

Warrior

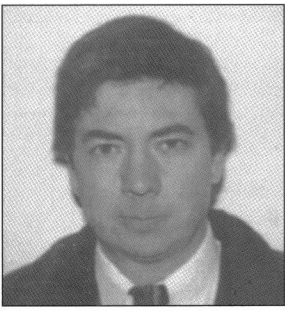
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Matchlock Musketeer

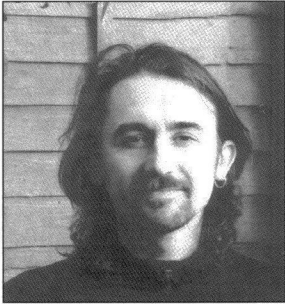
1588–1688



Keith Roberts • Illustrated by Stephen Walsh



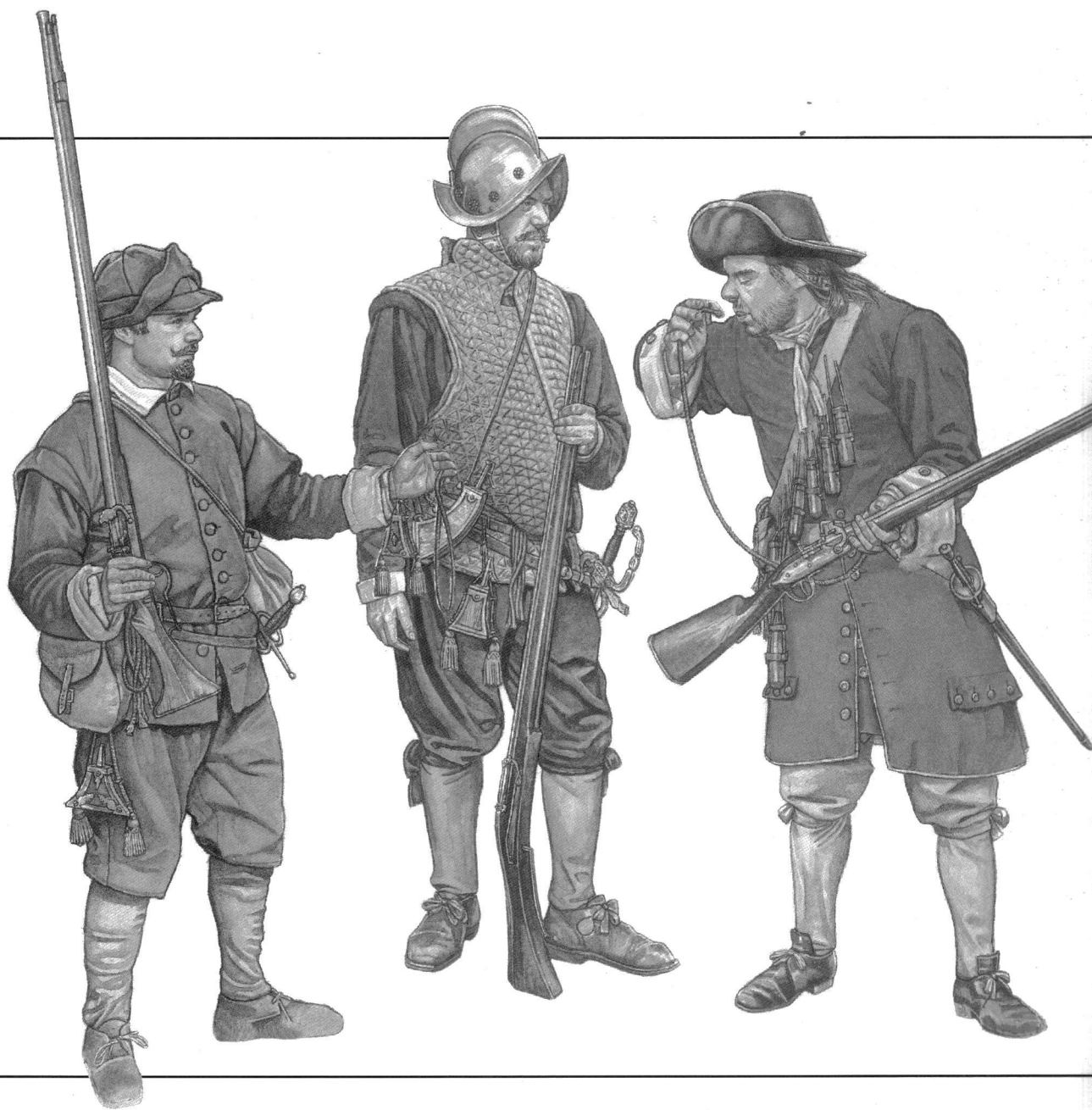
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Matchlock Musketeer

1588–1688



Keith Roberts • Illustrated by Stephen Walsh

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Author's note

Throughout this book the term 'English' is used in the
contemporary sense where both Englishmen and Welshmen
were usually referred to as English infantry.

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THE MATCHLOCK MUSKETEER 1588–1688

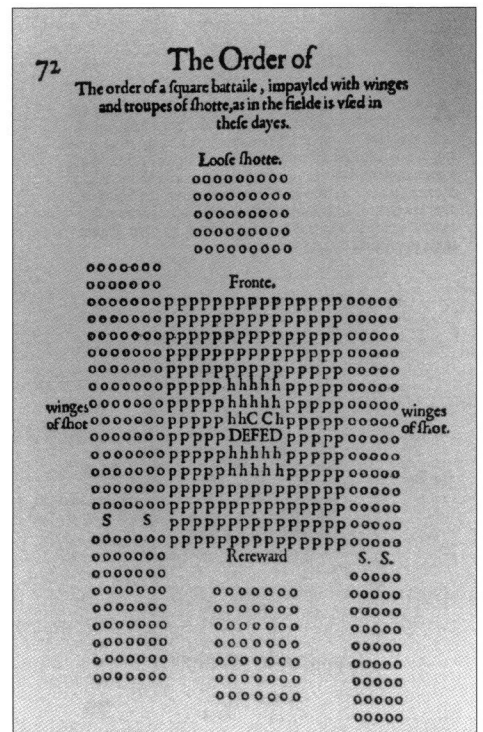
INTRODUCTION

The English did not immediately adopt matchlock firearms for their infantry when these became popular in Europe during the late 15th and early 16th centuries, relying instead on their traditional weapons, the longbow and brown bill (a polearm with a browned iron head). Henry VIII had hired foreign mercenary 'shot' to complement his English infantry during his campaigns in Scotland and France. Mercenaries were expensive, and the more frugal Queen Elizabeth made efforts to introduce modern weapons more widely, using a mixture of longbowmen and arquebusiers during the early part of her reign. Renewed English exposure to mainstream European warfare, as allies or mercenaries of the Dutch in their revolt against Spanish rule, had a greater impact on the equipment of English soldiers. In particular, Englishmen fighting against the Spanish Army of Flanders, the leading professional army of the 16th century, were equipped with modern weapons – arquebus, musket and pike – according to the mainstream European practice. For most of the period covered in our book English military theory was a copy of European practice. However, continuous campaigning during the English Civil War created an army, the New Model Army, that was seen as one of the leading armies of its day and one that had its own distinct military style.

This period saw a transition from the medieval to the modern world in terms of the weapons, training and lifestyle of the English infantryman. The role and importance of the matchlock musketeer changed as improved design and better tactical systems for using arquebuses and muskets altered – from a role supporting infantry-pikemen to a position of equal importance with them and, finally, with the adoption of the bayonet, to replacing pikemen altogether. The training of the matchlock musketeer became increasingly uniform as the tactical systems of the day made increasing demands on units of infantry in close order following uniform drill. His lifestyle changed as armies became permanent and larger, and soldiers in permanent garrisons were billeted in purpose-built barracks instead of amongst civilians.



Oliver Cromwell, the Lord Protector, 1658. By permission of Dolphin Coins and Medals, Leighton Buzzard.



Late 16th-century infantry formation. Note the centre of pikemen flanked by shot, and the loose skirmishing shot in front of the unit.

Although our musketeer's experiences in battle, skirmish, siege and camp change, there is also a sense of continuity throughout the period – firing, fighting hand-to-hand, digging trenches or storming a breach during a siege, and a soldier's life in the field stayed much the same.

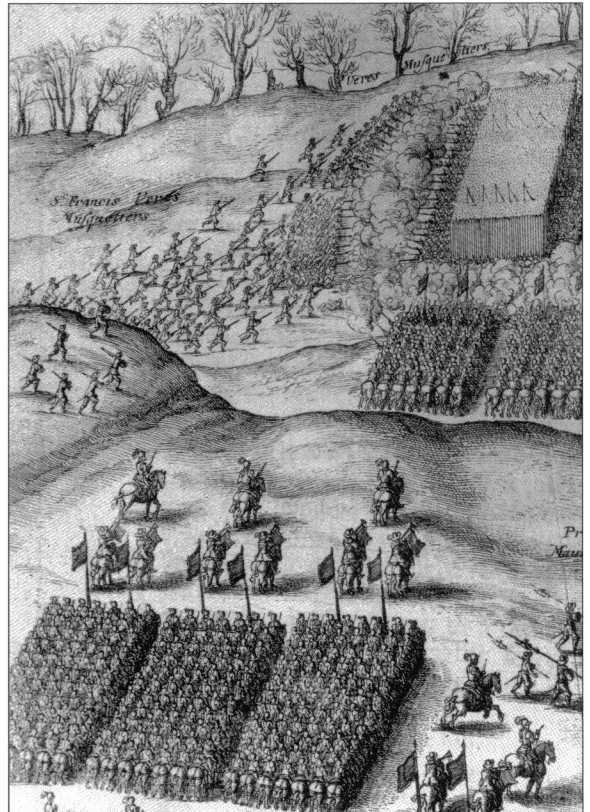
THE CHANGING ROLE OF INFANTRY

The military theory and practice according to which the musketeer fought were not unique to the period 1588–1688, which we will describe in this book. They had developed partly through evolution – the testing and improvement of existing practice – and partly through new or revolutionary ideas. This section outlines something of the origin of our infantryman's battlefield practice. The most successful of the commanders who would lead him in battle or siege made the best use they could of combined arms: 'Foot, Horse and Artillery'. Our companion volume *The Ironsides* will describe the cavalymen of our period and the origin of their military practice. Good cavalymen were effective on the battlefield throughout this period.

The role of infantrymen had been changing since the 14th century, during which they had proved their effectiveness in a series of battles. Earlier medieval armies had included some professional infantry, particularly crossbowmen, amongst less useful infantry levies. We may still underestimate the effectiveness of these early medieval infantrymen but we can clearly see the impact of particular groups of infantry from the 14th century onwards. The infantrymen who made such an impact during this time were usually recruited from areas where border warfare or bloody local feuds were endemic and the local population was already accustomed to fighting and killing. Most continued to use their traditional weapons when recruited to serve in national armies or as mercenaries.

