/2.
[324] See Reynolds, *The Lee-Enfield Rifle*, p. 55.
[325] See B. Robson, 'Roberts, Frederick Sleigh, first Earl Roberts (1832–1914)'. *Oxford Dictionary of National Biography (online edition)*, 2011 [http://www.oxforddnb.com/view/article/35768, accessed 10 Dec 2015].

Monro also benefitted from a surplus of rifle ammunition, left over from the South African War, which allowed for an increase of 100 rounds per soldier in the infantry, and 150 for the cavalry.[326] The majority of this appears to have been channelled into field practices, as these figures are not reflected in the ammunition allocated to the individual practices. The allowance for Table 'A' actually rose only slightly in 1902, to 200 rounds from the 189 issued in 1898. This figure was reduced to 113 in 1903 and to just 100 rounds in 1904. It returned to 1902 levels in 1905, with 195 rounds allocated, before a minor reduction to 180 in 1909 which remained in force until 1914. The allowance for Table 'B' was actually reduced in 1902, from 119 rounds to 106, but was set at 140 in both 1903 and 1904. In 1905, it rose again to its highest figure of 295 rounds, which was then reduced to 225 in 1909. As such, although there was a reduction in the gross ammunition allowance from 1908, it appears that its impact was limited to field practices, a point made in an article on musketry training in 1912 where the writer hoped for a reversal of the reduction in ammunition by 50 rounds to ensure such practices were effectively taught.[327]

Provisional Course of Musketry for the year 1902[328]

Whilst training and experiments appear to have been conducted throughout 1901 and 1902, no surviving copies of the Hythe Annual Reports have been found.[329] The only indication of the state of training comes from an article printed in *The Times* in December 1901,[330] which refers to a new set of Regulations having nominally been in a state of preparation for some

[326] 'Annual Allowances of Small-Arm Ammunition', Precis No. 359, *Minutes of Proceedings and Precis Prepared for the Army Council for the Year 1907*, PRO WO 163/12, pp. 154-5.
[327] Capt. A.H. Bathurst, Some Notes on Musketry Training, *The Army Review*, Vol. II (1912), p. 468.
[328] War Office, *Army Orders, 1901*. (London, Harrison and Sons, 1902), Army Order 259.
[329] The Royal Armouries Library, which holds the most complete collection of these Reports, has no copies of those for 1901 and 1902. However, that for 1903 discusses courses of instruction 'following the lines defined in the Report of 1902'. See H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1903*, (London, Harrison and Sons, 1904), p. 4.
[330] ['A Military Correspondent'], 'Musketry Training, 1902' *The Times (London)*, 20 December 1901, p. 5.

time, but which had only been formally announced in Army Orders that month.[331] The article was highly critical of both the delay and the provisional nature of the course, feeling that all of the lessons to be learnt from the war had already been amply demonstrated.[332] However, the delay reflected the fact that certain developments, particularly concerning the 'Short' rifle, had still not been confirmed. This course was to serve as an interim measure, similar to the amendments made in 1891. In this case, the course was written as a comprehensive series of amendments to *MR 1898*, rather than a stand-alone set of regulations. *The Times* article went into such great detail when listing the points of innovation, that it is possible to almost completely reconstruct the new tables from it.[333] This suggests a far higher level of public interest in British musketry training than had previously been the case. The full tables demonstrate how drastic a shift towards individual marksmanship had been made, beginning with the complete removal of the sectional practices which had been considered so crucial only five years earlier. [334]

Given the nature of the tables as amendments, their basic layout and progression show strong elements of continuity from 1898. Table "A" was still arranged in four parts, and although there had been some alterations to the headings they still followed an almost identical progression, with only two changes of note within the first three sections. The first of these was the usage of the 'sitting' position for practices 5 and 8. This had previously only been used by the Cavalry, in place of the kneeling position, to prevent them sitting on their spurs. However, the South African terrain appears to have demonstrated it had a wider application, being the most practical and balanced position for firing downhill whilst wearing service equipment,[335] and from 1902 its usage was extended to the Infantry. The other change

[331] Although a new Table "B" had been announced in April, this was cancelled and replaced by a 'Provisional Course' in December. See War Office, *Army Orders, 1901*, Army Orders 102 and 259.
[332] For the full article, together with discussion of its contents, see Appendix 6.
[333] See Appendix 6.
[334] H.M.S.O., *Report on... 1896*, p. 3.
[335] This issue had previously been raised in relation to the back position, as discussed in Chapter 2.

Table 19: Provisional Course of Musketry for the year 1902. Table "A" (as per A.O. 259, 1901)

No. of Practice	Description of Practice	Class of Target	Distance in Yards	No. of rounds	Position	Instructions
PART I.						Parts I., II., and III. count for classification
1	Independent	2nd	200	7	Lying	Any kind of natural or artificial rest may be used by a recruit, if found necessary.
2	"	2nd	200	7	Kneeling	
3	"	2nd	200	7	Standing	
4	"	3rd	200	7	Lying	
5	"	3rd	200	7	Sitting	
6	"	3rd	200	7	Standing	
7	"	2nd	300	7	Lying	
8	"	2nd	300	7	Sitting	
9	"	2nd	300	7	Standing	
10	"	2nd	400	7	Lying	
11	"	2nd	400	7	Kneeling	
PART II.						
12	Independent	1st	500	7	Lying	
13	"	1st	500	7	Kneeling	
14	"	1st	600	7	Lying	
15	"	1st	700	7	"	
16	"	1st	800	7	"	
PART III.						
17	Magazine Independent	2nd	200	7	Kneeling	Time allowed, 45 secs. from command "Commence."
18	" "	2nd	200	7	Standing	"
19	" "	1st	500	7	Lying	"
20	" "	1st	500	7	Kneeling	"
PART IV.						
21	Independent	Vanishing	100	7	Lying	Target exposed 4 secs. The rifle may not be brought to the present before the target appears.
22	"	Fixed Head & Shoulders	100	7	"	The firer, crouching behind cover, momentarily exposes himself sufficiently to fire a rapid shot. 4 secs. allowed for exposure, fire, and complete return to cover, from command or signal of commander. The rifle may be rested, and the firer must expose as little as possible of his head and arm. When the spotting disc is fixed, the man will rise by command, to observe the result of his shot, and will resume concealment.
23	"	Moving Figure	100	7	Standing	For details of targets, run, &c., *see* Instructions for Use of Moving and Vanishing Targets, which may be varied to suit locality and range. Each hit counts 2 points.
24	"	Moving Figure	150	7	Lying	As for practice 23. *Note.- (Targets for practices 21 and 22 will be as described in Note 3, Provisional Table B; scoring as for practices 7 to 10 of that table.)*
The remaining 32 rounds to be expended in 3 field practices, under conditions as practical as possible, under direction of the assistant adjutant.						

Table 20: Provisional Course of Musketry for the year 1902. Table "B" (as per A.O. 259, 1901)

No. of Practice	Description of practice	Class of target	Distance in yards	No. of rounds	Instructions for conduct of practice
		PART I.- INDEPENDENT			
1	Independent	3rd	200	7	Position, kneeling
2	"	3rd	200	7	" , standing
3	"	2nd	500	7	" , lying
4	"	2nd	500	7	" , sitting
5	"	2nd	600	7	" , lying
6	"	1st	800	7	" , "
7	"	Vanishing Head & Shoulders	100	7	Any Position. Target exposed 4 seconds
8	"	Fixed Head & Shoulders	100	7	The firer, crouching behind cover, momentarily exposes himself sufficiently to fire a rapid shot without necessarily aligning the sights. 3 seconds allowed for exposure, fire, and complete return to cover from command or signal of commander
9	"	Vanishing Head & Shoulders	200	7	Position, kneeling behind cover. Target exposed 3 seconds
10	"	Fixed Head & Shoulders	200	7	Instructions as for practice 8, but 4 seconds allowed
11	"	Vanishing 2nd Class	500	7	Position, lying behind cover. Target exposed 4 seconds
12	Magazine Independent	"	600	7	Position, any. Magazine fire. Target exposed 45 seconds
		PART II.- MISCELLANEOUS PRACTICES			
13	Independent	Moving figure	About 150	7	Standing. For details of targets, run, &c., *see* Instructions for Use of Moving and Vanishing Targets, which may be varied to suit locality and range. Each hit, 2 points
14	Magazine Independent	Moving figure	About 200	8	Any position behind cover. Magazine fire, two shots at each backward and forward run. Detail as in 13. Run not less than 28 feet, pace quick time. Each hit, 2 points.
15	Magazine Independent	Vanishing figure	About 200	7	Any position behind cover. A target to appear at intervals of 5 seconds, each time at a different place, and to remain exposed 4 seconds. Horizontal space for each man's target not less than 28 feet. For detail of target, &c., *see* Instructions for Use of Moving and Vanishing Targets. Each hit, 2 points
		PART III.			
	Part III. consists of practices for which rounds are allotted to commanding officers and company commanders. These should take the form of field practices executed under tactical schemes, and off measured ranges whenever possible. Attention is directed to special instructions for moving and vanishing targets and range appliances, which will assist in framing schemes and in selection of suitable targets.				

was to allow recruits to use any form of rest in Part I if necessary. This extended the rule introduced in 1896, but avoided the need to remove a recruit from his section for remedial instruction with a different group. The terminology used in Part III had been changed from 'Rapid Independent' to 'Magazine Independent', but was effectively the same practice with a reduced time allowance of forty-five seconds.

Part IV had seen the largest number of changes, with the introduction of four further individual practices to replace the sectional practices. These introduced 'Vanishing' and 'Moving' targets into range practices for the first time since their introduction in the 1880s, together with use of cover. Each was conducted at short range and stressed rapid acquisition of the target, although in different ways. The first two would later be described as 'snap-shooting', allowing four seconds to come to the aim, fire, and return to cover. However, whilst the first used a disappearing target, which the recruit had then to react to, the latter reversed this by using a stationary target, with the firer taking an opportunistic shot. The moving targets were based upon a new design, which could be adapted to the ground available, and were to move at approximately the same speed as a walking man. Finally, the remaining 32 rounds, including the eleven previously set aside for discretionary practices, were allocated to three field practices, the design of which were left to the discretion of the assistant adjutant, who was simply directed to ensure they were 'as practical as possible'. In many ways, recruits received a more practical course than that for trained soldiers in 1898.

It was from Table "B", specifically practices 9, 10, and 14, that the practices used in evaluating the 'Short' rifle the previous year were drawn. As with recruits, the table retained the same basic layout as that from 1898, but with the addition of a third section. The removal of the sectional practices called for a greater amount of rearrangement. This meant that, although the first two sections had the same total number of practices, there were now twelve independent practices. The first six, which had previously formed the entirety of Part I, were

unchanged with one exception: the incorporation of the sitting position. The remaining six practices were a mixture of 'Vanishing' and 'Moving', at both short and medium distances. These were generally similar to those for recruits, although Practice 8 only allowed three seconds per exposure. As the instructions noted, the soldier might fire 'without necessarily aligning the sights', a suggestion that Hamilton had made in 1885, and which required the adoption of a form of reflex learning, training soldiers to fire based purely upon instinctive alignment of the rifle.

The 'Miscellaneous practices' in Part II were all very different from previous training, and again have elements that relate back to Hamilton's suggestions in the 1880s. The targets appear to be attempting to replicate:

- A soldier moving into a defensive position;
- A soldier advancing in rushes, and;
- Soldiers in a trench.

These were all conducted at short range, and with strict guidelines on the timings of the target exposures, to ensure that training was as realistic as possible. The allocation of eight rounds in practice 14 marks the first increase of ammunition used in an individual practice. However, this may have been purely due to needing an even number of rounds. Even with these new practices, a larger amount of ammunition was left unallocated at the end of Part II. Part III divided this amount between the Company Captain and the Commanding Officer, to be used at their discretion, with the captain's allowance increased to fifty-three rounds.[336] However, certain conditions were made, most notably that the Commanding Officer's allowance was to be used for practices conducted during his annual inspection, and that all practices were to be

[336] *MR 1898,* sec. 36. Forty rounds had been allotted to the Captain, and forty-one to the Commanding Officer.

designed and executed in as practical a manner as possible, using the instructions relating to the new targetry for guidance.

The bull's eye target continued to be used for the basic 'Independent' practices, but there were now a series of new designs for the more advanced practices. The most simple of these were a basic head and shoulders target, used for practices 21 and 22 in Table "A", and 7 to 10 in Table "B", and a modified Second Class target used for Practices 11 and 12 of Table "B". These were both described in the notes to Table "B" thus:

Targets for practices 7 to 12.–

The target for practices 7, 8, 9, and 10 to be a black head and shoulders painted on the bottom of a 3rd class target. Dimensions as follows: a rectangle 2 feet wide by 1 foot high, with a rectangle 1 foot square on top…

The target for practices 11 and 12 to be a 2nd class target with a central vertical black band, 2 feet 6 inches wide.

Position of hits and misses to be shown by spotting discs in practices 7 to 11 after each shot; and in practice 12 after 7 shots.

For further details as to vanishing targets, see special instructions on the subject.[337]

Although these were similar to pre-existing designs, the widespread introduction of canvas targetry meant that they could now be made to disappear behind cover. This allowed for the basic vanishing practices to be carried out using standard range equipment.

The more advanced designs, referred to in the 'Miscellaneous Practices' of both tables, has appeared as a pamphlet with Army Orders in March 1901.[338] This depicted nine designs, ranging from head and shoulders targets to a group of six soldiers moving perpendicular to the firer, together with details of their construction. The materials used were,

[337] See War Office, *Army Orders, 1901*, Army Order 259, Table "B".
[338] See War Office, *Army Orders, 1901*, Army Order 67.

for the most part, relatively simple, being thick paper mounted on canvas or wood, which allowed for more humanoid shapes than had previously been possible. The pamphlet also included notes on which design was suitable for various types of training and levels of experience. There were four 'vanishing' and five 'moving' designs; these were to move at 'quick time', the standard marching speed. In many ways, these were simply refinements of older concepts using lightweight materials, but there were also more innovative falling and collapsing targets. The first of these were mild steel plates, twelve inches square, designed to fall over when struck. The collapsing targets were the only design not to be depicted, but were simply described as being balloons 'hung from strings stretched between upright sticks'.[339] These provided a more varied selection of targetry for officers designing field practices, and appear to have been inspired by the desire to make these practices more interesting than had previously been the case.

An article printed in the *Strand Magazine* in December 1901,[340] discussing the 'new style of field firing' used to train units in preparation for South Africa,[341] described a battle simulation using these types of targets. The scenario was laid out on Ash Ranges near Aldershot, where a British force on patrol encountered and engaged Boer forces over varied terrain, including not only infantry, but a machine gun section, cavalry, artillery (complete with simulated shell fire) and an armoured train. Although undoubtedly a far more realistic test of musketry than anything previously conducted within Britain, it was quite complex in operation and required a large amount of space to stage, and no further references to this layout or similar designs have been found.

In April 1902, a royal warrant came into force which altered the terms of enlistment. Although the overall length of service remained twelve years, the time which had to be spent

[339] *Ibid*, Army Order 67.
[340] A.H. Broadwell, 'The New Musketry Practice at Aldershot', *Strand Magazine*, *22* (December 1901), 777-782. See Appendix 8.
[341] Broadwell, 'The New Musketry Practice', p. 782.

'with the colours' was reduced from seven years to three, with the remainder spent in the reserve. Those who wished to extend their service with the colours could do so provided they were 'efficient in the duties of their arm of service'. For the infantry, this included achieving the required musketry standard, albeit on a reduced musketry course to allow for the part-time nature of their service. Failure to meet this standard would result in a reduction of pay for the following twelve months.[342] Lord Roberts also issued a Special Army Order that September,[343] in which he stated his dissatisfaction with the attitude of officers to musketry training, who saw it as an 'irksome business', to be completed 'as quickly as possible', and without evaluation of the results.[344] As such, he wished to impress upon them that they were to lead by example; to master the rifle, and to carry out 'a far more complete and finished system of instruction than exists at present'. To aid this, he laid down seven points, which addressed the training of recruits and trained soldiers, in both the Regular and Auxiliary Forces. He also included a description of the revised training for 1903:

The official instructions for the musketry practices for 1903 will embody, as far as possible, the principle that skill at short ranges is of the utmost importance, and that it is useless to allow a man to shoot at the longer ranges, or in advanced practices, until he has become a reliable shot at the shorter distances.[345]

Roberts also made General Officers Commanding 'personally responsible' for ensuring that this training was carried out as effectively as possible. They were ordered to submit reports to the Adjutant-General on 1st January 1903, detailing the improvements they had made, and any suggestions that they had for further changes. This proactive approach on the part of the

[342] Maj. E.A. Edwards, *Notes of Military Interest for 1902*, (Washington, Government Printing Office, 1903), pp. 226-227.
[343] Army Order 237, issued as Special Army Order, dated 19 Sept 1902. See H.M.S.O., *Army Orders, 1902*, (London, Harrison and Sons, 1903), Army Order 237 (October). See Appendix 7 for the full text.
[344] *Ibid.*
[345] *Ibid.*

Commander-in-Chief, expanding the ideas that he had started in India almost twenty years earlier, was to have a lasting impact on musketry training for the next decade.

The Musketry Regulations (Provisional), 1903[346]

To enforce the changes outlined by Lord Roberts, the training for 1903 was printed as a full set of regulations, rather than as further amendments to *MR 1898*. However, they were still 'provisional', and further changes had been made to both the layout of the tables and the practices they contained, including the stipulation that only one practice could be fired per day.[347] Both tables now contained a squad 'Skirmishing Practice', similar to the 'Section Attack' practices of the previous decade, but designed to teach the principles of skirmishing as embodied in *Infantry Training, 1902*.[348] The 'fixed sight' distance remained set at 500 yards,[349] and there had been a reduction in the distances shot over, in line with Roberts' comments. The maximum distance of any recruit practice had been reduced to just 600 yards, and only marksmen or first-class shots were eligible to shoot the final 'Independent practice of Table "B" at 800 yards. The time and ammunition that was saved was reallocated, with both tables including a greater number of 'Miscellaneous Practices'. Alongside these changes, and again in line with Roberts' orders, it was now 'desirable for company commanders' to fire Parts I and II of Table "B" with their companies,[350] whereas previously only subalterns had been required to do so.

For recruits, the first change to Table "A" was the introduction of a system of 'Qualifying points' in the first three parts. Whilst the scores for each practice were included

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[346] H.M.S.O., *The Musketry Regulations. (Provisional). 1903*, (London, Harrison and Sons, 1903). [Hereafter cited as *MR 1903*].
[347] *MR 1903*, p. 41.
[348] H.M.S.O., *Infantry Training (Provisional), 1902*, (London, Harrison and Sons, 1902), pp. 134-146. This described Skirmishing as '…extended order, in which each individual acts and thinks for himself, and makes use of all his powers, mental and physical, to attain a common object.' It also focused on development of individual intelligence and a 'spirit of independent action'.
[349] *MR 1903*, p. 81.
[350] *MR 1903*, p. 39.

Table 21: The Musketry Regulations (Provisional), 1903. Table "A"

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Qualifying Points. Cavalry and Infantry.	Instructions for Conduct of Practice.
Parts I, II and III. – Qualification Practices						
	Part I.					
1	Independent	2nd Class	200	7	20	Lying
2	"	"	200	7	19	Kneeling
3	"	"	200	7	16	Standing
4	"	3rd Class	200	7	16	Kneeling
5	"	"	200	7	14	Standing
					85	
	Part II.					
6	Independent	2nd Class	300	7	16	Kneeling
7	"	"	300	7	16	Sitting
8	"	"	400	7	17	Lying
9	"	1st Class	500	7	18	Lying
10	"	"	600	7	15	Lying
					82	
	Part III.					
11	Magazine Independent	2nd Class	200	7	15	Standing. 50 seconds allowed from command "Commence."
12	"	"	300	7	15	Kneeling. 50 seconds allowed from command "Commence."
13	Rapid Independent	"	400	7	14	Lying behind cover. 60 seconds allowed from command "Commence"
14	"	1st Class	500	7	15	As for Practice 13.
		Total rounds		98	**59**	
Part IV.- Miscellaneous Practices						
15	Fixed Sight and Fixed Bayonet Practice	2nd Class	200	7	Any Position. (Cavalry fire without the bayonet)	
16	Snap Shooting	Vanishing Figure No. 3	100	7	Lying behind cover, which should consist of sandbag loopholes, &c. Target exposed 4 seconds. The rifle may not be brought to the present before the target appears. The target will be exposed, and the shot hole indicated by the marking disc after each shot.	
17	"	Figure No. 3	100	7	The firer, crouching behind cover, exposes himself sufficiently to fire a rapid shot. 4 seconds allowed for exposure, fire, and complete return to cover from command or signal of commander. When the marking disc is placed the man will rise to observe the result of his shot, and will resume concealment.	
18	Snap Shooting	Vanishing Figure No. 3	150	7	Instructions as for Practice 16, except that exposure will be for 3 seconds only.	
19	"	Figure No. 3	150	7	As for Practice 17.	
20	Moving Target	Figure No. 5	150	7	Lying behind cover. Hit of miss to be signalled after each run. Pace, quick time.	
21	Skirmishing Practice (by squads)	Any Figures	500 to 200	12	The practice to be conducted in accordance with the principles laid down in "Infantry Training." A target for each man. Intervals between skirmishers not less than 10 paces; between targets not less than 5 paces.	
		Total rounds		54		

Notes:

2. In practices 16, 17, 18, and 19, the figure will be affixed to a 3rd Class target in order that the position of misses may be shown with the marking disc.

3. In order to give recruits confidence they may be permitted occasionally to use any artificial rest for the rifle in practices 1 to 5, at the discretion of the officer in charge.

Table 22: The Musketry Regulations (Provisional), 1903. Table "B"

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Instructions for Conduct of Practice.
Part I. – Classification Practices, Counting for Figure of Merit.					
1	Independent	3rd Class	200	7	Standing.
2	Rapid Independent	"	200	7	Kneeling behind cover. 45 seconds allowed from command "Commence."
3	Independent	"	300	7	Sitting.
4	Magazine Independent	"	300	7	Lying behind cover. 35 seconds allowed from command "Commence."
5	Independent	2nd Class	400	7	Kneeling.
6	"	"	500	7	Lying.
7	Magazine Independent	"	500	7	Lying behind cover. 35 seconds allowed from command "Commence."
8	Independent	"	600	7	Lying.
9	Rapid Independent	"	600	7	Kneeling behind cover. 45 seconds allowed from command "Commence."
10	Snap Shooting	Vanishing Figure No. 3	150	7	Any position. Target exposed for 3 seconds. The rifle many not be brought to the present before the target appears. The target will be exposed and the shot hole indicated by the marking disc after each shot.
11	"	Figure No. 3	150	7	The firer, crouching behind cover, exposes himself sufficiently to fire a rapid shot. 3 seconds allowed for exposure, fire, and complete return to cover from command or signal of commander. When the marking disc is placed the man will rise to observe the result of his shot, and will resume concealment.
12	Snap Shooting	Vanishing Figure No. 3	200	7	Lying behind cover, which should consist of sandbag loopholes, &c. Target exposed 3 seconds. The rifle may not be brought to the present before the target appears. The target will be exposed, and the shot hole indicated by the marking disc after each shot.
13	"	Figure No. 3	200	7	Instructions as for Practice 11.
			Total rounds	91	
Part II. – Miscellaneous Practices.					
14	Moving Target	Figure No. 5	150	7	Standing. Hit or miss to be signalled after each run. Pace, quick time.
15	Moving Target. Magazine Fire	Figure No. 5	200	8	Any position behind cover. Two shots at each backward and forward run. Run not less than 28 feet. Pace, quick time.
16	Snap Shooting. Magazine Fire	Any Figure	200	7	Any position behind cover. A target to appear at intervals, each time at a different place in a trench or gallery, and to remain exposed for 4 seconds.
17	Skirmishing Practice (by squads)	Any Figure	About 650 to 200	10	The practice to be carried out in accordance with the principles laid down in "Infantry Training." A target for each man. Intervals between skirmishers not less than ten paces; between targets, not less than five paces.
18	Fixed sight and fixed bayonet practice	3rd Class	200	7	Any position. (Cavalry fire without the bayonet.)
19	Independent (for marksmen and 1st class shots only	1st Class	800	10	Lying.
			Total rounds	49	
Part III. – Field Practices.					

Notes:

2. In practices 10, 11, 12, and 13, the figure will be affixed to a 3rd Class target, in order that the position of misses may be shown with the marking disc.

primarily as a guide, a recruit had to achieve the overall score for each part before being allowed to progress. Those that did not were to repeat the practices which they had failed to qualify in.[351] Six 'Independent' practices had been removed, comprising:

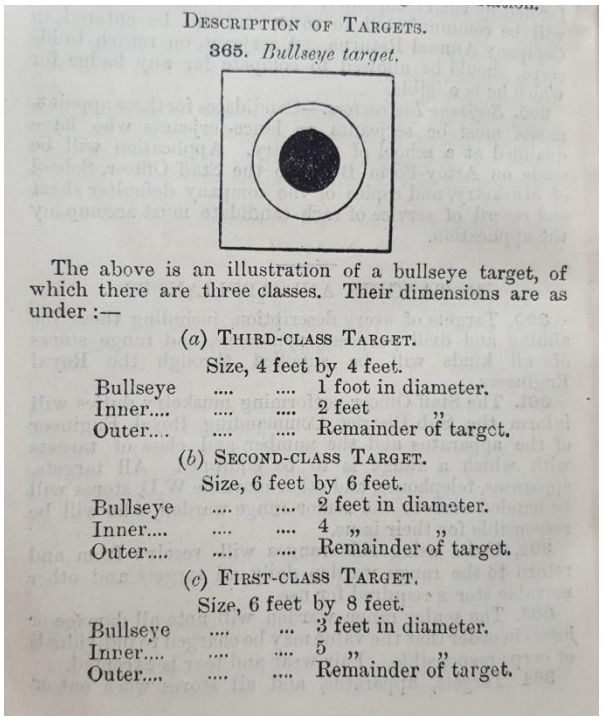
- Three long distance practices;
- Two of the prone practices at short range;
- And the secondary practice at 400 yards.

The ten that remained seem to have the same basic intention as the Individual practices in *MR 1898* – to ensure that recruits had a firm grounding in all of the major positions across the primary military distances. This is perhaps best demonstrated by the two practices at 300 yards, where the kneeling and sitting positions had separate practices, whereas they had previously been listed as alternative positions in the same practice. Having completed these first two sections, recruits moved to the final part of the classification, which now comprised two 'magazine' and two 'rapid' practices. The latter was a reversion to loading from the bandolier at longer distances, in keeping with the practice of retaining the magazine as a reserve of fire for when decisive range had been reached, and which necessitated the greater time allowance. The time allowed for the 'magazine' practices had also been increased by five seconds, which may have been done to ensure that accuracy was not sacrificed for speed, as the intention was to teach a balance between the two.

Part IV still contained seven practices in preparation for field exercises, but details were now provided for all of them, including two practices previously abandoned in 1898 – the 'fixed sight and fixed bayonet' practice, and skirmishing (discussed above). The other five practices were mostly 'snap-shooting' practices, at both static and vanishing targets, which reinforced the reflex training that had been introduced in 1902. Practices 16 and 18, using vanishing targets, specifically incorporated loopholes and sandbags within the cover the

[351] *MR 1903*, p. 32.

Figures 15– 24: Targetry, as described in MR 1903



DESCRIPTION OF TARGETS.

365. *Bullseye target.*

The above is an illustration of a bullseye target, of which there are three classes. Their dimensions are as under :—

(*a*) THIRD-CLASS TARGET.

Size, 4 feet by 4 feet.

Bullseye	....	1 foot in diameter.
Inner....	....	2 feet ,,
Outer....	....	Remainder of target.

(*b*) SECOND-CLASS TARGET.

Size, 6 feet by 6 feet.

Bullseye	....	2 feet in diameter.
Inner....	....	4 ,, ,,
Outer....	....	Remainder of target.

(*c*) FIRST-CLASS TARGET.

Size, 6 feet by 8 feet.

Bullseye	....	3 feet in diameter.
Inner....	....	5 ,, ,,
Outer....	....	Remainder of target.

Figure 15: Bull's eye targets

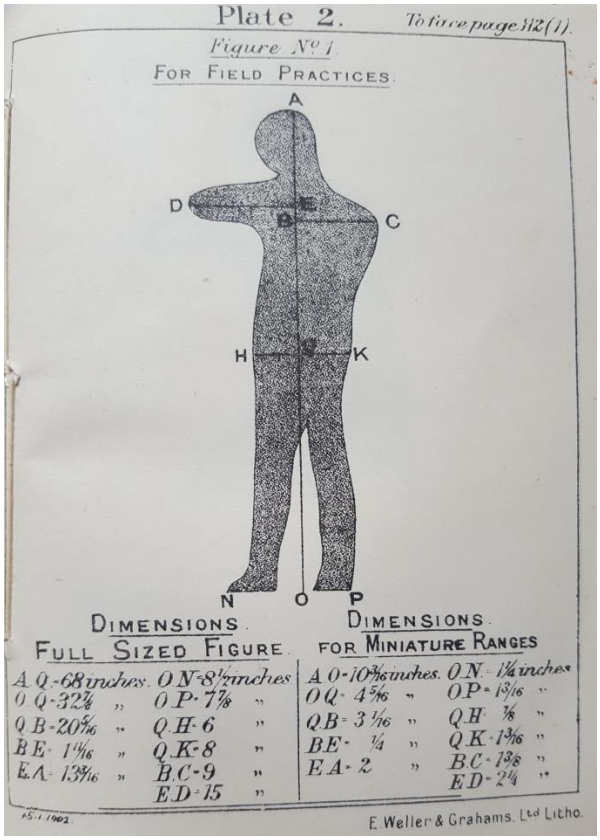


Figure 16: No. 1 Figure Target

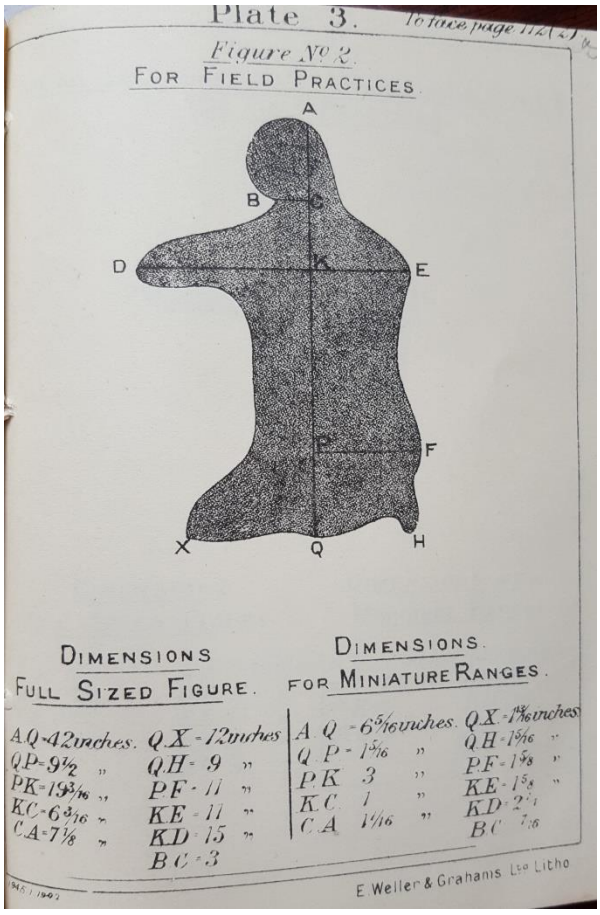


Figure 17: No. 2 Figure Target

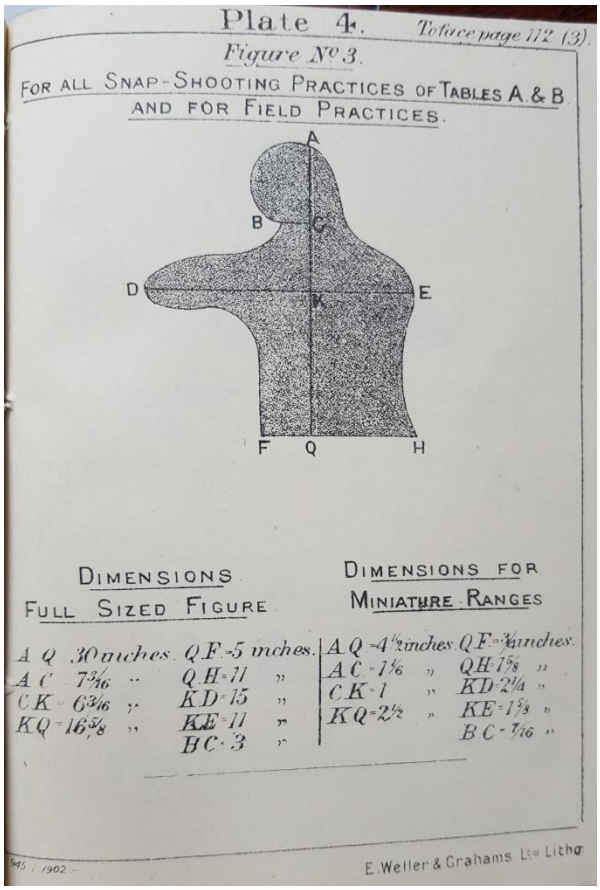


Figure 18: No. 3 Figure Target

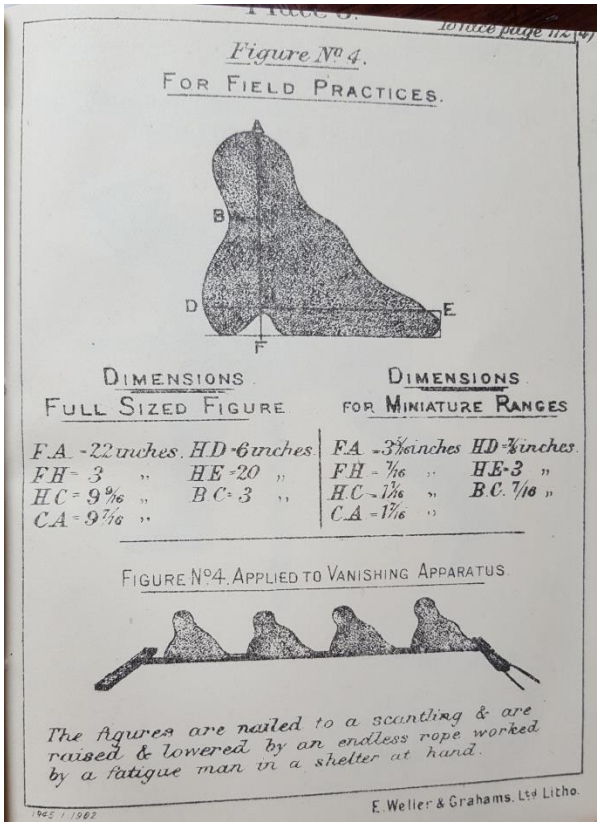


Figure No 4.
FOR FIELD PRACTICES.
B
D
E
F
DIMENSIONS
FULL SIZED FIGURE
F.A. -22 inches. H.D-6 inches.
F.H- 3 " H.E-20 "
H.C- 9 9/16 " B.C-3 "
C.A- 9 7/16 "
DIMENSIONS
FOR MINIATURE RANGES
F.A. -3 5/16 inches H.D-7/16 inches.
F.H - 7/16 " H.E-3 "
H.C- 1 7/16 " B.C. 7/16 "
C.A -1 7/16 "
FIGURE No 4. APPLIED TO VANISHING APPARATUS.
The figures are nailed to a scantling & are raised & lowered by an endless rope worked by a fatigue man in a shelter at hand.
E. Weller & Grahams. Ltd Litho.
1945-1-1082

Figure 19: No. 4 Figure Target

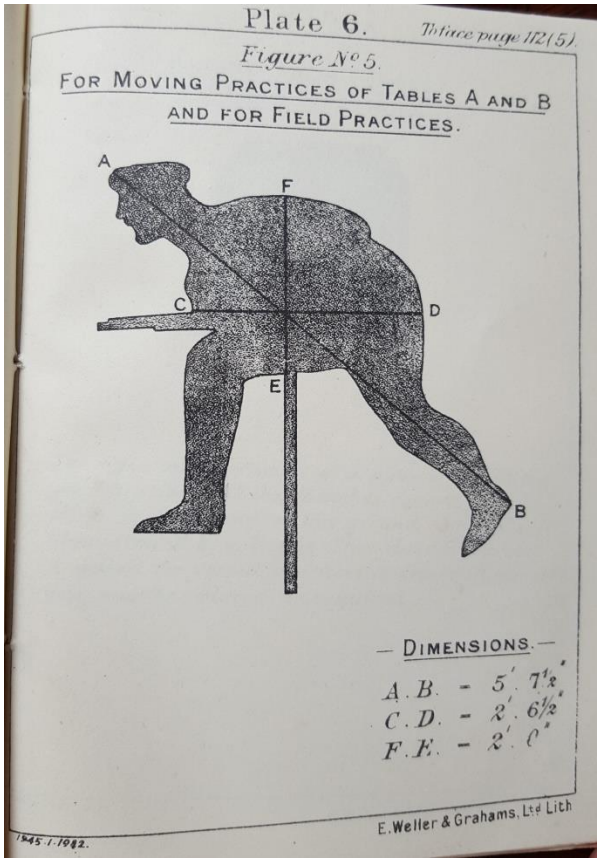


Plate 6.
To face page 112(5).
Figure No 5.
FOR MOVING PRACTICES OF TABLES A AND B
AND FOR FIELD PRACTICES.
A
F
C
D
E
B
— DIMENSIONS. —
A.B. - 5'. 7 1/2"
C.D. - 2'. 6 1/2"
F.E. - 2'. 0"
E. Weller & Grahams, Ltd Lith
1945-1-1082.