There are several examples from the 14th century of infantrymen making their greatest impact when fighting from prepared positions, where fortifications or obstacles such as ditches or potholes could reduce the impact of opposing cavalymen. Scottish spearmen, and Flemings armed with spears and *goededag* polearms, fought in close-order formations with varying degrees of success against mounted opponents. English longbowmen, deployed alongside bodies of dismounted men-at-arms, proved a particularly deadly combination. The English brought together the strength of formed infantry, which the Scots and Flemings had demonstrated, with a speed and volume of firepower that their opponents could not match. The longbow could be duplicated, and records show that the English imported quantities of their bow-staves from Europe. European commanders could and did form companies of

Combined arms. Dutch cavalry and infantry attacking Spanish Tercios at the battle of Turnhout in 1598. Note Sir Francis Vere's English musketeers in the upper left of the engraving.





ABOVE LEFT **Dutch pikeman of Prince Maurice's Guard, c. 1599, from Jacob de Gheyn's *Wapenhandelinge*, 2nd edition, Amsterdam, 1608.**

ABOVE RIGHT **A copy of the same posture (no 13 from de Gheyn) from Clifton Hall in Nottinghamshire. By permission of the Nottingham Trent University. Photo by Sue Brown.**



archers, but contemporary opinion held that none could match trained English longbowmen. Other infantry used weapons and formations more offensively. Catalan *almugavars*, armed with spears and javelins, fought both defensively and offensively, serving in Spain and as mercenaries in Sicily, the Byzantine Empire and Greece. The most famous offensive infantry was the Swiss, who fought with halberds in their war of independence against the Habsburgs but adopted the pike during their subsequent campaigns, first on their own behalf and later as mercenaries.

Their most famous enemy, the Burgundian Duke Charles the Bold, had probably created the most advanced army of the day. His army used battlefield deployments that included successive lines, and had extensive firepower provided by contingents of archers (including mercenary English longbowmen), crossbowmen, handgunners and battlefield artillery. It was Duke Charles's bad luck that in the Swiss he faced an exceptional opponent, whose infantry formations did not break up, who maintained a reputation for fighting almost literally to the last man and who rarely took prisoners. The Swiss used dense columns of closely formed infantry and relied on the speed and ferocity of their attack for victory, instead of firepower.

The first solution to opposing the Swiss was to set an equivalent force against them – the *landsknechts*, raised in southern Germany by the Emperor Maximilian. They were armed with pikes to fight in the Swiss manner, increasingly with the addition of firepower in the form of arquebusiers, but hand-to-hand they were not quite equal to the Swiss. The final solution to the Swiss charge was not to oppose it directly but to combine the delaying factor of field fortifications with infantry firepower, essentially the same response that the English had used

against French cavalry charges during the Hundred Years' War. The difference was that while European commanders could not duplicate the firepower of trained English longbowmen, they could achieve effective infantry firepower through the use of arquebusiers, a weapon anyone could use with brief training.

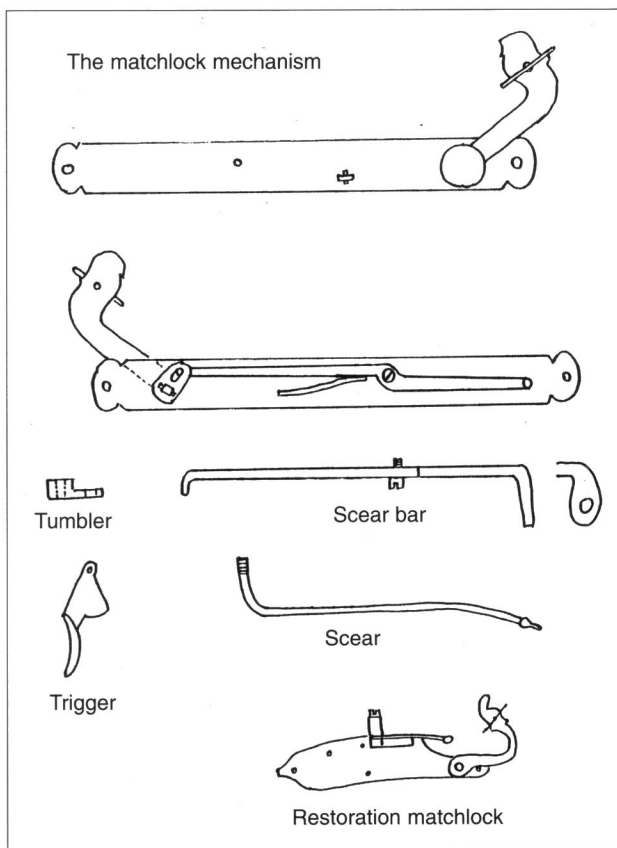
The wars in Italy during the 16th century saw the successful use of this tactic. At Cerignola (1503) Swiss infantry in the service of France failed to fight their way across a ditch in their attack on the Spanish army of Gonsalvo de Cordova. Fabrizio Colonna, a noted Italian condottiere who had served with the Spanish, commented after the battle that it was neither the courage of the troops nor the steadfastness of the general that won the day, but a little ditch, and a parapet of earth, and the arquebus.

THE MATCHLOCK

Mechanism

There are references to infantry firearms and handguns throughout the 15th century, as progressive commanders, such as the Burgundian Duke John the Fearless, began to use them alongside their crossbowmen. Duke John was said to have had as many as 4,000 handgunners in his service in 1411. These early firearms were fired by manually applying a heated wire or the glowing tip of a smouldering matchcord to the touch-hole at the top of the breech on the gun. By the middle of the 15th century advances were made in the design of the handgun, and the touch-hole was moved to the right-hand side of the gun barrel with a small external pan with a moving cover fitted below it to hold the priming powder. The earliest form of 'serpent', the s-shaped lever fitted to the stock with a vice to hold the matchcord, was moved to the priming pan by hand. Improved design made it easier to aim the gun, but the final change was the introduction of the first true matchlocks between 1450 and 1470. In this revised design the serpent holding the smouldering matchcord was moved towards the priming pan by pulling an early form of trigger, a bar attached to the serpent, rather than by hand. The word 'lock' was used because the early matchlock mechanism was similar to the common locks on doors and chests. By the 16th century the term 'arquebus' was in general use for a matchlock fire-arm.

Another firearm, the caliver, was introduced during the 16th century. The main difference between a caliver and an arquebus was that a caliver had a larger bore.



Detail of matchlock mechanism.
By permission of Partizan Press
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Musket

The musket was a heavier weapon than either the arquebus or the caliver. It probably evolved in Italy from a firearm called a *moschette* or *moschettone* that was used on fortification walls but was far too heavy for a soldier to carry and use on the battlefield. During the early 16th century the Spanish had begun to use a heavy firearm called a musket that was light enough for the battlefield if fired from a forked musket rest. The Spanish used them at the siege of Parma where 'from that hour on, the harquebuses that were fired from a fork were invented.' The advantage of the musket was its increased killing power, but the disadvantage was its weight. It needed a strong man to carry and fire one, and most of the 'shot' in a 16th-century infantry unit still carried arquebuses or calivers.

English soldiers probably came across the musket when fighting against the Spanish Army as allies or mercenaries serving with the Dutch Army. The army reforms of the Dutch leader, Prince Maurice of Nassau, during the 1590s introduced new, standard patterns and standard bores for both musket and caliver, and by the early 17th century the Dutch musket had become the model on which English soldiers were to be equipped. The actual equipment issued depended on availability, and it was still common to find muskets of several different bores in use in one army. The new Dutch musket was still a heavy weapon, and efforts were made to design one that was lighter than a musket but had a heavier bore than a caliver or arquebus. The first solution was the 'bastard' musket. According to an English standard around the beginning of the 17th

OPPOSITE TOP A copy of one of de Gheyn's engravings of a caliverman (posture no 26) from Clifton Hall in Nottinghamshire. By permission of the Nottingham Trent University. Photo by Sue Brown.

OPPOSITE BOTTOM Musketeer equipment from John Bingham's *The Tactiks of Aelian* (1616).

BELOW Detail of musketeers and arquebusiers of the Spanish Army of Flanders in the 1570s.





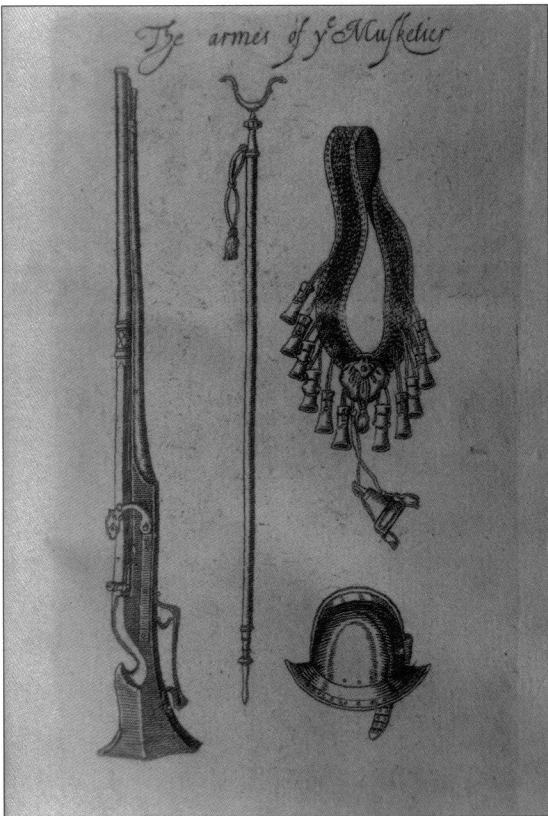
century a bastard musket should have a bore of 16 bullets to a pound of lead, while a musket should have 12 and a caliver 20. There was considerable debate about the use of bastard muskets, but they never replaced the full musket. During the 1630s a lighter musket was developed that still had the full musket bore of 12 bullets to the pound.

A shortage of weapons at the outbreak of the English Civil War meant that both sides made use of whatever they could find, and unscrupulous arms dealers sold desperate commanders poor quality and sometimes nearly obsolete firearms. One unhappy officer referred to the consignment he received in 1644 as 'all the old trash that could bee rapt together'. As the war progressed both sides were able to improve their arms supplies, at least for their main field armies, and the new lighter muskets became common issue. The process of lightening the musket continued for the remainder of our period, mainly through reducing the length of the barrel.

The decline of the matchlock musket began after the Restoration with the introduction of a proportion of flintlock muskets to each company of infantry. Guards regiments were the first to be fully equipped with flintlocks, and some matchlock muskets were still in use up to the end of the 17th century.