Figure 20: No. 5 Figure Target

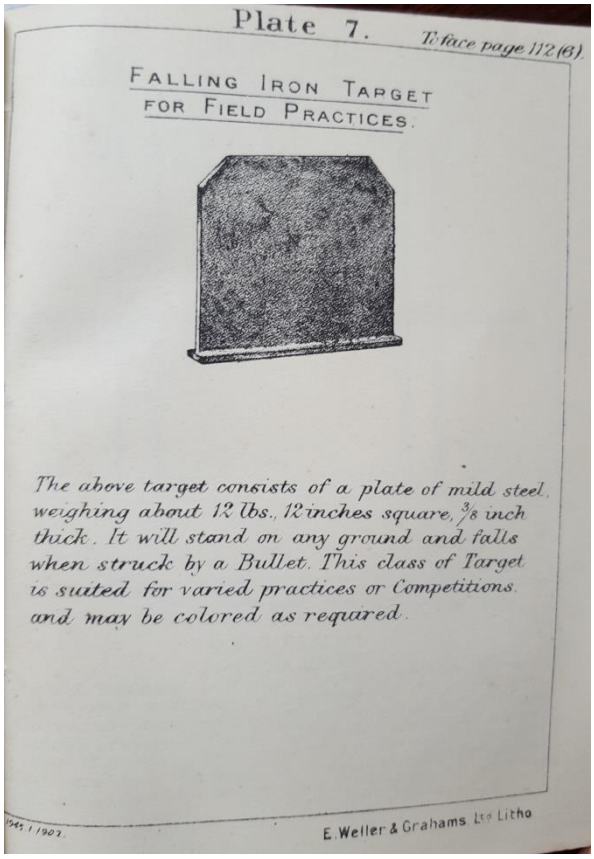


Plate 7. To face page 112 (6).

FALLING IRON TARGET FOR FIELD PRACTICES.

The above target consists of a plate of mild steel, weighing about 12 lbs., 12 inches square, 3/8 inch thick. It will stand on any ground and falls when struck by a Bullet. This class of Target is suited for varied practices or Competitions, and may be colored as required.

E. Weller & Grahams. Ltd Litho

Figure 21: Falling Plate Target

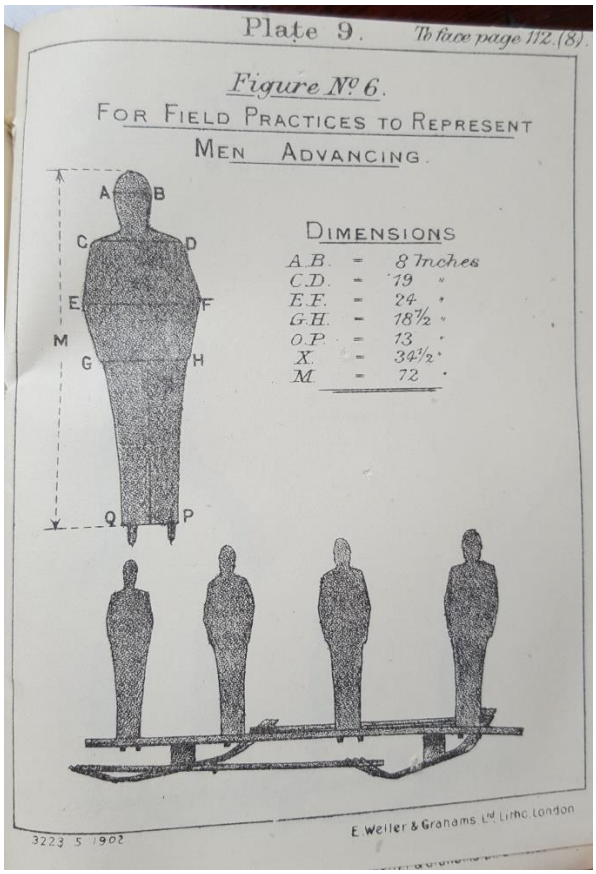


Plate 9. To face page 112 (8).

Figure No. 6.

FOR FIELD PRACTICES TO REPRESENT MEN ADVANCING.

A B C D E F G H M Q P

DIMENSIONS

A.B.	=	8 Inches
C.D.	=	19 "
E.F.	=	24 "
G.H.	=	18½ "
O.P.	=	13 "
X.	=	34½ "
M.	=	72 "

3223 5 1902

E. Weller & Grahams Ltd Litho London

Figure 22: No. 6 Figure Target

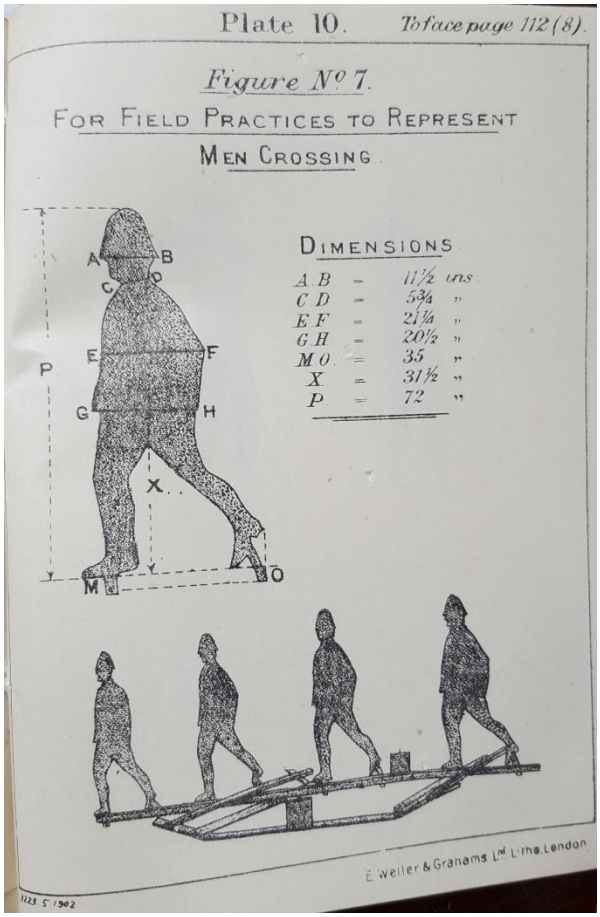


Figure 23: No. 7 Figure Target

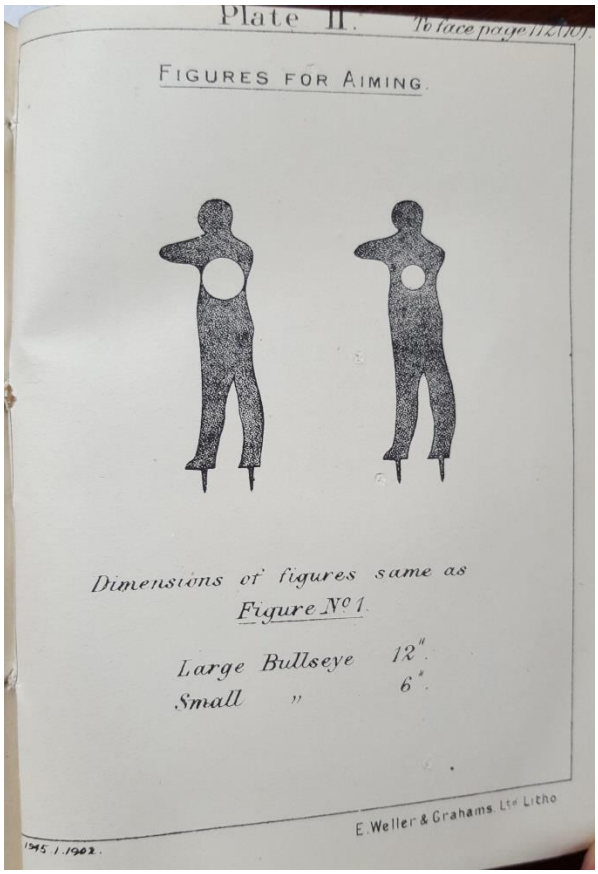


Figure 24: Aiming Figures

firer used, replicating a defensive position, with the target representing an attacking force. Practices 17 and 19, using fixed targets, reversed these roles, with the soldier now on the offensive. The exposure time, particularly in practice 18, seems short, especially as the rifle was not to be in the shoulder until the target appeared, but prepared recruits for Table "B". The final individual practice, against a moving target, was a repeat of practice 24 from 1902, and completed their preparatory training in close-quarter shooting. Table "B" had also been restructured. The classification practices in Part I were rearranged, returning to the layout used in *MR 1896* by pairing 'independent' practices with either 'rapid' or 'magazine' practices. With the removal of the long-distance practices, this allowed training to focus more closely on close-range training, including 400 yards, a distance that had not been used for individual firing since before 1884. There were now five 'Independent' practices, one at every distance, with a 'Rapid' practice at 200 and 600 yards, and a 'Magazine' practice at 300 and 500 yards. All four were conducted from behind cover; 'Rapid' being fired kneeling, to allow for loading from the pouch or bandolier, and 'Magazine' fired prone. The four 'Snap Shooting' practices, whilst generally conducted along the same lines as those in Table "A", used three seconds per exposure, with the first two practices moved to 150 yards. The targets had also been redesigned, and now depicted a figure from the waist up, rather than simply the head and shoulders.

Part II had also been expanded, and now had a total of six practices, the first three of which remained broadly unchanged from 1902. The exception was the target for the first two, depicting a soldier running in a more realistic crouched position, replacing that of a soldier standing upright, cut off at the thighs. The three new practices were similar to those added to Table "A", with minor differences: the 'fixed sight and fixed bayonet' practice was fired at the smaller Third Class target; and the skirmishing line started from 650 yards with ten rounds, instead of at 500 with twelve rounds. The marksman's practice at 800 yards was fired

from the prone position at the largest of the bull's-eye targets, the First Class. This also received ten rounds, rather than the normal seven, but appears to have been included purely as a basic marksmanship practice at long distance, rather than any particular tactical principle.

The details of the Field Practices in Part III were again left to the discretion of the officers, who were directed that the skills learnt on the range were now to be applied 'in a practical manner at unknown ranges.'[352] Only one practice was to be undertaken per day, and every practice was to incorporate eight principles:

a) Decentralisation of Command

b) Casualties amongst Leaders

c) Invisibility

d) Passing of Orders

e) Mutual Action and Support

f) Power of Fire

g) Reorganisation

h) Entrenchments[353]

To allow these to be practised properly, the overall ammunition allowance had been increased to 300 rounds, with 106 rounds allocated for Part III,[354] and an instruction that 'Ammunition must be freely used, and risks accepted.'[355] Eight types of silhouette targets were designed for use in field practices; variations of those that had been published in 1901, and arguably even more realistic in their appearance. Point *C*, 'Invisibility', was described as

[352] *MR 1903*, p. 47.
[353] *MR 1903*, pp. 47-48.
[354] In addition to the 140 rounds allotted to Parts I and II, fifty had been provided for miniature cartridge practices, and four rounds noted as 'surplus', to be used as needed.
[355] *MR 1903*, p. 50.

having ‘acquired an importance second only to fire effect’.[356] This appears to have expanded upon the use of cover in the classification practices, which was only now possible due to the use of khaki uniforms. There was also a strong emphasis on both officers and men being encouraged to use their initiative in these practices. In part, this evolved from experiences in both South Africa and on the North-West Frontier, where a greater spacing between soldiers was found necessary to reduce their vulnerability to artillery and small-arms fire. This also meant that orders were harder to communicate, and it became more difficult to generate the weight of fire necessary for the final assault. As such, a push towards giving troops more flexibility in how they achieved a defined objective, using their own initiative, was seen as a solution to this problem. The new training also focussed on building on the reflex training of the classification practices in the selection of targets. This included several references to building the intelligence of soldiers generally, as well as more specific examples of independent action on the battlefield.[357] Overall, a soldier was now not only better equipped to act individually within defined parameters, but also understood how to use the terrain to his advantage, both defensively and offensively.

The loss of the long-distance practices may initially appear to be a retrograde step, particularly when, according to some reports, engagements in South Africa had sometimes commenced at longer ranges than 600 yards, which was considered ‘decisive’. However, this allowed for more intense training at the remaining distances, and reflected tactical practice, where individual firing would not normally be used at greater distances than 600 yards. With that exception, these tables were perhaps the most comprehensive which had yet been drawn up, responding to the lessons of South Africa within the limitations of the ‘Long’ Lee-Enfield. This was the last set of regulations to differentiate between ‘Rapid’ and ‘Magazine’ practices, as the introduction of the charger-loaded SMLE, together with the retrospective

[356] *MR 1903*, p. 47.
[357] *MR 1903*, pp. 17 & 30.

fitment of charger-guides onto 'Long' rifles, meant loading would no longer be done using individual rounds. It was this basic but fundamental change that would dictate the next changes in musketry training.

Amendment to Musketry Regulations, 1904[358]

In early 1904, the first of the new SMLE rifles were issued to 'a number of cavalry regiments'.[359] As these were only to be loaded using chargers, not using individual rounds, training had to be amended to account for this, as well as other alterations to training. As in 1902, this was accomplished through Army Orders, this time as an amendment of the 1903 regulations.[360] For the first time, the training of the Cavalry was identical in every aspect to that of the Infantry, regardless of whether the course was fired with the 'Long' or 'Short' rifle. Alongside this, a new classification course was introduced for those troops issued with the SMLE, with those still using the 'Long' rifle continuing to use the 1903 tables. Every practice was allocated ammunition in multiples of five, the number of rounds held by an individual charger, and with a note that 'all loading will be through the magazine'.[361] The change to five rounds per practice also had an added benefit, as it meant that the ammunition saved could be transferred to further practices, expanding the breadth of the tables whilst only requiring a modest increase in the overall ammunition allowance.

In Table "A", this allowed nine extra practices to be added, eight of which went towards the overall qualification score. Recruits now fired sixteen 'Independent' practices, the first six of which were all fired from 200 yards. This allowed for the lying, kneeling, and sitting positions to be practised twice, using the smaller Third Class targets on the second occasion. Provided the Recruit achieved a passing score, they then undertook the remaining

[358] H.M.S.O., *Army Orders, 1904*, (London, Harrison and Sons, 1905), Army Order 62.
[359] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1904*, (London, Harrison and Sons, 1905), p. 34.
[360] H.M.S.O., *Army Orders, 1904*, Army Order 62, pp. 26-35.
[361] H.M.S.O., *Army Orders, 1904*, Army Order 62, p. 31.

Table 23: The Musketry Regulations (Provisional), 1903. Table "A" (as per Army Order 62, 1904)

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Qualifying Points. Cavalry and Infantry.	Instructions for Conduct of Practice.
Parts I, II and III. – Qualification Practices						
	Part I.					
1	Independent	2nd Class	200	5	14	Lying.
2	"	"	200	5	13	Sitting.
3	"	"	200	5	13	Kneeling.
4	"	3rd Class	200	5	12	Lying.
5	"	"	200	5	10	Sitting.
6	"	"	200	5	10	Kneeling.
					72	
	Part II.					
7	Independent	2nd Class	300	5	12	Lying.
8	"	"	300	5	12	Lying behind cover.
9	"	"	300	5	11	Kneeling.
10	"	"	400	5	12	Lying.
11	"	"	400	5	10	Kneeling.
12	"	"	400	5	12	Kneeling behind cover.
13	"	1st Class	500	5	13	Lying.
14	"	"	500	5	13	Lying behind cover.
15	"	"	600	5	10	Lying.
16	"	"	600	5	10	Lying behind cover.
					15	
	Part III.					
17	Rapid Independent	2nd Class	200	5	11	Lying. 35 seconds allowed from command "Commence."
18	"	"	200	5	10	Kneeling. 35 seconds allowed from command "Commence."
19	"	"	300	5	10	Lying. 35 seconds allowed from command "Commence"
20	"	"	300	5	9	Kneeling. 35 seconds allowed from command "Commence."
21	"	"	400	5	9	Lying. 35 seconds allowed from command "Commence"
22	"	1st Class	500	5	11	Lying. 35 seconds allowed from command "Commence"
		Total rounds		110	**60**	
Part IV.- Miscellaneous Practices						
23	Snap Shooting	Vanishing, Figure No. 3	100	5		Lying behind cover, which should consist of a sandbag loophole &c. Target exposed 4 seconds. The rifle may not be brought to the "present" before the target appears. The target will be exposed, and the shot hole indicated by the marking disc after each shot.
24	"	"	150	5		
25	"	Figure No. 3	100	5		The firer, crouching behind cover, exposes himself sufficiently to fire a rapid shot. 4 seconds allowed for exposure, fire, and complete return to cover from command or signal of commander. When the marking disc is placed the man will rise to observe the result of his shot, and will resume concealment.
26	"	"	150	5		
27	"	Vanishing, Figure No. 3	200	5		Instructions as for Practice 23.
28	"	Figure No. 3	200	5		As for Practice 25.
29	Moving Target	Figure No. 5	100	5		Lying behind cover. Hit or miss to be signalled after each run. Pace, quick time.
30	"	"	150	5		
		Total rounds		40		

Table 24: The Musketry Regulations (Provisional), 1903. Table "B" (as per Army Order 62, 1904)

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Instructions for Conduct of Practice.
Part I. – Classification Practices, Counting for Figure of Merit.					
1	Independent	3rd Class	200	5	Lying.
2	"	"	200	5	Lying behind cover.
3	Rapid, Independent	"	200	5	Lying. 30 seconds allowed from command "Commence."
4	Independent	"	300	5	Sitting.
5	Rapid, Independent	"	300	5	Sitting. 25 seconds allowed from command "Commence."
6	"	2nd Class	300	5	Lying behind cover. 25 seconds allowed from command "Commence."
7	Independent	"	400	5	Kneeling.
8	"	"	400	5	Kneeling behind cover.
9	Rapid, Independent	"	400	5	Kneeling behind cover. 25 seconds allowed from command "Commence."
10	Independent	"	500	5	Lying.
11	"	"	500	5	Lying behind cover.
12	Rapid, Independent	"	500	5	Lying behind cover. 25 seconds allowed from command "Commence."
13	Independent	"	600	5	Lying.
14	"	"	600	5	Lying behind cover.
15	Rapid, Independent	"	600	5	Lying behind cover. 30 seconds allowed from command "Commence."
16	Snap Shooting	Vanishing, Figure No. 3	150	5	Any position. Target exposed 3 seconds. The rifle may not be brought to the "present" before the target appears. The target will be exposed and the shot hole indicated by the marking disc after each shot.
17	"	Figure No. 3	150	5	The firer, crouching behind cover, exposes himself sufficiently to fire a rapid shot. 3 seconds allowed for exposure, fire, and complete return to cover from command or signal of commander. When the marking disc is placed the man will rise to observe the result of his shot, and will resume concealment.
18	"	Vanishing, Figure No. 3	200	5	Lying behind cover, which should consist of a sandbag loophole &c. Target exposed 3 seconds. The rifle may not be brought to the "present" before the target appears. The target will be exposed, and the shot hole indicated by the marking disc after each shot.
19	"	Figure No. 3	200	5	Instructions as for Practice 17.
			Total rounds	95	
Part II. – Miscellaneous Practices.					
20	Moving Target	Figure No. 5	150	5	Standing. Hit or miss to be signalled after each run. Pace, quick time.
21	"	"	200	10	Any position behind cover. Two shots at each backward and forward run. Run not less than 28 feet. Pace, quick time. Hit or miss to be signalled after each run.
22	Snap Shooting	Any Figure	200	10	Any position behind cover. A target to appear at intervals, each time at a different place in a trench or gallery, and to remain exposed for 4 seconds.
23	Skirmishing Practice (by squads)	Any Figures	About 650-200	10	The practice to be carried out in accordance with the principles laid down in "Infantry Training." A target for each man. Intervals between skirmishers not less than 10 paces; between targets, not less than 5 paces.
24	Independent (for marksmen and 1st class shots only)	1st Class	800	10	Lying.
			Total rounds	45	
Part III. – Field Practices.					

ten practices, starting with three at both 300 and 400 yards, with one practice at each distance fired from behind cover. This was also the case for the two practices at both 500 and 600 yards, and the qualification section closed with six 'Rapid Independent' practices. The time allowed for these had been reduced proportionally, in line with the reduction in ammunition allocated, but still gave an average of seven seconds per round. Part IV now had eight 'Miscellaneous' practices, but these were not all the same as those in the 1903 table. Two extra 'Snap Shooting' practices replaced the "Fixed Sight" and "Skirmishing" practices, despite their having only been introduced the previous year, allowing pairs of practices at 100, 150, and 200 yards. These were conducted under the same conditions as previously, replicating both offensive and defensive scenarios, each allowing four seconds per exposure. There was also an additional 'Moving Target' practice, allowing training to take place at both 100 and 150 yards, but without any alterations to how they were conducted. Despite these additions, the reduction of two rounds per practice meant that overall the course used two rounds less than the previous year.

Table "B" had undergone similar changes, and been expanded from nineteen to twenty-four practices, but with no change in the overall allocation of ammunition. The classification section now began with fifteen practices; three at every distance between 200 and 600 yards. Again, the previous training was expanded, although without a consistent pattern other than the inclusion of a basic practice at every distance. The remaining two then incorporated either usage of cover and/or rapid fire. Unlike 1903, there was normally only one position used per distance, with the exception of 300 yards. There, the first practice was fired sitting, then followed by two rapid practices; one sitting, and the other lying behind cover, with the latter fired at the smaller Second Class Target. Part I concluded with four 'Snap Shooting' practices, which remained unchanged from 1903. With the exception of the 'Fixed Sight' practice, which had been removed, the five 'Miscellaneous Practices' of Part II

remained unchanged other than the number of rounds used. Apart from practice 20, all used the full magazine capacity of ten rounds, the first individual practices to do so since the larger magazine was introduced in 1892. Of these, practices 21 to 23 appear to have been conducted with the magazines fully charged from the beginning, rather than reloading. Again, the table closed with the 800 yard 'Independent' practice, fired under the same conditions as before. The details of the 'Field Practices' in Part III remained at the discretion of commanding officers, rather than being prescribed within the table itself, and appear to have had the same ammunition allowance as before.

To assist instructors during preliminary training, particularly for recruits, new instructional equipment, particularly aiming and firing rests, was introduced to better demonstrate the correct aim picture and standing position. Alongside these, a separate work on Musketry Exercises had been published,[362] which included the first usage of photography in the training manuals. Up to 1902,[363] the firing positions had been depicted through line drawings. These had the benefit of being both very clear and relatively inexpensive to print, particularly when considering mass reproduction. The disadvantage was that the positions themselves were very much in the form of drill movements, depicting both the 'Ready' and 'Present' stances for the various positions, as well as some variations within those. The introduction of charger-loading, along with the new focus on the usage of cover, required some adaptation. There was also a desire to replace the old practice of 'drilling by numbers',[364] which was a remnant of the old form of rote training. Photography may have been used in an attempt to meet both these criteria,[365] as the resulting thirteen plates show a

[362] H.M.S.O., *Musketry Exercises. (Provisional). 1904*, (London, Harrison and Sons, 1904). [Hereafter cited as *ME 1904*].
[363] H.M.S.O., *Infantry Training (Provisional), 1902*, (London, Harrison and Sons, 1902), plates V-XV.
[364] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1905*, (London, Harrison and Sons, 1906), p. 31.
[365] *ME 1904*, plates I-XIII.

Sergeant-Instructor of the School of Musketry,[366] demonstrating the correct loading and firing positions, both in the open and from behind cover. For the latter, a second image was included of the view from the front, showing how concealed the soldier should be if correctly instructed. The purposes of these new images seems to have been an evolution from their original purpose – demonstrating the 'right' position, which had its roots in the Seventeenth Century – but to better demonstrate the intent of the new practices.[367]

The Commandant's Report for this year reveals four interesting points.[368] Although there is no reference to the amendments for the SMLE, he does note that the musketry regulations had 'been remodelled', apparently part of a backlog of revisions which the School had finally been able to address.[369] The new system of marking, introduced in 1903 to prevent 'the irregularities which occurred in previous years', had been successful. This allowed him to suggest that the majority of reports could now be taken as being an accurate reflection of unit efficiency,[370] although his assessment of those returns suggests that the scores were far from satisfactory. This was blamed on units completing the practices between February and April, as instructed in *Infantry Training*,[371] but which had been affected by particularly poor weather and hurried due to a lack of range accommodation. This also meant that recruit training could not be carried out to the fullest extent. As might be expected with a relatively new system, there were problems in converting both the equipment and the instructors to the new methods, particularly in the correct application of new principles, with a comment that the competitive spirit meant that realism was occasionally sacrificed in

[366] It is almost certain that the instructor in question was Jesse Wallingford.
[367] Perhaps the most famous training manual of the seventeenth century, Jacob de Gheyn II's *Wapnehandelinghe van Roers, Musquetten ende Spiessen* (Amsterdam, Robert de Baudous, 1607), contained 117 engravings of various types of soldier in the numbered drill positions. This was translated into English the following year as *The Exercise of Armes for Galivres, Muskettes, and Pikes* (Amsterdam, Robert de Baudous, 1608).
[368] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1904*, (London, Harrison and Sons, 1905).
[369] *Ibid*, p. 9.
[370] *Ibid*, p. 6.
[371] H.M.S.O., *Infantry Training (Provisional)*, p. 30.

favour of a higher figure of merit.[372] However, in general there was felt to have been a marked rise in the interest in musketry by all ranks,[373] with a Senior Officers course being run at Hythe for the first time since 1895.[374] As before, the course was designed to demonstrate the changes in training through both lectures and practical demonstrations, and involved discussion of the rifles of other armies, the effect of rapid and deliberate fire, as well as a full day devoted to the powers of the Maxim gun, both as a long range weapon and in comparison to twenty-five riflemen. Framing the relative value of a machine gun in terms of an equivalent number of riflemen was part of the contemporary debate, and would have an indirect effect on the future development of training, when it was decided that a method of supplementing the fire effect of the infantry was required.

The Musketry Regulations, 1905[375]

The duplication of tables was only a temporary measure whilst the SMLE rifles were issued, with a formal set of regulations published the following year. For the first time since the South African War, these were no longer 'provisional'. The new manual was also more compact than previous editions, as it focussed entirely on range training. The sections relating to fire theory and basic fire positions, which had been printed in *ME 1904*, were incorporated into a separate text which served as the appendix to several training manuals.[376] Whilst the tables were based on those issued in 1904, they had undergone further revision to fulfil their stated intention, of 'giving progressive instruction in accuracy and quickness of shooting at various targets'.[377] Each table had six additional instructional practices, as well as a short series of familiarisation practices before the qualification/classification section proper was undertaken. The inclusion of the latter may have been in response to comments received from

[372] H.M.S.O., *Report...for the year 1904*, p. 6.
[373] *Ibid*, p. 30.
[374] *Ibid*, p. 5.
[375] H.M.S.O., *The Musketry Regulations. 1905*, (London, Harrison and Sons, 1905). [Hereafter *MR 1905*].
[376] H.M.S.O., *Appendix to Training Manuals*, (London, Harrison and Sons, 1905). [Hereafter *ATM 1905*].
[377] *MR 1905*, p. 31, para. 77.

Commanding Officers in 1904, to the affect that it was unfair for soldiers to go straight into the classification practices.[378] Practices involving static targets were now classed as either 'Slow', 'Timed Slow', or 'Rapid'. The reasoning behind this was laid out at the beginning of the section on Field Practices.

In Tables A and B, the soldier is trained to acquire a high standard of skill in shooting at known ranges in the open and from cover.

He first fires deliberately at bullseye targets, practices designed to enable him as a recruit to carry out what he has been taught on the barrack square; or as a trained soldier to revive his previous skill. He thus learns the peculiarities of his rifle, and what allowance in adjusting the backsight to make for light and wind and all other conditions affecting shooting.

Deliberate practice at a bullseye target, however, tends to inculcate a slow method of shooting. The soldier is accustomed, before pressing the trigger, to wait for a lull in the wind, or a favourable light, to rest when he is unsteady, &c.

To overcome these tendencies he is also trained to fire first under a time limit, then rapidly at a figure; to shoot from cover; and finally in snap shooting.[379]

In this context, 'Timed Slow' provided an intermediate stage between the two other types of practice. The incorporation of a time limit, whilst not immediately challenging, would have assisted in building the soldier's reflexes and muscle memory in rapidly adjusting his aim and firing, preparing him for the later, faster practices. To further assist recruits, and in recognition of the level of fitness required to maintain 'prolonged bursts of firing' without

[378] H.M.S.O., *Report...for the year 1904*, p. 31.
[379] *MR 1905*, p. 44, para. 110.

fatigue, gymnastic training had also been introduced, running concurrently with the musketry training of recruits.[380]

Table "A" now commenced with three 'Elementary Instructional Practices', which were not dissimilar to previous preliminary sections, and focussed on acclimatising recruits to live firing as well as to the different firing positions. If felt desirable, these practices could be conducted in a Miniature Cartridge Range, which would serve to practice marksmanship principles without the recoil factor. These were also normally indoors, which may have been felt to benefit morale, rather than subjecting those firing for the first time to poor weather on an open range. As no more than fifteen rounds were to be fired on any one day, this formed their first full day of firing, preparing them for the 'Qualification Practices' proper. These had undergone some alterations, the largest of which was that recruits were now only assessed on Parts I and II. These were all 'Slow' practices, the first three of which had been moved to 100 yards, allowing the same Third Class bull's-eye target to be used for all six practices. These were the most basic practices, designed simply to test three positions at each distance. Part II was also generally similar to the previous year, but with only one basic prone practice at each of the four distances, allowing two more practices to be fired from behind various forms of cover. Far greater detail was included regarding the construction of these, which were either representations of a wall or entrenched defences. There was also a note as to whether the recruit should fire over or round the cover, or even through a loophole, as was apparently the case at 500 yards.

Having attained the necessary score, recruits then proceeded to Parts III and IV, which were something of an intermediate step towards Table "B". Part III had been expanded to ten practices, and retained the clear aiming mark of the bull's eye target, but introduced time constraints similar to those applied to trained soldiers. The five 'Timed Slow' practices

[380] H.M.S.O., *Report...for the year 1905*, p. 50.

Table 25: The Musketry Regulations, 1905, Table "A"

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Qualifying Points. Cavalry and Infantry.	Instructions for Conduct of Practice.
Elementary Instructional Practices						
…	Slow	3rd Class bullseye	100	5	…	Standing
…	”	”	100	5	…	Kneeling
…	”	”	200	5	…	Lying
		Total Rounds		15		
Parts I and II. – Qualification Practices.						
	Part I.					
1	Slow	3rd Class bullseye	100	5	13	Lying.
2	”	”	100	5	12	Sitting.
3	”	”	100	5	12	Kneeling.
4	”	”	200	5	12	Lying.
5	”	”	200	5	11	Sitting.
6	”	”	200	5	10	Kneeling.
					70	
	Part II.					
7	Slow	2nd Class bullseye	300	5	13	Lying.
8	”	”	300	5	13	Lying behind cover, consisting of two sandbags or a heap of stones round which the recruit will fire.
9	”	”	300	5	12	Kneeling behind cover, consisting of a screen, or pit of such height or depth as to represent a wall, over which the recruit will fire.
10	”	”	400	5	12	Lying.
11	”	”	400	5	12	Lying behind cover, as in 8.
12	”	”	400	5	12	Kneeling behind cover, as in 9.
13	”	1st Class bullseye	500	5	14	Lying.
14	”	”	500	5	14	Lying behind cover, which should consist of a sand bag loophole, &c.
15	”	”	600	5	9	Lying.
16	”	”	600	5	9	Lying behind cover, as in 8.
		Total Rounds		80	**120**	
Part III.						
17	Timed slow	3rd Class bullseye	100	5	Standing	20 seconds allowed for each shot
18	”	”	200	5	Kneeling	
19	”	2nd Class bullseye	300	5	Lying	
20	”	1st Class bullseye	500	5	Lying	
21	”	”	500	5	Lying behind cover	
22	Rapid	3rd Class bullseye	200	5	Lying. 40 seconds allowed	
23	”	”	200	5	Kneeling. 40 second allowed	
24	”	2nd Class bullseye	300	5	Lying behind cover, as in 8. 40 seconds allowed.	
25	”	”	300	5	Kneeling behind cover, as in 9. 40 seconds allowed.	
26	”	1st Class bullseye	500	5	Lying behind cover, as in 14. 45 seconds allowed.	
		Total Rounds		50		
Part IV.						
27	Slow	3rd Class figure	200	5	Lying in the open.	
28	”	”	200	5	Lying behind cover, as in 14.	
29	”	”	200	5	Kneeling behind cover, as in 9.	
30	”	”	300	5	Lying in the open.	
31	”	”	300	5	Lying behind cover, as in 14.	
32	”	”	300	5	Kneeling behind cover, as in 9.	
33	Snap Shooting	Vanishing 3rd Class figure	100	5	} Lying behind cover, which should consist of a	
34	”	”	150	5	} sandbag loophole, &c. Target exposed 6 seconds.	
35	”	3rd Class figure	100	5	} Kneeling behind cover, as in 9, target exposed for	
36	”	”	150	5	} 6 seconds.	
		Total Rounds		50		

Table 26: The Musketry Regulations, 1905, Table "B"

Number of Practice.	Description of Practice.	Class of Target.	Distance in Yards.	Number of Rounds.	Instructions for Conduct of Practice.
Part I. – Preliminary Practices					
1	Slow	3rd Class bullseye	200	10	Lying in the open.
2	"	"	200	5	Kneeling behind cover, consisting of a screen or pit of such height or depth as to represent a wall, over which the soldier will fire.
3	"	"	300	10	Lying in the open.
4	"	"	300	5	Lying behind cover, consisting of two sandbags or a heap of stones. &c., round which the soldier will fire.
5	"	2nd Class bullseye	500	10	As in No. 4.
			Total Rounds	40	
Part II. – Classification Practices					
6	Timed slow	3rd Class figure	200	5	Lying in the open. 20 seconds allowed for each shot
7	"	"	200	5	Kneeling in the open. 20 seconds allowed for each shot
8	Rapid	"	200	5	Kneeling behind cover, as in 2. 30 seconds allowed
9	Timed slow	"	300	5	Sitting or kneeling in the open. 20 seconds allowed for each shot
10	"	"	300	5	Kneeling behind cover as in 2. 20 seconds allowed for each shot.
11	Rapid	"	300	5	Kneeling behind cover as in 2. 30 seconds allowed
12	Timed slow	2nd Class figure	500	5	Lying in the open. 20 seconds allowed for each shot
13	"	"	500	5	Lying behind cover, as in 4. 20 seconds allowed for each shot
14	Rapid	"	500	5	Lying behind cover, as in 4. 30 seconds allowed
15	Timed slow	"	600	5	Lying in the open. 20 seconds allowed for each shot.
16	"	"	600	5	Lying behind cover, as in 4. 20 seconds allowed for each shot.
17	Rapid	"	600	5	Lying behind cover, as in 4. 35 seconds allowed
18	Snap Shooting	Vanishing 3rd Class figure	200	5	Lying behind cover, which should consist of a sandbag loophole, &c. Target exposed 4 seconds
19	"	"	200	5	Kneeling behind cover, as in 2. Target exposed 4 seconds
20	"	"	200	5	Standing in the open. Target exposed for 4 seconds
21	Moving Target	Figure 5	150	5	Standing. Length of run, 30 feet. Pace, quick time.
22	"	"	200	5	Kneeling behind cover, as in 19. Two shots at each backward or forward run, except the first. Length of run, not less than 30 feet. Pace, quick time.
23	Snap Shooting	Vanishing Figure No. 3	200	5	Standing in the open. The target will appear at different places in the trench or gallery, and be exposed for 4 seconds.
24	Snap Shooting, fixed bayonet	"	200	5	Lying behind cover, as in 18. The target will be exposed for 4 seconds
			Total Rounds	95	
Part III. – Marksmen's Practices *(for cavalry and infantry only).*					
25	Slow	1st Class bullseye	700	5	Lying in the open
26	"	"	700	5	Lying behind cover, as in 4
27	"	"	900	5	Lying in the open
28	"	"	900	5	Lying behind cover, as in 4
29	"	"	1,000	10	Lying in the open
30	"	"	1,000	5	Lying behind cover, as in 4
			Total Rounds	35	
Part IV.- Individual Field Practices Total rounds…50					
Part V. – Collective Field Practices Total rounds…75					

were fired from the three positions required in Table "B", including standing, with the final practice fired from behind cover. These were followed by five 'Rapid' practices, three of which were fired from behind the same cover as described in Part II, but with between ten to fifteen seconds more allowed than in the comparable practices in Table "B". The last section, Part IV, bridged the final gap between the two tables by introducing recruits to figure targets and snap shooting. The first six practices bear some similarities to the preliminary practices in Table "B", using both the lying and kneeling positions from behind cover.

The final four 'Snap Shooting' practices were fired at the same Third Class Figure target, which replaced concentric scoring rings with horizontal scoring bands, the lower of which was coloured brown to represent a figure appearing from a trench. Hits on the figure received the highest score, followed by hits on either side, then those below and finally those above. This was a continuation of the principle that troops should be taught to aim low, as the strikes might ricochet or spray up earth that would disturb the opponents aim. However, this layout was altered by a note below the table, which stated that, 'For practices 33 to 36 the target will be prepared as described in para. 212'.[381] The alteration involved the addition of a vertical rectangle, the width of the figure, which extended from its base to the lower edge of the frame. In marking terms, this reduced the scoring area to the width of a standing man, with only strikes to the figure or within this vertical rectangle being counted. In addition to this, there is a suggestion that the target was to be used in different ways. Although the instructions all seem to describe a target that was raised and lowered, two were distinguished as using a 'Vanishing 3rd Class figure'. Whilst the differentiation had previously been made in practices where the firer knelt behind cover, appearing for four seconds and firing at a static target, this does not appear the case here, and no explanation of the difference is made in the related text.

[381] *MR 1905,* p. 29, note 2.

Table "B" had undergone similar changes, with Part I now given over to five "Preliminary Practices". These used bull's eye targets to allow the soldier to check the sighting of his rifle, as per the instruction quoted above, with one practice at each distance allocated ten rounds rather than five. They also incorporated usage of cover, and firing from two positions, in preparation for Part II. The Classification practices themselves included two notable milestones. For the first time since 1890 they were entirely shot against figure targets and, perhaps more importantly, both snap and moving targets now formed part of the marksmanship assessment. This had been made possible by replacing the three practices at 400 yards with two moving target practices and an additional snap shooting practice, the latter to be fired with the bayonet fitted. The introduction of 'Timed Slow' meant that every classification practice now included some form of time restriction, creating a table that was the same length as the previous year, but was the most varied yet issued. There had also been further minor alterations: practices 18 to 20 used the same modified target as practices 33 to 36 of Table "A"; and the final two practices actually used a smaller outline target. This was affixed to a pole, rather than being mounted on a canvas square, which could then appear at different points along the face of the butts,[382] introducing another element of unpredictability. The sitting position appeared as an option in one practice only, and there was only one rapid practice at each distance. These were allowed an additional five seconds per practice, despite the fact that the training appendix included the note that:

"Rapid" fire, at the rate of about 15 rounds per minute, is the highest rate consistent with reasonable accuracy.[383]

[382] The butts are a bank of sand, placed behind the targets to catch the bullet safely, usually with a shelter in front to protect the markers who operate the targets. The absence of butts from field firing ranges, whilst one of the features which gave those practices realism, was also the reason why such large areas of land were required to conduct them safely, and why such spaces were rare within Britain and at smaller stations in the Empire.
[383] *ATM 1905*, p. 92, sec. 43.2.

This allowance may have been influenced by a perception that this was an area where training needed to be improved, as suggested in the Commandant's Report for 1905, where he noted that the average soldier was perhaps only capable of ten rounds per minute, but that training would improve this.[384]

The expansion of Part II removed the need for the majority of the 'Miscellaneous Practices', allowing the single long-range practice to be expanded to six, now reserved solely for those that classified as 'marksmen'. These were conducted without a time limit, and used the First Class bull's eye target, with one practice to check sights and a second fired from behind cover. As such, they lacked most of the more advanced elements which had been introduced over the previous three years, with the barest of practical elements. However, they allowed the very best shots the chance to practice at exceptional distances, perhaps with the intention that they could be used to harass forces prior to the main engagement. The table concluded with the individual and collective practices, each being given a separate section with its own ammunition allocation, which was a higher figure than had previously been allowed. As the preamble to the field practice section emphasised, these were intended both to teach elements which could not be demonstrated on a target range, and to practice officers in their duties as fire commanders.[385] The instructions for field practices also emphasised the principles that were to be taught, through a series of progressive exercises rather than all being incorporated into a single exercise. To aid in this, suggested practices were described, although these were intended to be exemplars rather than to be followed rigidly.[386]

MR 1905 marked the final iteration in an intensive four-year cycle of adoption and revision, which had arguably produced greater change than the previous decade. This had also been achieved in the face of similar complications: adapting to a new rifle; a new method

[384] H.M.S.O., *Report…for the year 1905*, p. 50.
[385] *MR 1905*, p. 44, para. 110.
[386] *MR 1905*, p. 52, para. 127.

of loading; and changing tactical ideas. That the result was considered satisfactory can be seen in the fact that it was this table which was to remain in use until 1909.

Summary - Monro Doctrine

Together, these four sets of tables chart the development of 'Monro Doctrine', as described by *The Times* in 1911.[387] This appears to be the first occasion where musketry training was considered the coherent product of a single individual, rather than the responsibility of the School at Hythe as a whole. Yet whilst *The Times* used this term to describe the framework within which training operated, the article actually named three officers who had had a hand in its creation:

Some years ago, Major-General C.C. Monro, C.B., was Commandant at the Hythe School of Musketry, and Lieut-Colonel [sic] N.R. McMahon, D.S.O., of the Royal Fusiliers, his chief instructor. The ability and enthusiasm of these officers, supplemented by the energy of Brigadier-General G. Egerton, C.B., who followed Major-General Monro as Commandant, promise to leave profound traces upon the fire action of the Infantry.[388]

To this list should also be added Richard Pennington, Monro's predecessor, who was almost certainly responsible for writing the 1902 Amendments, if not the 1903 Regulations as well.[389] Together these four men were responsible for the creation of all musketry training between 1900 and 1909, effectively dictating the overall direction of training up to World War One, and arguably into the 1920s. An idea of what they hoped to achieve can be glimpsed in a statement made by Monro in the Commandant's Report for 1904:

[387] ['Our Military Correspondent'], Company Training. *The Times*, 5 May 1911, p. 6.
[388] ['Our Military Correspondent'], Company Training. *The Times*, 5 May 1911, p. 6.
[389] Gen. Sir G. Barrow, *The Life of General Sir Charles Carmichael Monro, Bt. G.C.B., G.C.S.I., G.C.M.G.*, (London, Hutchinson & Co., 1931), p. 32.

...success in war hinges on the fire of masses of men intelligently directed, in the attainment of which individual accuracy is only an elementary stage.[390]

Superficially, this was not entirely different from the direction training had begun to take in the late 1890s. However, the elementary approach towards individual accuracy which was taken in 1898 relied too heavily on marksmanship being a low-maintenance skill, and the flaws of this approach were made evident in South Africa. From 1902, training was approached differently, with a far longer and more progressive syllabus for individuals providing the foundations for further training. However, this training was very much a means to an end, as Monro noted in 1905:

A high standard of skill in shooting on the part of the men is necessarily of the first importance, and too much attention cannot be devoted to its realisation; but it can only be accepted as a very necessary preliminary to the process of modern musketry training.[391]

As had been the case since the 1880s, it was the field practices where troops would be made 'thoroughly efficient according to modern requirements'.[392] At the heart of these practices was the principle that fire and movement were inseparable: fire facilitated the advance, and the advance facilitated a stronger firing position. Alongside that, there are two other words which begin to be used more frequently in the training literature; 'intelligence', and 'progressive'. Training was very clearly no longer about the mechanical response of men to commands, but giving soldiers the tools with which to operate in a more independent manner. That is not to say that there was no element of overall fire control, but that the individual was given a level of independence that allowed him to best decide how to achieve the nominal objective.

[390] H.M.S.O., *Report....for the year 1904*, p. 7.
[391] H.M.S.O., *Report…for the year 1905*, p. 48.
[392] *Ibid*., p. 48.

Given how closely the resulting training is tied to these men, it is worth looking at their backgrounds to better understand their perspective on training. Both Monro and Pennington had passed the Instructor's Course at Hythe in 1881, receiving the 'First Class Extra' certificate. Pennington was seconded to the Staff of the Indian Army as a musketry officer between 1890 and 1897,[393] and almost certainly experienced many of the innovations introduced by Hamilton and Roberts in the previous decade. When he succeeded John Hopton as Chief Instructor in October 1900, it is unclear whether he also took up the role of Acting Commandant, but he was formally raised to that post the following February, with Monro as his second-in-command. Whilst Pennington had long experience of musketry training, he lacked recent combat experience, having last fought in the Hazara Campaign (1888).[394] Monro was the opposite; he does not appear to have served as a musketry instructor other than during his period as an adjutant, but he had fought in both the Tirah and South African campaigns. He even went so far as to state that he felt unqualified for the role of Chief Instructor,[395] but he and Pennington appear to have been well-matched. With Lord Roberts becoming Commander-in-Chief in January 1901, these three men would hold their respective posts until Monro succeeded Pennington in March 1903, during which time the first two 'provisional' sets of regulations were issued and those for 1904 were almost certainly underway. Pennington later commented that Monro was heavily involved in the whole process, personally reviewing every page of the new musketry regulations. As such, Hamilton may have underestimated Monro's role in the process, if not where the original idea had come from.

In terms of the influence of Lord Roberts, he retired as Commander-in-Chief when the post was abolished in February 1904. Given the breadth of experience shared between

[393] Gazette 18 Apr 1890, p. 2275; Gazette 29 Mar 1898, 26952, p. 2023.
[394] H.M.S.O., *Quarterly Army List for the Quarter Ending 31st December, 1919. Part II. Volume Three*. (London, H.M.S.O., 1919), p. 1300.
[395] Barrow, *The Life of General…Monro*, p. 31.

Pennington and Monro, he may not have needed to involve himself directly in details, simply dictating the general direction. His role in the development of the SMLE, and his statement to the Army about the need to improve musketry training, carried far more authority than the Commandant of Hythe alone could exert. It does appear to have made an impact, as subsequent reports do suggest that there was a growing interest in the correct application of training. After Roberts' retirement, he remained a keen supporter of improving musketry training, and continued to speak on the necessity of training the civilian population in basic marksmanship, as well as serving as President of the Society of Miniature Rifle Clubs. He also privately petitioned the Prime Minister of the day, A.J. Balfour, to provide more rifle ranges and encouragement for men to practice, in the hope that this would generate a wider interest in marksmanship.[396]

After Pennington's departure in 1903, Monro was aided by W.D. Bird as Chief Instructor, eventually producing the 1905 Regulations. The evolution of their approach to training is perhaps best demonstrated in that a practice incorporating fire and movement was both reintroduced and removed over the course of these four years. This meant that the focus of the training by 1905 was on perfection of the usage of cover and the various types of fire, in preparation for the field practices where elements like movement over ground could be practised in a more realistic manner. The exercises described in 1911 demonstrate a remarkable flexibility in comparison to those from the 1890s, adapting formations and advances to the terrain. There was also a much greater stress on fire support between sections, with rapid fire used by neighbouring sections to suppress the enemy and cover their comrades' advance. *The Times* article described this as;

[396] Lord Roberts to A.J. Balfour, 5 Nov 1904, Balfour MSS., BL, Add. MSS 49725, ff. 96-103.

...the application of common sense to the infantry attack and the complete recognition of new conditions imposed by the character of modern arms.[397]

However, as it also admits, it had taken the practical demonstration of Monro, now in command of 13th Brigade, to gain the interest of fellow officers. Monro had also written a paper for the *Army Review* on the topic of 'Fire and Movement' in 1911, so as to explain '…the normal procedure which should be adopted in action in order that rifle fire may be applied in the most effective manner to meet tactical requirements…'[398] A footnote, signed by the General Staff, comments that much of what Monro set out was included in *Infantry Training, 1911*, and that although he varied from official doctrine at some points, the article was '…worthy of the attention of all arms of the service'.[399]

Monro and his contemporaries, responding to the experiences of South Africa, had sought to develop training that better combined fire, movement, and cover, and in this they appear to have been largely successful. In 1905, W.D. Bird was succeeded by N.R. McMahon. His qualifications for the role are unclear as, like Monro, he had not served as a musketry instructor since the mid-1890s. However, again like Monro, he proved highly suited to the task. Events between 1905 and 1908, particularly the Russo-Japanese War, were heavily analysed by European armies, either to validate their training, or to anticipate how warfare might develop. McMahon outlined some of these aspects in a lecture, entitled *Fire Fighting*, delivered to the Aldershot Military Society in December, 1907.[400] His personal assessment of the direction training and arms were taking led him to become a key exponent of both machine guns and rapid rifle fire. Monro had previously noted in his 1905 Report that whilst soldiers could probably not achieve greater than ten rounds per minute at that time,

[397] *The Times* (1911), *op cit*.
[398] Maj-Gen. C.C. Monro, 'Fire and Movement', *The Army Review*, Vol. 1 (1911), p. 91.
[399] Monro, *op cit*.
[400] For a reprint of the text of this lecture, together with commentary on its wider relevance, see Nicholas A. Harlow, 'Beyond the Machine Gun: Re-interpreting McMahon's 'Fire Fighting' lecture of 1907', in *The Journal of the Historical Breechloading Smallarms Association*. 4 (8), 2016, pp. 30-45.

'with practice there should be no difficulty in training them up to the standard rate of 15 rounds per minute'. [401] It was up to McMahon, together with Monro's successor, Granville Egerton, to build on the training as set out in *MR 1905*. They did so by focussing on that 'standard rate', creating the rapid fire training which has become the best-known aspect of the most enduring set of regulations of this period: *Musketry Regulations, 1909*.

[401] H.M.S.O., *Report...for the year 1905*, p. 50.

Chapter 4: 1909-1914 – Creating the Human Machine Gun[402]

The Army's approach to training between 1909 and 1914 had begun to receive criticism before the war had even ended. Some of the most vocal critics were those who had formed the first cadre of machine gun instructors, most of whom had been musketry instructors during that period, and part of what one historian described as a '…small group of fire-power theorists'.[403] Yet in terms of musketry training, this period is arguably the most stable of any covered by this thesis, as the manual issued in 1909 remained, in an amended form, the basis for training until 1924. This gives a strong suggestion that, at least in terms of musketry training, there was a lot that the British Army felt it got right.

Perhaps this confidence should not be surprising; after four years of annually amended tables, the following four years had been spent assessing the impact of that training. No new musketry manuals were published, but minor adjustments were made where they were felt to be necessary, including lessons learnt from the experiences of other armies. There were reciprocal exchanges between European armies, with British officers observing German and French exercises, and officers from those nations visiting the School of Musketry. Officers were also sent as observers to conflicts in which the British Army were not involved. During the Russo-Japanese War (1904-5), Ian Hamilton and other British officers were present as observers on both sides, alongside those of other European armies.[404] Their reports were thoroughly examined for lessons to back one of the competing tactical schools, particularly regarding the relative importance of the rifle against that of the bayonet in deciding the outcome of the battle, and the relative effectiveness and correct deployment of machine guns. The variation in opinion as to what lessons could be drawn from that war, as

[402] Pridham, *Superiority of Fire*, p. 56.
[403] Tim Travers, *The Killing Ground: The British Army, the Western Front & the Emergence of Modern War, 1900-1918*, (London, Allen & Unwin, 1987), p. 66.
[404] For the official commentary, see War Office, *The Russo-Japanese War*, (London, War Office, 1908). Ian Hamilton also published his own thoughts and observations on both the war and its combatants. See Sir I. Hamilton, *A Staff Officer's Scrap-Book*, (London, Edward Arnold, 1912).

well as the approaches of different nations to fire tactics, was demonstrated in Norman McMahon's presentation to the Aldershot Military Society in December 1907 under the title *Fire Fighting*.[405] This was not only a comprehensive assessment by the Chief Instructor at Hythe of the state of fire training and tactics across Europe at that point, but also speculated on likely future developments. Perhaps most tellingly, it demonstrates how varied the opinions were across Europe, and even within the British Army, as to whether the experiences of the Russo-Japanese War were more demonstrative of the trends in modern warfare than those gained in South Africa. McMahon was to play a role in developing some of these ideas alongside Monro's successor, Granville Egerton, who between them produced *Musketry Regulations, Part I, 1909*. Both left the School around the time of its introduction, bringing to an end the continuity that had existed since 1900, created by the overlapping cycle of Commandant and Chief Instructor.[406] However, their work was to become a cornerstone of future development.

At the same time, questions were again raised over the serviceability of the SMLE, with the Small Arms Committee directed to investigate the matter of a possible replacement in 1910. The requirements laid down to guide the process featured elements drawn from the Mauser rifle that the Army had faced in South Africa:

Front locking bolt action, a rimless cartridge, aperture sights, one-piece stock, and heavier barrel.[407]

[405] McMahon (1908), *op cit*.
[406] See Appendix 5.
[407] Skennerton, *The Lee-Enfield Rifle*, p. 159. The first four characteristics were all items the SMLE did not have, and with the exception of the aperture sights were all features of the Mauser rifle which had been faced in South Africa and which many armies around the world used either directly or indirectly. The heavier barrel reduced barrel vibration and potentially made for a more accurate rifle, although like the rest of the changes this was of greatest benefit on the National Rifle Association's ranges at Bisley, rather than to the soldier on the battlefield.

Alongside this, certain elements from the SMLE were retained, most notably the relative position of the bolt-handle and trigger, together with the bolt only cocking on the final forward motion. This design was eventually developed into the Pattern 1913 rifle, chambered in a specially designed .276 cartridge, and the Annual Reports from Hythe record instructors being sent to Enfield to undergo courses on the new rifle.[408] However, significant problems were uncovered during the trials, and the outbreak of war meant that the rifle was never completed as originally intended. Instead, it was redesigned to accept the .303 cartridge and entered service as the Pattern 1914 rifle. To avoid complicating the supply chain, most of these were issued to those troops not serving in combat areas, although some were issued as sniper rifles, and fitted with either a fine-adjustment rearsight or telescopic-sight.

After 1909, two amended sets of regulations were published, in 1912 and 1914 respectively. These were both essentially the same text, but updated through the incorporation of the relevant interim amendments. That the majority of changes made were relatively small in scale demonstrates how little change the authorities felt was necessary to fine-tune the training system. The final edition, *MR 1909 (14)*, was published in January 1914, eight months before it received its first practical test, outside the town of Mons. There the B.E.F. fought its first battle of the First World War, facing a much larger German force, in an engagement which has become a defining moment in British military history.

Musketry Regulations, Part I, 1909

Whereas the manuals issued between 1902 and 1905 were clearly the development of an idea, and drawing from the pre-South African War manuals, that issued in 1909 marked another step forward. Whilst training was still designed to be progressive, the method of achieving this had evolved. The most immediately noticeable change was the layout; in 1905 the

[408] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the School of Musketry, Hythe, and on Musketry Training during the musketry year ended 31st December 1913*, (London, Harrison and Sons, 1914), p. 12.

'Classification' practices formed the largest part of the table, as had been the case previously. In 1909 the majority of practices were designated 'Instructional', with a much shorter series of Classification practices at the end of the table. The reasoning behind this was not, as it might first appear, to allow soldiers to re-familiarise themselves with their rifles prior to qualifying. Instead, it had to do with the system of incentives and awards.

In 1906 the Annual Report from Hythe included comments to the effect that the scores of some units seemed suspicious, and that 'the introduction of Proficiency Pay has added further complications…[which] cannot fail to influence instructors for obvious reasons'.[409] The solution was to 'divorce competition from instruction',[410] by not allowing the results of the instructional practices to be published, preventing 'suspicious marking' by ensuring that both instructor and students had no knowledge of how anyone had fared. The practical tests would then be conducted 'with all precautions to ensure accurate results'.[411] Originally, commanding officers were to have a free hand in designing the instructional practices, using a set amount of ammunition, and this provisional Table B was to be 'tried and reported on by the 11th Infantry Brigade at Colchester and the 13th Infantry Brigade at Dublin', during 1908.[412] The need for this was reinforced in the Report for that same year, where it was noted that:

[409] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1906*, (London, Harrison and Sons, 1907), p. 47.
[410] *Ibid.*
[411] *Ibid.*
[412] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1907*, (London, Harrison and Sons, 1908), p. 52.

Squadron and company officers admittedly find it often impossible or impolitic to insist on a too strict observance of the conditions attached to timed firing, owing to the spirit of sympathetic toleration forced upon them by the prospect of unearned proficiency pay.[413]

This was to be solved by the introduction of independent supervision for the classification practices, by men drawn from other units, to prevent any interference or sympathy influencing the scores. Thus, it appears that this was the guiding motivation behind the changes made to the classification tables in *MR 1909*.

Within the tables themselves, whilst the insistence on progressive training and emphasis on practical examples had remained, the balance of training had been shifted slightly. The term 'Timed Slow' had been discontinued, as the time limit of twenty seconds was now mandatory on every 'Slow' practice.[414] There were now also 'Grouping' and 'Application' practices. The former was just that; the soldier was to fire five rounds, without alteration of the sights or point of aim. These were described as his 'group', and their relative dispersion or proximity (normally measured as the diameter of a circle which encompasses all five shots) was then used to assess his basic shooting ability: 'The value of such a group is determined by the relative closeness of the shot marks'.[415] These practices were only fired at 100 yards, to ensure that the effect of external factors was minimised,[416] allowing any issues with either the rifle or the firer to be assessed and addressed. Once the recruit had achieved the desired standard, they could then undertake the 'Application' practices, where it was permitted to make adjustments so as to hit a definite mark.[417] In both tables, practices of both types can be found side-by-side, as referenced in the regulations:

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[413] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regulars, Special Reserve, and Territorial Force, Serving at Home for the year 1908*, (London, Harrison and Sons, 1909), p. 58.
[414] *MR 1909*, p. 115, para. 445.
[415] *MR 1909*, p. 103, para. 378.
[416] *MR 1909*, p. 103, para. 378.
[417] *MR 1909*, p. 104, para. 386.

Grouping standards are in some cases attached to application practices in order to emphasize the importance of care and consistency in shooting.[418]

The types and design of targetry had also been revised in several ways. There had previously been three sizes of bull's-eye targets, the overall design and dimensions of which had remained relatively unchanged since the introduction of the magazine rifle twenty years before. Of these, the First Class had seen only limited usage in *MR 1905*, where it was used by recruits for practices at 500 and 600 yards, and by trained soldiers for distances of 700 yards and greater. As the furthest distance used for any individual practice in 1909 was 600 yards, the design had essentially become redundant, and so it was discontinued. The two remaining targets were then renumbered accordingly, but the only physical change made was to the aiming mark on the Second Class target; the black disc of the aiming mark was reduced in diameter from twelve inches to eight, making it a smaller visual target, although the scoring area itself remained the same.

The figure targets had been renumbered in line with the bull's-eye targets, and had undergone more drastic changes. Whilst the rectangular 'zones' used in 1905 had reflected a level of realism, with scores reflecting those which would have the greatest effect, there appear to have been issues from a marking perspective. This may have been due to a perceived issue of 'fairness', as some groups might be more harshly marked than others, despite being the same distance from the centre. In 1907 the marking scheme had been altered to a series of concentric rings, similar to those applied to the bull's-eye target. Although less realistic, these were far fairer as a scoring system, better reflecting the grouping size of the firer. The aiming marks had been redrawn, altering the silhouette by the incorporation of a cap, which gave the head a more angular profile. This had also altered the

[418] *MR 1909*, p. 105, para. 388.

Figures 25– 32: Targetry, as described in MR II 1910

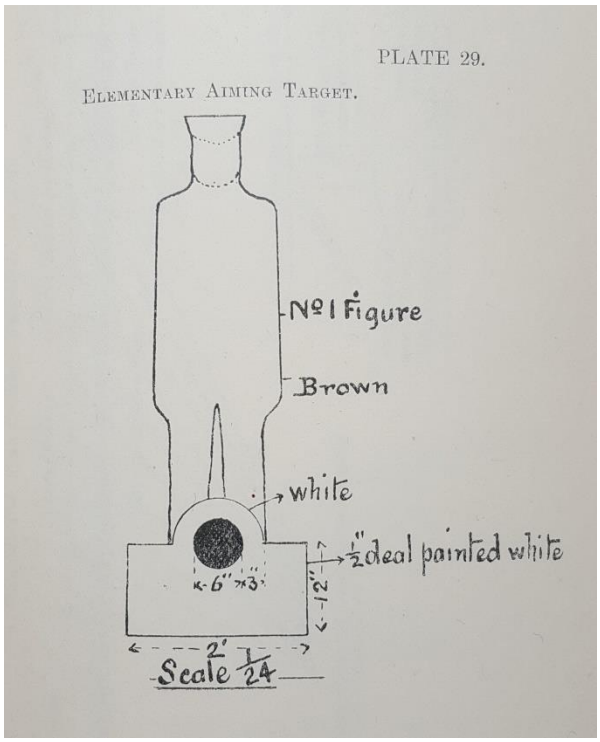

Figure 25: Elementary Aiming Target

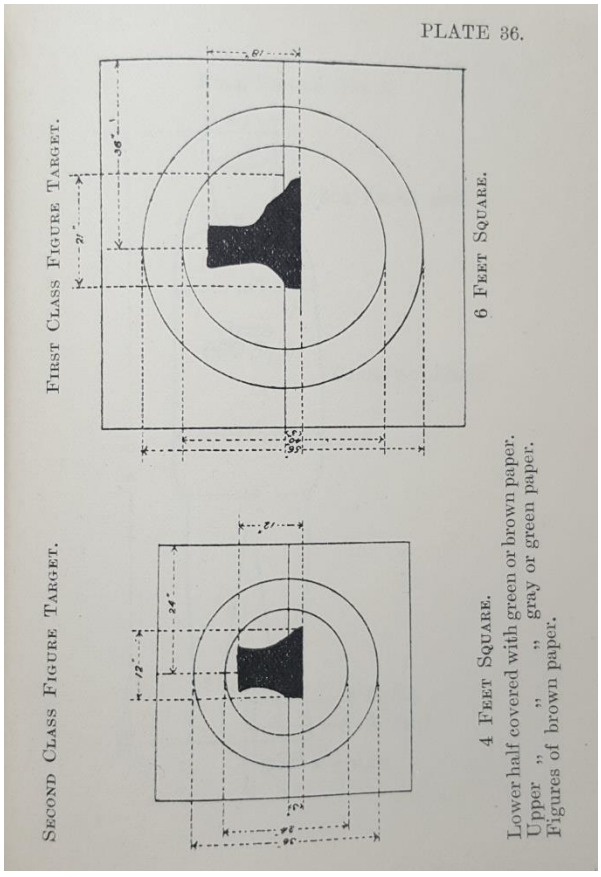

Figure 26: Second and First Class Figure Targets

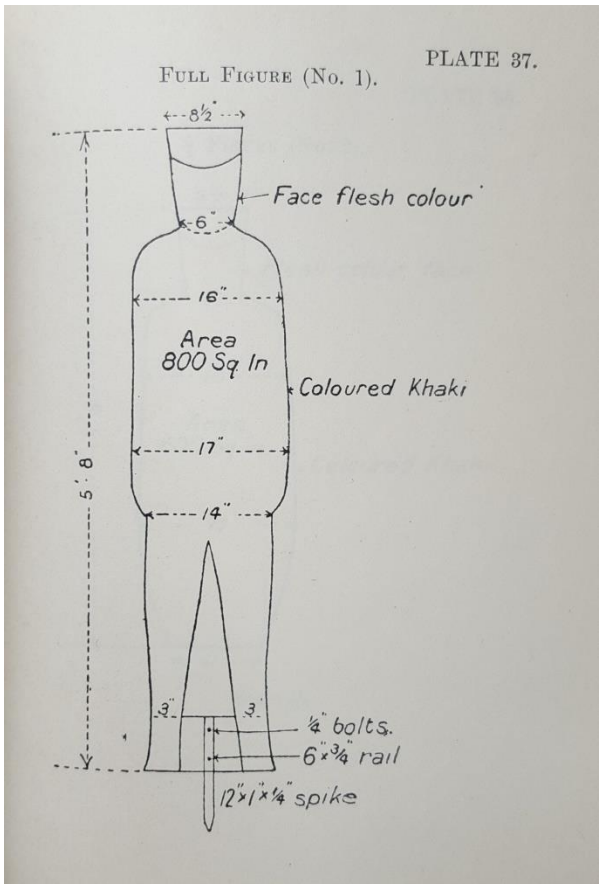

Figure 27: No. 1 Figure Target

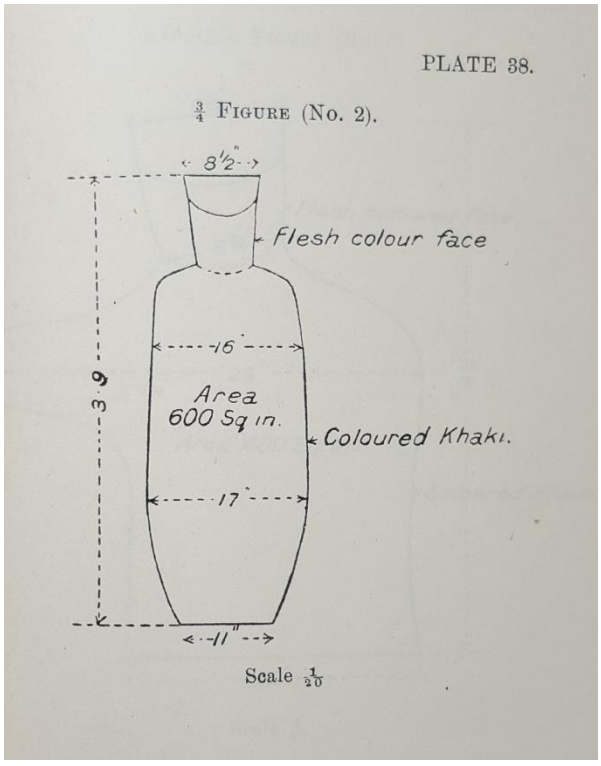

Figure 28: No. 2 Figure Target

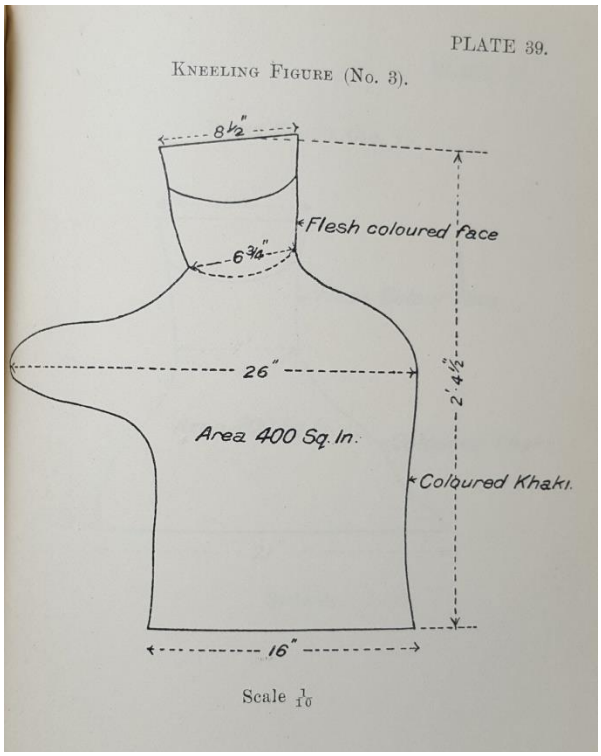

Figure No. 29: No. 3 Figure Target

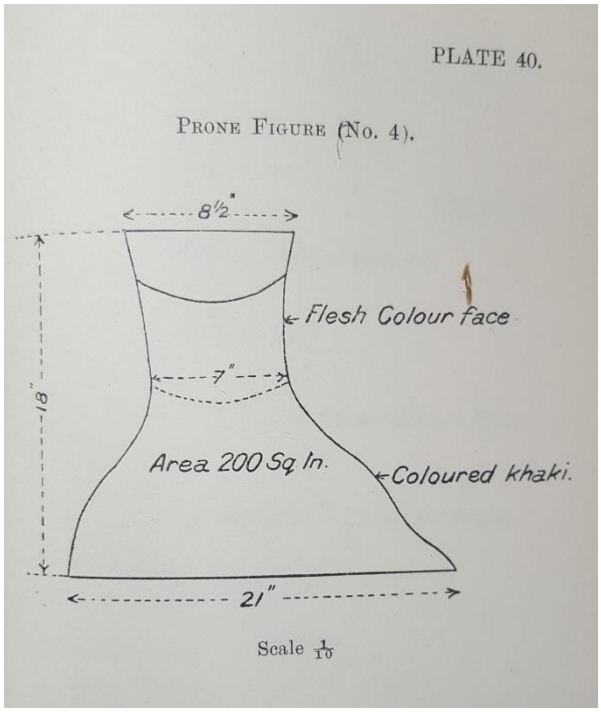

Figure No. 30: No. 4 Figure Target

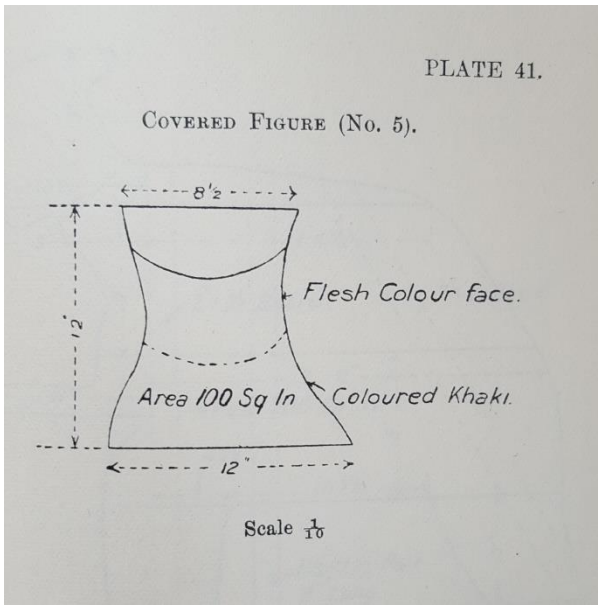

Figure No. 31: No. 5 Figure Target

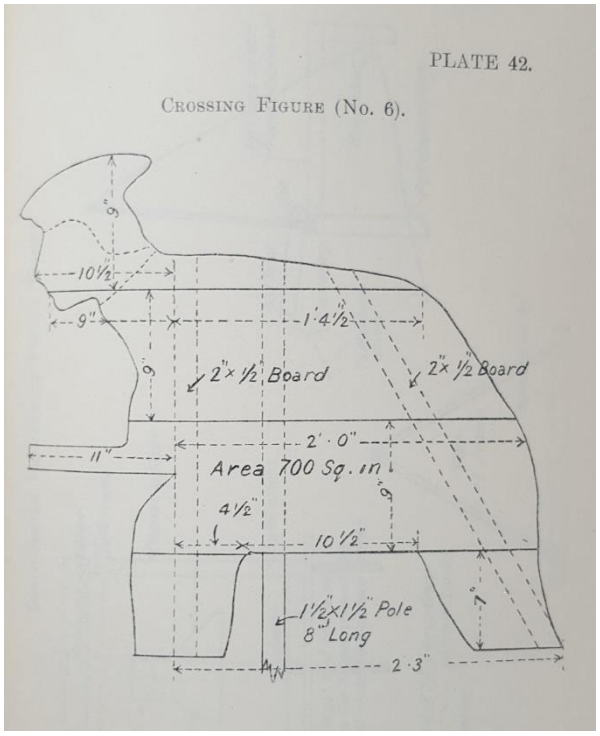

Figure No. 32: No. 6 Figure Target

Table 27: Comparison of target designs and scoring areas, MR 1905 and 1909

Target	Year	Overall size	Aiming Mark	Inner	Outer
3rd Class Bull	1905	4ft. x 4ft.	12in. disc	24in. ring	Remainder
2nd Class Bull	1909	4ft. x 4ft.	8in. disc/ 12in. scoring ring	24in. ring	Remainder
2nd Class Bull	1905	6ft. x 6ft.	24in. disc	48in. ring	Remainder
1st Class Bull	1909	6ft. x 6ft.	24in. disc	48in. ring	Remainder
3rd Class Figure	1905	4ft. x 4ft.	12in. wide x 10in. high	18in. x 10in.*	48in. x 19in.†
2nd Class Figure	1909	4ft. x 4ft.	12in. wide x 12in. high	24in. ring	36in. ring
2nd Class Figure	1905	6ft. x 6ft.	24in. wide x 24in. high	24in. x 24in.*	60in. x 24in.†
1st Class Figure	1909	6ft. x 6ft.	21in. wide x 18in. high	40in. ring	56in. ring

*: *There were two rectangles, each of these dimensions, either side of the aiming mark.*
†: *The rectangle below the figure was awarded two points, and that above one point.*

overall dimensions slightly, making the Second Class figure two inches taller, but that for the First Class was reduced from twenty-four inches square to eighteen inches high by twenty-one inches wide. These figures were also the basis for the silhouette targets, which were mounted on poles for use in snap-shooting practices.

However, it was not the change of marking areas that marked the greatest visual change, but that of colour. In 1905, the figure was made from black paper, and placed on a background which was divided in half horizontally, the top half being white and the lower half being brown. Although an improvement from previous designs, it still gave a relatively distinct aiming mark against an unnaturally-coloured background. In 1909, white and black were not used anywhere on the targets. Instead, general officers commanding were given three colour options: green, brown, or grey. They were to nominate two of these for use as the background colours, laid out as before, whilst the aiming figure itself was now to be brown, drastically reducing the contrast between aiming mark and background. It was intended that the colour combination chosen would reflect the natural colours of the area in which a unit was stationed, making them the most realistic targets to date.