Equipment

A musketeer using a matchlock musket required a few yards of matchcord, a pouch containing his musket balls and musket cleaning kit, a small flask with fine priming powder and a larger flask filled with the coarser gunpowder that was poured down the barrel. The matchcord was cord soaked in saltpetre that smouldered steadily when lit. In action a musketeer carried about a yard lit at both ends and blew upon one end until it glowed creating a 'coal' before using it to ignite his priming powder. At the beginning of our period a musketeer carried his coarse powder in a powder flask with a nozzle designed to hold the right charge for the musket he carried. Early muskets were made with different bores so it was important for a musketeer to have a flask with the right charge for the musket he was using. An alternative, which became the norm during the later Sixteenth century, was a bandoleer with several wooden or metal containers strung from it. Each container holding enough for one charge. By the end of our period the bandoleer was replaced by paper cartridges carried in a pouch. In



addition most musketeers carried a cheap sword. Few English musketeers made use of their swords, preferring to use the musket butt as a club in hand-to-hand fighting.

RECRUITMENT

The first stage in our soldier's military life was his recruitment. There were always some volunteers for army service, but most of the soldiers raised between 1588 and the outbreak of the English Civil War in 1642 were levied men raised by conscription. Large numbers of Englishmen and Welshmen volunteered for service during the early stages of the Civil War, and others were recruited through the influence of leading figures in their community. Enthusiasm for military service declined as the Civil War dragged on, and levies were necessary to fill the ranks of infantry regiments on both sides. Parliament's victorious New Model Army became a professional army after the First Civil War and was able to obtain many of its recruits by voluntary enlistment, many of them former Royalists. Levies continued to fill the gaps until 1651 when a final levy of 10,000 men was made to reinforce the army in Ireland. From then until the Restoration in 1660 the army of the Commonwealth and then the Protectorate relied on volunteers. After the Restoration the new Royal Army was small enough that it could be recruited by voluntary enlistment, and levies were only necessary when large numbers of men were required in 1673 and 1678, or when soldiers were required for unpopular service overseas.

Levies were mustered, armed, clothed and billeted at the expense of their local communities using a process that was developed during Queen Elizabeth's reign. Orders for the levy were given by the queen and her privy council to the lord lieutenant of a county or, if there was no lord lieutenant, directly to the justices of the peace. The lord lieutenant would then give instructions to the justices of the peace who would then pass instructions further down the chain of local officials to the constables of the hundreds and the churchwardens in the parishes. Once the number of men required had been selected, funds described as 'coat and conduct' money were provided by the county to cover the cost of a coat for the newly raised soldiers and the cost of a journey to a mustering point or, for service abroad, to the embarkation port. There was no common design or colour for the coat provided by the county, although the men levied from a single county were usually equipped in the same style and colour. An Elizabethan conscript received a coat costing between 15 and 16 shillings, of which four shillings was contributed by the government in London. The conduct money was intended to cover the cost of food and lodgings en route to



Ernst, Count Mansfeld, commander of an English expedition to recover the Palatinate. Most of the 12,000 men levied for this expedition never saw England again.

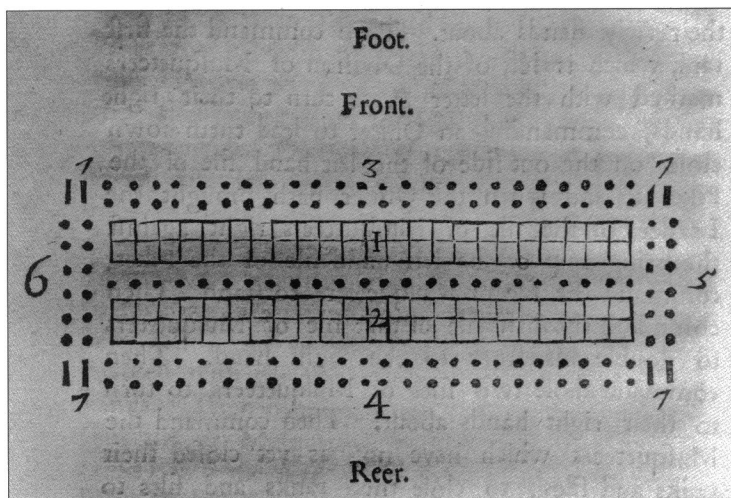
the muster point and was paid at a rate of '8d per man per day'. Recruits were expected to cover about eight miles a day under the control of a 'conductor' who was responsible for their safe delivery and who would receive an 'indenture' as a receipt when he handed them over to the government muster master. Corruption of one sort or another was common throughout the whole system for levying troops, and conductors were often accused of accepting bribes to let unwilling recruits go.

Few returned to their homes after military service, and the local officials responsible for selecting the men preferred to choose those they felt the community could do without. For the most part the government held the same view and encouraged the impressment of vagrants, thieves or masterless men on the basis that this would remove individuals likely to cause trouble at home in England or Wales. Most contemporary writers who described this process were involved in military service in one way or another and were exasperated by the type of recruit this system provided. Matthew Sutcliffe commented that a local constable might select some men as the result of a local feud, but for the most part local officials would levy rogues or masterless men who, if they had their just deserts, would have gone to the gallows rather than to the wars. Most contemporary writers made similar comments. There was evidently some truth in this assessment, as surviving records and popular theatre show, for example William Shakespeare's *Henry IV*.

The infantrymen levied by this process did not want to be soldiers, and those who could afford to bribe their way out of a military career did so. Some bribed local officials not to select them in the first place, others bribed the conductor to let them go en route to the muster point and some bribed the captain of the company they were assigned to. Those who could not afford the bribe, tried to desert either when travelling to the muster point or at any point thereafter. The fittest men for military service were usually those who could afford to buy their way out of the levy one way or another, so those who ended up in the army were not the best men for the job in terms of physical strength. A report by the muster commissioners in Bristol in 1602, describing the levies delivered to them, commented unfavourably on the standard of men supplied, stating that 'there was never beheld such creatures to any muster ... they are most of them lame, diseased, boys, or common rogues. Few of them have any clothes, small weak starved bodies taken up in fairs, markets and highways to supply the places of better men kept at home.'

Not all levies were quite this bad, or they would have been completely useless, and there are examples of the county authorities supplying the kind of contingent any captain would want to have. The arrival at Chester in 1601 of a contingent from

One of several versions of the infantry square used as a defence against cavalry. The square symbols represent pikemen and the dots are musketeers.



Anglesey showed what could be achieved, and the mayor of Chester reported, 'They came to this City very well apparelled with caps, cassocks, doublets, breeches, nethersocks, shoes and shirts.' However, this was exceptional and, in this case, caused trouble amongst other less fortunate levies. The mayor commented that this 'gave great discontentment to the residue of the soldiers which had no apparell and to us some trouble for their pacification'.

Volunteers could be raised by sending a recruiting party to a town or city, attracting attention by 'beat of drum', essentially by having drummers march through a town leading a crowd to the recruiting station set up by the officer in charge, usually at a tavern. The officer might appeal to their sense of adventure or their loyalty to one cause or another, and would offer an immediate payment to enlist and plenty of beer as an encouragement. In country districts, the influence of the local landowner would be dominant, and while some would join his regiment or his company through personal loyalty or belief in the cause he followed, others simply followed the habits of their civilian life and volunteered because they were told to do so.

The same process of recruitment through voluntary enlistment continued after the Restoration. The new Royal Army was small and volunteers were sufficient unless there was a sudden urgent need for large numbers of recruits. Soldiers were levied, and taken from the militia in 1673 and 1678, but this was exceptional. The Civil War had created a professional English army recruited by voluntary enlistment, this process was continued through the Restoration to form a new professional volunteer English Royal Army.

Robert Dudley, Earl of Leicester, the English Governor General of the Netherlands, 1585–88. During the Armada crisis of 1588 he commanded the army at Tilbury Camp.

ORGANISATION

The basic administrative unit throughout our period was the company. In the Elizabethan period, when full regiments were uncommon and military forces in the field were often small, the company was often the tactical unit as well. With the adoption of the new Dutch military practice in the 17th century the tactical formation for infantry changed and infantry companies became an administrative sub-unit within a regiment.

During Queen Elizabeth's reign the term 'bande' for a unit of infantry was replaced by the European term 'company', although the militia were known as trained bands. The size of an Elizabethan company in the closing years of the 16th century could be 150 or 200 men, but a strength of 100 was more common. A company with a strength of 100 men was commanded by a captain assisted by a lieutenant, an 'Ensign' (ancient), two sergeants, a drummer and sometimes a fifer, five or six corporals and 94 men. The practice of the time was to allow the captain six dead-pays or non-existent private soldiers out of every 100 on the



muster roll. The captain used the money for company expenses or his own profit. The soldiers were usually armed as arquebusiers, musketeers, pikemen and a few halberdiers but there was a number of variations, and as late as 1585 there was a company of longbowmen in service with the Earl of Leicester in Ireland. Examples of the variations in use can be seen in the strengths of two companies raised in 1596 for service in Ireland: one consisted of 20 musketeers, 50 calivermen and 24 pikemen, and the other of 30 musketeers, 40 calivermen and 24 pikemen. In each case six dead-pays made up the total to 100 men. Within the company itself the structure was copied from the Spanish system, and the soldiers were grouped in sub-units termed squadrons of 20 to 25 men under the command of a corporal or *cabo de squadra*. Each squadron was composed of two equal sections known as a *camarada* of 10 or 12 men under the command of a *cabo de camera*.

The Dutch system that replaced this had a different tactical system for the battlefield, but the organisation of its units was similar. Dutch infantry were formed into regiments comprising of several companies. Companies in the Dutch Army were made up initially of arquebusiers, musketeers and pikemen. By the time the English copied the Dutch system in the early 17th century a company was composed of equal numbers of musketeers and pikemen. In the Dutch Army, the 'Companies are some more in number, some lesse. Some reach 300 men, some 200, some 100, some 90, some 80, some 70 ... Regiments containe not alwaies a like number of Companies, some having 10, some 11, 12, 13, 14, 15, some 30 Companies and above.' There was more standardisation by the outbreak of the Civil War in 1642, and there were two popular models. In one model, a regiment of 1,200 men was divided into 10 companies; the colonel's company consisted of 200 men, the lieutenant-colonel's of 160, the sergeant-major's of 140, and each of the seven captain's companies comprised 100 men. The alternative model was a regiment of 1,000 men divided into 10 equal companies. There was wide variation during the Civil War as few colonels on either side could keep their regiments up to strength. The New Model Army followed the first model of stronger companies for senior officers, but the number in each company fluctuated with reductions in the number during peacetime. This basic system continued after the Restoration, although the percentage of musketeers to pikemen increased throughout the 17th century.

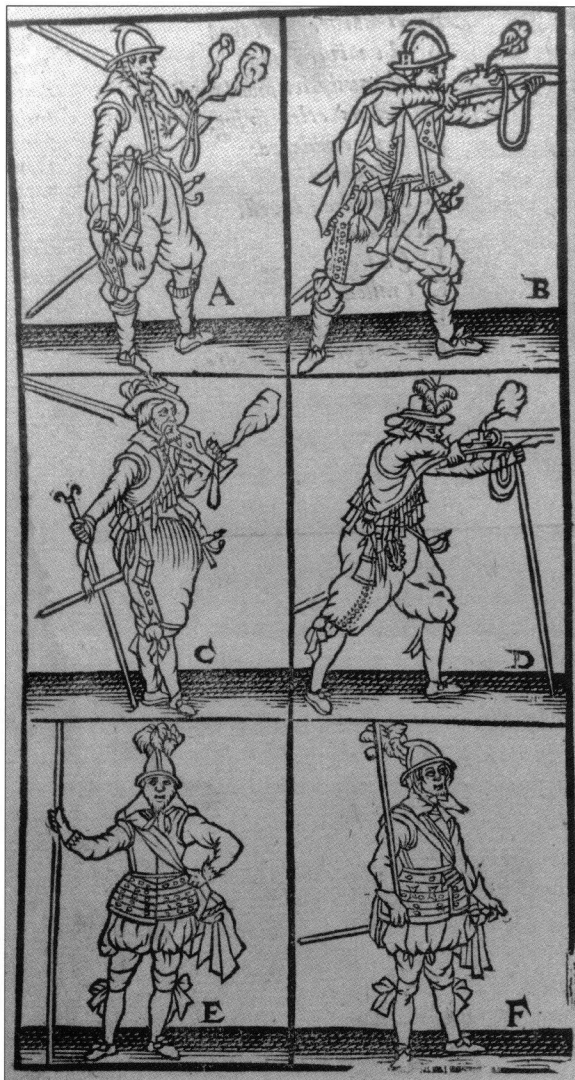
Under the Dutch model the company was divided into squadrons composed of between four and six



Prince Maurice of Nassau (1566–1625), Captain General and later Stadtholder of the Dutch Republic.



Gustavus Adolphus, King of Sweden. His victories at Breitenfeld (1631) and Lutzen (1632) changed the balance of power during the Thirty Years' War.



Musketeers and pikemen from the *Sieur du Praissac's Discours Militaires*, 1st edition, 1612. The figures are copies of those in Jacob de Gheyn's *Wapenhandelinge*.

files. With only three corporals to the company, there was no longer one corporal to each squadron. Each file was commanded by a file leader. The number of men in a file in England varied during the 17th century: 10 men by 1610, eight men shortly before the Civil War and six men from 1642 to 1688.

REGIMENTAL UNIFORM

The style of the uniform issued to our soldier changed between 1588 and 1688 in line with changes in civilian fashion, but the principle of a regular issue of clothing remained the same.

The cost of the uniform was deducted from the soldier's pay, and a common complaint was that it was overpriced, and deductions were made even if the clothing was never issued. The clothing issue was not made, initially, to create a uniform appearance, but simply because the soldiers were often poorly clothed when levied or enlisted and they would not survive on campaign without it. The option of providing soldiers with money to buy clothing themselves was dismissed for fear that they would drink or gamble the money away.

There were no standard regimental uniforms for English soldiers at the beginning of our period, although for some orders a 'pattern' showing the cut or fashion of the uniform required was provided to the merchant who had the contract to supply clothing. In theory the clothing supplied would be checked against the pattern before it was shipped out for issue to the soldiers, but minor, and sometimes quite significant deficiencies would be passed if the merchant bribed both the government official who was supposed to check the consignment and the officer who received it for his soldiers. The merchant providing the uniform would often send a consignment of clothing in the same colour, the colour depending on the material he had bought from his own suppliers, but the next batch might be a different colour, and he might supply uniforms made of different colour cloth in one consignment. The effect of this was that a newly raised company or regiment might have a uniform appearance, but the next batch of recruits might have different colour clothing, and the next formal clothing issue might also be different. Apart from this, soldiers on campaign frequently acquired better clothing when they could, often through plunder or theft, and a veteran unit would have presented a motley and often ragged appearance.

Red and blue were popular colours for soldier's coats during the Elizabethan period, although other colours were issued. The same principle was followed through to the early years of the Civil War,

although some officers on both sides made efforts to retain a particular colour for their regiments, and some armies favoured a particular colour or colours. Several regiments in the Earl of Essex's Parliamentary Army were issued with grey clothing in 1642 and 1643, but red seems to have been the predominant colour when his army was re-equipped in 1644 after his disastrous campaign in the west country. The Royalist Army also had regiments whose initial clothing issue, at least, included a wide range of regimental coat colours. Infantry in the main Royalist Army in Oxford were issued with red or blue uniforms in 1643, but later references to Royalist infantry still record a range of different colour coats.

The first regiments to be uniformed in consistent regimental uniform were the infantry of Parliament's New Model Army. A report in the contemporary newsbook *Perfect Passages* for 7 May 1645, describing the regiments of the New Model Army marching out of Windsor on the 1 May, recorded that 'the men are Red-coats all, the whole army only are distinguished by the several facings of their coats.' The facings at this period would be the lining of the soldier's coat, visible where the coat sleeve was turned back to form a cuff at the soldier's wrist. Red remained the predominant colour for the coats of the English infantry after the Restoration, with different colour linings according to the colonel's preference, the Earl of Beaufort being advised on 4 July 1685 'as to their Cloathing, the outside being red [His Majesty] leaves it to you to use what other colour you like best for the lining.' When the Earl of Chesterfield raised his regiment in 1667 he had his regiment's coats lined with black, 'which I did, because I was at the time in mourning for my mother'. There were some exceptions; for example the Lord High Admiral's Regiment is thought to have worn yellow coats lined red, but the principle of red coats of the New Model Army had become established as the standard colour for English and Welsh infantry. Of the 11 regiments of infantry encamped on Hounslow Heath in 1686, 10 had red coats and one wore blue.

Issue

At the beginning of our period the first issue of clothing our soldier would receive was that provided by the county where he had been levied. As we have seen in the section describing recruitment, this could be a complete set of clothing if the county authorities took their responsibilities seriously, but more commonly it consisted of as cheap a coat as the county authorities felt they could get away with.

The clothing issue varied throughout our period, and the official uniform was not always supplied in full. The optimum during the Elizabethan period was the standard set out for

Frontispiece of William Barriffe's *Military Discipline*, 6th edition, 1661. The figures are members of the Society of the Artillery Garden, London merchants who provided officers for the London trained bands.



the equipment for English and Welsh infantry campaigning in Ireland during the Earl of Tyrone's rebellion in 1599. This consisted of a clothing issue for winter consisting of a cassock of broad Kentish cloth lined with cotton (17 shillings and sixpence), a doublet of canvas with white linen lining (12 shillings and sixpence), a pair of venetians or breeches of broad Kentish cloth lined with linen (13 shillings and four pence), two shirts of Holland cloth with bands (eight shillings), three pairs of ox-hide shoes (seven shillings), three pairs of kersey stockings (eight shillings), and a hat (three shillings). The summer clothing issue differed in that no cassock was issued and only two pairs of shoes, one pair of stockings and a cheaper hat (three shillings). The caasock was a heavy coat intended for harsh campaign conditions. The standard clothing issue would be adequate if it was issued in full or to the required quality. All too

often this was not the case, and a typical example is the comment in 1600 by William Jones, a commissary in Munster, that the soldiers there were as poorly dressed 'as the common beggar in England', and although it was then mid-winter they had not yet received their winter issue of clothing and many had not received the previous summer's issue either.

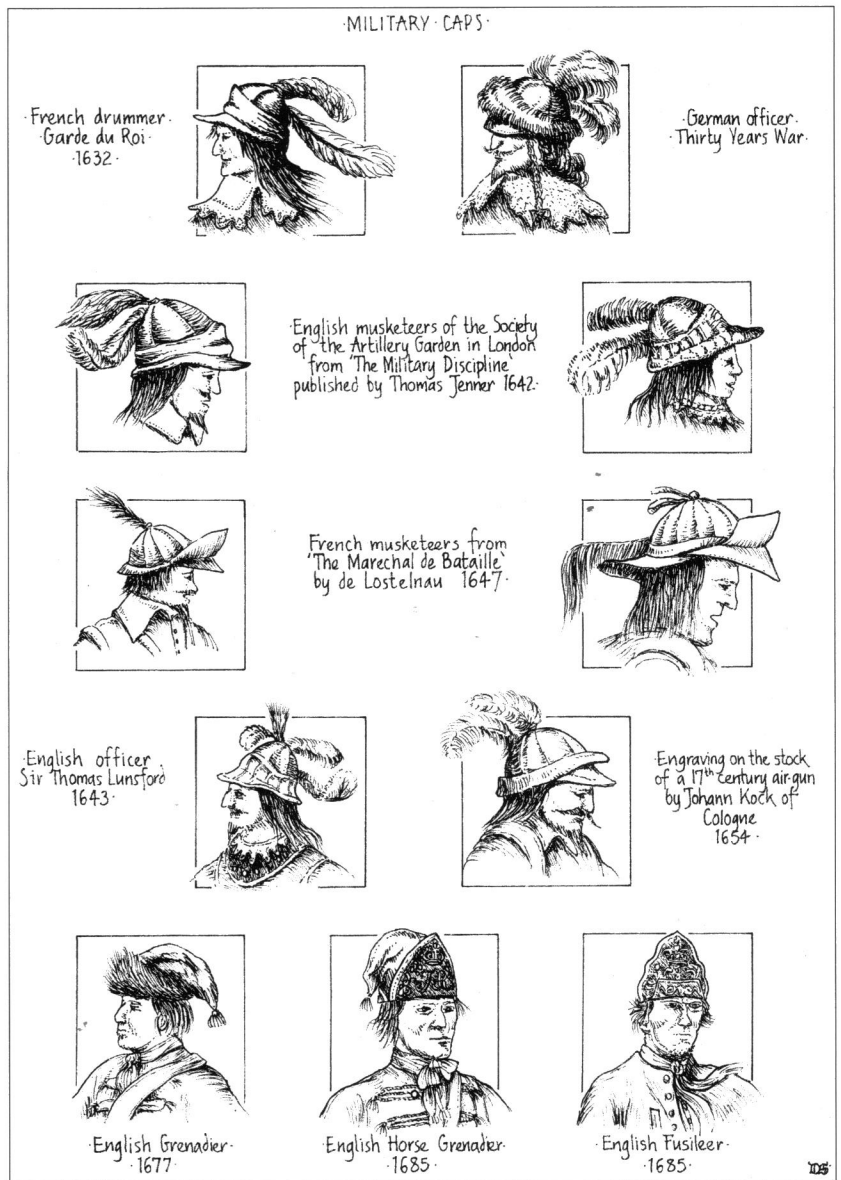
Forty years later, the standard clothing issue for infantry campaigning in Ulster was set in September 1642 as a cap, canvas doublet, cassock, breeches, two pairs of stockings, two pairs of shoes and two shirts, at a cost of 42 shillings and sixpence for each set. In the same month, the lord justices in Ireland required that every captain ensured that his men were issued with a good suit of clothes (which usually meant a coat or cassock and breeches), two shirts, three pairs of stockings, three pairs of shoes and a hat. This was essentially the same clothing allowance as in 1599, although the style would probably have been different. The article whose supply caused the greatest concern was the shoes, as the soldiers' 'want of shoes exceeds (clothes) and is general, without which they are neither able to



A ragged New Model Army soldier in Ireland from a broadsheet dated 1647. This was produced by the 'poor distressed Souldiery' in Ireland complaining about lack of clothing, food and medical supplies. Note the snapsack at his feet. By permission of Partizan Press ECW Picture Library.

march nor do any service at all.' Another necessary item supplied at this time was the soldier's knapsack (or snapsack), essentially a tube-like sack slung over one shoulder and tied at the chest, in which the soldier carried his possessions on campaign. The standard of clothing actually supplied remained poor, and complaints made against a delivery which arrived in Ireland in the same month included comments that the 'cloth is very bad, the suits ill and slightly made up, the cassocks not lined, the lining of the breeches very bad cloth, the caps so little as they can hardly come on the head of a child'.