In terms of the training itself, Table "A" had been reduced from thirty-six to twenty-seven individual practices, divided into four sections. The first three of these were

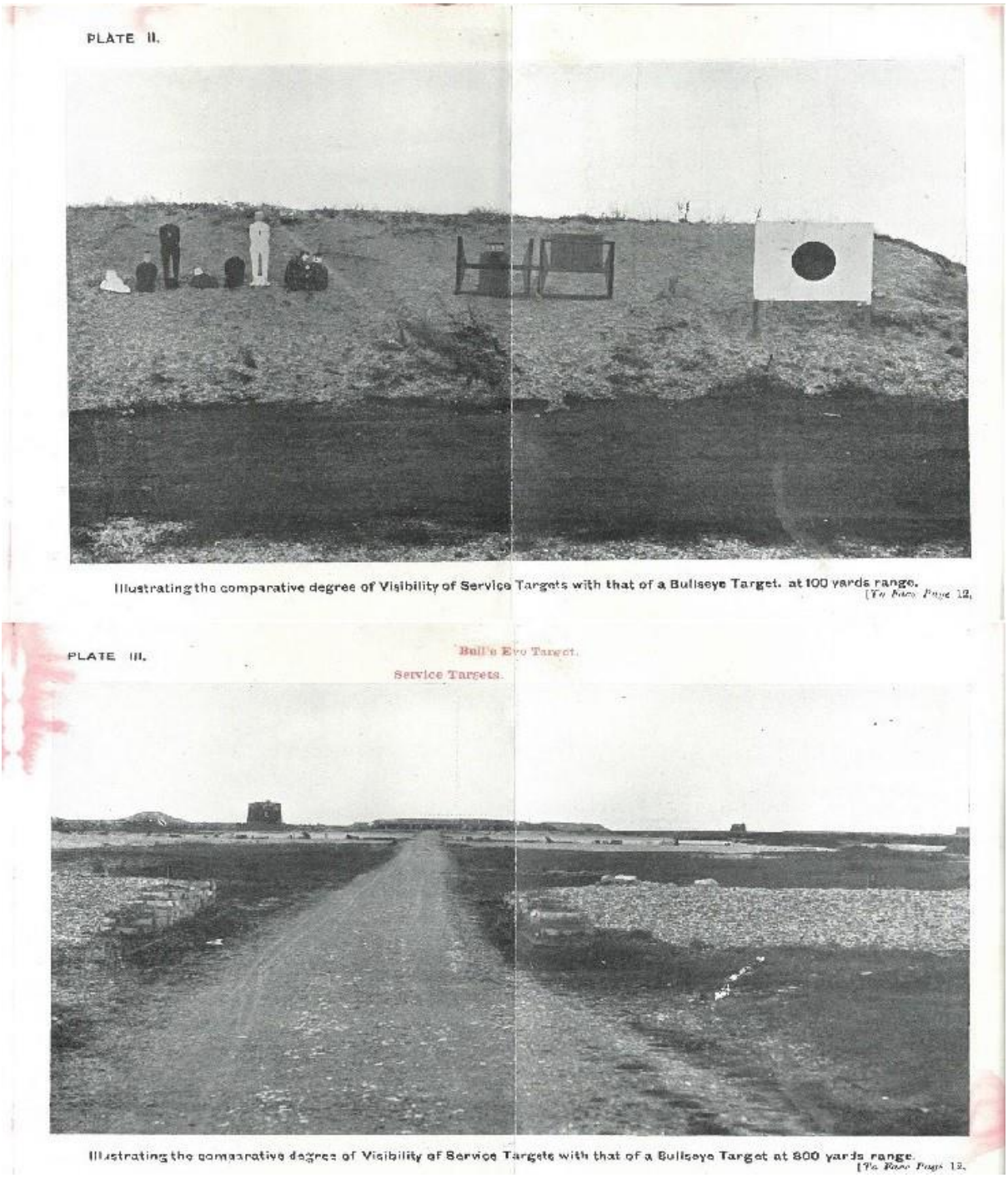

Figure 33: Illustration of the relative visibility of bull's-eye and service targets at 100 and 800 yards, as depicted in Qr-Mr-Sergt-Instr. J. Bostock, *Visual Training and Judging Distance*, (London, Gale & Polden, 1908), Plates II and III.

instructional, incorporating elements from both the "Elementary Instructional Practices" and Parts III and IV in *MR 1905*. This eliminated what was perhaps the only flaw of the 1905 table; that whilst it could be considered as comprehensive a training system as ever introduced, it had continued the approach whereby recruits qualified before undergoing further training. By moving these sections ahead of the Classification practices, the recruit's figure of merit provided a far more accurate assessment of what had been learnt both in the classroom and on the range.

Part I, the 'Elementary' section, was now composed of four practices and focussed on building accuracy at short distances. The recruit was first taught to aim and fire from a prone supported position, before repeating the same practices unsupported. Unlike previous training, this was the only position used for these early practices; as the most stable, it allowed instructors to focus on perfecting basic marksmanship practices before introducing further complexities. To aid this, all of the practices were fired at the Second Class Elementary bull's-eye target, providing a clear aiming mark upon which to judge the accuracy of the recruits.

Part II was now subtitled 'Repetition', with ten practices following a similar layout to those of the first classification practices from 1905. The first seven all tested accuracy, by requiring that the firer be able to group his shots within a given area of the target. This approach, rather than a required pass score, required a much more consistent level of accuracy to pass, and ensured that recruits were prepared for the remainder of the table. The first practice was a test of their progress so far, requiring them to repeat practice 3, but with the added requirement that all five shots fall within the central 12-inch ring. This was also the final instructional practice to use the bull's-eye target, unlike *MR 1905*, where it had seen far greater usage. The next three practices used the Second Class Figure target, and formed a distinct sequence, which would be repeated twice. There was also a progression within each

sequence, where the firer was first allowed to use a support from the prone position at 200 yards, then made to fire unsupported, before moving back to 300 yards. The expected group size expanded with each move away from the 12-inch ring in practice 5: five hits, four of which were to be within the 24-inch ring; then all within the 36-inch ring; and finally simply expecting five hits on the target. This allowed for both the lack of support, and the increased distance from the target. Having completed this sequence, the recruit returned to 200 yards and began the sequence again, this time using the First Class Figure target. Practices 9 and 10 also used the kneeling position, with the standard of accuracy expected being reduced to 'at least' four hits within the 40-inch ring. There was some assistance provided at 300 yards, where they were allowed to use a rest for support. The last four practices only included one with an accuracy standard, which simply required four hits at 400 yards. The final practice was fired at 600 yards, the greatest distance used in any individual practice in the table, and was to be conducted with just the side of the rifle rested, providing only a moderate level of support.

Having thoroughly tested the recruit's accuracy, Part III introduced further elements, under the heading 'Timed'. As this suggested, the largest change was the addition of a time constraint, using elements from Parts III and IV of the 1905 table. Twenty seconds were allowed per shot during the four 'Slow' practices, reducing to eight seconds in the two 'Rapid' practices, and six seconds per exposure for the two 'Snapshooting' practices.[419] Usage of cover was also incorporated into two practices, one of which used a fire trench for the first time. Although this could be seen as prescient, they were not universal, and only deep enough to be fired from whilst kneeling. This suggests that they were actually designed to replicate firing over a wall, as depicted in the manual, than from a true defensive entrenchment. As before, only the kneeling and lying positions were used, with firing

[419] Snapshooting practices involved the appearance of a man-sized target for a limited time period and at random intervals. To ensure that a soldier could not simply remain aimed at the same point, the target could appear anywhere within a given section of the range, to better test his ability to respond, aim, and fire instinctively.

Table 28: Musketry Regulations, Part I, 1909, Table "A"

No.	Practice	Target	Distance in yards	Rounds	Instructions for Conduct of Practice
Part I. – Instructional Practices (Elementary)					
1	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying, with arm or rifle rested
2	Application	2nd Class Elementary (Bull's-eye)	200	5	Lying, with arm or rifle rested
3	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
4	Application	2nd Class Elementary (Bull's-eye)	200	5	Lying
		Total rounds		20	
Part II. – Instructional Practices (Repetition)					
5	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying. All shots in 12-inch ring
6	Application	2nd Class Figure	200	5	Lying, with arm or rifle rested. Five hits, including 4 within Inner (24-inch) ring
7	Application	2nd Class Figure	200	5	Lying. Five hits within Magpie (36-inch) ring
8	"	"	300	5	Lying. Five hits
9	"	1st Class Figure	200	5	Kneeling. Four hits at least within Inner (40-inch) ring
10	"	"	300	5	Kneeling, with arm or rifle rested. Four hits at least within Inner (40-inch) ring
11	"	"	400	5	Lying. Four hits at least
12	"	"	500	5	Lying, with arm or rifle rested
13	"	"	500	5	Lying
14	"	"	600	5	Lying, with side of rifle only rested
		Total rounds		50	
Part III. – Instructional Practices (Timed)					
15	Slow	2nd Class Figure	200	5	Lying
16	"	"	200	5	Kneeling
17	Rapid	"	200	5	Lying. 40 seconds allowed
18	Slow	1st Class Figure	400	5	Lying
19	Rapid	"	400	5	Lying. 40 seconds allowed
20	Slow	"	500	5	Lying. Taking cover behind stones or sandbags representing a parapet and firing over them, with arm or rifle rested
21	Snapshooting	2nd Class Figure	200	5	Lying. Exposure, 6 seconds for each shot
22	"	"	200	5	Kneeling. Taking cover in a trench, or behind a screen representing a wall, and firing over the parapet, with arm or rifle rested. Exposure, 6 seconds for each shot
		Total rounds		40	
Part IV. – Classification Practices					
23	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
24	Application	1st Class Figure	300	5	Kneeling
25	Rapid	"	300	5	Lying. 40 seconds allowed
26	Snapshooting	2nd Class Figure	200	5	Lying. Taking cover as in 20. Exposure, 5 seconds for each shot
27	Application	1st Class Figure	500	5	Lying
		Total rounds		25	
Part V. – Individual Field Practices Twenty rounds will be expended in elementary practices, 10 rounds in an attack practice from 700 to 200 yards, and 10 rounds in a defence practice against full-length figures representing an advancing enemy					
		Total rounds		20	
Part VI. – Collective Field Practices Twenty-five rounds will be expended, if ammunition is available					
		Total rounds		25	

conducted between 200 and 500 yards, although noticeably not from 300 yards. By doing so, it meant that no practice was exactly duplicated in the five Classification practices in Part IV, where two of the practices were fired from 300 yards.

Of those five practices, the two most basic assessments, practices 23 and 27, were essentially identical to two Instructional practices (3 and 13 respectively), and the remaining three were all variations of Instructional practices, with subtle differences:

- Practice 24 was shot from the same position and distance as practice 10, but the rifle was not to be supported.
- Practice 25 was similar to both practices 17 and 19, but fired from 300 yards.
- Practice 26 was similar to practice 21, but was fired from behind cover as for practice 20, and with only five seconds allowed per shot.

This made the Classification practices slightly more challenging than if they had been simply repeating previous work, requiring recruits to adjust their sights based upon their own judgement, rather than being able to refer back directly to their shooting record.

Having completed the range training, there were then two sections of field practices. Whilst certain aspects of these had appeared in previous tables, this was the first time that recruits had both time and ammunition specifically dedicated to training over unmeasured distances. This included two individual practices, with a similar function and purpose to the 'Skirmishing' practices which had been included in various tables since 1884, and, if there was ammunition available, a collective field practice. This moved recruit training forward from 1905, increasing their grounding in the practical application of musketry prior to undertaking Table "B". Overall, where the 1905 table primarily tested the Recruits theoretical training before preparing them for Table "B", *MR 1909* utilised the same basic system but

included an assessment of the effectiveness of their practical training as well. This allowed any issues to be addressed prior to their undertaking Table "B".

Table "B" had also undergone significant reorganisation, in keeping with those changes made to recruit training. Part I was no longer simply 'Preliminary', but had become 'Qualifying Practices'. This was formed of six basic 'Grouping' and 'Application' practices, shot over various distances between 100 and 500 yards, which both checked the basic marksmanship skills of the firer and that the rifle was correctly sighted. To assist in this, as with Table "A", they were all relatively simple in design, with some form of rest allowed in four of them, and with only one fired kneeling. Those who failed to achieve the required standard would either be put back for remedial instruction, or classified as third class. Once the standard was achieved, trained soldiers omitted the 'Repetition' phase of Table "A", and instead faced a slightly longer series of eleven 'Timed' practices. Unlike those for recruits, these were more closely related to the 1905 'Classification' practices, incorporating 'Slow', 'Rapid', 'Snapshooting', and 'Crossing target' practices, but only the three most basic (10, 12, and 14) remained unchanged. The remainder had undergone alterations, seemingly to allow the necessary training to be compressed into seven fewer practices. To this end, the table commenced with two 'Snapshooting' practices at 200 yards. These allowed six seconds per exposure; the same amount of time per shot as when firing the first two 'Rapid' practices. They also combined other elements, including use of cover, firing from the sitting or kneeling position, and with the bayonet attached. During an attack, the bayonet would have been fixed prior to launching the final assault, which would be done from about 200 yards. That this, and the first 'Rapid' practice, both included the bayonet and were both fired from the same distance, demonstrates how these details of practical assault tactics were being incorporated at a more basic level of training than had previously been the case.

Table 29: Musketry Regulations, Part I, 1909, Table "B"

No.	Practice	Target	Distance in yards	Rounds	Instructions for Conduct of Practice
Part I. – Qualifying Practices					
1	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying, with arm or rifle rested
2	Application	"	200	5	As in 1
3	"	2nd Class Figure	300	5	Kneeling, with arm or rifle rested
4	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
5	Application	1st Class Figure	400	5	Lying
6	"	"	500	5	Lying, with side of rifle only rested
		Total rounds		30	
Part II. – Instructional Practices (Timed)					
7	Snapshooting	2nd Class Figure	200	5	Lying. Taking cover behind stones or sandbags representing a parapet and firing over them, with arm or rifle rested. Exposure, 6 seconds for each shot
8	"	"	200	5	Sitting or kneeling. Bayonet fixed. Exposure, 6 seconds for each shot
9	Rapid	"	200	5	Lying. Bayonets fixed. 30 seconds allowed
10	Slow	"	300	5	Lying
11	Rapid	2nd Class Figure	300	10	Lying. Rifle unloaded and magazine empty until the target appears. Loading from the pouch or bandolier by 5 rounds afterwards. One minute allowed
12	Slow	1st Class Figure	500	5	Lying
13	Rapid	"	500	5	Lying. Taking cover as in 7. 45 seconds allowed
14	Slow	"	600	5	Lying. Taking cover behind stones or sandbags and firing round them, with side of rifle only rested
15	Snapshooting	Figure No. 3 (silhouette)	200	5	Lying. Taking cover as in 14. Exposure, 4 seconds for each shot
16	"	"	200	5	Kneeling. Taking cover in a trench or behind a screen representing a wall and firing over the parapet, with arm or rifle rested. Exposure, 5 seconds for each shot
17	Crossing target	Figure No. 5 (silhouette)	200	5	Lying. One shot at each run of 30 feet. Pace of target – quick time
		Total rounds		60	
Part III. – Classification Practices					
18	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
19	Snapshooting	Figure No. 3 (silhouette)	200	5	Lying. Taking cover as in 7. Bayonet fixed. Exposure, 4 seconds for each shot
20	Slow	2nd Class Figure	400	5	Lying. Taking cover as in 14
21	"	"	300	5	Kneeling. Taking cover as in 16
22	Rapid	"	300	15	Lying. Rifle to be loaded and 4 rounds in the magazine before the target appears. Loading from the pouch or bandolier by 5 rounds afterwards. One minute allowed
23	Slow	1st Class Figure	500	5	Lying
24	Rapid	"	500	5	Lying. 30 seconds allowed
25	Slow	"	600	5	Lying. Taking cover as in 7
		Total rounds		50	
Part IV. – Individual Field Practices					
		Total rounds		35	
Part V. – Fire Direction Practices					
Short series of shots will be fired at distances beyond 600 yards by officers and non-commissioned officers for practice in observation of fire, estimating atmospheric influences, and verifying sighting by trial shots. Screens, or any visible objects such as might serve as range marks on service, will be used as targets. About 300 rounds, drawn from the surplus, should suffice. Special fire direction exercises should be substituted for these practices if range accommodation does not extend beyond 600 yards					
Part VI. – Collective Field Practices					
		Total rounds		50	

Having moved back to 300 yards, the initial 'Slow' practice appears designed to allow firers to reset their sights, in preparation for the second, more complicated, 'Rapid' practice. This was unlike anything that had come before, firing ten rounds in a minute, but with the rifle not being loaded until the target appeared. Whilst the firer was still allowed six seconds per shot, this was not used purely for manipulating the action and aiming. Instead, the rifle was to be loaded using chargers, drawn from pouches on the soldier's belt equipment, a procedure he would have to complete twice to fire the ten rounds. This appears to have been specifically designed as preparation for practice 22 of the Classification section, which had the same reloading constraints but started with the rifle loaded, as the time allowed was reduced from six seconds to four. The soldiers then moved to 500 yards, where they fired the penultimate Slow' practice before a second 'Rapid' practice, this time firing five rounds in forty-five seconds from behind cover. Again, this was preparation for a specific Classification practice, practice 24, which was fired in the open and allowed only thirty seconds. After firing a final 'Slow' practice at 600 yards, firing round cover rather than over it, the soldiers returned to 200 yards for the final three practices.

Although the two 'Snapshooting' practices were similar to those at the beginning of Part II, two changes had made them more challenging. Firstly, the target was a silhouette of a kneeling man, represented from the waist up in realistic colours and mounted on a pole, rather than as the aiming mark on a larger frame.[420] As such, only hits on the figure would be scored. Secondly, the exposure time had been reduced; the first practice only allowed four seconds whilst firing round cover, and the second, fired from the same position used in practice 22 of Table "A", allowed only five seconds. The final instructional practice was the only 'Crossing target' practice in the entire table, and originally used a 'Figure No. 5' target. This was otherwise called the 'Covered Figure', and had the same dimensions as the aiming

[420] The capped figure was given a flesh-coloured face, with the remainder being khaki. See H.M.S.O., *Musketry Regulations, Part II. Rifle Ranges and Musketry Appliances. 1910*, (London, Mackie and Co., 1910), plate 39. [Hereafter referred to as *MR II 1910*].

mark of the 'Second Class Figure' target. It appears to have been mounted on a pole, rather than a trolley, and walked along the edge of the marker's gallery at the required pace, possibly in preparation for the field practices to follow. Yet it is entirely possible that the selection of this target was a printing error, as it presents a remarkably small mark to hit, particularly moving at 'quick time' pace. The more likely, and logical, choice was 'Figure No. 6', otherwise known as the 'Crossing figure', and indeed this had replaced Figure No. 5 for this practice by 1912 (see below).

Having completed the first two parts, soldiers then moved onto the Classification Practices of Part III. As with Table "A", this section was far shorter than it had ever been, due to the separation of the instructional and assessment aspects of the training. With the exception of practices 18 and 23, which were identical to practices 4 and 12 respectively, the six remaining practices mixed aspects of previous training with new elements to better test the soldier's abilities:

- Practice 19 combined elements of practices 7, 8, and 15.
- Practice 20 was similar to practice 14, but fired from 400 yards.
- Practice 21 was fired kneeling behind cover, as for practice 16, but from 300 yards.
- Practice 22 was based on practice 11, as described above.
- Practice 24 was fired from the same position and distance as practice 13, but without cover and under a reduced time allowance.
- Practice 25 was similar to practice 14, but the soldier fired over cover, rather than round it.

Having completed the individual classification phase, there were three further sections. As in 1905, two of these were Individual and Collective Field Practices, but in

between them was a section dedicated to 'Fire Direction Practices', allowing 'fire leaders' to gain practical experience of their role, in preparation for the Collective practices.[421] Where possible, 'parties of officers and non-commissioned officers' would fire together against semi-realistic targets and observe their results. This was to be done over unmeasured ground, although this did not necessarily have to be an area normally reserved for firing. If this was not possible, they could be replaced with theoretical practices instead. By the end of the practices:

> *...all fire unit commanders should be familiar with the effects of winds and temperature in shooting at 500, 1,000, 1,500, and 2,000 yards. The range tables should be studied, and lectures given on the influence of ground, ranging errors, and other details of fire direction.*[422]

This is the first time that such exercises had explicitly formed part of the programme, and appears to answer a criticism made in the Hythe Annual Reports, that whilst the firers were being trained, there were rarely opportunities for the commanders to practise their role outside the Collective practices themselves. For the first time, both firer and commander were to be tested together, an approach which would hopefully improve the effectiveness of the fire unit as a whole.

The new arrangement of both tables formed a logical extension of the progressive approach to training which had been introduced in 1902. Where it differed from *MR 1905* was in the move to separate instruction from assessment, focussing on building the necessary principles, which also had the benefit of removing the repetitive nature of those earlier tables. In doing so, they broke with an approach that had persisted since the 1880s, as had been suggested in the Annual Report for 1906. The success of this approach can be judged by it

[421] *MR 1909*, p. 136, para. 535.
[422] *MR 1909*, p. 138, para. 539.

having remained the basic layout, with minor alterations, for all musketry training up to World War Two.

Amendments to Musketry Regulations, Part I, 1909

MR 1909 itself remained the basis for all training until 1924, although it underwent various amendments over the intervening fifteen years as new technology and tactics were introduced. Those issued prior to the outbreak of war were collated in two amended editions, published in 1912 and 1914 respectively. The changes to the text added eighty-four pages to the 1912 edition, which can be grouped broadly into one of the following six categories:

- Changes due to the introduction of the Mark VII bullet, with a higher velocity and flatter trajectory[423]
- Alterations to how orders/drills were to be conducted
- Expansion of eligibility/requirement to participate in training
- Adjustment of marksmanship standards for both Regular support units, and of those for Territorial and Special Reserve units
- Revised scoring or procedures for training practices, both individual and field firing
- Enhanced training and assessment for machine gunners

Of these, the largest individual category was that for training machine gunners, which had grown from being five pages in 1909 to twenty-two pages in 1912. This included a much expanded training table, as machine gun usage was beginning to receive a far greater focus around this time. The majority which related directly to rifle training were relatively minor,

[423] The Mark VII bullet travelled at 2,440 feet per second (f.p.s.), against the 1,970 f.p.s. of the Mark VI bullet. This higher velocity gave the bullet a flatter trajectory, which in turn meant that mistakes in estimating the range of a target were slightly mitigated, as well as meaning that the 'clearing height' (the range at which the bullet's trajectory went above that of a standing man) was also greater than had previously been the case, increasing the effectiveness of the 'fixed sight'.

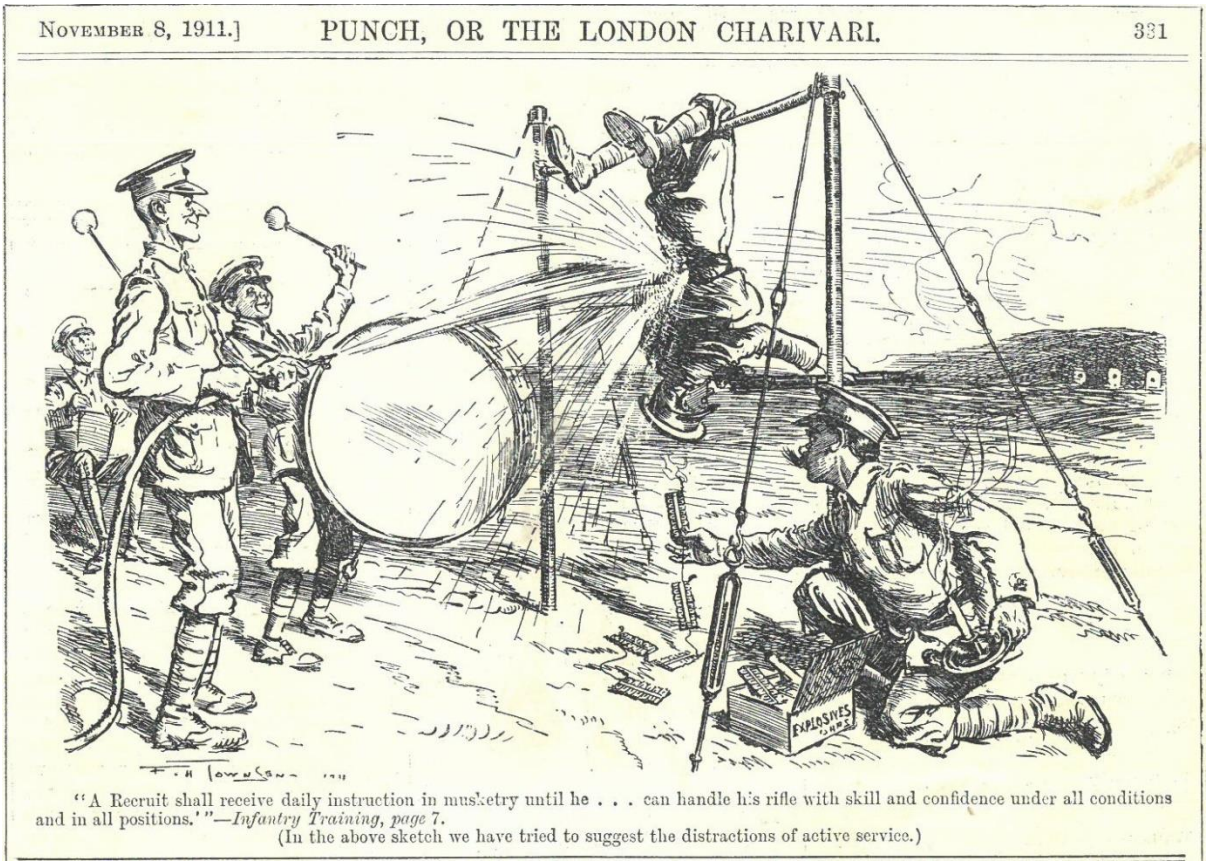

Figure 34: "A Recruit shall receive daily instruction in musketry until he…can handle his rifle with skill and confidence under all conditions and in all positions." *The above untitled cartoon, printed in Punch on the 8th of November 1911, gave its interpretation of these instructions for rifle training, published in Infantry Training that year.*

changing the word of command, or passing autonomy in areas such as reloading from the fire commander to the individual soldier. There had also been a slight adjustment of the classification scores, with a reduction of five points from every grade, although this may have been connected to changes in the scoring of Practice 22 (see below). The greatest change was in the expansion of who was required to demonstrate a level of accuracy, and the level of accuracy required, to include units who were not previously mentioned specifically, most notably medical and veterinary personnel.

In terms of the tables themselves, relatively little was altered between the three editions. In the version of Table "A" issued in 1912, there were two main changes. Firstly, Part IV was now classed as an instructional section for Regular recruits, although it was still

Table 30: Musketry Regulations, Part I, 1909 (With Amendments, 1912), Table "A"

No.	Practice	Target	Distance in yards	Rounds	Instructions for Conduct of Practice
Part I. – Instructional Practices (Elementary)					
1	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying, with arm or rifle rested
2	Application	2nd Class Elementary (Bull's-eye)	200	5	Lying, with arm or rifle rested
3	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
4	Application	2nd Class Elementary (Bull's-eye)	200	5	Lying
		Total rounds		20	
Part II. – Instructional Practices (Repetition)					
5	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying. All shots in 12-inch ring
6	Application	2nd Class Figure	200	5	Lying, with arm or rifle rested. Five hits, including 4 within Inner (24-inch) ring
7	"	"	200	5	Lying. Five hits within Magpie (36-inch) ring
8	"	"	300	5	Lying. Five hits
9	"	1st Class Figure	200	5	Kneeling. Four hits at least within Inner (40-inch) ring
10	"	"	300	5	Kneeling with arm or rifle rested. Four hits at least within Inner (40-inch) ring
11	"	"	400	5	Lying. Four hits at least
12	"	"	500	5	Lying, with arm or rifle rested
13	"	"	500	5	Lying
14	"	"	600	5	Lying, with side of rifle only rested
		Total rounds		50	
Part III. – Instructional Practices (Timed)					
15	Slow	2nd Class Figure	200	5	Lying
16	"	"	200	5	Kneeling
17	Rapid	"	200	5	Lying. 40 seconds allowed
18	Slow	1st Class Figure	400	5	Lying
19	Rapid	"	400	5	Lying. 40 seconds allowed
20	Slow	"	500	5	Lying. Taking cover behind stones or sandbags representing a parapet and firing over them
21	Snapshooting	2nd Class Figure	200	5	Lying. Exposure, 6 seconds for each shot
22	"	"	200	5	Kneeling. Taking cover in a trench, or behind a screen representing a wall, and firing over the parapet. Exposure, 6 seconds for each shot
		Total rounds		40	
Part IV. – Instructional Practices (Classification for Special Reserve)					
23	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
24	Application	1st Class Figure	300	5	Kneeling
25	Rapid	"	300	5	Lying. 40 seconds allowed
26	Snapshooting	2nd Class Figure	200	5	Lying. Taking cover as in 20. Exposure, 5 seconds for each shot
27	Application	1st Class Figure	500	5	Lying
		Total rounds		25	
Part V. – Individual Field Practices Twenty rounds will be expended in elementary practices, 10 rounds in an attack practice from 700 to 200 yards, and 10 rounds in a defence practice against full-length figures representing an advancing enemy					
		Total rounds		20	
Part VI. – Collective Field Practices Twenty-five rounds will be expended, if ammunition is available					
		Total rounds		25	

Table 31: Musketry Regulations, Part I, 1909 (With Amendments, 1912), Table "B"

No.	Practice	Target	Distance in yards	Rounds	Instructions for Conduct of Practice
Part I. – Qualifying Practices					
1	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying, with arm or rifle rested
2	Application	"	200	5	As in 1
3	"	2nd Class Figure	300	5	Kneeling, with arm or rifle rested
4	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
5	Application	1st Class Figure	400	5	Lying
6	"	"	500	5	Lying, with side of rifle only rested
		Total rounds		30	
Part II. – Instructional Practice (Timed)					
7	Snapshooting	2nd Class Figure	200	5	Lying. Taking cover behind stones or sandbags representing a parapet and firing over them. Exposure, 6 seconds for each shot
8	"	"	200	5	Sitting or kneeling. Bayonet fixed. Exposure, 6 seconds for each shot
9	Rapid	"	200	5	Lying. Bayonets fixed. 30 seconds allowed
10	Slow	"	300	5	Lying
11	Rapid	"	300	10	Lying. Rifle unloaded and magazine empty until the target appears. Loading from the pouch or bandolier by 5 rounds afterwards. One minute allowed
12	Slow	1st Class Figure	500	5	Lying
13	Rapid	"	500	5	Lying. Taking cover as in 7. 45 seconds allowed
14	Slow	"	600	5	Lying. Taking cover behind stones or sandbags and firing round them, with side of rifle only rested
15	Snapshooting	Figure No. 3 (silhouette)	200	5	Lying. Taking cover as in 14. Exposure, 4 seconds for each shot
16	"	"	200	5	Kneeling. Taking cover in a trench or behind a screen representing a wall and firing over the parapet. Exposure, 5 seconds for each shot
17	Crossing shot	Figure No. 6 (silhouette)	200	5	Lying. One shot at each run of 30 feet. Pace of target – quick time
		Total rounds		60	
Part III. – Classification Practices					
18	Grouping	2nd Class Elementary (Bull's-eye)	100	5	Lying
19	Snapshooting	Figure No. 3 (silhouette)	200	5	Lying. Taking cover as in 7. Bayonet fixed. Exposure, 4 seconds for each shot
20	Slow	2nd Class Figure	400	5	Lying. Taking cover as in 14
21	"	"	300	5	Kneeling. Taking cover as in 16
22	Rapid	"	300	15	Lying. Rifle to be loaded and 4 rounds in the magazine before the target appears. Loading from the pouch or bandolier by 5 rounds afterwards. One minute allowed
23	Slow	1st Class Figure	500	5	Lying
24	Rapid	"	500	5	Lying. 30 seconds allowed
25	Slow	"	600	5	Lying. Taking cover as in 7
		Total rounds		50	
Part IV. – Individual Field Practices					
		Total rounds		35	
Part V. – Fire Direction Practices					
Short series of shots will be fired at distances beyond 600 yards by officers and non-commissioned officers for practice in observation of fire, estimating atmospheric influences, and verifying sighting by trial shots. Screens, or any visible objects such as might serve as range marks on service, will be used as targets. About 300 rounds, drawn from the surplus, should suffice. Special fire direction exercises should be substituted for these practices if range accommodation does not extend beyond 600 yards.					
Part VI. – Collective Field Practices					
		Total rounds		50	

used as the classification section for Special Reservists. There is no direct reference to this change in the regulations, but it appears to have been intended to ensure that recruit training did not have an undue focus upon unrealistic levels of accuracy. It may also have drawn from the desire to get as many recruits through both tables in a single year, and the removal of the need to classify twice could have assisted this process, as it removed the need to obtain external supervision for these practices. Secondly, the wording of several practices had been changed, with the phrase 'with arm or rifle rested' removed from practices 20, 22, and 26. This was also the case for practices 7, 13, and 16 of Table "B", and appears designed to ensure that soldiers were relying upon the strength of their firing positions, rather than being supported by cover. There was one further change for trained soldiers, with the 'Figure No. 5' target used in practice 17 ('Crossing Shot') practice replaced by the 'Crossing figure' target, as discussed above. In all other practices, the conditions remained unchanged, and there were no further amendments made to the tables themselves up to 1914.

At the same time, the photographic plates depicting loading and firing positions, which had been in use since 1904, had been replaced. Individually, the most noticeable difference is aesthetic, with the new photographs depicting the uniform and equipment which would be used throughout the First World War. This is perhaps to be expected, as the firing positions were designed to confer as much stability as possible, and so had remained relatively unchanged when the individual images are compared. When viewed as a body, there were changes to how the images were framed and used. Whilst there had been only eight photographs in 1909, this was increased to fifteen in 1912, all of which now had 'points to note' beneath. Of the original eight positions, half were re-photographed without change, but the other half incorporated slight alterations, as laid out in the table below. Of the seven new images, four depicted the same position from a different angle, reinforcing particular aspects. The remaining three showed different stages:

- How to load whilst kneeling behind cover,
- The waiting position whilst sitting,
- Firing across a valley from the seated position.

These positions were not described in any great detail in the text, instead being addressed in two paragraphs, which then directed readers to the relevant plates.[424] As the main details of loading and aiming had already been covered for both the standing and prone positions, and elements of both were transferrable, it was logical that these were not repeated. Where there were differences, such as the position of the firer's arms or the orientation of the rifle, these could be shown more clearly using the photographs, with the notes below used to

Table 32: Comparison of images in MR 1909 and MR 1909(12)

Title	Plate (1909)	Plate (1912)	Change
Standing (loading)	XIX	XIX	Firer looks at target rather than magazine
Standing (firing)	XX	XX	Firer's weight now on his front foot
Lying behind cover (face on)	XXII	XXVI	Uses smaller amount of cover to make firer's position clearer
Sitting	XXIII	XXXIII	Alternative angle used to better show position of left forearm resting on thigh

draw attention to those elements. When the regulations were reissued in 1914, the only change to the photographs was to consolidate them, rather than having them dispersed through the text as had been the case previously. This not only made them much easier to reference, it removed the possibility of missing the individual pages of text that were originally interleafed between the images.

Between 1912 and 1914, the amendments only accounted for a total addition of eight extra pages, with the most major changes focussed on four areas:

- Night Firing
- Usage of range finders

[424] *MR 1909(12)*, pp. 101-102.

- Classification badges
- Machine gun training

Of these, that for machine guns is not directly related to musketry training, as it was part of the separation and expansion of training for that arm. The training for night firing was changed from using mechanical rests, setting rifles to cover areas of ground at night, to instinctive alignment of the rifle in the shoulder. This may also have been of benefit in snap shooting practices, by giving further practice in instinctive alignment of the rifle. The training concerning range finders, and the numbers qualified to use them, had been slightly altered and tabulated to allow for the introduction of a new model and to make reference easier. The change most directly related to musketry training was the revision of classification badges. Whilst the text included in 1914 was significantly longer than that produced in 1912, this is primarily attributable to a reinforcement of the conditions under which awards were to be made; most specifically, that such prizes were only to be awarded for the highest score achieved whilst completing Table "B". Although this had been the case since 1909, the stipulation had originally been placed at the top of each section, rather than against each individual prize. This appears to have led some commanding officers to make awards for scores that were shot in competition, rather than classification, which went against the intention of the changes that had taken place over the previous twelve years.

These changes refined the overall training, increasing the musketry standard expected of second-line troops and expanding to incorporate new technology. In terms of the musketry itself though, they remained relatively stable. The greater focus appears to have been on machine gun training, an area which had been relatively neglected in the period immediately after the South African War. It was this void which the rapid practice in Table "B" – Practice 22 – was reputedly designed to compensate for, and which has formed a large part of the historiography relating to pre-war training.

Rapid Fire: The growth of the 'Mad Minute'

The development of rapid fire training in the period between 1902 and 1914 forms a distinct case study, as it has been the source of much commentary in First World War historiography on various aspects of pre-war preparations. In particular, this has drawn on the connection between the British approach to machine guns and rifle training in the years prior to the First World War.[425] Perhaps the earliest comment on this relationship was printed as a footnote in the second volume of the official history of the First World War, printed in 1924:

The rapid fire of the British infantry was introduced as a substitute for additional machine guns that were refused to it. In 1909 the School of Musketry urged that each battalion should have six guns instead of two; the suggestion was declined for financial reasons, and subsequent reductions of the Army Estimates and Vote made any such addition impossible. It was therefore decided to increase the rate of fire of each rifle by the special training of the men.[426]

The basic facts are reflective of the state of affairs at the outbreak of war; the British Army still had only two machine guns per battalion, although this figure was comparable with that of other nations.[427] Together with the prominence given to the effectiveness of British rapid aimed rifle fire in accounts of the first phase of the war, it has served to reinforce the belief that musketry was used to fill a deficiency caused by political and fiscal considerations. However, that would imply that rapid fire was introduced post-1909, whereas it was clearly developed before that date.

[425] For a discussion of machine-gun development from a technical and tactical standpoint during this period, written by a contemporary, see Lt-Col. G.S. Hutchison, *Machine Guns; Their History and Tactical Employment*, (London, Macmillan and Co., 1938), pp. 71-119.
[426] Brig-Gen. J.E. Edmonds (ed.), *Military Operations, France and Belgium, 1914*, Vol. II, (London, Macmillan and Co., 1925), p. 463.
[427] P. Cornish, *Machine Guns and the Great War*, (Barnsley, Pen & Sword Military, 2009), p. 30.

Rapid fire, in the modern sense, evolved out of the twelve years before World War One. In his 1907 *Fire Fighting* lecture, Norman McMahon put forward the following suggestion whilst responding to debates over the best distance between firers to ensure their relative safety from enemy fire whilst retaining a command structure:

...there can be no better course than to provide superior training in rapid and accurate fire, which, with good fire discipline, may enable a firing line at slightly greater intervals, and therefore with less vulnerability, to produce a more effective volume of fire than a dense line of the enemy.[428]

This connection between rapid fire and the spacing of the firing line had been demonstrated during an experiment at Hythe, where 100 marksmen and 150 average shots fired at different dispersions of enemy. The average shots overwhelmed the marksmen, suggesting that it was volume that mattered more than accuracy, although this conclusion was a matter of some debate.[429] McMahon also noted that rapid fire provided a method of fire suppression, which was why the practices focussed on firing long bursts at 'decisive' distances (600 yards or less), when it would be used at critical moments in an assault. At longer ranges, particularly if the firing line had the wider intervals which were recommended for advancing, there would not be the density of firers required to achieve the greatest shock value from this tactic. The eventual outcome of this discussion was Practice 22, laid out in *MR 1909*'s Table "B", and more commonly referred to by another name; the 'Mad Minute'.[430] This focussed on firing a

[428] Lt-Col. N.R. McMahon, 'Fire-Fighting', (Aldershot, Aldershot Military Society, 1908), p. 11.
[429] S. Bidwell & D. Graham, *Fire-Power*, (London, Pen & Sword Military Classics, 1985), pp. 27-28.
[430] Although contemporary usage of this term has been disputed, it was referred to as such by a pre-war Special Reserve officer in his autobiography. See Capt. G. Lowry, *From Mons to 1933*, (London, Simpkin Marshall, 1933), p. 8-9.

maximum of fifteen rounds in a minute, a figure that was far higher than that of any other European army.[431]

The drill practices required to attain this level of efficiency were not without historical precedent. In the Eighteenth Century, Frederick the Great had used a similar approach as a method of force multiplication, responding to the technical limitations of the arms available at the time. The muzzle-loading musket was relatively inaccurate, and was most effective when fired in volleys by massed formations at close range. The side that could fire more volleys in a given time could, potentially, control the battle by gaining superiority of fire. This led to three factors being seen as interlinked: Rapidity of loading/firing; volume of fire; and superiority of fire. The introduction of rifled muskets in the 1850s, followed by the first breech-loading rifles in the 1860s, increased the accuracy and range of the individual soldier, but they remained single-shot designs, and therefore the rapidity of fire was still dictated by the dexterity of the firer in reloading his rifle.

The development of the magazine rifle during the 1880s carried with it the potential to significantly increase the volume of fire achievable by the average soldier, by providing a 'reserve of fire' which allowed them to vary their rate of fire in a more predictable and controllable manner.[432] However, this development was met with caution, particularly over the logistical challenges that might be presented. Even the progressively-minded Ian Hamilton expressed reservations as to the desirability of introducing the new rifle, although his concerns stemmed from what he perceived as flaws in the approach to individual training. Most notably, these were the British Army's desire to retain 'unreasoning obedience' to

[431] For a fuller discussion of the development of the 'Mad Minute' from a technical standpoint, together with the identity of the record holder, see Nicholas A. Harlow, 'The 'Mad Minute': Rapid Rifle Fire, and its place in the Edwardian Army', in *A Long, Long Trail A-Winding; Centenary Perspectives on the Great War*, Special Publication No. 18, 2018, pp. 9-32.

[432] This feature had previously been noted as an attribute of machine guns by 'The Special Committee on Mitrailleurs', a War Office committee which investigated early machine guns at the beginning of the 1870s. See T.H.E. Travers, 'The Offensive and the Problem of Innovation in British Military Thought, 1870-1915', *Journal of Contemporary History*, 13, 3, (July 1978), p. 532.

words of command.[433] He suggested that a new approach was needed: 'reasoning obedience',[434] increasing the latitude allowed to individual soldiers in the field,[435] something which at least one member of staff at Sandhurst was still arguing against in 1891.[436]

The 'Magazine Rifle', when it finally entered service in 1889, incorporated a design feature which handicapped use of the magazine. The eight-round magazine, although larger in capacity than many of its contemporaries, could only be loaded with individual rounds whilst attached to the rifle. This meant that, once the magazine was emptied, it was time consuming to refill, and this was exacerbated by the magazine's capacity being increased to ten rounds from the introduction of the Lee-Metford Mark II rifle. In battle, this could reduce a soldier's rate of fire to no faster than that of the Martini-Henry it replaced.[437] However, as the magazine was seen solely as a method of providing a reserve of fire, this was not considered a particular problem until reports from both the Tirah Campaign (1898) and the South African War (1899-1902) were analysed.[438] Both campaigns had seen British forces facing opponents armed with modern European rifles, and had highlighted several issues with the Long Lee-Enfield, including the need for greater rapidity in reloading. Whilst rapid loading and magazine practices had both been incorporated into individual practices throughout the 1890s, these were primarily intended as preparation for the sectional practices. It was these which trained soldiers in the manner of how they would operate as a unit in battle, firing in volleys as their predecessors had done. Whilst this appears anachronistic in retrospect, the theory was not entirely flawed, as the intention was to create a firing line capable of producing a great enough weight of fire to achieve fire superiority. The underlying question, as to the specific number and concentration of men required in a firing line to

[433] Hamilton, *The Fighting of the Future*, p. 22.
[434] *Ibid*.
[435] *Ibid*, pp. 39-44.
[436] G.F.R. Henderson, quoted in M. Samuels, *Command or Control? Command, Training and Tactics in the British and German Armies, 1888-1918*. (London, Frank Cass, 2003), pp. 94-96.
[437] Colonel Lord Cottesloe, *The Englishman and the Rifle*, (London, Herbert Jenkins, 1945), p. 37.
[438] Major E.G.B. Reynolds, *The Lee-Enfield Rifle*, (London, Herbert Jenkins, 1960).

achieve superiority of fire, remained a point of debate up to the First World War, as noted above.[439] The chief failings of volley fire were that it relied upon a form of fire control which was too rigid for the modern battlefield, as Ian Hamilton had noted, resulting in the men being grouped relatively closely together. This presenting a massed target for their opponent's forces, and made them particularly susceptible to artillery fire. However, his suggestions were ignored by the Army, and sectional practices took precedence over those for individuals in the Musketry Regulations of 1898, although the South African War quickly demonstrated the flaws in this approach. The volley sights, allowing a section to fire at targets out to 3,500 yards, remained on the Lee-Enfield rifles until the introduction of the SMLE Mark III* rifle in 1916, when they were omitted as a wartime economy,[440] but they had also been superseded in such a role by the Vickers machine gun.

Table 33: Rates of rapid fire in Table "B", 1891-1909

Year	No. of Rounds	Time per practice (Seconds)	Time per round (Seconds)
1891	7	60	8.5
1892	7	60	8.5
1894	7	60	8.5
1896	7	60	8.5
1898	*7*	*60*	*8.5*
1902	7	45	6.5
1903	7	35	5
1904	5	25 / 30	5 / 6
1905	5	30 / 35	6 / 7
1909	10 / 15	60	6 / 4

Following a comprehensive examination of the Army's performance, which sought the opinions and suggestions of all of the main commanders who had been involved, major

[439] Lieutenant-Colonel N.R. McMahon, 'Fire-Fighting', *Aldershot Military Society. XCV*. (London, Hugh Rees, 1908); Maj. N.R. McMahon, 'The Principle that the Object of Fire in the Attack is to Facilitate Movement in the Direction of the Enemy, and in the Defence, to Prevent the Movement of the Attacking Infantry towards the Defender's Position', in *Report of a Conference of General Staff Officers at the Staff College, 17th to 20th January, 1910*, (London, Harrison and Sons, 1910), pp. 25-28, preserved in TNA WO 279/496.

[440] List of Changes no. 17622 (dated 2 Jan 1916). See I.D. Skennerton, *List of Changes in British War Material in relation to Edged Weapons, Firearms and Associated Ammunition and Accoutrements, Volume IV, 1910-1918*, (Ashmore City, Ian D. Skennerton, 1993), pp. 123-124.

changes were made to both equipment and training. Arguably the most important of these in terms of rapid fire was the development of the shortened Lee-Enfield rifle. Although early models had been trialled at Hythe in 1898,[441] it also responded to the suggestions of those who had fought in South Africa. This particularly related to its overall length, which placed it between the infantry's 'Long' rifle, and the cavalry's carbine. Amongst the rifle's other features was a fitting to facilitate loading using chargers; disposable metal clips, each holding five rounds, which could be used to refill the magazine in a single motion. The first version of this fitting was a two-piece design, which was relatively weak, and was replaced in 1907 with a unified 'charger bridge' which would remain in use on all successive iterations of the Lee-Enfield. The introduction of chargers not only drastically increased the speed of reloading, but totally changed the function of the magazine. It was no longer an ammunition reserve, but instead became the only manner by which the rifle was to be loaded. This tied in with several unintended consequences of the rifle's design, where the changes dovetailed with innate features, such as the relative placement of the bolt-handle and trigger, creating a rifle which was ideally suited to rapid manipulation, allowing the Army to look at ways to increase the rate of individual fire. However, issuing the new rifles took several years, which meant that the rate of fire in the classification practices was relatively consistent between 1902 and 1905, and there were no practices that required the firer to reload. This allowed the tables to be used for soldiers still equipped with the older Long Lee-Enfield rifles without the charger-loading feature.

The longevity of *MR 1905* appears to have had a positive benefit for training, as it allowed soldiers to become familiar with both the new type of practices and the new rifle. This was reflected in the steady rise of the average scores achieved over that period. Yet whilst the training itself was more comprehensive than any previous attempt, there was a flaw

[441] See HL Deb 23 February 1905 vol. 141 cc1037.

in how they were carried out. The tables retained the pre-existing concept of combining instruction with competition, with the classification tests overseen by the officers of the unit that was firing. This created a conflict of interest, as was noted in the Annual Report for 1906, because a soldier's pay was linked to his performance.[442] The Commandant also noted that, whilst it required 'several months' daily practice to achieve the highest rates of fire, some units were only practising with their rifles during the classification period.[443] This was due to the demands placed upon units to complete all of the required training as quickly as possible, to provide men to fill the drafts for units in India, and exacerbated by restrictions on range space, but the report was quick to point out that 'snapping' practice in barracks would help reinforce the mechanical skills necessary to achieve the highest rate of fire. It is perhaps due to these complaints that the Commandant's opinion was that soldiers were not capable of achieving the regulation figure of fifteen rounds a minute,[444] which he contrasted with the 'abnormal' figures of 30 and greater achieved by the instructors at Hythe.

By 1908 these concerns appear to have been addressed with some success, as that year the Commandant reported that the British Army had 'a considerable advantage over foreign soldiers in regard to skill in snapshooting and rapid firing', although with the caveat that the Army generally remained too obsessed with an unrealistic level of accuracy.[445] However, the issue of officers failing to enforce time limits remained, with the Commandant more explicit in linking the pressure applied to the invigilating officers with the possibility of denying a soldier the extra pay of a higher classification.[446] This could have had a particular impact on rapid practices, where time limits were most important. He also raised another

[442] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regular and Auxiliary Forces Serving at Home for the year 1906*, (London, Harrison and Sons, 1907), p. 47.
[443] *Ibid*, p. 48.
[444] This was described in the regulations as 'the highest rate consistent with reasonable accuracy.' See *ATM 1905*, p. 92.
[445] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regulars, Special Reserve, and Territorial Force, Serving at Home for the year 1908*, (London, Harrison and Sons, 1909), p. 59.
[446] *Ibid*, p. 58.

concern, that 'a very large number' of both serving and retired officers still believed 'that rapid firing is inevitably associated with an increased expenditure of ammunition',[447] a viewpoint he attributed to the failure of officers to study developments in fire tactics. The drive to address these concerns, particularly those relating to the classification practices, guided the development of the new regulations which were introduced in 1909.

Amongst the perceived benefits in the approach of these new tables was that the introduction of independent supervision of the Classification practices, which were now significantly reduced in number, would ensure that time restrictions in practices were observed.[448] The Commandant also expected to see a corresponding drop in the numbers of those classifying as Marksmen, as men who had focussed their skills on success in 'Bisley' competitive shooting would lose their advantage under the more practical conditions. The poor results noted in the Annual Report for 1909 suggested that the Commandant's assessment had been correct, and he also felt that it demonstrated the previous neglect of preliminary training, as so many had failed to qualify out of Part I of Table 'B'.[449] The following year saw a remarkable rise in scores, which was seen as the Army rectifying this neglect, and particularly attributed to 'vastly increased practice throughout the year in rapid loading...'[450]

This expansion of musketry training, from being restricted to two weeks on the ranges to being practised throughout the year, was necessary to develop the skills required to perfect rapid fire, and a point which Hythe had been struggling to enforce for decades. The same Report also noted that there was a general feeling that too much of the classification score

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[447] *Ibid*, p. 59.
[448] *Ibid*, p. 58.
[449] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regulars, Special Reserve, and Territorial Force, Serving at Home for the year 1909*, (London, Harrison and Sons, 1910), p. 47.
[450] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the Instruction and General Work at the School of Musketry, and on the Musketry Training of the Regulars, Special Reserve, and Territorial Force, Serving at Home for the year 1910*, (London, Harrison and Sons, 1911), p. 49.

depended on Practice 22, as it had the most rounds of any of the practices. The Commandant agreed with this assessment, and had devised a potential solution should the same comments be made in the 1911 returns.[451] Whilst there was no direct reference to this in the following report, the scoring was amended in such a way as to lower the practice's maximum possible score. The system of independent marking was also not without controversy, and formed a point of discussion at the 1911 General Staff Conference.[452] Some officers were of the opinion that it failed to prevent the greatest abuse, that of 'impersonation', although the current Commandant at Hythe, Colonel Congreve, stated that he had never seen any evidence of such a practice.[453] The conclusion of the conference was that the system was effective, producing an accurate assessment of the state of musketry efficiency for the Army Council, and that it was to be retained.[454]

By 1912, there was a growing drive to make sure that as many recruits as possible were completing both tables in a single year, to ensure that the greatest number of men were available for active service.[455] Recruits of 6 months standing were to have completed Table "A", and those who had passed through both tables could be considered able to undertake field practices, 'now that musketry training is systematic and progressive...'[456] In the final full year of training, 1913, there had been an improvement in the numbers relating to both of these points. It was also decided that the wind-gauge on the rear-sight was no longer to be used, to ensure that training was more practical.[457] In its place, the solution was to 'aim off'; adjusting the point of aim to one side, to account for the effect of wind on the bullet, as had

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[451] *Ibid*, p. 50.
[452] Colonel Du Cane *et al*, 'Policy of independent supervision in the classification practices of the Regular Forces and Special Reserve, and in the standard test of the Territorial Force', in *Report of a Conference of General Staff Officers at the Staff College, 9th to 12th January, 1911, Held under the direction of the Chief of the Imperial General Staff*. (London, H.M.S.O., 1911), pp. 36-42. Preserved in TNA (UK) WO 279/42.
[453] *Ibid*, p. 37.
[454] *Ibid*, p. 50.
[455] Hythe Report, 1912, p. 51.
[456] *Ibid*, p. 53.
[457] H.M.S.O., *Report by the Commandant, School of Musketry, Hythe, on the School of Musketry, Hythe, and on Musketry Training during the year 1912*, (London, Harrison and Sons, 1913), p. 63.

previously been the case. So the Army of 1914, whilst not considered perfect by those entrusted with training it, were certainly felt to be far better trained than they had been in 1909, and in a more practical manner. In terms of rapid rifle fire, they were far more intensively trained than their European contemporaries, but can this be explained as purely intended to cover a lack of machine-guns?

To understand the context of these discussions, it is necessary to examine contemporary machine gun training and development, which was beginning to receive renewed attention around 1909/10.[458] Although the Maxim Gun had been in service since 1890, not every unit had received them by 1897,[459] with Hythe pointing out that same year that the guns could not be properly used without the crews being properly trained.[460] This may well have been a contributory factor in their lacklustre performance during the South African War, where they suffered from the extremes of temperature and poor handling, as well as being mounted on unsuitable artillery-style carriages.[461] They were undervalued to the point where the committee tasked with examining their usage alongside quick-firing guns originally ignored machine-guns entirely, and had to be recalled.[462]

Whilst the committee did eventually make some recommendations, discussion as to how best to use machine-guns continued. A demonstration of the relative state of training was witnessed by R.V.K. Applin, a contemporary of Norman McMahon. In a test undertaken at the South African School of Musketry in Bloemfontein in 1904, a single Maxim gun, manned by two sergeant-instructors, fired against forty-two First Class student riflemen over an unknown distance for a minute.[463] All were allowed unlimited ammunition, firing at the 'Rapid' rate, at targets representing infantry spaced two paces apart. The machine-gun

[458] T.H.E. Travers, *The Killing Ground*, (Barnsley, Pen and Sword Military Classics, 2003), pp. 64-65.
[459] J. Ellis, *The Social History of the Machine Gun*, (U.S.A., Purnell Book Services, 1975), p. 65.
[460] Quoted in Ellis, *The Social History*, p. 58.
[461] Travers, *The Killing Ground*, pp. 63-64.
[462] Travers, 'The Offensive', p. 534.
[463] Maj. R.V.K. Applin, *Machine-Gun Tactics*, (London, Hugh Rees, 1915), pp. 8-9.

achieved greater success yet fired only half the number of rounds used by the riflemen, demonstrating its superiority under the conditions of the trial. However, as he himself admitted, such comparisons were subject to a number of variables.[464] On this occasion, the measured distance was 1,000 yards, a range at which Hythe defined rifle fire as only 'Effective',[465] and during a period where the chief instructor at Hythe at that time, Wilkinson Bird, was noted as not being 'an enthusiast' when it came to machine-guns.[466] This demonstration was undertaken before the Regulations of 1905 and 1909 had been implemented. As such, whilst it does demonstrate the relative effectiveness of the machine-gun at that time, it predates the largest efforts to improve the standards of both musketry and machine-gun fire.

In 1905 the 'war establishment' of the stores to be taken on campaign was raised to two guns per infantry battalion,[467] a figure which appears to have been felt the most convenient number for use at short ranges,[468] although there were still major issues in terms of training. Despite the inherent variations between individual weapons in both sighting and operation, the two guns were issued to stations rather than individual units, with one being designated 'mobilisation stores', and not allowed to be used for training purposes until 1910.[469] This meant that a unit could potentially go to war having no practical experience of either one or both guns, something which the Commandant criticised in his Report for 1909.[470]

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[464] *Ibid*, p. 7.
[465] Quoted in S. Jones, *From Boer War to World War*, (Norman, OK, University of Oklahoma Press, 2013), p. 92.
[466] See Hutchison, *Machine Guns*, p. 96.
[467] H.M.S.O., *Report…for the year 1905*, p. 55.
[468] A comment included in marginal notes made by Hugh Bruce Williams, whilst attending a Senior Officers Course at Hythe, May 1909. See Papers of Sir Hugh Bruce Williams, Imperial War Museum, 77/189, box 3.
[469] Major F.V. Longstaff & A.H. Atteridge, *The Book of the Machine Gun*. (London, Hugh Rees, 1917), p. 138.
[470] H.M.S.O., *Report…for the year 1909*, p. 48.

1905 was also the first year that machine gun training was taught as a separate course at Hythe,[471] allowing for a far greater focus upon what had become a distinct discipline. This training faced several challenges, referred to repeatedly in the Hythe reports throughout this period. The largest of these were a lack of ammunition to train with, and high turnover amongst the crews, due to the need to supply men to units in India. Both of these had been addressed by 1913, together with a push to raise the level of training of the machine-gun detachments. These improvements were assisted by the additional training, which had provided the bulk of the amendments when the Musketry Regulations were reissued in 1912. Whilst this was apparently the period in which Hythe asked for an increase in the number of machine-guns issued, no comments to this effect can be found in the Hythe Annual Reports of this period, the closest being that the guns then in hand were 'obsolete' in 1909.[472] Indeed, after authorisation was given to use both machine-guns for training in 1910, the main focus appears to have been in ensuring that the crews were properly trained to handle them. By 1913, the Commandant was looking to ensure that machine gun crews were only comprised of First Class gunners.[473] Overall, the Reports certainly suggest that the situation at the outbreak of war was a vast improvement even over that which had prevailed in 1909, and that both riflemen and machine-gunners were as well trained as it had been possible to achieve, although this was not yet perfection either.

A related issue which has often been overlooked is the matter of how the number of guns on issue might have been augmented. In 1908, in response to a suggestion by the Financial Secretary at the War Office that they would support an increase in machine-guns, the Master General of the Ordnance replied that two guns were felt to be sufficient.[474] This was still the case two years later, when he stated that 'no new machine gun is to be

[471] H.M.S.O., *Report…for the year 1905*, p. 5.
[472] H.M.S.O., *Report…for the year 1909*, p. 48.
[473] H.M.S.O., *Report…1913*, p. 65.
[474] Quoted in Ellis, *The Social History*, p. 70.

considered at present'.[475] The reasoning behind this decision was that, about this time, trials were being undertaken for both a new rifle,[476] chambered in a new calibre, and an automatic rifle. In that light, the desire to retain compatibility of calibre between the infantry's weapons appears to have stayed the decision until the new cartridge had been developed.[477] It was not until 1911 that the Master General finally relented, and the Vickers 'Light' Gun was sent for testing, so as to supply 'immediate requirements with this gun'.[478] This phrasing again seems to suggest that it was initially intended as a stopgap rather than a permanent solution when it was introduced in 1912. Apart from various refinements over the original design, the Vickers gun weighed only 40lbs against the Maxim Gun's 60lbs,[479] but the complexity of the design meant that, of the initial order of 1,792 guns to be delivered by July 1915, only 1,022 had been delivered by that date.[480] Given the difficulty of increasing the production capacity of the Vickers factory when war broke out, it is hard to conceive how a higher rate of production could have been achieved in peacetime. It is also worth noting that, contrary to the conventional argument, the German Army issued only two machine-guns per battalion as well. Where they differed was in terms of organisation, with the guns formed into a separate company, allowing the regimental commander to group them in greater numbers if he desired, rather than distributed through his battalions on the British model. The funding to provide the Germans Army with six guns per regiment was not approved until 1912, in the wake of the Moroccan Crisis.[481]

There is then the question of whether another gun could have supplemented either the Maxim or the Vickers. McMahon was a champion of the automatic rifle, echoing a comment

[475] Travers, *The Killing Ground*, p. 65.
[476] Development of the Pattern 1913 rifle, as it became known, had commenced in 1908. See T. Edwards, *The P14 .303 Infantry Rifle*. (2010) http://www.slideshare.net/tcattermole/p14 [Viewed 13 Sep 2016].
[477] S. Bidwell & D. Graham, *Fire-Power; The British Army Weapons & Theories of War, 1904-1945*, (London, Pen & Sword Military Classics, 1985), p.54
[478] Travers, *The Killing Ground*, p. 65.
[479] Ian V. Hogg, *The Greenhill Military Small Arms Data Book*, (London, Greenhill Books, 1999), p. 231 and 239.
[480] Quoted in Cornish, *Machine Guns*, p. 49.
[481] Cornish, *Machine Guns*, pp. 23-24.

that appeared in the Annual Report for 1907, which suggested that one might be adopted in the 'next few years'.[482] The Small Arms Committee had been examining various designs since the 1890s, although it was given a renewed sense of purpose in 1900, when examining whether there was a need to replace the Lee-Enfield. By 1906 five designs had been trialled, one of which, the 'Hallé', was reported widely that year after Jesse Wallingford gave a remarkable performance during the trials in terms of both speed and accuracy.[483] This was also the year that the Committee set out the basic criteria by which future designs would be judged. However, of the twenty-seven designs tried before 1914, none were found to be entirely satisfactory, although one design remained under trial throughout the war.[484]

Reading contemporary publications, it appears that the term 'automatic rifle' was used in a broader sense during this period, as what might now be considered a light machine-gun could, when fired from the shoulder without a rest, be considered more akin to a rifle. Guns of this type had appeared at about the same time, and one in particular, the 'Rexer' (otherwise known as the 'Madsen'), had been tested at Hythe in 1904, and was felt by at least one witness to have been very successful.[485] However, it does not appear to have been viewed favourably by the authorities, and a legal dispute over licensing eventually led to the Rexer Company being wound up. As such, although McMahon had pressed for the British Army to 'lead the way' in perfecting and adopting such a design at the 1910 Staff Conference,[486] particularly given the tactical benefits he envisaged for them, the Army needed to stimulate as well as perfect the designs. The level of specialisation which McMahon himself envisaged can be seen in the list of accoutrements he expected to be fitted to these guns: 'silencers, and

[482] H.M.S.O., *Report…for the year 1907*, p. 56.
[483] D.S. Beebe, 'Three Hundred Shots a Minute'. *The Technical World Magazine*, Vol. VI, 1906, pp. 12-14.
[484] See T. Edwards, *Early British Automatic Rifle Trials*. (2009). http://www.slideshare.net/tcattermole/early-british-automatic-rifle-trials-a-lecture-to-the-hbsa-of-gb [Viewed 13 Sep 2016].
[485] Sleeman, 'Prince of Riflemen', p. 506.
[486] McMahon, 'The Principle that the Object of Fire', p. 26.

perhaps hyposcopes and detachable shields'.[487] Although none of these were ever used by the British Army in combat, it does suggest how wide the possibilities were felt to be at that time. He also appears to have been ahead of his time, as the design which was eventually to meet this demand, the Lewis Gun, did not come onto the market until 1912, and entered service with the infantry in 1915.

In light of these issues, a call for more machine-guns, whether it was an increase in Maxim guns or the introduction of light machine-guns,[488] was essentially moot. The capacity to build more of the former did not exist until the creation of a new factory in 1915, and no viable automatic rifle or light machine-gun had been found by the outbreak of war that was felt up to the task. The Lewis gun was far from perfect, but represented the best of what was readily to hand, and would become integral to British offensive tactics during the latter half of the war, along with the grenade. It has been argued that marksmanship suffered from this process, as there was no longer the same requirement for accuracy, nor the time or space to permit of the training to perfect such skills. Yet, in spite of these drastic changes, Practice 22 remained part of musketry training throughout the war, although it was changed to be fired from a trench in 1917.[489] In fact, similar practices were to remain as part of a soldier's training with the bolt-action rifle into the 1950s.[490]

Practice 22, as introduced in 1909, was a highly unusual practice. For the first time, firers were required to demonstrate a level of skill and dexterity that had previously only been required in principle. However, that it was clearly a development of previous tests makes it highly unlikely that it was developed as a response to a single refusal to provide additional machine guns. Given the poor performance of machine-guns in South Africa, and the focus

[487] *Ibid*. A hyposcope was a periscope system, which allowed the firer to remain behind cover whilst firing the rifle over a parapet. Early designs had appeared during the South African War, and Hythe had experimented with one, developed by Mr. Youlton, in 1903.
[488] Bidwell & Graham, *Fire-Power*; Samuels, *Command or Control?*
[489] H.M.S.O., *Musketry Regulations, Part I. Addendum No. 4*, (London, H.M.S.O., 1917).
[490] See War Office, *Infantry Training, Volume I, Infantry Platoon Weapons, Pamphlet No. 3, No. 4 Rifle and Bayonet*, (London, War Office, 1955), p. 87.

on snap-shooting which is evident in the training issued between 1902 and 1905, it is just as possible that such training had been developed to provide infantry with the ability to apply that reserve of fire when needed, without relying on machine-guns. That the practice survived the introduction of the Lewis Gun in 1915, and continued in a similar form into the 1950s, seems to confirm this approach. Whatever the reasoning, the 'Mad Minute' was unparalleled in contemporary European training, and is a product of the unique conditions and experiences of the British Army at the start of the Twentieth Century.

Summary:

Whilst the period between 1909 and 1914 was one of relative stability in musketry training, as demonstrated by the longevity of the regulations as a body, it was very much a product of the previous decade. *MR 1909* would not have been possible without the experiences of the South African War, and the results of the experiments conducted between 1902 and 1908. Its long service life also suggests that the broad principles grouped under 'Monro Doctrine', most notably the progressive arrangement of training, had proved much more effective for training purposes than the more rigid drill approach that it replaced. *MR 1909* built upon the practical experience of applying *MR 1905* over four years, refining the training to ensure that it had the greatest impact, was reflective of battlefield scenarios, and was properly assessed.

It was this last concern that led to the most fundamental shift in the approach to training tables since the introduction of the magazine rifle, separating instruction from assessment in what could be described as a 'modern' examination system, and setting the pattern that continues to be used today. This approach, coupled with a pay incentive, also ensured that troops were engaging with the training, rather than seeing it as something to be suffered, with that interest driving their desire to participate in additional competitions, which in turn raised their overall efficiency. In turn, the military hierarchy were finally able to accurately assess the battlefield efficiency (as opposed to mechanical accuracy) of the troops

under their command, arguably for the first time since such training had been implemented in the 1850s.

This assessment is reinforced by the way *MR 1909* evolved through subsequent reissues, with minor adjustments to the conditions or scoring of practices to ensure the requirements were reasonable. As noted above, the largest source of amendments in both 1912 and 1914 reissues was not related to musketry, but an expansion of machine-gun training, which came into focus from about 1910. That the army hierarchy in general was committed to maintaining and improving the high standard of musketry can also be seen at the Staff Conference in 1911, when the question of proficiency pay was raised, and every officer who spoke supported the retention of a musketry standard as part of such a system.[491]

The 'Mad Minute' provides a study of not only the development of musketry training between 1905 and 1909, but the complicated system of design and procurement which influenced the development of training as well. It had its foundations in the experiments conducted under Monro, using a rate of fire that had been discussed as early as 1904, and which was incorporated into the regulations the following year. Given the universality required of training, it is possible that the delay in including this as a practice was tied to both a need to ensure enough charger-loading rifles had been issued, and giving time for troops to become familiar with the charger system. Its successful application also relied upon repeated practice of loading drills; mechanical repetition of the loading actions to allow the basic elements to become automatic. Whilst the application of the training in the field was to be conducted intelligently – 'reasoning obedience',[492] as Ian Hamilton had described it – at its heart were forms of drills which were not dissimilar to those applied to every previous form of firearm. It was in their operation that they differed, relying on the autonomy of the individual, rather than the orders of a fire commander. This form of training, as Hamilton had

[491] Colonel Du Cane *et al*, 'Policy of independent supervision', pp. 42-45 and p. 52.
[492] Hamilton, *The Fighting of the Future*, p. 22.

also suggested, relied upon the basic nature of the Army; volunteers, with a relatively long period of service. The success of this training can be seen in the opening stages of the war, when the British forces operated with relatively little artillery support, and therefore relied almost entirely upon small arms fire as the basis of their combat efficiency. Whilst it may well have been desirable to supplement this firepower with a greater number of machine guns, it would appear that this was in many ways a moot point, as neither the desire nor the technology appears to have been present at the necessary points to make such an outcome possible. Given the experience of machine-guns in South Africa, it appears highly likely that rapid aimed fire training would have been included in the musketry regulations anyway. The fire effect it created was much more mobile, and much harder to silence, than the heavy Maxim gun, and was particularly useful in an offensive capacity, where it was felt the machine-gun would be at a disadvantage.

The British Expeditionary Force that went to France in August 1914 was, at least in the assessment of the Commandant at Hythe, as well trained as any that had gone before it. It was not perfect, and had war come later many things might have been different about that force, both in terms of armaments and training. But this does not mean that they were felt to be underequipped or poorly trained by the majority of officers. On the contrary, the comments from Hythe suggest that they were improving on an already good standard, and one which they felt was equal if not superior to any European army. If described in modern terms of 'force multipliers', the training allowed a relatively small force to operate successfully in the face of numerically superior opposition, and gave the country time to begin the long and arduous process of equipping for the entrenched warfare that followed. Although this approach has been criticised, the training had succeeded in creating a successful expeditionary force, but those behind it understood that it was not designed to operate in the field for extended periods of time. Once the new realities of warfare took hold,

and tactics adapted from open to entrenched warfare, the training was changed to allow for the greater usage of new attack plans and weapons, including machine-guns and grenades. Whilst these formed the basic construction of an infantry section as used today, at the heart of every soldiers training remained *MR 1909*; abbreviated, due to the demands of time and the requirements of a smaller battlefield than had previously been imagined, but retaining most of the basic elements. As such, whilst many have argued that lessons from the South African War had been forgotten, the work done in musketry provided a solid experimental foundation to take the British Army through the First World War, and into the 1920s.

Conclusion

As outlined in the introduction, the British Army's approach to musketry training underwent significant changes during the period between 1884 and 1914. The forces driving this process were the result of a complicated interaction between various influences, which can be broadly grouped under three headings: technological; tactical; and political. No one factor was consistently more influential, and their inter-relationship is best described as triangular, each interlinked with the other two and feeding into the centre point of musketry training, but with the importance of each factor rising and waning at various times. This fluidity also resulted in further complications, as it was entirely possible for two factors to pull against each other, and the School of Musketry then determined the best balance between the two.

Technological changes were the impetus for the most basic changes in training, as this covered the evolution in both rifle and ammunition designs. In 1884 the Army were using the Martini-Henry; a single-shot rifle which was not particularly advanced in terms of cartridge design or mechanical operation from the Snider-Enfield it had replaced, and only two short steps from the rifle-musket which had first entered service in 1851. In practical terms, there were many similarities between the training issued for the Martini-Henry and that for the Long Land Pattern musket of the Napoleonic War, most notably in the relatively rigid methods of instruction that were employed. This is perhaps best exemplified by the use of rote training to teach marksmanship, instilling the skill by mechanical repetition and automatic responses to a fire commander's orders. In battle, commanders still relied on massed volleys to gain superiority of fire over the opposing forces, and the smoke from the black powder-filled ammunition covering the battlefield meant that the concept of concealment was practically unheard of.

The introduction of the magazine rifle in 1889 marked the culmination of ten years of experimentation, and the start of a series of changes which would lead to the development of

the ‘modern’ battlefield’. In the face of the conservatism of the Army, a rifle and ammunition entered service that was not simply evolutionary, but revolutionary. Combined together, the magazine rifle and its new ammunition gave the individual soldier both greater range and a reserve of fire that was not limited by his dexterity of feeding individual rounds into his rifle. An individual soldier was now dangerous at distances over 1,000 yards, and out to over 2,000 yards as part of his section. The move to smokeless propellant, with the introduction of Cordite, was the final step away from the rifles of old, and the new rifling designed to suit it was the final major change of the nineteenth century.

The changes that took place between 1900 and 1907 were more a matter of refinement, creating the ‘Short’ rifle which was to become a feature of the twentieth century battlefield. The adoption of a charger-loading system at the same time created a rifle design which went on to earn a reputation as a remarkably robust and successful battlefield rifle, contradicting those who had wanted something more akin to the Mauser rifle the Boers had used in South Africa. The Army had started development of such a design, in the form of the Pattern 1913 rifle, but its introduction had been delayed by issues with its ammunition and it was not ready when war was declared. This can be viewed as serendipitous – had those issues not occurred, the British Army could have been in the midst of re-equipping just as war broke out, which might have had disastrous consequences from both a training and a logistical standpoint. As it was, the soldiers of the B.E.F. were well-versed with the foibles of their rifles, and able to use them to full effect.

Whilst technology provided the tools for a soldier to use on the battlefield, it was tactics that dictated how both soldiers and arms were coordinated. As the decision of how both were to be best utilised was often a matter of opinion, tactics were much more subject to changes in the prevailing school of thought. This can be most clearly seen between 1884 and 1899, when the targets used for individual training were altered from bull’s eye to silhouette

and back again, as the Army learnt from the lessons of the First Boer War, then reversed them when the new rifle was adopted. It also restricted what technology was adopted, particularly in the decisions made regarding how the magazine rifle was to be loaded and used. Whilst these decisions were not illogical when explained to a contemporary audience (most notably that detachable magazines would lead to wasted ammunition when half-used magazines were discarded),[493] the final rifle had to be serviceable anywhere in the world, and so certain choices were made that appear short-sighted in retrospect. The benefit of lighter ammunition was not lost on those in charge of selecting the design, as this allowed for '115 rounds [to be carried] for the same weight as [the soldier] now carries 70'.[494] This meant that soldiers could fight for longer before needing to be resupplied, and fewer wagons would be required to transport the same quantity of ammunition. Yet concerns as to whether soldiers would be able to control their fire, rather than expending their ammunition wastefully and stretching the supply chain, led to the retention of strict fire control procedures and the fitting of the magazine cut-off as preventative measures.

This also explains why the targetry used for individual practices in the 1890s apparently took a retrograde path; the focus was upon making sure soldiers were individually as accurate as possible over known distances, as this was felt to ensure the best results when they fired as a section. As the section was felt to be the smallest effective unit on the battlefield, the targets for those practices were more realistic, whereas bull's-eye targets could be used to better assess and correct individual marksmanship skills. In combat, it was intended that the fire commander would designate the target and range, which is why sectional practices in *MR 1898* received a greater emphasis than ever before. But the two campaigns of that period, in the Tirah and South Africa, demonstrated the failings of such a system. At a tactical level, retaining fire control under a single fire commander was no longer

[493] Sir H. Halford, 'Lecture upon the New Service Rifle', *Aldershot Military Society*. (Aldershot, Divisional Printing Office, 1888), p. 7.
[494] *Ibid*, p. 5.

possible, as the increased lethality of both modern small arms and artillery meant that it was necessary to increase the spacing between soldiers to limit the damage a single shell could inflict, and combined with the increased noise of combat the modern battlefield was too loud to permit the necessary words of command to be transmitted successfully and rapidly. At a training level, the School of Musketry had always stressed that Sectional and Field practices were often poorly executed, either lacking in realism or not being practised at all. This meant that the British Army at the turn of the century was not necessarily particularly well-practised in their main method of fighting. It was problems like these that faced Field-Marshal Lord Roberts when he took overall command, both in South Africa and then as Commander-in-Chief of the Army as a whole.