Similar clothing was issued during the Civil War in England. On 6 August 1642 Parliament ordered that all 'the soldiers shall have delivered unto them at their first marching coats, shoes, shirts and caps, in all to the value of 17 shillings for every man.' Surviving accounts record the issue of shirts, coats, shoes and knapsacks. Similar problems in maintaining supplies occurred, and the Parliamentary general, the Earl of Essex, described his soldiers as 'most almost naked' in August 1643. Shortages in the clothing actually sent caused the Earl of Essex still further problems in the field, as he wrote later that year that there was 'sent to the army a proportion of shirts, shoes, coats and snapsacks which are so unevenly provided that I know not how to dispose of them without a damage to the army by a mutiny, there being no stockings and so few shirts'. He was so concerned about this that he only issued those items (coats, shoes and snapsacks) where he had enough to make an equal issue to each man. The uniform issue to the Royalist Army is not so well documented, but was probably similar, and there is a record of Royalist infantry being issued with coats, breeches and montero caps in 1643. Supply arrangements improved during the Civil War, and though there were still complaints over the quality of clothing and shoes supplied, the quality controls appear to have improved. For



Military caps. Examples showing different styles of cap between 1632 and 1685 and the evolution of the grenadier cap of the late 17th century. Artwork by Derek Stone.

example, a contract for clothing made in February 1646 specified that ‘although it is impossible for any person to undertake to make the said provisions exactly suitable for goodness to any pattern, for that many may be a little better, and some a little worse, yet it is the resolution of the said contractor and does hereby promise that as near as he can none of the said provisions of coats, breeches, and stockings shall be worse than the patterns presented to the said honourable committee.’ In theory this had always been the case with government contracts, but there seems to have been a greater effort in the supply of a standing army.

After the Restoration in 1660 the supply of uniforms became the responsibility of the regimental commander. There was still a standard government pattern set to maintain some consistency, but supply was arranged on a regimental level. In 1690 the *London Gazette* reported that colonels were to appoint two or three officers to agree the details and price with the merchants who would supply the clothing, and the contract would be signed by the colonel and all his captains. In 1678 the uniform supplied to infantry raised for war with France consisted of ‘a cloath coat lined with baize, one pair of kearsey breeches, lined, with pockets, two shirts, two cravats, one pair of shoes, one pair of yarn hose, one hat, edged and hat band, one sash, and also one sword and belt’, at a cost of 53 shillings for each man.

Whilst the soldiers may have looked smart immediately after their uniform issue, they would not receive a new uniform for another year, during which time they became shabby and dirty. A poem of around 1680, ‘A Call to the Guard by a Drum’, by former army officer Alexander Radcliffe describes their appearance:

With your Noses all scabb’d and your Eyes Slack and blew
 All ye hungry poor Sinners that Foot Soldiers are
 With their Bones dried to Kexes, and Legs shrunk to Switches
 With the Plague in the Purse and the Pox in the Breeches
 With two old tatter’d Shooes that disgrace the Town Dirt
 With forty shreds of Breeches and not one shred of shirt

TRAINING

The next stage in our soldier’s life was his training to use the arms with which he was equipped and to be deployed in the formation in which he would fight. Throughout our period a unit of infantry was armed with different weapons. In 1588 Elizabethan infantrymen were in the process of being re-equipped with modern European weapons – the arquebus, musket and pike – in place of the traditional English infantry weapons – the longbow and brown bill. By the beginning of the 17th century both militia and levied soldiers were equipped with modern weapons –



Detail from an engraving by Wenceslaus Hollar of infantry at the garrison at Tangier, c.1669.

Charles I, King of England, Scotland and Ireland. His rule saw rebellion in all three realms. By permission of Dolphin Coins and Medals, Leighton Buzzard.



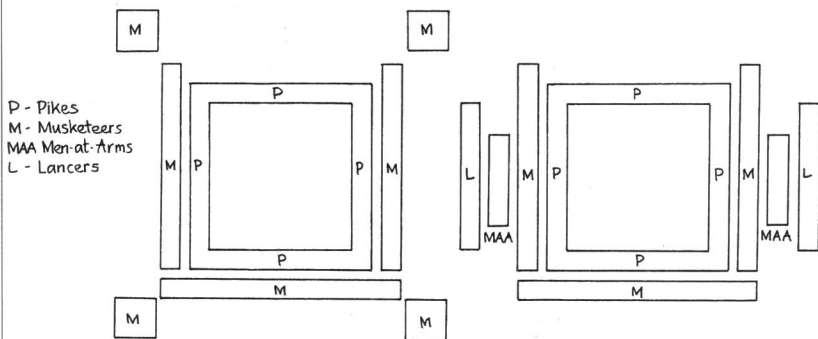
arquebus, musket and pike – and increasingly the mixture of arquebuses and muskets was replaced with muskets alone.

Once trained in the use of their weapons, soldiers were trained in the infantry formations, unit and army tactics of the day. These were copied from the training and fighting models of leading European armies of the time, and these models were changing throughout our period. Sir James Turner, writing c.1670/71, commented, 'Another part of the Military exercise in teaching the Soldiers both of Horse and Foot to fight orderly and readily with an Enemy, and this is that which properly we call Training and Drilling. It consists of two parts, the first is, to teach them to handle and manage their offensive Arms (whatsoever they be) handsomely, readily and dexterously, and this is ordinarily called the Postures. The second is to make them, when they are in a Body, to cast themselves in such a figure or order as shall be commanded them, and this is commonly called the Motions and Evolutions.'

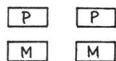
In 1588 the leading army was the Spanish Army of Flanders, the centre of professionalism in the Spanish Army of the day. From the early 17th century the model for Protestant armies, including the English, was Prince Maurice of Nassau's Dutch Army. European mainstream military theory changed with the successes of the Swedish King Gustavus Adolphus during the Thirty Years' War, and a new composite German style emerged during that war. In England, the Dutch theory was followed until the outbreak of the English Civil War but was radically changed during the Civil War itself as the latest European ideas were introduced by professional soldiers who had served in the Thirty Years' War in Europe. The practical impact of the English Civil War was the evolution of an English style. This was influenced to some extent by the developing French style to which English Royalist officers had been exposed during their exile in France, but it remained a distinctly English style. This was replaced after the Glorious Revolution of 1688 by the

UNIT FORMATIONS

Theoretical formations for Englishmen based on a Spanish model from Robert Barretts 'The Theorie and Practike of Modern Warres' 1598



DUTCH REGIMENT 1610-1640

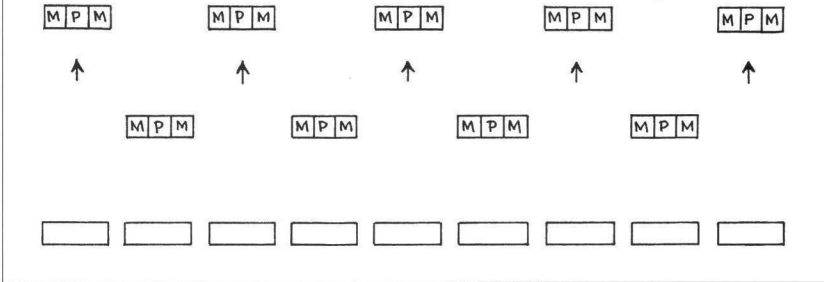


A Dutch Regiment formed into two battalions. Each battalion is formed up with the pikemen in advance of the musketeers.

Unit formations. Artwork by Derek Stone.

· THE ENGLISH ARMY 1642-1660 ·

Roger Boyle, Earl of Orrery, described the style of deployment used by the English Army during the Civil War when they chose to deploy in two lines in his book 'A Treatise of the Art of War' (London 1677).



Army deployment. Army commanders needed to deploy their armies with sufficient space between their units to allow them to fight effectively. Practical soldiers found 'quick and dirty' ways of achieving this on the battlefield. Stage 1 is a continuous line of battalions. Stage 2 sees the movement of alternate battalions forwards. Artwork by Derek Stone.

latest Dutch style of King William's Dutch Army. By this time the Dutch style was evidently different to the English, as indicated here by John Churchill, commander of English troops sent to fight in the Low Countries in 1689, who sought clarification from the secretary of war as to which style his men should follow: 'I desier to know that you will know the Kings pleasure, whether he will have the Regiments of foot lern the Dutch Exercise or else to continue the English, for if he will I must have it translated into English.'

Prince Maurice's reforms set the trend for infantry training throughout Western Europe during the 17th century. Tactical formations and firing techniques changed during this period but the basic training sequence remained the same. This learning curve included five key points:

1 Arms drill

New recruits have always been trained how to use their weapons. Robert Barret commented on the Spanish practice that 'every Caporall, with his cabos de Camera, to traine and Esquadra, especially of shot, once every weeke, or once every fortnight at the least: ensigning them the use of their weapon, and to order of sleight skirmish: For often practice maketh men readie, especially the shot, the which without readinesse and skill is a weapon of litle advantage.' By the 17th century, and probably earlier, English soldiers were trained according to the Dutch model. They were first allocated to the files (the smallest sub-units of a company) in which they would fight. It was then the responsibility of the corporals of an infantry company, under the overall direction of the company sergeants, to train their soldiers to handle their weapons according to a set series of movements or 'postures'. The large number of postures was a training aid to break down the

Dutch musketeer of Prince Maurice's Guard, c.1599.
Jacob de Gheyn,
Wapenhandelinghe, 2nd edition,
Amsterdam, 1608.



necessary movements into an optimum sequence, and then teach proficiency through repetitive practice. The actual orders given to a soldier were brief, such as 'shoulder your musket', and only three orders were given in action to fire a musket or arquebus – 'make ready, present and give fire'.