Roberts' General Order of 1902,[495] concerning musketry training in the Army, makes it clear that he viewed marksmanship training as having equal importance to battlefield manoeuvres, which relied upon gaining superiority of fire at the decisive moment. He also noted that the Army as a whole appeared to think of musketry as a distraction, rather than central to its effectiveness. His drive to change that approach meant that he formally ordered General Officers Commanding to investigate and comment on training. If Ian Hamilton's comments were correct, he also sought to ensure that the training was far more practical through his choice of commanders at Hythe. Although it is not clear whether this was actually the case, the work of Richard Pennington and Charles Monro, later assisted by Norman McMahon, laid most of the foundations of the Army's training, as well as demonstrating how effective small arms could be when applied correctly. Their work was not conducted in isolation, and required a shift in the role of the individual soldier on the battlefield to be fully effective. Although a section was still the smallest effective unit, soldiers were now allowed a certain amount of latitude in their actions, operating within a wider plan. The focus of

[495] See Appendix 6.

musketry training expanded to encompass all of the skills that a soldier would need to operate successfully as part of his unit. Roberts' emphasis upon short-range accuracy, particularly in snap shooting, as well as progressive training, were clearly reflected in the new manuals, and would remain at the heart of all training up to World War One. The debates surrounding the best method of achieving superiority of fire also demonstrate that tactical opinions remained divided, with certain elements pushing to retain greater unit control, a slightly conservative approach which was gaining ground in the years immediately before the war, although this is less apparent in individual musketry training for obvious reasons.

These debates also demonstrate the political elements of musketry training, which can be considered under two different descriptions: personal and interpretational. Politics within the Army were often subject to patronage and by personalities; the ability of an individual to affect change, or resist it. In the case of Ian Hamilton, the patronage of Lord Roberts not only assisted the publication of his early work on improvements to musketry training, but allowed him to experiment with the training of the Native Army in India. He was so successful that elements of the British press used it as a goad when they felt that Hythe were failing to improve the training standards of the British Army. The instructors at Hythe were certainly not incapable, with many of the finest marksmen of the British Army amongst their number, and a keen technical understanding of the capabilities and application of their arms. The delays were often caused by the different scope of training; Hythe was required to create training that could be applied anywhere the British Army was stationed, rather than just in India. It was also forced to operate within the tactical plans of the British Army, and lacked the support of any senior officers to affect anything more than gradual change. This is another reason why Lord Roberts was so important; as Commander-in-Chief, he was the most senior officer, and used his position to the benefit of musketry training. It is worth noting that he did not support Hythe in the same way that he had done Hamilton, but the circumstances were

very different. Whilst Hamilton was experimenting with new ideas, Hythe had to formulate solutions to the failings seen during the South African War. Roberts' approach was to set the direction for the Army as a whole, which Hythe then followed. As noted above, he also benefitted from finding officers, most notably Charles Monro, who were particularly suited to creating a training system upon a more modern progressive approach, which could then be refined into the system which remained at the heart of training throughout World War One.

As with any attempt to define themes throughout this period, there are those which cross between multiple approaches. This is true for many of the debates surrounding how to win battles in the era of the 'empty battlefield'. The late Victorian era had seen the formation of two distinct groups of military patronage: The 'India Ring' under Field-Marshal Roberts; and the 'Ashanti' or 'Wolseley Ring' under Field-Marshal Wolseley in Britain (the Ashanti being 'their' most famous campaign in Africa).[496] The acolytes of both seem to have been unable to form their own circles of patronage, or at least not to the same extent, and so the rings dispersed as the followers became too senior to simply follow. Instead, the challenges raised to military orthodoxy set up new divisions, based upon how best to meet them. The most notable was the Cavalry school, who sought to preserve the traditional elite role of that arm on the battlefield, and who provided both of the commanders of the B.E.F., John French and Douglas Haig. Whilst they succeeded in preventing cavalry becoming mounted infantry, in the style of those deployed in the South African War, they were not able to avoid the advances in musketry training. The 'Short' rifle, in replacing both carbine and long rifle, meant that for the first time both Cavalry and Infantry were armed with the same weapon, and subject to the same proficiency standards. In terms of classification scores, the Cavalry proved to be the equals of the Infantry in the years between 1910 and 1913, which was

[496] R. Lock, *Hill of Squandered Valour; The Battle for Spion Kop, 1900*, (Newbury, Casemate Publishers, 1999), p. 99.

perhaps just as well: the first shot fired by a British soldier on the Western Front was by a corporal of the 4th (Royal Irish) Dragoon Guards.[497]

At the same time, discussions of how best to use this new firepower also became a political struggle. One example of this is the debate caused by McMahon's contention that the rifle was now equal in importance to the bayonet as a motivating force in the attack.[498] Although this was in line with lessons learnt during both the South African and Russo-Japanese wars, senior officers worried that soldiers would depend upon their firepower to overwhelm the opposition, remaining at a distance rather than advancing to take the position in close combat. This position was taken most forcefully by Brigadier-General Launcelot Kiggell, Director of Staff Duties and protégé of Douglas Haig.[499] Similar views were expressed at lower levels, and the Commandant at Hythe continued to comment on the resilience of entrenched opinion. That resistance had a strong influence upon tactical change, and upon the choices as to what equipment was required and how it was to be used.

This can also be seen in discussions around the machine gun, where a small group of relatively junior officers lobbied for its greater usage in the face of resistance from older officers who thought of them as an ineffective distraction. They were also hindered by the development of the Pattern 1913 rifle, and its new ammunition, in the years immediately prior to the First World War. Due to the desire to retain a single calibre for both rifles and machine guns, selection of a new machine gun was delayed until that process was completed.[500] The Vickers gun was initially only taken on to replace those Maxim guns which had come to the end of their service lives, although the decision to do so can be seen as fortunate in retrospect. Whilst the junior officers' theories regarding the potential of machine guns were eventually proven correct, and several were very prominent in announcing this

[497] The shot was fired by Ernest Edward Thomas, during a skirmish with German cavalry outside the town of Casteau on the morning of 22nd August 1914.
[498] See McMahon, 'The Principle that the Object of Fire', pp. 25-28 and 32.
[499] Bidwell & Graham, *Fire-Power*, pp. 31-32.
[500] *Ibid*, p. 54.

fact, there is every chance that they might have been more successful had the change to a smaller calibre already been implemented, although this may have created further issues to be overcome.

Too many variables exist within that debate to truly vindicate one side or the other, but the lack of machine guns certainly placed additional emphasis upon the ability of riflemen to generate rapid and accurate fire in volume. Cartridge development had also had an impact on tactics in the late 1890s. With the introduction of smokeless propellant in 1895, the cover given by black powder was gone, and with it the need for brightly coloured uniforms. Both the Tirah Campaign and the South African War demonstrated the need for better usage of cover, including both entrenchments and early forms of camouflage. The development of concealment as a tactical concept required immediate changes to training, to ensure that both were used correctly, and which is reflected in the illustrations that accompanied Musketry Regulations after 1903.

Whilst the experiences of various wars, filtered through these three channels, drove the largest changes, there was also a much more continuous process of assessment and adjustment of training that ran in parallel. This was driven by the need to not only ensure that the manuals were in line with current practices and theories, but also that they were teaching in the most effective manner. This is why so many manuals were issued between 1890 and 1900 – the training was constantly being altered to enhance the potential of the new rifle, in a way that meshed with current tactical theory. Although the changes were frequent, they were also more evolutionary than revolutionary, retaining a sense of continuity back to the first manuals of the 1850s. The basic approach to training prior to the South African War, where rote instruction was used to inculcate obedience and standardise reactions, was one which had its roots in much older systems of instruction. Although it involved an assessment cycle not dissimilar to that later described by Kolb, the autonomy of the process was as restricted as

possible, with each individual only making observations and alterations within parameters set by his commander.

From 1902 onwards, although commanders retained overall control on the battlefield, the approach to training was something more recognisably modern. The contemporary description of 'Monro's Doctrine' as 'progressive' is true in several ways. Not only was it a progression from the training it replaced, with each section of the training expanding upon the previous one until the classification phase was reached, but its approach to individual training was more open to allowing soldiers to make informed decisions on the battlefield. This was anticipated by the work of Ian Hamilton in the mid-1880s, who had suggested the approach such training might take, if not its final form. However, it was only after the South African War that such training could have been successfully introduced to the British Army, and even then it was far from universally popular amongst commanding officers. The speed with which these changes were made, and without requiring large changes in personnel at any particular point in the training system, suggests that the existing training mechanisms were basically sound, and simply needed reinforcement rather than replacement to be effective.

The impact of the South African wars during this period is hard to overlook. The First Boer War (1880-1) led to a more practical approach to individual marksmanship, with the introduction of humanoid targets for individual training and 'fire with movement' practices. It is ironic that what appears to have reversed these changes was the introduction of the new magazine rifle, which would potentially have benefitted from that style of training. Instead, the manuals reverted to ensuring that soldiers were even more accurate, and this was twinned with a focus on sectional training over that for individuals, which grew throughout the decade. This led to a system whereby individual training purely taught accuracy in the most sterile sense, rather than the other skills necessary for the battlefield, which would only be taught at a sectional level. The Hythe reports are generally consistent in their frustration at

how poorly sectional training, including field exercises, were conducted during this period, giving the impression that the desire to only teach battlefield practices to sections was idealistic rather than practical, and somewhat misguided. The School of Musketry was aware of both its own shortcomings and advances overseas, but often felt handicapped by a lack of interest amongst all ranks, as well as a limited amount of money and space for training. Their relative success in making do with what little was available, whilst the majority of the available funds were being channelled into retaining naval superiority, allowed the British Army to cover those shortcomings until faced with the challenge of an opponent equipped to an equal level, in the South African War. The resulting investigations were even more wide-ranging than those of twenty years previously, and had a longer-lasting effect. The relevance of that experience was still being debated ten years later, often with the feeling that it was anomalous rather than indicative of the pattern of wars to come. However true that may have been, it was the inspiration for much of the work done prior to World War One, and placed the Army on a far better footing than might otherwise have been the case.

In summary then, it is the contention of this thesis that the musketry training of the British Army between 1884 and 1914 was built upon a foundation of analysing and adjusting training to suit the tactical and technological requirements of the time. Under the administration of the School of Musketry, these mechanisms were strong enough that, even in the face of radical changes post-1902, they remained relatively unchanged in terms of operation. The training that was placed on top of this underwent two major changes during this period: the introduction of the magazine rifle in 1889, and the introduction of progressive training post-1902. The first was a technological leap forward, and how best to incorporate it within tactical thinking challenged the British Army for the next ten years. The progressive approach to training produced a system which is recognisably ‘modern’, using realistic scenarios to give individual soldiers a far stronger grounding in battlefield skills. It was these

skills that would come to define the Regular soldiers who went to war in 1914, and about whom so much has been written in the last century.

Areas of further research

This thesis has focussed on the years 1884 to 1914, as it was felt that a better understanding of the changes that occurred during that period would contribute to current debates regarding the creation of the B.E.F. However, this work having been undertaken, the next logical steps would be to examine what occurred both before and afterwards. Particularly, this could focus on the First World War, and how the system was modified to meet the changing requirements of wartime, and then how those lessons were interpreted and adopted or ignored in peacetime. Similar studies could be conducted up until the early 1950s, when the Army and the NRA finally parted ways in terms of the arms used, and seemingly public opinion and knowledge of military arms began to wane. A similar study could also be conducted back to 1851, with the first introduction of a rifle-musket as a standard arm, or indeed back to the work of Sir John Moore with the Rifle Brigade at the beginning of the nineteenth century. The work on earlier periods may also prove to have greater relevance than simply researching lineage: the resurgence of interest in Light Infantry tactics in the aftermath of the South African War suggests that this topic could also provide information to further expand understanding as to what those pioneers were creating.[501]

Due to a lack of previous research in this field, this thesis has focussed on drawing from primary sources, to build a picture of what the Army were attempting to achieve and how they went about fulfilling that ambition. This has meant that certain groups of publications, most notably those produced by Gale & Polden as secondary training material, have had to be omitted. As the majority of these were written by serving members of the

[501] Although published in the 1920s, J.F.C. Fuller's work on Sir John Moore's system of training reflects renewed interest from a man who had served in the First World War, and was a pioneer in tank tactics. See Col. J.F.C. Fuller, *Sir John Moore's System of Training*, (London, Hutchinson & Co., 1925).

Army, including members of the Hythe Staff,[502] these could expand our understanding of the practical application and implications of the various Musketry Regulations. This is particularly true of the body of literature that appeared in the first two years of the First World War, prior to conscription, to allow those volunteering to bring themselves up to service standards as quickly as possible, including authors such as Sir Robert Baden-Powell.[503] They may also reflect contemporary opinions as to how musketry training could be better improved, in a similar vein to the proposals made by Ian Hamilton in 1885. There are also various examples of training aids, some issued by the Army and some sold by private inventors/entrepreneurs, which would also add further understanding of the methods used to teach certain basic principles, particularly correct aim picture. These will also allow for a better understanding of the training of the Territorial Army, whose training was based upon that of Regular soldiers, but in a reduced format due to their part-time service. Whilst this work covers much of the basic details, a separate work focussed solely upon the training of the Territorial soldiers could also be considered

In all of these directions, I hope that they will be able to provide an understanding of the Army which still allows for the individuals, but focuses upon what the Army expected them to be able to do, rather than their individual experiences of war. Whilst the latter helps us to understand the trials and suffering which the First World War inflicted upon both combatants and their families, it often means that we lose sight of what and how they were being trained and prepared to do. No man was sent to the front totally untrained, and perhaps in the future we will be able to see inside the machine, rather than looking at how it was operated, or at the men crushed underneath it.

[502] The most notable of these was James Bostock, an N.C.O. instructor who appears to have been responsible for various handbooks published by both Gale & Polden and W.H. Smith from 1907 through to about 1916. His titles include *Notes on Visual Training and Judging Distance*, and *How to Instruct in Aiming and Firing*.
[503] Lt-Gen. Sir Robert Baden-Powell, *Quick Training for War*, (London, Herbert Jenkins, 1914).

Appendix 1: The Staff of the School of Musketry, Hythe

The following tables have been compiled from sources including Miller's history of the School,[504] and the 'List of Succession' preserved in the National Archives.[505] Later details have also been taken from the centenary history of the School.[506] Where necessary and/or possible, dates have been confirmed through the London Gazette.[507]

Inspector-General of Musketry and Commandant		
Name	**From**	**To**
Charles Craufurd Hay	June 1853	30th September 1867
William Robert Halliday[1]	16th October 1867	1st January 1873
William Pollexfen Radcliffe	1st January 1873	1st May 1878
Richard Henry Travers[2]	1st May 1878	31st January 1880
Harrison Walke John Trent[3]	31st January 1880	31st January 1885
Commandant		
John Moore Gurnell Tongue	31st January 1885	31st January 1890
Charles George Slade	31st January 1890	17th July 1894
George Paton	17th July 1894	11th May 1898
Ian Standish Monteith Hamilton	11th May 1898	15th September 1899
John Dutton Hopton (née Hunt)[4]	*15th September 1899*	*1st October 1900*
Richard Lionel Arthur Pennington	14th February 1901	27th March 1903
Charles Carmichael Monro	27th March 1903	28th March 1907
Granville George Algernon Egerton	28th March 1907	5th September 1909
Walter Norris Congreve	5th September 1909	6th December 1911
Harold Goodeve Ruggles-Brise	6th December 1911	15th September 1914
Bernard William Lynedoch McMahon[5]	7th January 1915	22nd July 1918
Thomas Gerald Dalby[6]	23rd July 1918	22nd July 1919
Thomas Wolryche Stansfield[7]	22nd July 1919	1st August 1923

NOTES:

[1] Halliday had previously served as the Commandant and Chief Instructor of the School of Musketry, Fleetwood, from 1st September 1864 until its closure in September 1867, after which he became Commandant at Hythe

[2] Travers died during his period of service, and the Travers Library (now at Warminster) was founded in his memory.

[3] Trench was the last to be both Inspector-General and Commandant, with the posts being separated thereafter.

[4] A memorial over the fireplace of the Army Rifle Association states: 'Colonel Hopton was Commandant of the School of Musketry, Hythe, 1899-1900…', confirmed by his being the signatory on the Hythe Annual Report for that year. He was only Acting Commandant, never being formally appointed, and the dates given are based upon Hamilton's departure for South Africa, and Hopton's appointment as Chief Inspector, Small Arms. It is also believed that Pennington may have served as acting Commandant whilst Chief Instructor, until formally appointed on the date given.

[5] The School was 'dispersed' for the duration of the war, although it appears from the London Gazette that McMahon was temporarily appointed as Chief Instructor (Acting Commandant) in 1915, which was only formalised as of 1st August 1917. He was also Norman McMahon's cousin (see under Chief Instructors, below)

[6] Dalby was appointed Commandant of the School of Musketry (Bisley) on the former date. He became 'Rifle, Bayonet and Revolver Wing Commander' as of the latter date, and went on to serve as Assistant Commandant between 31st August 1920 and 1st February 1923.

[7] Stansfield was the first overall Commandant of the Small Arms School, Hythe.

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[504] W.S. Miller, *The School of Musketry at Hythe*, (London, William Clowes and Sons, 1892), pp. 37-41.

[505] *Record of Officers' Services, School of Musketry*. TNA WO 76/356.

[506] Capt. A.J. Parsons, *A Brief History of the Small Arms School Corps and the Small Arms Wing, School of Infantry, Hythe*, (Maidstone, British Legion Press, 1953), p. 35.

[507] Whilst both the Gazette and the School's records give specific dates, these are sometimes done for administrative purposes, and are not always a reliable indicator as to the location of the officer at that date, particularly in wartime.

First Instructor		
Name	**From**	**To**
Augustus Lane Fox[1]	June 1853	March 1854
John Clark Kennedy[2]	March 1854	April 1855
Ernest Christian Wilford	25th April 1855	17th June 1856
Chief Instructor		
Ernest Christian Wilford	17th June 1856	10th June 1862
Wyndham Edward Bewes	10th June 1862	1st April 1868
Henry Francis Bythesea	1st April 1868	1st November 1873
Henry Edward Hillman Burnside	1st November 1873	1st August 1875
Drury Richard Barnes	1st August 1875	9th March 1880
James Kiero Watson	9th March 1880	9th March 1885
Walter Carr Mackinnon	9th March 1885	28th July 1889
William Blakeway Burton	27th July 1889	28th July 1894
Francis George Archibald Wiehe	27th July 1894	28th July 1899
Chief Instructor & Staff Officer		
John Dutton Hopton (née Hunt)	28th July 1899	1st October 1900
Richard Lionel Arthur Pennington	1st October 1900	14th February 1901
Charles Carmichael Monro	14th February 1901	27th March 1903
Wilkinson Dent Bird	27th April 1903	9th June 1905
Norman Reginald McMahon	10th June 1905	10th June 1909
John Campbell	9th June 1909	9th June 1913
Henry Edward Gogarty[3]	9th June 1913	4th January 1915
Bernard William Lynedoch McMahon[4]	7th January 1915	1st August 1917
William Arthur Cecil Saunders Knox-Gore[5]	22nd July 1919	25th January 1921

NOTES:

[1]Later known as Augustus Lane Fox Pitt Rivers, founder of the Pitt Rivers Collection in Oxford.

[2]Originally printed in Miller as simply 'Clarke Kennedy',[508]

[3]Gogarty was appointed to the General Staff in January 1915. He went on to be Chief Instructor at the Machine Gun Training Centre, Grantham, before becoming Superintendent of Training there

[4]Norman McMahon's cousin. For his role as Commandant, see above.

[5]Knox-Gore was the first Chief Instructor, Rifle Wing, Small Arms School

Deputy Assistant Adjutant-General		
Name	**From**	**To**
John McKay	1st April 1856	1st October 1867
Drury Richard Barnes	1st October 1867	1st May 1875
J.P. Campbell	1st May 1875	1st January 1880
William Marsden	1st January 1880	1st February 1884
Francis MacKenzie Salmond	1st February 1884	11th March 1889
G.E. Harley	11th March 1889	12th August 1891
C.J. Whittaker	12th August 1891	22nd January 1893
Sir James de Hoghton	22nd January 1893	31st May 1893
Thomas Nock Bagnall	31st May 1893	31st May 1896
John Dutton Hopton (née Hunt)[1]	31st May 1896	28th July 1899

NOTES:

[1]The post was then combined with that of Chief Instructor, to create the post of Chief Instructor & Staff Officer.

[508] Hew Strachan, *From Waterloo to Balaclava*, (Cambridge, Cambridge University Press, 1985), p. 51. For details of his career, see A.E. Clark-Kennedy, *A Victorian Soldier*, (Cambridge, John Bluff, 1980).

Appendix 2: Officer Biographies

General Sir Ian Standish Monteith Hamilton GCB GCMG DSO
Born 16th January 1853
Eldest son of Lieutenant-Colonel Christian Monteith Hamilton and Maria Vereker
Educated at Cheam and Wellington College
Entered Sandhurst by examination in August 1870
Spent six months studying with General I.S. Drammers in Dresden, 1870-71
Posted to the 12th (Suffolk) Regiment as a Lieutenant, 24th April 1873
Transferred to the 92nd (Gordon Highlanders) Regiment, 1875
In England, 21st April 1877 to 15th February 1878
(Believed he underwent a Musketry Instructors course at this point)
Served in the Second Anglo-Afghan War, 1879-80
Participated in the march to Kabul
Served in the First Boer War, 1881
Wounded in the left wrist at Majuba Hill, February 1881
Recuperated in England, 7th July 1881 to 12th May 1882
Promoted to Captain, 25th February 1882
Returned to India, 3rd June 1882, to serve as ADC to Lord Roberts
Served with the Nile Expeditionary Field Force, 23rd October 1884 to 1st May 1885
Published *The Fighting of the Future*, October 1885
Promoted to Major, 7th November 1885
Returned to India, 16th February 1886, to resume post with Roberts
Served in Burmese Expedition, 1886-87
Married Jean Muir, 22nd February 1887
Promoted to Lieutenant-Colonel, 1st July 1887
Appointed AAG for Musketry, Bengal, 1st July 1890 (to 7th April 1893)
Promoted to Colonel, 25th November 1891
Appointed Military Secretary to Sir George White, 8th April 1893 (to 10th October 1895)
Served in Chitral Relief Expedition, 1895
Served as AAG and AQMG to General Stedman
Temporarily took command in Stedman's place
Returned to Simla, September 1895
Awarded CB, 1895
Appointed DQMG, 11th October 1895 (to 22nd April 1898)
Served with the Tirah Field Force, 3rd October 1897 to 8th April 1898
Returned to England, 9th May 1898
Appointed Commandant, School of Musketry, 11th May 1898 to 15th September 1899
Served in Second Boer War, 1899-1902
Left for South Africa, 16th September 1899, as AAG to Sir George White
Participated in operations in Natal, the Orange Free State and the Transvaal, as well as the defence of Ladysmith
Post 29th November 1900, Chief of Staff
Promoted to Major-General, 12th October 1899
Raised to KCB, 1900
Promoted to Acting Lieutenant-General, 10th April 1900
Returned to England as military secretary to Lord Roberts, December 1900
Re-assigned to South Africa as Chief of Staff under Kitchener, 9th November 1901
Conducted operations in western Transvaal, Orange River Colony and Cape Colony
Appointed Honorary Colonel, Gordon Highlanders, 31st August 1901

Returns to London to resume role as Lord Roberts' Military Secretary, 12th September 1902
Promoted to Lieutenant-General, 22nd August 1902
Appointed Quartermaster-General, 27th April 1903 to 1st February 1904
Serves as an observer during the Russo-Japanese War, 2nd March 1904 to 22nd April 1905
Returned to England, April 1905
Appointed to GOC, Southern District, 1st June 1905 to 31st May 1909
Appointed Honorary Colonel, Army Service Corps (Territorial Force), 1st January 1906
Promoted to General, 24th October 1907
Appointed Honorary Colonel, Manchester Regiment, 9th August 1908
Appointed Adjutant-General, 1st June 1909 to 31st July 1910
Raised to GCB, 1910
Appointed GOC Mediterranean and Inspector of Overseas Forces, 1st August 1910
Returned to England, July 1914
Served in the First World War, 1914-18
    At the outbreak of war, given command of Central Force (Home defence)
    Given command of the Dardanelles expedition, 12th March 1915
    Replaced by General Charles Monro, October 1915
Appointed Lieutenant of the Tower of London, 1918
Awarded GCMG, 1919
Retired from the Army, 1920
Lord Rector of Edinburgh University, 1932-1935
Died 12th October 1947. Buried in Doune, Perthshire

General Sir Charles Carmichael Monro Bt. GCB GCSI GCMG
Born 15th June 1860
Educated at Sherborne School
Entered Sandhurst, 1st September 1878
Posted to the 2nd Foot [Queen's (Royal West Surrey Regiment)] as a Second Lieutenant, 13th August 1879
Promoted to Lieutenant, 15th May 1881
Posted to the 1st Battalion at Colchester as Adjutant, 27th July 1881 to 26th July 1886
Promoted to Captain, 24th July 1889
Passed Staff College, 1890
Served with his battalion in Malta, first as the Governor's ADC, then as Brigade Major
Battalion moved to India in 1897. Served with the Malakand Field Force and the Tirah Expeditionary Force, 1897-8
Promoted Major, 23rd February 1898
Appointed Brigade Major, Gibraltar, 20th October 1898 to 24th March 1899
Appointed DAAG, Guernsey, 15th April 1899 to 15th October 1899
Appointed temporary DAAG, Aldershot, 16th October 1899 to 3rd December 1899
Served in the South African War, 1899-1900:
    DAAG, 6th Division under General Thomas Kelly-Kenny
    Participated in the march to Pretoria, Siege of Paardeburg and the battles of Poplar Grove and Driefontein
Promoted to Brevet Lieutenant-Colonel, 29th November 1900
Mentioned in Despatches (*London Gazette*, 8th February 1901)
Returned to England, appointed Chief Instructor and Staff Officer, School of Musketry, 19th February 1901 to 27th March 1903
Appointed Commandant, School of Musketry, 28th March 1903 to 27th March 1907
Promoted to Colonel, 29th November 1903

Awarded CB, 1906
Promoted to Brigadier-General and appointed to command 13th Infantry Brigade, Dublin, 12th May 1907 to 31st January 1911
Promoted to Major-General, 31st October 1910
Transferred to command 2nd London Division, 1911
Served in the First World War, 1914-18:
- Commanded 2nd Division from the start of the war through to the end of 1914
- Escaped being killed by a shell that killed 1st Division's CO (Major-General S.H. Lomax)
- After the BEF became two armies, he is given command of I Corps with the temporary rank of Lieutenant-General

Raised to KCB, 1915
Given command of Third Army, July 1915, with the temporary rank of General
- Succeeded General Sir Ian Hamilton in command of the Mediterranean Expeditionary Force, October 1915, to assess and command the withdrawal from Gallipoli
- Returned to France, January 1916, to assume command of First Army

Made GCMG, 1916
Appointed C-i-C, Indian Army, October 1916
Made ADC General to the King, 1918 to 1922
Participated in the Third and Fourth Afghan Wars
Made GCSI and GCB, 1919
Resigned his post, August 1920, to return to London on half pay
Created a Baronet and Bath King of Arms, 1921
Appointed Governor of Gibraltar, replacing General Smith-Dorrien, 1923-28
Returned to London, succeeding Douglas Haig as Trustee of the Imperial War Museum
Died of cancer, 7th December 1929. His funeral was held at Westminster Abbey, and he was buried at Brompton Cemetery, 11th December 1929

Brigadier-General Norman Reginald McMahon DSO
Born 24th January 1866
Fourth Son of General Sir Thomas Westropp McMahon CB, 3rd Baronet
Educated at Eton
Enlists as a Lieutenant in the Royal Fusiliers, 23rd May 1885
Served with the Burma Expedition, 1885-87, as a Special Service Officer
Battalion Adjutant, 28th February 1890 to 27th February 1894
Promoted to Captain, 27th November 1896
Served in the South African War, 1899-1902:
- ADC to Major-General Geoffrey Barton, 9th October 1899 to 18th April 1900
- Participated in Relief of Ladysmith, Colenso, Tugela Heights, Pieters Hill and Natal
- Brigade-Major, 29th April to 3rd August 1900
- Severely wounded during operations in Cape Colony
- Mentioned in Despatches (*London Gazette*, 8th February 1901)
- DAAG, 26th February 1901 to 28th June 1902
- Awarded the DSO "In recognition of services during the recent operations in South Africa" (*London Gazette*, 19th April 1901)
- Operations in Orange River Colony, April 1901 to February 1902
- Promoted to Major, 28th November 1901

Chief-Instructor and Staff Officer, School of Musketry, 9th June 1905 to 8th June 1909
"Fire-Fighting" lecture presented to the Aldershot Military Society, 18th December 1907
Lectures and demonstrations of rapid fire, 1908

"Specially employed at the Headquarters of the Army", 9th June 1909 to 21st January 1910
Passed Staff College, December 1910
Promoted to Lieutenant-Colonel, May 1911
Served in the First World War:
Commanded 4th Battalion, Royal Fusiliers
Present at Battle of Mons (23rd/24th August 1914)
Commands the rearguard of the 3rd Division during the retreat from Le Cateau (26th August to 4th September 1914)
Received Sir John French's compliments, 21st September 1914
Promoted to Brigadier-General (to succeed Aylmer Haldane in command of 10th Brigade), but unable to be spared to take up his new role.
Present at First Battle of Ypres (19th October 1914 – 22nd November 1914)
On the 11th November, whilst attempting to rally his battalion, was killed by shellfire. Having no known grave, he is commemorated on the Ploegsteert Memorial (Panel 1)

Colonel Charles Blair Mayne
Born 1855
Entered Woolwich, January 1875
Commissioned as a Lieutenant, Royal Engineers, 15th January 1878 (antedated to January 28th, 1875
Promoted to Captain, 28th January 1886
Granted local rank of Major whilst serving as a Professor at the Royal Military College, Kingston, Canada, 7th October 1886
Promoted to Major, 12th December 1894
First son born: Second Lieutenant Jasper Moore Mayne, Royal Field Artillery (1895 – 9th May 1915)
Second son born: Lieutenant Victor Charles Moore Mayne, South Wales Borderers (1896 – 19th February 1916)
Promoted to Lieutenant-Colonel, 31st December 1901
Appointed Assistant Inspector General of Fortifications at Head-Quarters, 2nd February 1903
Promoted to Brevet Colonel, 31st December 1904
Appointed Assistant Director at Headquarters with substantive rank of Colonel, 1st April 1904
Retires upon completion of his posting, 12th February 1907
Retired to Camberley, Surrey, with his wife, V.A. Mayne
Died 1914

Lieutenant-Colonel George Alban Lewes
Ensign in 16th Foot, 23 Dec 1864
Transferred to 48th Foot, 7th March 1865
Promoted to Lieutenant by purchase, 14th March 1868
Captain, 2nd February 1880
Raised from Supernumerary Major to Major, 1st February 1886
Made Instructor at Royal Military College, 1st September 1886, confirmed a week later
Lieutenant-Colonel, moved from Half-Pay to be an Instructor, RMC, 16th December 1889
To be a Professor, 1st September 1892
Period of service expired, 1st September 1896
No further Gazette references found prior to 1900
Died 14th October 1917. A memorial was erected to him in First Trinity Church, Heol Y Bont, Aberaeron, Wales

Major Charles Edward Etches CB OBE

Born in Derby, 1st October 1872
Member of the RMC Sandhurst Rifle Team for the Winter Term of 1891
Member of the RMS Sandhurst Rifle Team for the Summer Term of 1892, and of the Revolver Team
Competed in the first Challenge Shield Match against RMA Woolwich
Commission in the 1st Bn, Royal Warwickshire Regiment, 19th November 1892
Passed Hythe, Extra Certificate, 1893
Mentioned in Hythe Annual Report for that year as highest scoring officer firing Individual Practices with Lee-Metford
Bronze Jewel Winner, Army Sixty, 1895
Bronze Jewel Winner, Army Sixty, 1896
Promoted to Lieutenant, 3rd May 1897
Received a slight bullet wound to the forearm at the Battle of 'Khartum' (Omdurman), 2nd September 1898
Also received a Mention in Despatches for 'good services'
Served as Assistant Adjutant, 21st March – 15th October 1899
Bronze Jewel Winner, Army Sixty, 1899
Appointed Assistant Instructor, Hythe, 16th October 1899
Posted to South Africa, 20th November 1899 – 19th December 1900
Promoted to Captain, 3rd February 1900
Listed returning to England aboard the *Chicago*, 27th November 1900
Appointed temporary Assistant Instructor, Hythe, as of 1st January 1901
Gold Jewel Winner, Army Sixty, 1901
Gold Jewel Winner, Army Sixty, 1902
First marriage, to Julia Adderley, in Tewkesbury Abbey, 16th July 1902
Promoted to Instructor, 27th November 1902
Referred to in accuracy tests conducted with the SMLE submitted by Hythe, 7th June 1905 for which he had selected the eight firers, and where he was described as 'one of the most accomplished rifle shots in England.'
Ended term at Hythe, and was posted to regimental duties, 16th December 1905
Appears to have resigned his commission, 4th April 1906
Divorced his first wife in 1915
Attached to the General Staff, graded for pay as an Assistant Instructor, SoM, and to be a Temp. Major (brought up from the Reserve of Officers)
Made an Instructor
Second marriage, to Annie Hall, *circa* December 1917
Appointed Temporary Chief Instructor, 22nd July 1918
Awarded the O.B.E., 10th January 1919
Relinquished both the position and rank, 21st November 1919
Formally promoted to Major, 21st November 1919
Served as Secretary of the NRA, 1921 – 1938
Having reached the age limit of liability for recall, relinquished his commission but retained the rank of Major, 8th November 1922
Appointed Companion of the Bath, 1st January 1935
Killed by enemy action, aged 71, 30th May 1944. One of three civilians to die in the Pentargan Hotel, Cliff Road, during a bombing raid on Falmouth. Buried at St. Michael and All Angels, Pirbright

Colonel John Dutton Hopton (Previously Dutton-Hunt)

Born in Stroud, Gloucestershire, 30th December 1858

Son of Captain Dutton Hunt

(Of Farm Hill Park, Stroud. Appears to have been a clothier, and active Volunteer officer in Stroud, before his death at 41 in 1865)

Stood 6ft. 5in. tall

Educated at Harrow School

Passed out of Royal Military College, Sandhurst, 1879

Commissioned in Highland Light Infantry (71st Foot), 13th August 1879

Served in Gibraltar, October 1879 to March 1880

At Home, March 1880 to March 1896

Qualified for a Hythe Certificate in 1881

Married Harriet Mary Rudd Stevenson (?) in Edinburgh, 31st January 1883

Qualified for a Hythe "Extra" Certificate, 5th August 1885

Seconded to Hythe as a Lieutenant-Instructor, 16th May 1886

Promoted to Captain-Instructor, 13th February 1890

Appointed District Inspector of Musketry, 1st August 1891

Captain of the Army Eight, 1891-1907

Present at demonstration of Dowe's Bulletproof Cuirass at the Alhambra, May 1894[509]

Served in Malta, March to May 1896

Appointed D.A.A.G., Hythe, 31st May 1896

Married Sybil Maude Hopton, 29th April 1899

Assumed the surname of 'Hopton' by Royal Licence to take possession of wife's estates at Canon Frome (Granted authority under W.O. 77716/12, 30th May 1899)

Appointed Chief Instructor and Staff Officer, Hythe, 28th July 1899

This combined the roles of D.A.A.G. and Chief Instructor

Given temporary rank of Lieutenant-Colonel, 4th November 1899

Appointed Chief Inspector, Small Arms, Army Ordnance Department, 1st October 1900

Promoted to Lieutenant-Colonel, half pay

Promoted to Brevet Colonel, 29th October 1905

Replaced as Chief Inspector, 29th October 1907.

This appears to be related to his retirement, although confirmation of this cannot be found.

Led the NRA tour of Australia, 1907

Competed in 1908 Olympics, in the 1,000 yard Free Rifle category. He placed 24th, with a score of 84 ex. 100

Shot for England in the Elcho Shield match on 36 occasions. One of the NRA competitions remains the "Hopton Aggregate", the winner receiving the "Hopton Challenge Cup".

Served as High Sheriff of Herefordshire in 1917

Had a private rifle range at Meephill, which he extended to 1,500 yards in 1928

Cellist, songwriter and Director of the Royal Academy of Music.

Composer of 'Ceylon Whispers'

Died at Canon Frome Court, Herefordshire, 1st June 1934. Buried in a mausoleum, placed on the site of his firing point (referred to as Meephill Coppice Mausoleum)

[509] See Cottesloe, The Englishman and the Rifle, pp. 106-7, for further details of the cuirass.

Appendix 3:

The Saga of the Lewes Rifle Sights

Perhaps the best statement on the nature of the service rifle as a system comes from a writer who had practical competitive experience with all British breech-loading service rifles, and formed part of the Committee which oversaw the introduction of the 'Short' rifle after the South African War – T.F. Fremantle, later Lord Cottesloe:

The soldier's rifle is of necessity a compromise. He has to carry it for long spells; if it is too heavy he will feel it a burden; if too light he will suffer from the kick. It must be handy to use in fencing with the bayonet, yet strong enough to bear the strains imposed by thrusting, and even capable of withstanding the effect of firing a grenade from its muzzle.[510]

Whilst his discussion here is on the more obvious points of a rifle's design, an area which is often overlooked is that of the rifle's sights. These had also to be robust and relatively simple from the perspectives of training and usage, yet incorporating enough refinement to ensure the mechanical accuracy of the rifle could be translated into fire effect on the battlefield. When the first rifles were introduced into the British Army, the method of sighting was a vertical post of metal as a foresight, and a block of metal with a notch cut into the top edge as the backsight. Aligning the post within the notch at the correct point would give an accurate point of aim over a given distance. Allowance for the effect of the wind, or incorrect estimation of the distance, had to be made by 'aiming off' – either by altering the position of the foresight relative to the backsight, or aiming at a point to one side of the target. This was as much a matter of luck as judgement, and in a battlefield scenario was far from ideal, causing the authorities to look at ways of refining the design.