2 Learning drum beats

The soldier was then taught to recognise 'several beats of the drum'. These were not used to give precise directions but to reinforce a general order. For example, on hearing the beat 'a Call' a soldier was to 'understand and prepare to hear present proclamation, or else to repaire to your Ensigne', essentially to form up in their ranks and files. An example of a drum beat used on the battlefield is 'a Battail' by which the soldier was 'to understand the continuous or pressing forward in order of battaile without lagging behind, rather boldly forward in the place of him that falls dead or wounded, before thee'. The drum was also used to set the pace for soldiers on the march.

3 Basic training in ranks and files – 'The Five Vowels'

The next stage in training was to draw the files together into groups of either pikemen or musketeers for the training by their sergeants in the basic orders of unit drill. These groups formed the next sub-unit of a company called 'Divisions' or 'Squadrons' in English armies. By 1678, when the *Abridgement of the English Military Discipline* was printed, the term 'Division' had become standard. William Barriffe described the objective of this stage of the soldiers' training as being to 'fit and enable them to the quicke, true and orderly performance of all formes and figures of Battaile, as may best suit with the time, number, place, and discretion of the Commander. And may rightly be divided into these five generall heads, (viz.) Distance, Facings, Doublings, Counter-marches, and Wheelings, which have (not unaptly) been compared to the five Vowels; for as without one or more of the Vowels, no word can be spelled, so without one or other of these, neither form, nor action can be performed.'

Distance referred to the space between the files and ranks in which soldiers were 'formed up'. The distances represented the space upon which each soldier stood. There were two key distances, 'Order' and 'Open Order', but

Details of a German engraving, c.1610–20, showing fifers and drummers.



others were in use. Richard Elton set out six in his book *The Compleat Body of the Art Military*:

Closest Order	Half a foot
Close Order	One foot and a half
Order	Three foot
Open Order	Six foot
Double Distance	Twelve foot
Twice double Distance	Twenty four foot.

Facing was an order to face to the right, to the left, or to about face.

Doubling was the doubling of the number of men in a rank or a file, not the numbers of ranks or files in a group. So if the order 'Ranks to the right double' was given to a division of musketeers formed in files eight deep, each musketeer in the even ranks – the second, fourth, sixth and eighth ranks – would move alongside and to the right of the musketeer immediately in front of him. This would leave the division formed up four instead of eight deep.

Countermarches were also derived from classical models, as William Barriffe described: 'Wherefore note, that the Counter-marches were of ancient use amongst the Greeks many hundreds of years since, & from them learned, & practised by many other Nations; and so still continued unto this day.' Of the 'five vowels', William Barriffe considered that 'Counter-marches might be the best spared of all Motions, as being the least beneficial to this our Modern Discipline.'

Wheelings were the final vowel in this sequence. As William Barriffe commented, 'The next branch springing from this Military Root, is Wheelings, which are of two kinds, viz, Wheelings Angular, and Wheelings on the Center', essentially the wheeling of a line of infantry with the stationery point being either end of the line or the centre of the line.

A copy of the posture on p.20 (no 10 from de Gheyn) from Clifton Hall in Nottinghamshire. By permission of the Nottingham Trent University. Photo by Sue Brown.



4 Battalion drill

Each company of infantry was formed of several divisions, some composed of musketeers and others of pikemen. The number of divisions in a company depended on its theoretical size, which varied throughout our period, and on how many men remained in its ranks at different times during a campaign. The company was only an administrative unit, and several companies were combined to form 'Battalia', the tactical unit in which they would fight on the battlefield.

The officer in command of training, or his colonel, would decide on the tactical formations in which he wished his soldiers to be proficient. The officer had several options open to him and as William Barriffe commented, he should 'make use of so many of them, as he shall think fit for his present occasion or exercise'. Most officers would practise the most straightforward formations as a starting point, and go on to more complex tactical styles if they had the time or the ability.

5 Full army deployment

For the final stage of our soldier's training, as Robert Ward commented in his *Anima'dversions of Warre*, 'A Generall is to draw his whole Army into Battalia and see them exercised in grosse, changing them into divers formes of Battel ... this kind of exercise will make them ready, and orderly in their performances, otherwise it may prove dangerous to being them to the encounter.' In order to avoid confusion on the day of battle the leading generals of the day, such as the Dutch Prince Maurice of Nassau and the Swedish King Gustavus Adolphus and those who sought to emulate them, took care to train their men in their chosen battle formations by carrying out military exercises involving their whole army.

This was a constant practice throughout our period, and training manuals encouraged officers to consider a variety of options on army deployment. An indication is the comment in *An Abridgement of the English Military Discipline* (London, 1678): 'Though there be no certain Rules given for any order of Battel, which depend chiefly upon the Circumstances of place, and other Accidents that happen, yet I shall set down some which may serve for an example to shew the nature of the thing.'

Training in practice

Not every officer trained his soldiers with this much care, but those officers who took their business seriously took care to do so. Even professional officers fell short of this ideal, as Sir James Turner complained:

I have seen in Germany and Denmark Regiments newly raised, and some also sent out of Sweden in time of the long War before the Peace of Munster, only exercised and drill'd three or four times, and that was enough for them for the whole time they were to serve; for a man would have made himself ridiculous if he had spoken of drilling old Soldiers, to keep them in mind of their Postures and Motions; this would have been looked upon as a disparagement to them, for it would have been presupposed that they stood in need of Exercising, as in truth most of them did. It is a pity, and sometimes matter of sport, to hear men glory that they are old Soldiers, who either never have learned, or have forgot, what belongs to their profession, and so upon the matter prove themselves old fools.

PROFESSIONALISM

Although comprehensive training was necessary to create an effective soldier, it was only a starting point and was not enough in itself to bring success, any more than military education alone was enough to create a useful officer. Sir James Turner summarised this with the comment, 'Observe that no man can or will attain to a perfect understanding of

- *Every [Officer] that shall not draw every Munday Thursday and Saturday cause his companie drawne together and exercised two howers in a morneinge and two in the afternoone shall forfeyt a daye's pay for every neglect.*
- *Every souldier that shall make default in not appearinge and performinge his deuty or shall come wth his armes unfixt shall be punished at discretion.*
- *Every Sergeant or Corporal that doth not twice a day exercise his squadron shall be punished with losse of his place and if any souldier shall refuse to exercise he shall be punished wth losse of pay and such other punishment as shalbe conceived fitt.*
- *Whosoever shall be druncke shall be punished at discretion.*

Garrison orders for the New Model Army in Ireland. This extract from the Orders to be observed in the Garrison of Dundalke demonstrates the regular training requirements of a professional army during the Civil War: twice daily exercise by the corporals and sergeants, and company training by their officers three times a week.

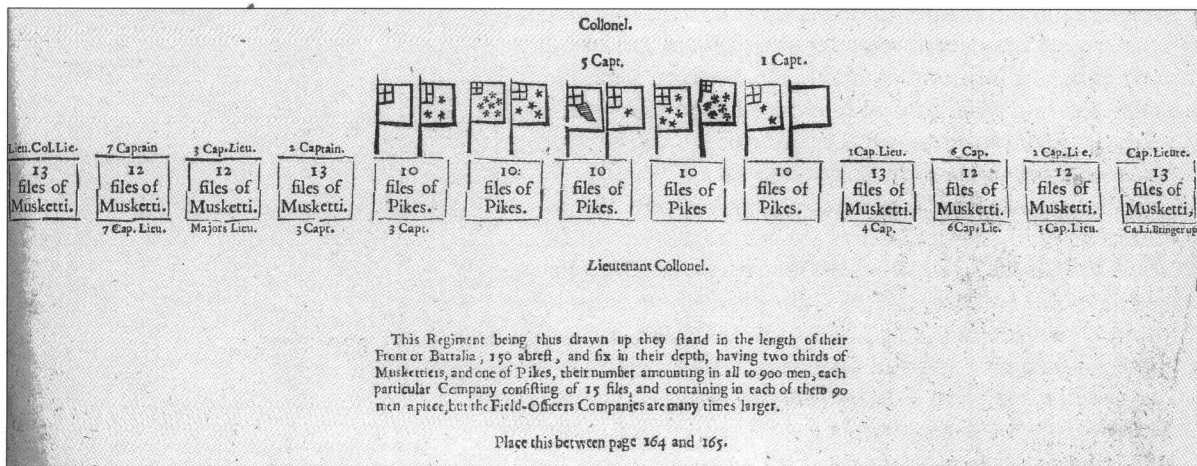
either postures, motions or evolutions in the training particular men, or yet Bodies of Horse and Foot by reading the words of command in a Book or Paper, or looking upon the figures of them, for the Military Art is practical, one shall understand what belongs to Drilling and Training, more by looking on the real practice of it three days, than by the contemplative study of it three years... When you see a Countermarch in the Field, you will quickly understand what an Evolution is when you see the figure of it in a Book, but you will not so soon know what it signifies when you see the figure before the practice.' Several of the military writers in our period make similar comments, but this is not to suggest that they considered there to be no use in 'contemplative study'. Leading commanders of the day, such as Prince Maurice of Nassau, saw clear connections between the ongoing development of military theory and practice in the field, and most of them drew some inspiration from classical military texts.

The key to these comments was the value which veteran commanders placed on experienced soldiers over 'rawe' soldiers. The Spanish took particular care over the training and integration of newly raised men (besonios), using their garrisons in Italy as a training ground. These soldiers were transferred to more active theatres of war once they had been trained and replaced with a new batch of recruits. The English professional soldier Sir Roger Williams, who had served in the Spanish Army of Flanders between 1574 and 1578 and against it thereafter, described this in his book *A Briefe Discourse of Warre* (London, 1590):

Their order is, where the Warres are present, to supplie their Regiments being in Action, with the Garrisons out of his Dominions and Provinces before they dislodge, besonions supply their places, raw men, as we tearme them. By these meanes he traines his besonions and furnishes his Armie with trained Souldiers: yet though these Garrison men be well trained Soldiers, God knowes they are but raw men for a long time.

Training was seen as essential to enable soldiers to fight in formation for a pitched battle, but an easy life in an Italian garrison did not teach men the skills they would need for the day-to-day problems of surviving

Colonel Thomas Rainsborough's infantry regiment of the New Model Army, drawn up in its battle formation prior to marching through London on 7th August 1647.



on campaign or for fighting in the small skirmishes or 'actions' of war in the Low Countries. This was the basis of the Spanish commander the Duke of Alva's famous comment on the value of veteran troops: 'One cannot fight any "actions" with other troops – unless it comes to a pitched battle where entire formations are engaged.' Veteran units or a veteran army were also more valuable in pitched battle than recruits; they were able to react more quickly and were more effective in hand-to-hand fighting. However, in battle, where both sides had troops deployed in formation, the tactical advantages of the formations themselves went some way to reducing the veterans' advantage, particularly with the increasing importance of firepower rather than hand-to-hand fighting in battle.