[510] Colonel Lord Cottesloe, *The Englishman and the Rifle*, (London, Herbert Jenkins, 1945), p. 38.

Over time the top of the foresight became slightly tapered, eventually leading to the 'barleycorn' shape used on the Martini-Henry which, from the firer's perspective, appeared as a triangle inside the 'V'-shaped notch of the backsight. The backsight had also evolved from the fixed leaf to the more complex 'ladder' – a graduated frame, hinged to lie along the barrel on a stepped bed for shorter distances, or raised vertically for longer distances. The top of the 'ladder' was capped by the short-range back-sight, with a relatively shallow 'V', used for distances up to 400 yards. The frame of the backsight was fitted with a sliding bar which, in the horizontal position, engaged with the steps on the bed to alter the elevation of the short-range back-sight, and when raised became the back-sight itself. On the face of the bar were three vertical white lines, the middle of which ran up to the base of the 'V'. The lower edge had a wide, flat notch, and the slide could be reversed so that this might be used for competitive shooting, with temporary marks permitted to compensate for variations in windage.

In 1876, at a conference called to discuss changes to be made to the Martini-Henry, the comments of commanding officers led to the recommendation that the notch on both the cap and slide be deepened in future manufacture, a move which was approved that February, and incorporated into the Mark II rifle when it was formally approved fourteen months later. This method of sighting remained in service until the Magazine Rifle Trials a decade later.[511] The instructions for a service aim, as described in the Musketry Regulations for 1887, were thus:

[511] War Office, *Committee on Small-Arms, Progress Report No. 4*, (London, Harrison & Sons, 1889), Appendix A, p. 7.

Aim, which must be an exactly true one, must be taken along the bottom of the notch, of the top of the centre white line of the back-sight, and the tip of the fore-sight to the centre of the mark aimed at.[512]

This was what was described as a 'fine' sight: it left very little of the foresight visible to the firer, but allowed for adjustment of elevation by taking a 'fuller' sight; bringing the tip level with the top edge of the slide. However, this did not provide a consistent adjustment due to the ballistic curve, with the regulations warning that,

...firing with a full sight at 500 and 600 yards will send the bullet 3 or 4 feet higher than the ordinary fine sight, whereas at short distances, such as 150 and 200 yards, the difference would be only a few inches.[513]

In visual terms this variation was miniscule, with the slightest mistake automatically tending towards a 'fuller' sight, and a correspondingly higher point of impact.

Whilst trialling new rifle designs in the mid-1880s, the sights used were the same as fitted to the Martini-Henry, partially due to the work already done on developing the .402 Enfield-Martini rifle and cartridge. The first Lee actions tested by the British were also chambered for this round, until it was eventually abandoned in 1887 after successful tests with smaller calibres. These led to the .303 cartridge, which was then paired to the Lee action as the most successful of those previously trialled. The Martini-Henry pattern sights were depicted in the drawing of the 1888 Trials Rifle attached to the Small Arms Committee Memorandum on how the Troop Trials were to be conducted, issued in June 1888.[514] However, in January 1888 a new system of sighting had been proposed by Major G.A.

[512] *MR 1887*, para. 54.
[513] *MR 1887*, para. 55.
[514] H.M.S.O., *Magazine Rifles, 1888: Memorandum Relating to Rifles about to be Issued for Trial,* (London, Harrison and Sons, 1888), plate 1.

Lewes.[515] It was a complete inversion of previous designs, and its method of usage was later described in the List of Changes thus:

The foresight is a square block, with a vertical cut through it, showing a fine line of sight. Aim is taken by fitting this square in a corresponding square notch in the backsight, so that lines of light of equal width may be seen on each side of it, and aligning the central line of light on the point to be hit.[516]

Experiments were conducted with this design whilst the troop trials were underway,[517] possibly on the twelve additional rifles authorised to be manufactured for the committee's use in May 1888.[518] No record of the tests conducted has been found, but the results appear to have been positive, with only minor alterations to the size of the foresight and the width of the backsight notch recommended.[519] Lewes was granted a patent for his design in October 1888,[520] and the Committee recommended its adoption on the new rifle the following month.[521] The design seems to have been popular initially, with Fremantle writing favourably of the design several years later:

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[515] George Alban Lewes joined the Northamptonshire Regiment in 1864, reaching the rank of Major in 1882, and was posted to Sandhurst in September 1886 as an Instructor in Military Topography. He was promoted to Lieutenant-Colonel in 1889, and made a Professor at the Royal Military College in 1892, leaving at the end of his period of service in 1896 and apparently returning to half-pay. He died 14 October 1917, and a memorial was erected by his children in First Trinity Church, Heol Y Bont, Aberaeron, Wales.

[516] List of Changes no. 5877 (dated 22 Dec 1888, promulgated December 1889). See Skennerton, *List of Changes*, Vol. II, p. 27.

[517] "Meantime the Committee continued their experiments which led to further improvements…" See [Unknown], *Précis of the steps which led to the introduction of a Magazine Rifle into the Imperial Service, and subsequent action relating thereto*, [Confidential Report, *circa* 1891], p. 5 and Appendix B.

[518] [Unknown], *Magazine Rifle, Pattern 1888*, [Confidential Report, 1888], p. 19.

[519] War Office, 'First Meeting', *Committee on the Magazine Rifle*, (London, War Office, 1890), Appendix A, p. 11.

[520] Patent no. 14,093 of 1 Oct 1888. See H.M.S.O., *Patent for Inventions, Abridgements of Specifications, Class 119, Small-Arms*, (London, H.M.S.O., 1896), p. 128.

[521] *Magazine Rifle, Pattern 1888*, p. 25.

*For picking up an aim in a hurry, without any tendency to shoot high, these sights are much superior to the ordinary barleycorn foresight used with either the **V** or the bar.*[522]

The Navy, whose representative had left the Committee in August 1888 believing that the rifle was all but complete,[523] were not convinced. A series of trials conducted on H.M.S. 'Excellent' had resulted in a negative report, and formal objections to the system's adoption were raised in the first half of 1889.[524] Given the numerical disparity between the Army and Navy's requirements for rifles, and with the Prime Minister having directed that as much equipment as possible should be interchangeable between the two services, the Army pressed its case in favour of the new design. In June, following correspondence between the Secretary of State and the First Lord of the Admiralty, a compromise was reached: The Navy would withdraw their complaint, on the condition that the matter was reconsidered when the question of the Mark II rifle was raised.[525] With this agreement, the sights were formally incorporated into the final design for the 'Rifle, Magazine (Mark I)', promulgated in the List of Changes in December 1889.[526] By this time, 13,000 rifles had been completed and were being issued, first to the Infantry of 1st Army Corps, with the Brigade of Guards receiving theirs the following February. The first instructions on sighting were issued that same month, in a pamphlet covering aiming drill, firing exercises and care of the new rifle.[527] The instructions for sighting with the new sights were brief, and make no comment on the novelty of the sight:

[522] T.F. Fremantle, *Notes on the Rifle*, (London, Vinton & Co., 1896), p. 31.
[523] *Magazine Rifle, Pattern 1888*, p. 21.
[524] *Ibid*, p. 27.
[525] *Ibid*, p. 28.
[526] See footnote 481.
[527] H.M.S.O., *Magazine Rifle. Care of Arms and Ammunition, Firing Exercises, Aiming Drill*, (London, Harrison and Sons, 1890).

Align the upper edge of the front-sight with the shoulders of the notch of the back-sight, centre the former in the latter so that a line of light of equal breadth is seen on either side; then direct the top of the centre line of the front-sight on the mark aimed at.[528]

After several months in service, 7,402 rifles underwent a thorough examination for issues and flaws.[529] Although alterations to the sighting were suggested following these inspections, in addition to independent reports on the rifle from various units, it was decided to leave the matter until the Mark II was considered. In April 1890, the Secretary of State directed that that process should commence in the early autumn. This allowed formal reports to be called for from General Officers Commanding Districts at Home on the new rifle, with general comments and questions focussing on certain aspects.[530] The new Committee first met on 5th August 1890,[531] and upon examining the reports found the views on the Lewes sights were mixed, with some remarking that it was more difficult to teach or to learn.[532] Overall, the new sights did not seem to have a marked benefit over the previous design. The alterations made to the sights by the Committee were also facing criticism from its inventor. In February 1889, Major Lewes had written to the Superintendent of the Royal Small Arms Factory, Enfield, asking to be allowed to inspect the first thousand rifles, an offer which was declined on the orders of the Adjutant-General.[533] In October he wrote again, having handled and fired one of the rifles, expressing dissatisfaction with how the sights had been finished, and repeating his request to be allowed to set up some rifles and inspect future production. He also wished to see the instructions for their use, or to be allowed to provide some, to explain the system's benefits. As the inventor, his comments were felt worthy of attention, and a rifle

[528] *Ibid*, pp. 36-7.
[529] *Précis of the steps*, p. 6.
[530] *Précis of the steps*, p. 9.
[531] War Office, 'First Meeting', *Committee on the Magazine Rifle*, p. 1.
[532] Of seventy-five reports, nineteen were for the design and thirty-three against, with the remainder making no report. See *Précis of the steps*, Appendix D .
[533] War Office, 'First Meeting', *Committee on the Magazine Rifle*, p. 11.

was provided for him to inspect and alter the backsight as he saw fit before certifying it as correct. This would then be used as a pattern for future manufacture. This was done at Enfield on 4th December 1889, and became the reference point for future discussions between Lewes and the Committee.[534]

In May 1890, Lewes submitted further complaints about the sights, this time related to the angle of the inclined plane in front of the foresight.[535] However, the alteration he suggested would have made the foresight block even more vulnerable, so a compromise was reached by reducing the depth of the backsight notch instead. A month later, the Commandant of the School of Musketry reported that the foresight-notch was susceptible to damage, and had a tendency to produce a blurred sight picture. This led to the recommendation at the first meeting of the new Committee in August 1890, that fifty rifles be fitted with Martini-Henry sights and issued to the School of Musketry for comparative trials.[536] These were delayed due to having to hand-fit the sights, and were eventually ready to be issued on 20th September.[537] Whilst the Committee delayed their decision on the Mark I rifle until the report was received, reversion to the 'Martini-Henry pattern' sights for the Mark II rifle had already been approved.[538] The report of the trials was submitted in October, with the conclusion that the sights, '…do not possess any decided superiority…' in regards to shooting. Coupled with their liability to damage, the difficulty of repair, and the Navy's original disapproval, the Committee's decision was, '…[to] recommend that the Lewes system of sighting be abandoned, and that the forms of sights used with the Martini-Henry rifle be reverted to…'[539]

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[534] War Office, 'Fifth Meeting', *Committee on the Magazine Rifle*, p. 2.
[535] War Office, 'First Meeting', *Committee on the Magazine Rifle*, p. 13.
[536] *Ibid*., pp. 4-5.
[537] War Office, 'Second Meeting', *Committee on the Magazine Rifle*, p. 2.
[538] *Ibid*., p. 6 and Appendix C.
[539] War Office, 'Third Meeting', *Committee on the Magazine Rifle*, pp. 1-2.

However, in November the Director of Artillery notified the Committee that he had received a file of correspondence from Colonel Lewes via the Adjutant-General, to the effect that his design was not being treated fairly. As such, he was suspending their recommendation until they had provided the Adjutant-General with a memorandum answering Lewes' complaints. Whilst the Committee felt that the issues Lewes raised did not affect their recommendations, having based their decision on experience of the rifle in service, they decided to postpone any final comments until they had interviewed him.[540]

The Committee's interview with Lewes took place in December, with the Superintendents of both of the Royal Small Arms Factories, the Inspector of Small-Arms, and the Assistant to the Director-General of Ordnance Factories in attendance, alongside the five Committee members. At Lewes' request, the President enumerated the main complaints against the design:

...it is very difficult to teach, it is more liable to injury, and it has not the same capabilities of regulating the aim. Furthermore, there is no wind gauge to it, which some people complain of. Then again, some regiments report that it is slower in taking aim, whereas others report that it is quicker.[541]

The President emphasised that the main issue which concerned the Committee was that the sight was easy to damage and difficult to repair. Lewes began by describing how he had designed his sight to overcome the variation in sight picture which the barleycorn sight could cause, and so ensure uniformity of elevation, particularly when firing volleys, which would in turn increase fire effect by removing the tendency to fire high. He also maintained that it was a simple system to teach, and had been so successful in the trials that Lord

[540] War Office, 'Fourth Meeting', *Committee on the Magazine Rifle*, p. 4.
[541] 'Examination of Colonel Lewes at the Fifth Meeting', in War Office, *Committee on the Magazine Rifle*, p. 1.

Wolseley had told him, "we are determined to have your sight and no other".[542] However, Lewes admitted that the sights had been personally fitted and marked under his direction, and he had also been involved in instructing the firers. There also appeared to be a lack of understanding within the service as to how to use the sight, with some thinking that the target had to be seen *through* the foresight, rather than placing the line underneath the point of aim. However, no diagrams for their use had been created for training purposes, despite Lewes offering to draw them, and this further compounded the issues that had been raised.

He then went on to discuss the manufacturing flaws, stating that the alterations made by the Committee had caused the foresight to be more liable to blur and susceptible to damage, and he felt certain that he could refine it so that it was impervious to injury as well as less reflective. The graduations on the backsight were a separate issue, as they were graduated for ammunition with a higher velocity than that which was issued. As such, he felt that his design was being blamed for the mistakes of others, and that he had not received a fair test. To illustrate his points further, he displayed a rifle which he felt demonstrated that the sights were not being correctly finished, although the Committee maintained that the discrepancy was so minor that it could only be detected by use of a gauge. As the Superintendent of Enfield pointed out, the level of detail in inspection required to detect such a flaw would severely restrict the scale of production that could be obtained. At the end of the meeting, the Committee assured him that they had not decided to abandon his design without good reason, and would wait until the rifle Lewes had displayed was reported on by the Inspection Department before making a final decision.[543]

This report was received at the following meeting; having been inspected, it was decided that the 'flaw' on the sights was within manufacturing tolerances. This actually provided another reason to discontinue their usage – the tolerances which were required for

[542] 'Examination of Colonel Lewes at the Fifth Meeting', p. 2.
[543] For a transcript of the full interview, see *Ibid*, pp. 1-7.

their best usage were so fine as to make them unsuitable for mass manufacture. As such, the Committee resubmitted their recommendation that the sights be replaced.[544] At the same meeting, they also discussed the recommendation of the Commandant of the School of Musketry that all Mark I rifles should have their backsights altered to Mark II standard (although there is no note of any alteration to the foresights at this time).[545] The Committee received final vindication of their stance in two additional reports, submitted at their last meeting, of responses from the Navy units which had previously tested the sights, confirming their continued opposition to the design.[546]

The inclusion of the modified Martini-Henry sights on the Mark II rifle was confirmed in January 1891,[547] although the rifle was not formally adopted until a year later.[548] That same month, an order was issued to retrofit those same sights onto the Mark I rifles, which were then designated as the "Mark I*" standard.[549] This meant that these sights would be used for rifles of new manufacture, and ones already issued would be altered by pinning a barleycorn to the existing foresight block. The backsight slide was altered, with only a single white line, the depth of the notch reduced, and the sight bed altered to a continuous ramp rather than a stepped one. The sights of the Mark II rifle were also calibrated for a 'full' aim picture as the service sight, a practice that would remain the standard through the transition from the ladder to the tangent sight fitted to the 'Short' rifle, continuing until the introduction of the peep-sight in the late 1930s.

[544] War Office, 'Sixth Meeting', *Committee on the Magazine Rifle*, p. 5.
[545] *Ibid*., p. 3.
[546] War Office, 'Eighth Meeting', *Committee on the Magazine Rifle*, p. 1.
[547] *Ibid*., p. 4.
[548] List of Changes no. 7404 (dated 12 Apr 1893). See Skennerton, *List of Changes*, Vol. II, p. 102.
[549] List of Changes no. 5877 (dated 19 Jan 1892). See *Ibid*, p. 76.

Appendix 4:

The Hamilton letter

To mark the centenary of the South African War, Spink Auctioneers held a dedicated sale of related memorabilia in London. One of the lots was a letter,[550] sent from Hythe by Ian Hamilton two weeks before he left for Natal, recommending the issue of additional ammunition for the further training of those troops being sent to South Africa. Digital records were in their infancy at this time, and it is not known if the letter was sold at this auction. It subsequently resurfaced on ebay in 2010, but due to the site's data policy, neither the seller nor the successful buyer have been identified, and as such the current whereabouts of the letter remains unknown.

Photographs taken of the letter when it was offered for sale, combined with some interpretation based upon the research conducted for this thesis, have allowed the following transcript to be made:

Hythe

3-9-99

My dear Congreve –

I found I had to run down here after all for the purpose of extricating my fishing tackle, guns gear etc about which no servant knows anything. I go north tonight but before I start I write you this line for favour of submission to your Chief.

What I have to say is this:– Sir Redvers Buller is going to command our forces in S. Africa and the bulk of these forces are now under his orders. May I suggest then that he applies for a free issue of 100 rounds for each rifle in the command, & that he commences

[550] Spink, *The Anglo-Boer War Anniversary 1899-1999; Orders, Decorations and Campaign Medals, Militaria and Memorabilia*, London, 20/21 October 1999, lot 34.

forthwith a special additional course at moving and vanishing targets etc. Also that he carries out a real(?) field firing with 50 rounds of ball in pouch.

*The only serious objection I see to this is that the news, if spread to the Boers, might frighten them into premature submission **

[Marginal note: You must be almost sure to get some good ideas for our revise of the M. Regns. in the process.]

You may be tempted to make the ammunition over to Brigadiers or C.O.s but don't do this. I know the clap trap cry just now is give everybody a free hand – abolish regulations etc. & that orders from superiors are apt to be classed as interference. A distinguished Brigadier for instance stated the other day at a lecture at the U.S.I. [United Service Institution] that if he had had a free hand when he commanded a Battn. instead of being bound down hand & foot by red tape, the musketry efficiency of his Battalion would have been improved cent per cent(?). This is all very fine but we have only to go a short step further & the N.C.O. will be talking about the free hand and resenting the interference of Captains.

Goodbye for the present

Yours sincerely

Ian Hamilton

P.S.

What sort of a chap is Radcliffe? Didn't he make rather a hash of it at my inspection of the Devons?

I.H.

The cataloguer for Spink in 1999 did not discuss the possible identity of the recipient, although there is enough circumstantial evidence to suggest that the most likely candidate is

Captain Walter Congreve,[551] a Rifle Brigade officer who would go on to win a Victoria Cross at the Battle of Colenso (15 December 1899) whilst serving on the staff of Sir Redvers Buller. According to a brief biography written by his regimental museum,[552] Congreve was serving as the District Inspector of Musketry at Aldershot at the outbreak of war, a post he had held since the beginning of 1898,[553] which would partially explain Hamilton's postscript.[554] It also made him the perfect candidate to put forward Hamilton's proposals; as a musketry instructor serving on Buller's staff, he could both explain and oversee the proposed supplementary training.

The main suggestion of the letter ties into ideas that Hamilton had set out in 1885, as part of the musketry scheme he proposed in *The Fighting of the Future*.[555] Although he had proposed the usage of a type of vanishing target called 'Jumping Jemmies', there appears to have only had been limited usage of moving and vanishing targets throughout the 1890s. This was due both to a lack of available range space, and the complexity of the necessary apparatus for operating those practices. It was only in 1896 that a new, simplified mechanism was introduced which made the training more widely practicable. The 1898 Regulations focussed on sectional practices, and as such this form of individual training had been left out to a certain extent. Given that Hamilton's treatise had been published in the light of his own experiences during the First Boer War, he could be claimed to have had as much understanding as any officer of the style of fighting that the British Army would face in 1899. However, the opinion of the abilities of the Boers appears to have been relatively low in some

[551] General Sir Walter Norris Congreve, VC KCB MVO DL (1862-1927).
[552] http://www.rgjmuseum.co.uk/pages_object/obj_0018.asp, viewed 9/12/2015.
[553] *The London Gazette*, (1898, January 11), p. 166.
[554] As DIM Aldershot, Congreve would have been present at musketry inspections of any unit within his inspection area. The inquiry as to the Devon officer could be a reference to Hamilton's command of Seventh Brigade in South Africa, which placed the 1st Devons under his command. For the latter, see E. McGilvray, *Hamilton and Gallipoli: Command in the Age of Military Transformation*, (Barnsley, Pen & Sword Military, 2015), p. 14.
[555] Hamilton, *The Fighting of the Future*, pp. 30-31.

quarters,[556] and there is no evidence that his suggestions were carried out. When Hamilton arrived in South Africa that October, he was placed in command of Seventh Brigade, which he then spent three days retraining to use much more open formations than was common at that time.[557] He returned to England in December 1900 as Lord Roberts military secretary, but was sent back out the following November to serve as Lord Kitchener's Chief of Staff. Whilst on his way there, he sent a letter to his wife, which included the following passage:

Another, very different point, I am going to press is the question of rifle shooting. Our men have had no practice now for a couple of years. To fire at a Boer on the veldt & not know where your bullet goes, can no more be called practice than to fire a blank cartridge. Before leaving S. Africa I got Lord Bobs to sanction a scheme which I had myself drawn up for rifle practice. I hear however this has never been acted upon. The fellows <u>will not</u> understand that, especially in S. Africa, one man who can shoot is worth (in certain circles and usually critical ones) half a dozen who cannot. Several of our recent actions have shown me very clearly that the Boers are learning how, against our indifferent, unpractised shooting, they can gallop in upon our fellows without much risk & I have always maintained that once the Dutch are within 80 yards of us (where they can clearly see a head pop over a stone) they are our masters with their style of snap shooting without aligning their sights. But steady practice, which can easily be arranged for upon the veldt will not only make our men as good; but will give them morale and self-confidence.[558]

This clearly demonstrates his concerns that the standard of individual accuracy within the British Army was affected by having little chance for soldiers to check the sighting of their rifles, amplifying existing problems. This was something that both he and Lord Roberts

[556] See Capt. H.R. Mead, Notes on Musketry Training of Troops. *Journal of the Royal United Service Institution. XLIII* (253), 1889, 233-263, p. 257.
[557] McGilvray, *Hamilton and Gallipoli*, p. 14.
[558] KCL Liddell Hart, HAM 2/2/7, letter to Lady Hamilton dated 11 Nov 1901.

would raise again, and appears to be reflected in the provisional musketry courses of 1902 and 1903, which had a heavy emphasis on snap-shooting and the use of cover during training practices. The postscript in Hamilton's letter to Congreve also included a marginal note that the additional training might be used as an experiment for future revisions of the Musketry Regulations, echoing a comment made by Hamilton's successor, John Hopton, in the Hythe Annual Report for 1899.[559] Certainly, some of the ideas that Hamilton was proposing are reflected in that training, although he himself later stated that it was Lord Roberts who created the reforms and initiated that implementation.[560] It is also interesting to note that Congreve himself was later to serve as Commandant at Hythe, between September 1909 and December 1911, during another period of change for the British Army.

[559] H.M.S.O., *Report on...the year 1899*, p. 4.
[560] KCL Liddell Hart, HAM 17/2, letter to the Times (unprinted), dated 12 Oct 1931.

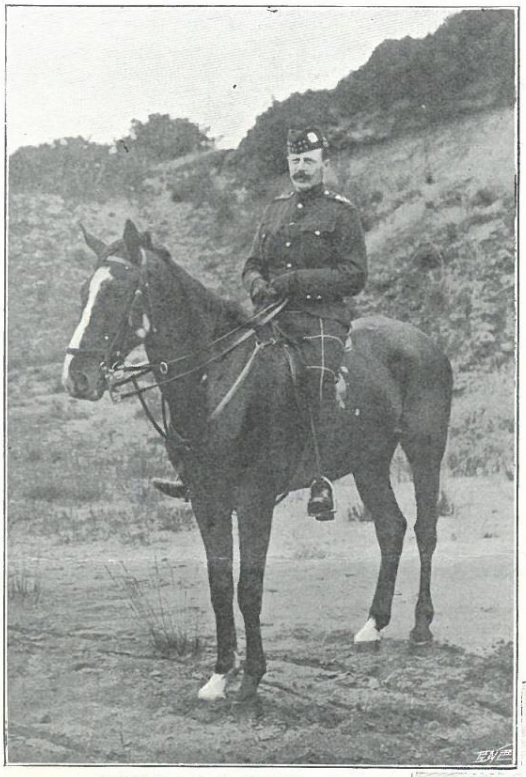
Appendix 5:

The New Musketry Practice at Aldershot, 1901

The New Musketry Practice at Aldershot.

By Albert H. Broadwell.

[*The Photographs by A. J. Johnson which illustrate this article have been submitted to several officers at head-quarters, who were good enough to express their entire satisfaction with them.*]



CAPTAIN E. L. C. FEILDEN.

THE greatest lesson in warfare taught to any nation during the last thirty years has been learnt by Great Britain in South Africa; it has been a thorough lesson in shooting, and it is important to note, therefore, that the authorities at Aldershot have not been slow in taking advantage of the experience of the past two years in teaching our soldiers how to shoot straight.

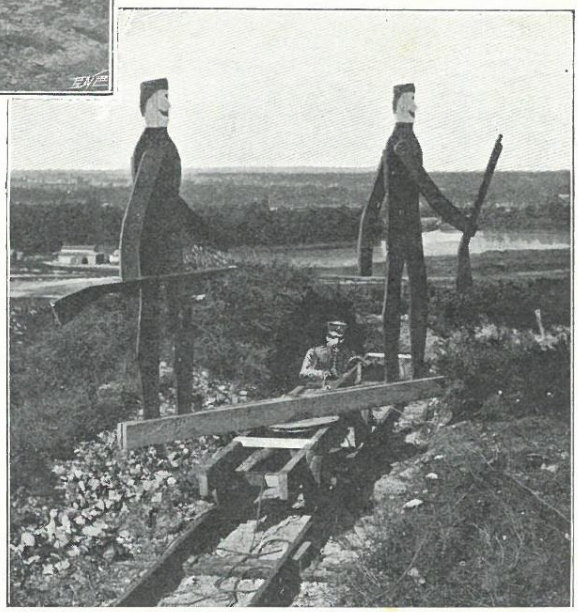
The Strand Magazine for June, 1901, contained an article entitled "A British Commando," describing Dr. Conan Doyle's civilians' rifle club at Undershaw.

Dr. Doyle may well be called the pioneer of civilian rifle clubs, for, ever since Lord Salisbury in his famous speech advised Englishmen to learn how to shoot, Dr. Doyle has given much of his spare time to the organization of a shooting club where bulls'-eyes rank before banking accounts.

The war in South Africa has demonstrated the fact that pretty sword exercises and cavalry charges *en masse* are things of the past so far as success in modern warfare is concerned, and *how to shoot* has become the great problem of the day.

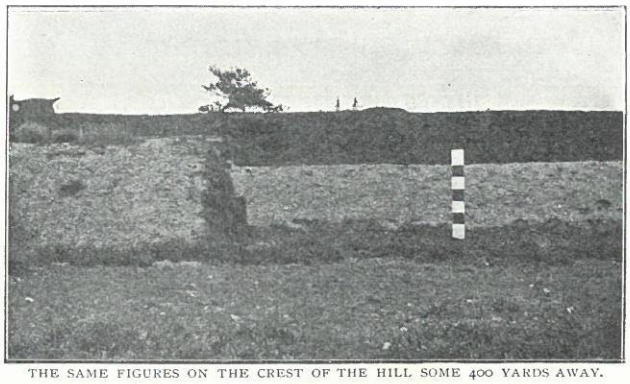
What Dr. Doyle is doing for citizen rifle-shooting Aldershot is now doing for the Regulars on a more elaborate plan on the Ash Ranges at North Camp.

The Ash Ranges, under the supervision of Captain E. L. C. Feilden, to whom we are indebted for the arrangements which have made this article possible, have altered their appearance



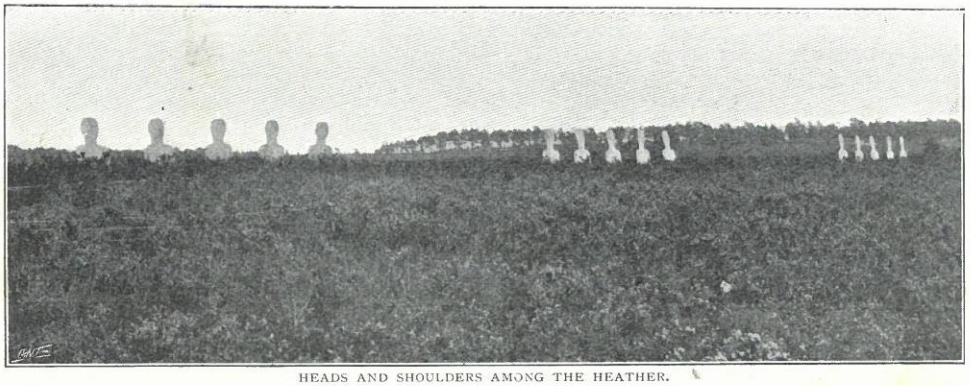
THE RUNNING MEN, SHOWING HOW THEY ARE WORKED FROM THE PIT.

in a startling and eminently practical manner.



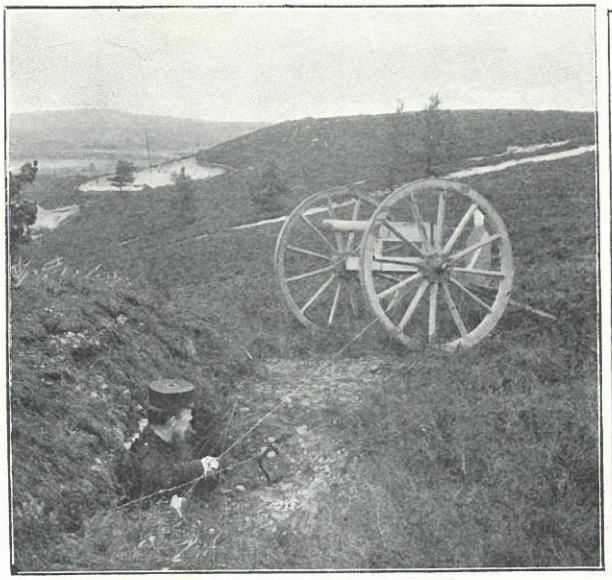
THE SAME FIGURES ON THE CREST OF THE HILL SOME 400 YARDS AWAY.

The British soldier has shot at regulation targets too long, and he is tired of the monotony of it. See him on the Ash Ranges to-day and you will find him full of fun, of enthusiasm. Why? Because he sees a head in the heather and the sport is to get a shot home before they are gone. That is what Tommy never had before; it rouses his latent energies and awakens that spirit of sport which is ever ready to show itself when opportunity offers. No better ground could possibly be found for the purpose, for the Ash Ranges

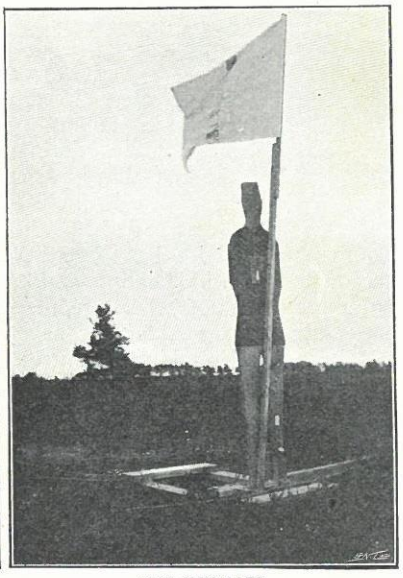


HEADS AND SHOULDERS AMONG THE HEATHER.

a moving enemy on the crest of the hill. Up they pop, down they go, in a twinkling; comprise a series of kopjes and valleys which lend themselves admirably to the

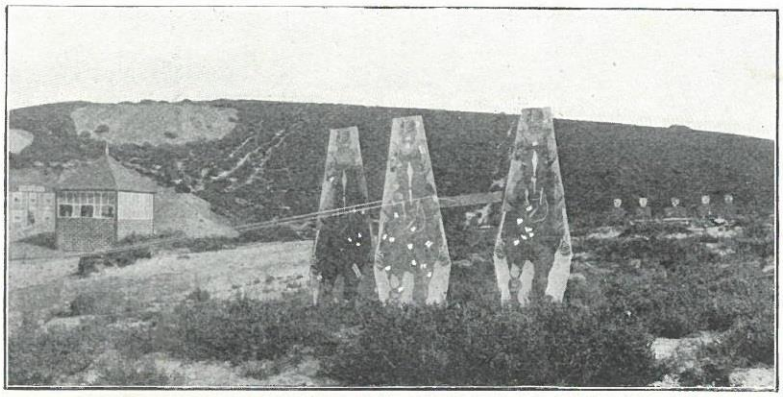


THE DUMMY MAXIM AND WORKING PIT.

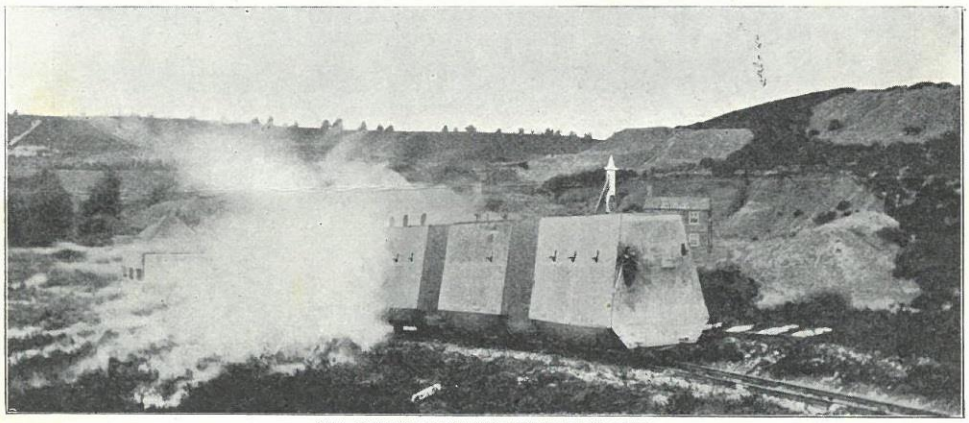


THE SIGNALLER.

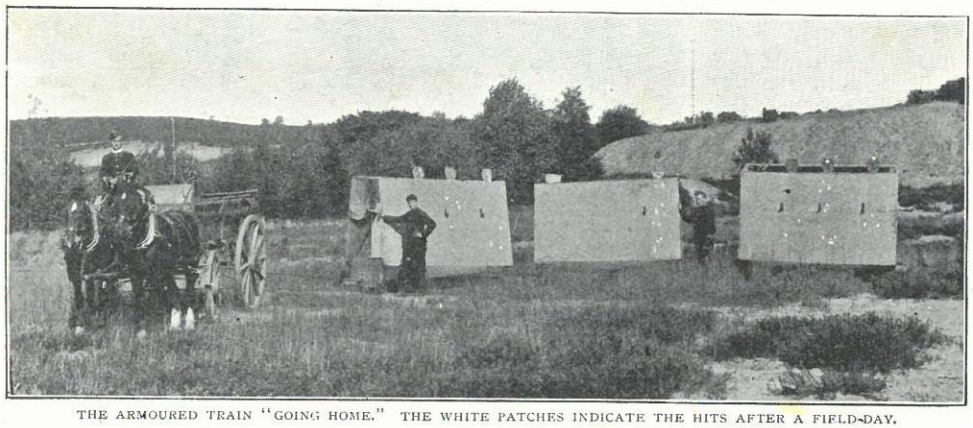
object in view. The various moving targets which are scattered over the field of operations are designed to represent the dispositions of a defending force prepared to meet an enemy invading the ranges from the south. In order to give our readers an idea of a field-day on the ranges we will imagine, for the time being, that we are part and parcel of the attacking force. Forward! march! We scatter and become units; that is to say, units of a long, straggling line of creeping, ever-advancing foes! We



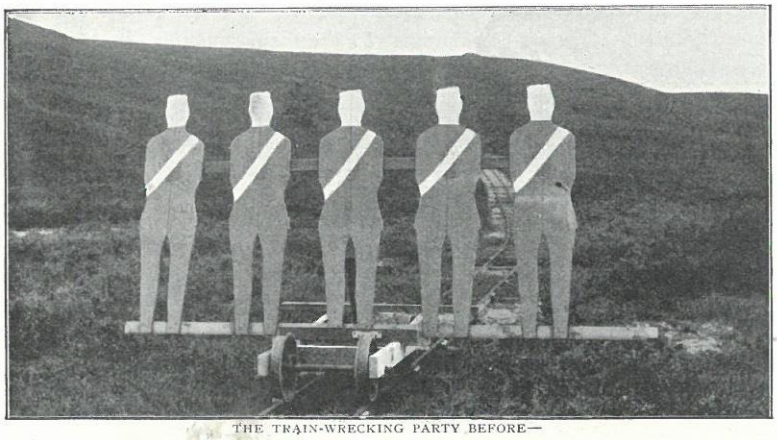
THE DUMMY CAVALRY—NOTE THE ROPES WHICH KEEP THE FIGURES STRAIGHT.