Continuous service gave soldiers, or at least those who survived, the experience necessary for all the challenges of warfare. It also created a professional army with all the advantages of experienced officers, veteran cadres of non-commissioned officers, and soldiers and a centre for developing military theory. Like the Spanish, the Dutch went to considerable lengths to train their soldiers, but they also placed a high value on the finished product – trained, experienced soldiers formed in veteran units. For Prince Maurice, one consequence of this was that he was reluctant to risk his trained, veteran soldiers in pitched battle, as they were irreplaceable in the short term. Prince Maurice's fear was that defeat in a major battle would reduce the numbers of his trained, experienced soldiers to the extent that he would be unable to form a new field army which would have any chance against the Spanish.

Continuous campaigns in the last years of Queen Elizabeth's reign saw the creation of veteran English units fighting in Ireland and France, and of English mercenary regiments in Dutch service. England was at peace under Queen Elizabeth's successor, James I, and no standing regiments were maintained in English service. One reason for the failure of English expeditionary forces sent to France and Spain in the 1620s was the absence of standing regiments to provide cadres for their newly raised regiments. Some English officers were released from the English regiments in Dutch service, but not the full companies of veteran soldiers which would be necessary to provide cadres for newly raised regiments, and the regiments themselves did not remain long enough in service to become fully effective.

The Earl of Strafford began to create a small standing army of English and Welsh soldiers in Ireland during the 1630s, but the English Parliament was highly suspicious of his motives in doing so. Years of campaigning during the English Civil War created effective field armies on both sides, Royalist and Parliamentarian. The victorious New Model Army became as good an army as any in Europe. J.B., in his *Some Brief Instructions for Exercising of the Horse-Troopes*, wrote shortly after the



Sir Horace Vere, commander of English regiments in Dutch Service.

Restoration on the standards of the English Army, describing the importance of 'A well Govern'd and Disciplin'd Army; Holland formerly, England lately'. Most of the New Model Army was disbanded at the Restoration. The New Model infantry regiment of George Monk, the general who brought about the Restoration, remained in the new Royal Army as the Second Foot Guards (the 'Coldstreamers'), and many of the disbanded infantrymen were later recruited into the Royal Army. King Charles and King James maintained a small Royal Army between the Restoration and the Glorious Revolution in 1688.

PAY

Our soldier's pay was consistent for most of this period at eight pence a day, paid for seven days in the week, making a week's pay four shillings and eight pence. A month's pay was calculated on the basis of 28 days to the month, and monthly figures for this period should be multiplied by 13, not 12, to give an annual figure. The currency is calculated on the basis that 12 pence equals one shilling and 20 shillings equals one pound. A higher rate was paid to infantrymen in the New Model Army between 1649 and 1655 because a series of poor harvests had increased the price of bread. During this period pay was increased 'in regard of the present dearth' by a penny a day for an infantryman in garrison and two pence a day if he was serving in the field. In 1655 this was reduced back to eight pence a day for an infantryman in garrison and nine pence a day for a soldier in the field. This reduction caused some discontent,

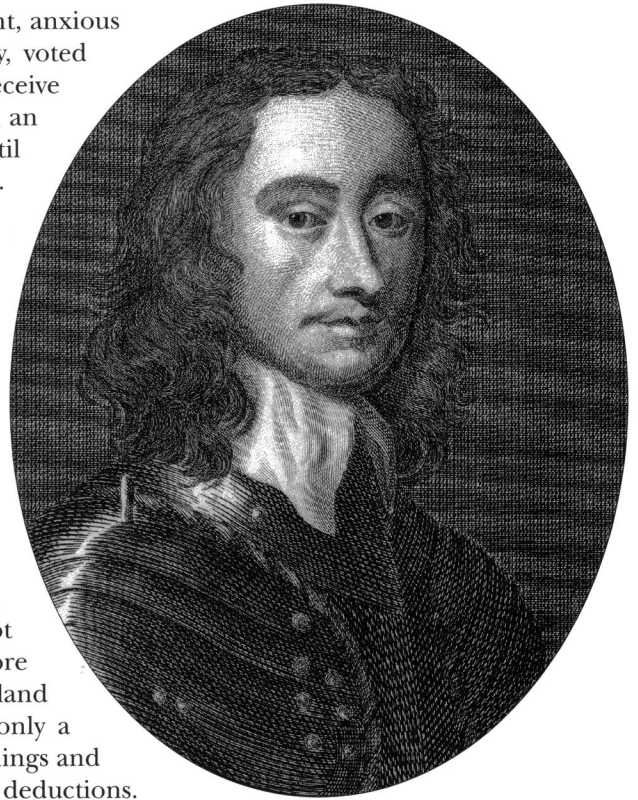
**Arquebusiers of the Spanish
Army of Flanders in the 1570s.**



and on 3 May 1659 the restored Long Parliament, anxious to placate the soldiers in its immediate vicinity, voted that infantrymen quartered in London should receive an additional penny a day. After the Restoration an infantryman's pay was set at ten pence a day until 1672, when it was reduced back to eight pence. The pay for an infantryman quartered near London remained higher.

This was the set rate of pay, but our soldier did not receive this much in hard cash. Deductions were made in respect of his food, uniform and weapons. In the Elizabethan period an arquebusier was also charged for the ammunition supplied to him, although this practice was discontinued because it made the soldier reluctant to fire his gun 'because he by that means thinketh he should starve his belly or his back'. The amount of deductions varied during our period, but whatever model was followed our soldier was not left with much cash in hand. Immediately before the English Civil War, an infantryman in Ireland serving in the Dublin garrison would receive only a shilling in cash out of his weekly pay of four shillings and eight pence, the remainder being taken up in deductions. Even this was not regularly paid, and the soldier 'doth extremely suffer' as a result. An infantryman in the English garrison in Tangier during Charles II's reign was paid nine pence a day, but sixpence was deducted for his rations and further deductions were made for clothing and weapons from the three pence remaining. One consequence of this was that a soldier often sold part of the rations he did receive, together with items of clothing or even his equipment, in order to have some cash to spend.

The greatest problem facing our soldier was not low pay, but the absence of pay. Most governments in Western Europe at this time found it difficult to raise sufficient funds to pay their armies on time, and England was no exception. Sir James Turner, whose extensive experience as a professional officer made him well placed to comment, summarised this situation: 'Being that most men who follow the Wars over all the World, receive wages, they justly deserve the name of Mercenaries; but if you will consider how their wages are paid, I suppose, you will rather call them Voluntaries, at least very generous, for doing the greatest part of their service for nothing.' The reason was that 'they need far greater numbers in time of War than Peace, and many are not paid with so little money as a few are.' To add to our soldier's difficulties, practically everyone involved in handling such money as was available for a soldier's pay was involved in corruption of one type or another. Both civilian officials and army officers sought to make money out of their positions, and one way to do this was to defraud the soldier by delaying his pay or increasing the deductions he had to pay, often for poor food and overpriced weapons and clothing. Not all officers were this bad, and many felt some responsibility for their men and spoke out



Lieutenant General Charles Fleetwood (1618–92), briefly commander of the New Model Army in 1659.

Soldier's Pay at 8d a day

James I



A sixpence and a half groat

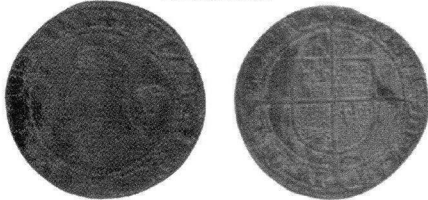
Civil War



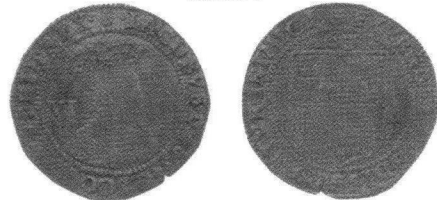
A sixpence and a half groat

Small Change

Elizabethan



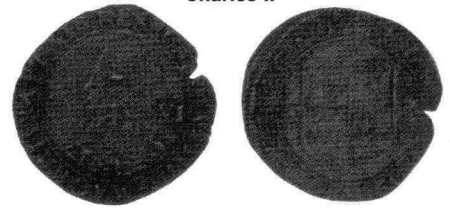
James I



Charles I



Charles II



Soldiers' pay. By permission of
Dolphin Coins and Medals,
Leighton Buzzard.

against corrupt practice, but this must have been an uphill struggle and corruption was seen as ordinary, not exceptional, practice.

Most soldiers received part of the pay due to them in cash, but not the full amount, and they soon accumulated substantial arrears. When the New Model Army mutinied in 1647, one of its chief grievances was its considerable arrears of pay – 18 weeks for the 'Foot' and 43 weeks for the 'Horse' and 'Dragoons'. This does not mean that New Model infantrymen had seen no money at all for 18 weeks, only that the amount outstanding was equivalent to 18 weeks' pay. The mutiny of the New Model Army was certainly the most famous during our period, but while it had the most far-reaching consequences, it was not unique during the English Civil War. Lack of pay was also the principal cause of mutinies during the Elizabethan period, particularly amongst those serving in the Low Countries. This usually took the form of a passive protest – the simple refusal to obey orders to march out on campaign until at least some of the outstanding arrears of pay were forthcoming – but on occasion it led to the surrender of Dutch towns by their English or Irish garrisons. The most striking example was the surrender of the town of Deventer by Sir William Stanley and Rowland Yorke to the Spanish in January 1587.

Our soldier's problems did not end when his arrears were agreed. In 1644 Parliament had placed all its officers above the rank of captain on half pay for the duration of the war, giving them a certificate called a debenture, secured 'upon the public faith', for the

balance. In 1647, this was extended to non-commissioned officers and soldiers, although these debentures were secured upon more reliable security – bishops' lands and the estates of Royalists. The debentures could only be redeemed in London and most soldiers sold them at a discount, sometimes for only 20 or 25 per cent of their face value, to speculators or to their own officers. This caused considerable dissatisfaction amongst the soldiers who had, to be blunt, been defrauded by their own officers. This was an important factor in the unwillingness of New Model soldiers under John Lambert and Charles Fleetwood to fight against their fellows marching under the command of George Monk when he came south from Scotland to settle the future government of England. Financial speculation had weakened the bonds of mutual loyalty between officers and men in the New Model Army, something that the harsh conditions of campaigning had never done.

After the Restoration, pay for the army in Ireland was often in arrears, but the army in England was usually paid reasonably punctually. However, debentures were used again during the disbanding of large numbers of soldiers in 1674 and 1679. The same abuses were repeated, and speculators purchased debentures at a discount of 50 per cent or more.



George Monk. Captured while fighting as a Royalist he became one of Oliver Cromwell's best generals. After Cromwell's death he was the leading figure in the Restoration of Charles II.

Rates of Pay

The currency of this period was pounds, shillings and pence. 12 pennies or pence to a shilling, and 20 shillings to a pound.