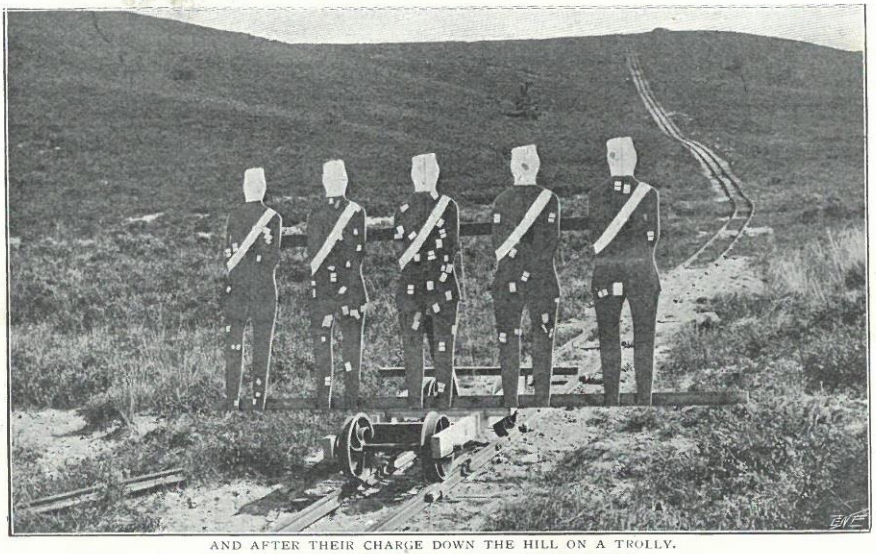
THE DUMMY ARMOURED TRAIN SPITS FIRE.



THE ARMOURED TRAIN "GOING HOME." THE WHITE PATCHES INDICATE THE HITS AFTER A FIELD-DAY.



THE TRAIN-WRECKING PARTY BEFORE—

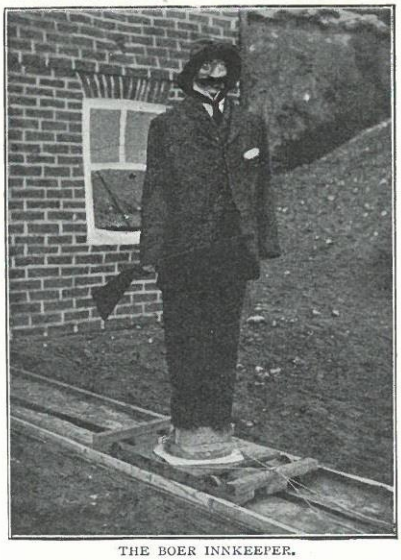


AND AFTER THEIR CHARGE DOWN THE HILL ON A TROLLY.

avail ourselves of every particle of cover. What is that on the crest of the hill? The enemy? Who said the enemy? Why, yes, surely, there they are again. Watch those two men running along the crest of the hill — but before the words are out they are gone again!

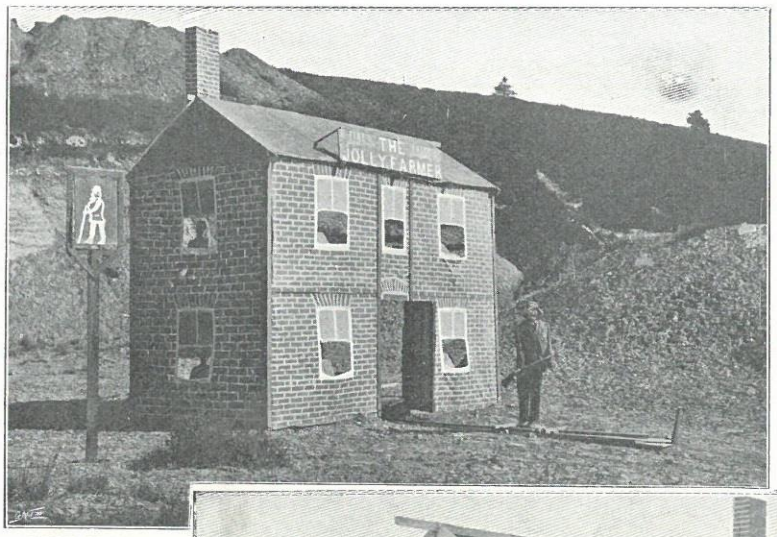
Someone on our left has taken a pot-shot at them. A hit! — no, it isn't. They are there once more. Let us get nearer. On we creep; we reach the coveted hill; we make a dash for the top, and lo! before us are the dummy figures of the enemy. On our right we detect a Maxim ready to fire. The gunner pops up and down behind the breech. "Shoot him if you can, boys!"—and the peppering begins.

Then, without a moment's notice, heads and shoulders appear in the heather, and before we can take aim they are gone again! The magazines are brought into use and we pepper away for our lives. The heads appear again and are lost to view a moment after.



THE BOER INNKEEPER.

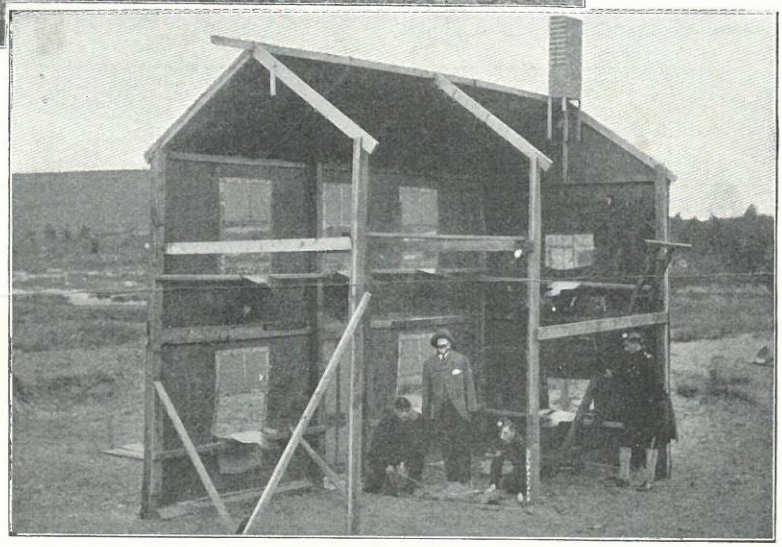
We reach the hill. Behold a signaller! He waves his flag, evidently sending a message to his commander in rear, reporting our advance. He's gone — our excitement grows to a tremendous pitch. There he is again! Ping, ping, ping —he's down! But, alas, it is not the rifle that



THE BOER INN.

bodies. But, see, they are up again for a few seconds near the signal-box. What is that loud explosion? Halloa! They have succeeded; yes, the line is blown up. They were gallant fellows, but they did not know the value of taking cover.

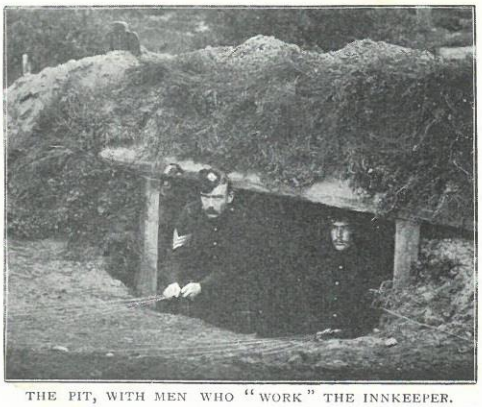
We do, and on we creep. There's a man has done it, but the man in a protecting-pit behind, who has worked the life-like dummy. We advance cautiously. Five hundred yards ahead there is a house — a Boer inn. We intend to capture it, but we are not there yet. We have first to face a cavalry charge. The intrepid horsemen are dummies too, but none the less are swift of motion. Note the ropes which give them life. We give the mounted men a lesson. Look at the white patches, each of which denotes a bullet mark, and you will say that we have made good practice to-day.



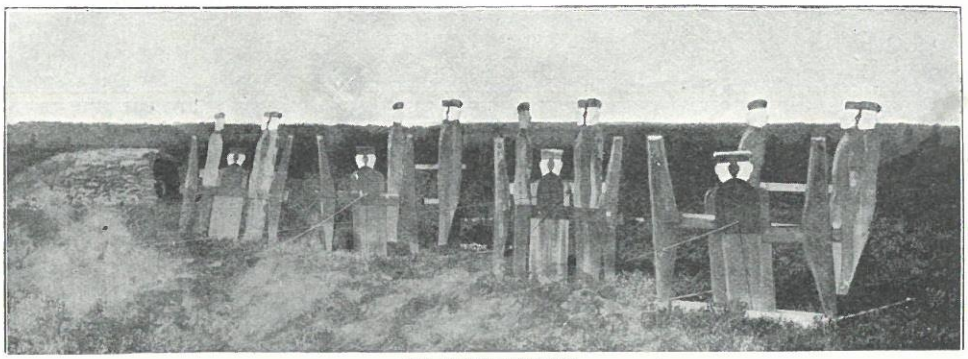
THE BOER INN—BEHIND THE SCENES.

We must get to the inn at any price; it must be stormed. We crawl again, down hill, behind hillocks, across ditches and ravines. But what is this? Take cover. A roar and a rumble—it is the armoured train! With a shriek it dashes across the valley and spits fire at us as it goes.

A party of the enemy has been sent to wreck the line as soon as the train has passed. They tear down the hill in front of us and disappear from view. They have had a bad time. Look at their poor dummy coming out of the inn with a gun—probably the landlord. Steady, boys! Bang! bang!!



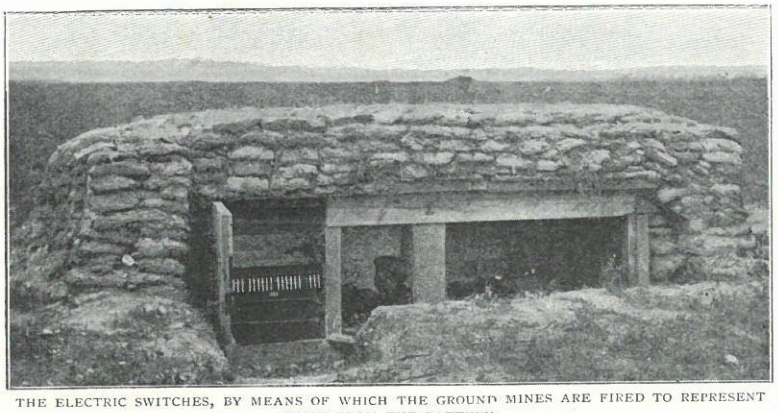
THE PIT, WITH MEN WHO "WORK" THE INNKEEPER.



THE DUMMY BATTERY.

We've got him! No, he turns tail and enters the house again. We do our best, however, and give him a parting shot in the back just as he gains shelter.

As we advance we obtain a glance of the



THE ELECTRIC SWITCHES, BY MEANS OF WHICH THE GROUND MINES ARE FIRED TO REPRESENT SHOTS FROM THE BATTERY.

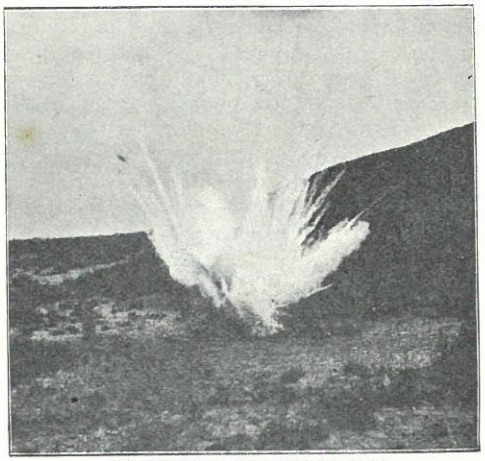
back of this structure, and we note with satisfaction that we have left our mark on the walls—canvas walls—and on the dummy figures that appeared at short intervals at the windows. We climb another kopje and come under the fire of a battery, just visible in the far distance, craftily concealed under the shadow of a wood. We hear an explosion; it is the 15-pounders opening fire.

Halloa! One of its deadly messages drops and explodes less than twenty yards in front of us. Shrapnel covers our advance, but undaunted we move ahead, unswerving, towards the coveted goal.

We find out afterwards that the battery fire was not so deadly as might have been anticipated by anyone who did not know that the bursting shells were nothing more than ground mines fired, as we advanced, by electricity from the switch shown on this page.

So our illusion is over. We shake hands, for we have done uncommonly well, but we want to come again.

Taking the matter seriously, too much importance cannot be attached to this new style of field firing; it is what our soldiers require—unknown ranges, hidden targets, appearing and disappearing in unexpected places, representing an enemy, in place of the old-fashioned large black and white targets. It also gives an interest which was formerly lacking. Let us hope that some similar kind of range will be constructed in every district in the country, and follow the lead which Aldershot has given us.



THE EXPLOSION OF A GROUND MINE.

Appendix 6:

Musketry Training in the Public Domain

Towards the end of the South-African War, with British pride severely dented by the protracted nature of the conflict, every aspect of the military was under public scrutiny. The level of interest was such that, when the provisional course of musketry for 1902 was published, it received a detailed review in *The Times* of London. *The Times* was repeatedly critical of the Army's choice of rifle throughout this period: two articles published in 1890,[561] concerning the Lee-Metford rifle, had led the Director of Artillery to reconvene the Small Arms Committee for their comments.[562] In 1905, it published another article about the new 'Short' rifle, sparking further articles and letters discussing its suitability.[563] However, whilst openly critical of the technology, the following article appears to be aimed at the military hierarchy rather than the new training itself.

Musketry Training, 1902

(From a Military Correspondent)

As an appendage to the December Army Orders the "Provisional Course of Musketry for the year 1902" has just been issued, the authorities apparently finding it impossible to extricate "Musketry Regulations," 1901, from the state of preparation in which, according to the official announcements, they have been lingering for months past. As even the present edition of King's Regulations is "provisional," one can hardly be surprised at the reluctance of the War Office to commit itself to anything definite as regards musketry training. Yet there

[561] [Anon.], 'The Magazine Rifle (First Article)'. *The Times (London)*, 12 November 1890, p. 8; and [Anon.], 'The Magazine Rifle (Second Article)'. *The Times (London)*, 13 November 1890, p. 8.
[562] See Maj-Gen. P. Smith *et al., Report by Major-General P. Smith, C.B., Colonel Sir H. St. John Halford, C.B., and Colonel C.G. Slade, late President and Members of the Small-Arms Committee, on certain articles which appeared in the Times on 12th and 13th November, 1890, relating to the MAGAZINE RIFLE*. (No publication details, 1890). Held in the Pattern Room Archives, Royal Armouries Library.
[563] [Anon.], 'The New Short Rifle'. *The Times (London)*, 3 February 1905, p. 10. This drew four letters to the editor over the following seventeen days, with the last on February 20 forming the subject of an editorial, as well as being referenced in a House of Lords debate three days later. See HL Deb 23 February 1905 vol 141 cc1019-39.

seem to be no very substantial reason why some degree of finality should not have been arrived at in the time that has elapsed since the war ceased to have, from a musketry standpoint, a distinctive and epoch-making character. It is idle to suggest that any fresh musketry lessons of importance will be derived from the operations now in progress, and the experiences already gained, as tested by last year's training, should have sufficed to preclude the course for 1902 from being merely provisional – a word of which the military side of the War Office appears to be becoming unduly fond.

"Table A–Recruits–Cavalry and Infantry"–in the 1902 course consists of four parts, of which the first three count for classification. Part I. includes 11 practices a 200, 300, and 400 yards, seven rounds, "independent," in each practice. The targets for the various distances are as laid down in the 1898 Regulations, but in practices Nos. 5 and 8, at 200 and 300 yards respectively, the position is "sitting," and throughout the 11 practices any kind of natural or artificial rest may be used by a recruit if found necessary. Parts II. and III. remain unchanged except for the substitution of the terms "independent" and "magazine independent" for "deliberate" and "rapid individual," and the reduction of the time allowed in "magazine independent" from a minute to 45 seconds from the command "Commence." Part IV. consists of four "independent" practices, the first three at 100, the fourth at 150 yards, one at a vanishing target, one at a fixed head and shoulders, and two at a moving figure. In the practice at the fixed head and shoulders the firer, crouching behind cover, momentarily exposes himself sufficiently to fire a rapid shot, recruits being allowed four seconds for exposure, fire, and complete return to cover from "Commence" or signal. In the above-mentioned practices 168 rounds are expended, leaving 32 for three field practices to be directed by the assistant adjutant and carried out under conditions as practical as possible. The points required for classification as a first-class shot are, as at present, 300 for cavalry and 330 for infantry.

"Table B–Trained Infantry"–now consists of three parts–independent, miscellaneous practices, and practices for which rounds are allotted to commanding officers and company commanders. Part I. includes 12 practices, of which the first six are as in the 1898 Regulations, with the exception that the position in No. 4 at 500 yards is "sitting" instead of "kneeling." No. 7 is "any position," 100 yards, at a vanishing head and shoulders exposed four seconds, No. 8 at a fixed head and shoulders, 100 yards, the firer crouching behind cover and momentarily exposing himself as in the similar practice in Table A. Trained men, however, are allowed only three seconds for exposure, fire, and complete return to cover. Nos. 9, 10, and 11 are at vanishing head and shoulders, fixed head and shoulders, and vanishing second-class targets respectively, the distances being in the first two cases 200, and in the third 500 yards. No. 12 practice is any position, magazine independent, 600 yards, at a second-class vanishing target exposed 45 seconds. Part II. embraces three practices–No. 13, independent, about 150 yards at a moving figure; No. 14, magazine independent, about 200 yards, any position, behind cover, two shots at each backward and forward run of a moving figure, eight rounds in all; No. 15, magazine independent, about 200 yards, any position, behind cover, at a vanishing figure. A target to appear at intervals of five seconds, each time at a different place, and to remain exposed four seconds. Horizontal space for each man's target not less that 28ft. In the first two parts 106 rounds are expended, leaving 94 for Part III., of which 41 are allotted to the commanding officer and 53 to the captain, who formerly had only 40 rounds per man at his disposal. In addition to these 96 rounds per man, general officers are authorized to draw 4,000 rounds per battalion of infantry. Attention is directed to special instructions for moving and vanishing targets and range appliances, which will assist in framing schemes and in selection of suitable targets.

To speak broadly, the main changes in Tables A and B introduced since the 1898 Regulations, which have been in force only up to the present year, are the abolition of

volleys, the system of firing behind cover, and the permission accorded to recruits to use any kind of natural or artificial rest in their independent practices at 200, 300, and 400 yards. The increased encouragement of individuality in the preparation of special schemes by captains of companies, the closer attention paid to the use of vanishing and moving targets, and the introduction of the "sitting" position are other matters in which progress is indicated, and the hope justified that the British Army may shortly emerge from the "provisional" stage of up-to-date musketry training.[564]

Whilst the training course itself has been considered in Chapter 3, it was found that this article, with certain amendments, was syndicated as far away as Australia.[565] Associated articles, including speeches by Field-Marshal Roberts, can also be found in the New Zealand press. This suggests that it was not only readers within the British Isles who were interested in this field, but throughout the Empire as a whole. The following tables have been drawn up by incorporating the details above into the *MR 1898* tables. What becomes obvious, when compared with the true 1902 tables,[566] is that there is far more information than was contained in *MR 1898*, together with a far greater focus on individual training. The information contained within this article is so detailed that the general public were provided an almost complete picture of how training had been revised, even if only provisionally.

[564] ['A Military Correspondent'], 'Musketry Training, 1902' *The Times (London)*, 20 December 1901, p. 5.
[565] [Anon.], 'Rifle Shooting'. *The Register, Adelaide*, 24 January 1902, p. 2.
[566] See Chapter 3.

Provisional Course of Musketry for the year 1902. Table "A" (Times Copy)

Number of Practice	Description of Fire	Class of Target	Distance in Yards	Number of rounds	Position
	PART I.				
1	Independent	2nd	200	7	Lying
2	"	2nd	200	7	Kneeling
3	"	2nd	200	7	Standing
4	"	3rd	200	7	Lying
5	"	3rd	200	7	Sitting
6	"	3rd	200	7	Standing
7	"	2nd	300	7	Lying
8	"	2nd	300	7	Sitting
9	"	2nd	300	7	Standing
10	"	2nd	400	7	Lying
11	"	2nd	400	7	Kneeling
	PART II.				
12	Independent	1st	500	7	Lying
13	"	1st	500	7	Kneeling
14	"	1st	600	7	Lying
15	"	1st	700	7	"
16	"	1st	800	7	"
	PART III.				
17	Magazine Independent	2nd	200	7	Kneeling
18	" "	2nd	200	7	Standing
19	" "	1st	500	7	Lying
20	" "	1st	500	7	Kneeling
	PART IV.				
21	Independent	Vanishing	100	7	?
22	"	Fixed Head & Shoulders	100	7	Crouching behind cover
23	"	Moving Figure	100	7	?
24	"	Moving Figure	150	7	?

Provisional Course of Musketry for the year 1902. Table "B" (Times Copy)

Number of Practice	Description of fire	Class of target	Distance in yards	Number of rounds	Position
	PART I.- Independent				
1	Independent	3rd	200	7	Kneeling
2	"	3rd	200	7	Standing
3	"	2nd	500	7	Lying
4	"	2nd	500	7	Sitting
5	"	2nd	600	7	Lying
6	"	1st	800	7	"
7	"	Vanishing Head & Shoulders	100	7	Any Position
8	"	Fixed Head & Shoulders	100	7	Crouching behind cover
9	"	Vanishing Head & Shoulders	200	7	?
10	"	Fixed Head & Shoulders	200	7	?
11	"	Vanishing 2nd Class	500	7	?
12	Magazine Independent	Vanishing 2nd Class	600	7	?
	PART 2.- Miscellaneous				
13	Independent	Moving figure	150	7	?
14	Magazine Independent	Moving figure	200	8	Any position
15	Magazine Independent	Vanishing figure	200	7	" "
	PART 3.- Discretionary				
Of the remaining 94 rounds, 41 are allotted to the commanding officer, and 53 to the captain, to be fired in practices as they see fit.					

Appendix 7:

Lord Roberts' General Order of 1902

[Army Order 237, October, 1902 – issued as a Special Army Order, dated 19th September 1902][567]

Musketry Training – Regular and Auxiliary Forces.

–Considerable as has been the improvement in the shooting of the Army during the last few years, our experience in South Africa has brought home to us the fact that our soldiers cannot as yet take the fullest advantage of the admirable weapon which has been placed in their hands, or use it with that skill and precision which are so essential to success in war.

While I deeply regret that this should be the case, I am not surprised, for I know from many years' anxious watching over the progress of rifle shooting in our Army, how comparatively few officers take any real interest in this–by far the most important part of the soldiers' training–particularly to those who belong to the Cavalry and Infantry branches of the Service. Too frequently the musketry course is still looked upon as a somewhat irksome business which has to be got through as quickly as possible, and sufficient consideration is seldom given as to whether the results achieved are satisfactory or not.

Success or failure in rifle shooting depends entirely upon the officers, and I now most earnestly desire to impress upon them the imperative necessity for their becoming experts in the use of the rifle themselves, and for assisting me in carrying out a far more complete and finished system of instruction than exists at present.

As a first step in this direction it is essential that young soldiers should be more carefully prepared to profit by the lessons of the rifle range, and that they may be able so to profit, they must be taught everything which concerns the rifle, and how to handle it with ease and confidence before they are introduced to the ranges.

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[567] H.M.S.O., *Army Orders, 1902*, Army Order 237.

As an aid to musketry training, the following points should be carefully considered and given effect to:–

1. *Instruction*.–The value of the instruction imparted to the men is entirely dependent on the ability of the officers to teach, and on the zeal with which they enter on a task which demands careful preparation, patience, and energy.

I expect therefore that all officers will do their best to become competent instructors, and that commanding officers will ensure themselves of the fitness of their officers to teach, by watching them when at work with their non-commissioned officers and men, and will impress upon them that keenness in musketry, and good results, will be the first claim for advancement.

In the same way subordinate officers will be held responsible that the non-commissioned officers under their command are capable instructors, and will not recommend any for promotion whom they do not consider as such. It is to be borne in mind that, after the first broad principles of instruction have been communicated, nothing but constant practice in teaching can make the perfect instructor; all non-commissioned officers should therefore be frequently practised as instructors, and the plan of depending upon a few of the most capable, which is detrimental to the rest of the non-commissioned officers of the battalion, should be discontinued.

2. *Elementary training of recruits*.– I consider it essential to every man's efficiency as a soldier, that his elementary education as a recruit should be conducted with the greatest patience, sympathy, and judgement, and that it should be of the most thorough and finished description. I regard the present short period of recruit training in musketry as insufficient, and I direct that a system of training be established, which will ensure that no

recruit is pronounced qualified until he has acquired a thorough knowledge of musketry, and can handle his rifle with skill and confidence under all conditions, and in all positions.[568]

The recruit's training in musketry should commence 14 days after his arrival at the depot, and should be continued daily until he leaves to join his corps. During this time the instruction will be limited to care of arms, aiming, and the firing exercises.

When recruits join their corps daily instruction will at once be resumed.

The following will be the course:–

(a.) Care of arms.

(b.) Instruction in aiming.

(c.) The firing exercises, both in drill order and field service order–one exercise at least to be performed daily.

(d.) Instruction in practice in judging distance. A short exercise daily.

(e.) Instruction in firing from behind cover, and in snap shooting.

(f.) Instruction in the theory, powers, and mechanism of the rifle and its ammunition.

(g.) A course of lectures and examinations on the whole of the above subjects.

N.B.–Squads are not to consist of more than ten men, but eight would be better.

3. *Elementary instruction of trained soldiers*.–When a proper system of recruit training is established, the soldier may be expected to be so expert with his rifle that repetition of elementary lessons will seldom be necessary. As yet this has not been achieved, and until it has been, all soldiers now in the ranks must be exercised as frequently as possible in the same course as that laid down for the recruit.

[568] The underlined text later appeared in the Infantry Training manual, and was then satirised in a Punch cartoon. See *IT 1905*, p. 7; and F.H. Townsend, Untitled Cartoon. *Punch, or the London Charivari. CXLI,* November, 1911, p. 331.

4. *Range practices*.–The sole object of the range practice is to produce good marksmen, and this cannot be arrived at hurriedly, or without due deliberation. The aim should not be to expend a certain quantity of ammunition, but to make every shot fired a practical lesson; this can only be done by careful marking of each shot, and explaining to the men the causes of failure. In cases, therefore, where time has to be considered, it will be better to do a part of the course thoroughly, than to try to get through the whole in a hurried and perfunctory manner. In such cases General Officers Commanding will sanction the omission of shooting at the longer ranges, when they consider that the whole course cannot be advantageously carried out.

Exercise with blank ammunition, miniature cartridges, or merely "snapping," on the lines of the rapid magazine and snap-shooting practices of the regulation course, should be frequently practised in quarters throughout the year. It is by snap shooting at short ranges that battles in the future will probably be decided, and the few rounds, which can be fired on the rifle range, are not sufficient to enable a soldier to attain that high standard of shooting which will henceforth be needed.

5. *Auxiliary Forces*.–These instructions apply to the Auxiliary Forces so far as it may be possible to carry them out under the different conditions of service. Officers commanding regimental districts must at once take up the question as to how they can be applied. They must in the first instance especially concern themselves with the training of the permanent staff, and must satisfy themselves that they are kept up to a high standard of instructional ability under the direction of the adjutants of the Auxiliary Forces, of whose qualifications they must make themselves cognizant. It is only by district commanders' personal interest and inspection of corps while at musketry training that the desired end can be gained.

Officers commanding regimental districts must also give their special attention to the musketry training of Militia recruits, including that of officers. This is at present most unsatisfactory.

6. *Course of Musketry Practice for* 1903.–The official instructions for the musketry practices for 1903 will embody, as far as possible, the principle that skill at short ranges is of the utmost importance, and that it is useless to allow a man to shoot at the longer ranges, or in advanced practices, until he has become a reliable shot at the shorter distances.

Commanding officers are hereby empowered to keep back such men as they consider require further instruction, in order that they may expend their ammunition at the shorter ranges.

I am convinced that straight shooting, which is the result of careful training, is at least as important on the modern battlefield as tactical combinations, to the practice of which so much time and trouble are now devoted. It will be well for all to recollect that the best tactics may fail if, when the climax of the struggle is reached, a superiority of fire cannot be established.

I cannot, therefore, too strongly impress on every General Officer Commanding that it is his most important duty to attain and maintain a high standard of efficiency in musketry throughout all ranks in his command, and, being convinced that this can only be attained by the exercise of constant personal interest and supervision on the part of the senior officers, I shall hold every General Officer Commanding personally responsible that he, by whatever means he may consider best, will endeavour to attain a standard which can only be considered satisfactory when it has attained the highest efficiency. With this view he should satisfy himself by frequent and close observation, that a well-ordered and progressive system of elementary instruction in musketry is established in all corps in his command on the lines here indicated, and should specially endeavour to stimulate the interest of officers in their

men's shooting and in recruit training. He should endeavour to overcome any difficulties which may arise in complying with the spirit of this order, and in regard to such as he may be unable to cope with, he should at once bring them to the notice of the Adjutant-General.

7. *Report to be made to the Adjutant-General.*–On the 1st January, 1903, General Officers Commanding will report to the Adjutant-General, in detail, the steps which they have taken to introduce a better system of training, and will explain the progress made up to date, while putting forward any suggestions which may occur to them as being likely to be of use. They will, at the same time, furnish the result of their observations as to the action taken by officers commanding regimental districts, and as to the general effect of this Order.

Appendix 8:

The Introduction of Charger Loading, and the Mechanics of Rapid Rifle Fire

When the Magazine Rifle Trials were being held in the 1880s, the method of loading the magazine was one of the points under consideration. James Paris Lee's original design, when first submitted to the British Army in 1879,[569] was loaded using detachable magazines. The Small Arms Committee were not in favour of this, stating:

> *...it is not advisable to introduce into the Army a rifle with a detachable magazine, as it adds to the number of articles already carried by the soldier, and is liable to be lost.*[570]

Despite this concern, the 'Magazine Rifle, Mark I' was initially issued with two magazines, although the second magazine was quickly withdrawn. The remaining magazine was connected to the action-body by a linkage, and was only to be removed for cleaning purposes. It had also been altered so that it could be loaded whilst fitted to the rifle. This meant that, for its first fourteen years in service, the rifle was loaded either by feeding individual rounds into the magazine or, with the cut-off plate closed, directly into the breech. It was in this second manner that soldiers were primarily to load, with the magazine held in reserve for 'critical moments'.[571] However, once the magazine was empty, reloading was a relatively slow process, and it was simpler to use the rifle as a single-loader, although this reduced the rate of fire to that of the Martini-Henry.[572]

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[569] [Unknown], *Précis of the steps which led to the introduction of a Magazine Rifle into the Imperial Service, and subsequent action relating thereto*, [Confidential Report, *circa* 1891], p. 1.
[570] [Unknown], *Magazine Rifle, Pattern 1888*, [Confidential Report, 1888], p. 5.
[571] Colonel C.G. Slade, *Magazine and Small-Bore Rifles*, (London, Harrison and Sons, 1888) [Internal paper], p. 8.
[572] Colonel Lord Cottesloe, *The Englishman and the Rifle*, (London, Herbert Jenkins, 1945), p. 37.

During both the Tirah Campaign and the South African War, the slowness of reloading was a particular source of complaint.[573] There was also a tendency for loose ammunition to be dropped whilst reloading, particularly by cavalry, which had allowed the Boers to resupply themselves during the latter stages of the war by following British units.[574] To address these issues, it was decided to introduce some form of charger or clip-loading.[575] The distinction between the two was set out in the contemporary *Text Book of Small Arms*:

Cartridges are carried in chargers and clips in order to accelerate the rapid loading of the magazine. Chargers are used by being placed in grooves in the body over the magazine, the cartridges are swept out of them by the thumb into the magazine, the empty charger being thrown away.

Clips with their cartridges are placed in the magazine, the clip being held down by a catch... The cartridges are fed up by the magazine lever, or platform, which is made sufficiently narrow to pass between the sides of the clip. When the cartridges are expended, the clip falls out through an opening in the bottom of the magazine.[576]

Although Lord Roberts referred to using 'clips' during a Parliamentary debate on the 'Short' rifle in 1905,[577] this appears to have been due to the two terms being considered interchangeable in common usage. Clip-loading would have required a complete re-design of at least the magazine of the Lee-Enfield, but the receiver could be adapted for charger-loading with relatively little trouble. The matter was made slightly more complicated by the design of the ammunition. The .303 (British) cartridge is a 'flanged', or 'rimmed', design, over which the extractor claw of the bolt hooks, controlling the cartridge's passage into and

[573] See Major E.G.B. Reynolds, *The Lee-Enfield Rifle*, (London, Herbert Jenkins, 1960), p. 51 and pp. 56-58.
[574] For one account of this, see R. Selley & K. Cocks, *I won't be home next Summer: Flight-Lieutenant R.N. Seeley, DFC (1917-1941)*, (Pinetown, 30° South Publishers, 2014), p. 22.
[575] For an introduction to both British and European chargers, see B. Harriman, 'Collecting Rifle Clips and Chargers', *The Journal of the Historical Breechloading Smallarms Association. 4* (1), 2009, 23-29.
[576] H.M.S.O., *Text Book of Small Arms*, (London, Harrison & Sons, 1904), pp. 207.
[577] HL Deb 23 February 1905 vol. 141 cc1038.

out of the breech. This rim presents a complication when loading, in that the cartridges must be arranged so that they do not overlap, otherwise the bolt will carry two cartridges from the magazine, causing an obstruction which would then have to be cleared before firing could continue. For this reason, the chargers had to be filled in a particular pattern to ensure the cartridges entered the magazine in the correct arrangement.

When the SMLE Mark I was introduced in 1903,[578] charger loading was initially accomplished by using a two-piece guide. The receiver wall was redesigned to incorporate one of the grooves mentioned above, with the other incorporated into a sliding bar attached to the bolt-head. When the bolt was brought fully to the rear, the bar was pushed forward, aligning the two grooves to receive the charger. This was not a particularly sturdy arrangement, and when the SMLE Mark III was introduced in 1907,[579] this was replaced with a 'charger bridge', which contained both grooves within a single rigid fitting. The chargers themselves were constructed from a single piece of stamped steel, with high sides and a spring tab at either end to retain the cartridges. The first pattern does not appear to have been totally satisfactory, and after trials with three alternative designs were conducted between January 1905 and March 1906, an improved pattern was adopted.[580] Experiments relating to the charger bridge, undertaken around the same time, found that the forward motion of the bolt dislodged the empty charger, rather than needing to remove it manually.[581] Although this appears to have been an unintentional feature, it did make loading slightly faster, and was incorporated into future training.

[578] Formally designated the 'Rifle, short, magazine, Lee-Enfield. (Mark I)'. List of Changes no. 11947 (dated 6 Nov 1903). See Skennerton, *List of Changes*, Vol. III, pp. 70-76.
[579] Formally designated the 'Rifle, short, magazine, Lee-Enfield. (Mark III)'. List of Changes no. 13853 (dated 26 Jan 1907). See Skennerton, *List of Changes*, Vol. III, pp. 148-155.
[580] These were the 'Kings Norton', 'Webb', and 'Improved Enfield' patterns, the last of which was the successful design. See letters 180 (21 Jan 1905), 180/5 (1 Aug 1905), 180/6 (9 Mar 1906), and 207/2 (15 Jun 1905), contained in TNA WO 140/9.
[581] Letter from the School Experimental Officer, ref. 260/2 (3 Apr 1906), contained in TNA WO 140/9.

The SMLE, through both luck and design, incorporated several features alongside the charger bridge that made it ideal for rapid fire. The large capacity of the magazine meant there was less spring resistance when loading the first charger.[582] The bolt-handle was sited behind the trigger, placing them in the best arrangement for rapid manipulation. The bolt was also cocked as it closed, meaning that spring resistance was not encountered until the final motion, when the firer had the greatest mechanical advantage. None of these features were specifically noted or looked for during either the original trials or subsequent development, and they appeared individually on other contemporary rifles. However, the combination of all four created a design uniquely suited to modern warfare. When combined with rapid fire drills, of the type that were introduced in 1909, the rifle was capable of a rate of aimed fire of fifteen rounds per minute in the hands of a trained soldier, in what came to be known as the 'Mad Minute'.[583] Such pride was placed in the execution of this practice that it was included in a recruitment film produced by the British Army in early 1914, where 'a soldier was shown on the firing range "scoring with twenty-eight rounds a minute eighteen bulls and ten inners"'.[584] The SMLE, so very nearly replaced in 1914, proved its worth during the First World War as 'the best all-round rifle in the war'.[585]

[582] During trials it was noted that there was great difficulty in emptying the second charger into the magazine, particularly the tenth round. As such, the loading instructions throughout the period had the following footnote: *The magazine will hold two chargers of five cartridges each, but should, in ordinary circumstances, be loaded with one only, as the soldier will thus retain the power of adding another charger, at any time, should necessity demand*. See *ATM 1905*, p. 81 (footnote).

[583] It became so inextricably linked to the B.E.F. that it was even used as the title for an account of one regiment's experiences during the opening phase of the First World War. See J.M. Craster (ed.), *'Fifteen Rounds a Minute' – The Grenadiers at War, August to December 1914*, (London, Macmillan London, 1976).

[584] Quoted in N.P. Hiley, "The British Army Film', 'You!' and 'For the Empire': reconstructed propaganda films, 1914-1916', in *Historical Journal of Film, Radio and Television. 5* (2), 1985, 165-182, p.167. From a programme apparently presented at the Royal Premiere, it is believed that the firing was conducted at the School of Musketry, but no details of the firer are known, and no surviving prints of the film had been identified as of June 2014.

[585] Cottesloe, *The Englishman and the Rifle*, p. 136.

Appendix 9: Reference Images

Figure 35: Royal Engineers, with Martini-Enfield carbines, taken at Aldershot, c.1907.

Figure 36: A group of trainee N.C.O. instructors, with their instructor seated in the centre. He holds a skeletal rifle action, used to demonstrate the operation of the mechanism.

Figure 37: A group of trainee N.C.O. Instructors, circa 1914, surrounded by various teaching aids including landscape and figure targets, and aiming rests.

Figure 38: Part of a group photograph of the Staff of the School of Musketry, taken circa1905. It includes Charles Monro and Norman McMahon, seated in the front row, right hand end.

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