Earl of Essex's Irish Army, 1599

<i>Officers and Men</i>	<i>Per Diem</i>
Captain	Two shillings and sixpence
Lieutenant	Two shillings
Ensign	One shilling and sixpence
Sergeant	One shilling
Drummer	One shilling
Private soldier	Eight pence

Civil War Armies, 1642–48

Officers and Men Per Diem

<i>Officers and Men</i>	<i>Per Diem</i>
Captain	Twelve shillings
Lieutenant	Four shillings
Ensign	Three shillings
Sergeant	One shilling and four pence
Clerk	One shilling
Drummer	One shilling
Private soldier	Eight pence

N.B. In response to higher costs of basic food, particularly bread, a private soldier's pay was increased between 1649 and 1655 by a penny to nine pence a day when in garrison, and by two pence to ten pence a day when in the field.

Proposed pay for an army to support the Protestant cause in the Palatinate, 1621

<i>Officers and Men</i>	<i>Per Diem</i>
Captain	Six shillings
Lieutenant	Three shillings
Ensign	Two shillings and sixpence
Sergeant	One shilling
Drummer	One shilling
Surgeon	One shilling
Private soldier	Eight pence

Royal Army, 1672

<i>Officers and Men</i>	<i>Per Diem</i>
Captain	Eight shillings
Lieutenant	Four shillings
Ensign	Three shillings
Sergeant	One shilling and four pence
Drummer	One shilling
Private soldier	Ten pence

N.B. in 1672 a private soldier was paid ten pence. After 1672 all soldiers in garrison or stationed outside London were paid eight pence.

PLUNDER

In addition to his pay, or lack of it, our soldier had other potential sources of income. A soldier who distinguished himself in battle or in the storming party at a siege might receive a small reward. The soldiers who captured Royalist flags at the battles of Marston Moor in 1644 and Dunbar in 1650 were rewarded with ten shillings each, and the men carrying the ladders at the storming of Bristol in 1645 received five shillings each.

Plundering paid better than bravery, and the soldiers besieging a town or city had the right under the laws of war of the time to plunder it without restraint if they had to take it by storm. Casualties were always high in a storm, and the laws of war simply recognised that it would be a while before the commander of the assaulting army would be able to control his men. By setting a limit, usually 24 hours, all parties knew where they stood, and a commander could restore order to his men at the end of it. Apart from anything of intrinsic value – coins, gold, silver plate or jewels – the soldiers could realise some value on literally anything else they could carry away by holding a formal market. The alternative, an attractive one for a civilian, was to pay a ransom to avoid wholesale plunder. The soldiers saw this as their right after the hardships of a siege, and their commander could not restrain them without a reward of some kind. It was usual to set out in advance the rules for dividing plunder. For example, in February 1644 the Council of War in Ireland set out how ‘Preys, Booties and Pillage’ would be divided – an infantryman would receive one share, a cavalryman two shares, and a corporal would receive one footman’s share and a half, and so on.



ABOVE A plundering soldier in Ireland. This was printed in 1642 as a warning against the plundering habits of professional soldiers. At the time, London citizens were concerned that King Charles would use mercenaries against them. By permission of Partizan Press ECW Picture Library.



RATIONS

Throughout this period our soldier's rations were sufficient to keep a man reasonably well fed, provided he received them. As we have seen with the supply of clothing, our soldier was at the mercy of both the contractor who supplied the rations and his own officers, and both parties frequently attempted to make a profit by providing poor-quality or an inadequate supply. Difficulties in supply were aggravated on campaign as supply trains failed to keep pace with a marching army. To some extent this could be supplemented by obtaining supplies locally along the army's line of march. While this system could work in highly populated areas, it could not be sustained while campaigning in more difficult territory such as Ireland, where years of war had devastated the countryside. Difficult terrain created other problems for a commander and several English commanders made use of pack horses to move their supplies. The New Model Army commander Sir Thomas Fairfax made use of pack horses during his campaign in Cornwall in 1646, and two English commanders campaigning in the Scottish Highlands are known to have done the same – Richard Deane in 1652 and George Monk in 1654.

A typical example of the type and amount of food provided can be seen in a description by Sir James Turner, written between 1670 and 1671:

There are few Princes who have not their particular establishment for their Proviand both in Field and Garrison, as well as for money; the order whereof commonly is this: they allow so much Bread, Flesh, Wine or Beer to every Trooper and Foot Soldier, which ordinarily is alike to both, then they allow to the Officers, according to their dignities and charges, double, triple and quadruple portions; as to an Ensign four times more than a common Soldier, a Colonel commonly having twelve portions allowed him. The ordinary allowance for a Soldier in the field is daily, two pound of Bread, one pound of Flesh, or in lieu of it, one pound of Cheese, one pottle of Wine, or in lieu of it, two pottles of Beer. It is enough cry the soldiers, we desire no more, it is enough in conscience. But the allowance will not last very long, they must be contented to march sometimes one whole week, and scarce get two pounds of bread all the while, and their Officers as well as they, who if they have no provisions of their own carried with them, must be satisfied with Commis-bread, and cold water, as well as the common Soldier, unless they have money to buy better entertainment from Sutlers.

The beer that was issued was weak, but salt meat or hard biscuit had to be washed down with something. Where the full allowance of beer was not available alternatives could be supplied, one example being half a pint of sack together with a quart of beer and a quarter of a pint of whiskey or aqua vitae every other day. The type of food supplied in the field consisted of non-perishable items, salted meat, cheese and a type of hard bread that was closer to being biscuit. This was only non-perishable up to a point, and soldiers on the English expedition to the West Indies in 1655 complained that the biscuit issued to them was 'most beastly rotten'. For English soldiers in the field the issue was mostly Cheshire

cheese and biscuit, and the phrase 'cheese and biscuit' became used as a slang term in the army to refer to their rations generally. If he had the money, or could get credit, a soldier could supplement his rations by buying food locally or, probably more expensively, from an army sutler.

Shortage of rations on campaign was a common problem. Some infantrymen in the Royalist Army at the battle of Edgehill had 'scarce eaten bread in eight and forty hours before'. Parliament's soldiers were in no better state, as Edmund Ludlow, who served in the Earl of Essex's Lifeguard of Horse at Edgehill, wrote in his memoirs that after the battle he received no food until the following evening, and 'when I got meat I could scarce eat it, my jaws for want of exercise having almost lost their natural faculty.' In garrison or in an army encampment, different types of food could be obtained and issued more easily, including beef, bacon, pork, salt herrings, mutton, wheat, oats, beans and peas. One of the most complete examples is recorded for Elizabethan infantry serving in Ireland. This consisted of one and a half pounds of bread or one pound of biscuit per day plus an addition for each day of the week:

Sunday	two pounds of salt beef or two and a half pounds of fresh beef
Monday	one pound of Holland Cheese
Tuesday	half a pound of butter
Wednesday	one quart of great oatmeal called cleas
Thursday	one pound of cheese
Friday	the third part of a large dried cod
Saturday	half a pound of butter

A wagon park. An army on the march required a large support train to carry its provisions, ammunition, spare weapons and artillery supplies.





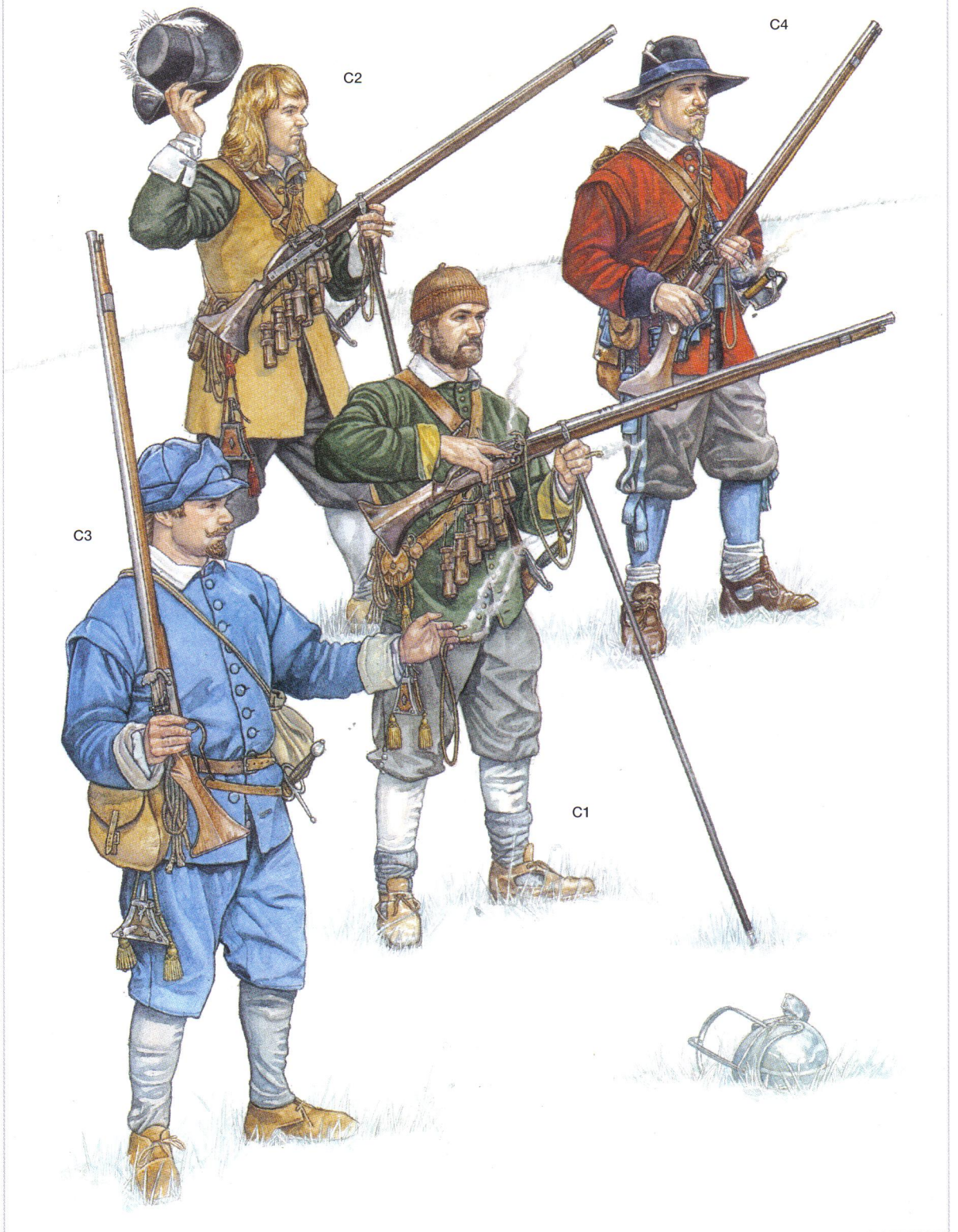
B1

B4

B2

B3







D4

D1

D2

D3

The double-armed man, 1625–88



Digging the trench in the 1590s



Marching in bad weather





Skirmish in the woods

Firing by volleys



The 'like proportion shall be served every second week; only in lieu of the 2lbs of beef on Sunday, 1lb of bacon or 1lb of salt pork with one pint of pease'.

Another account of the same period refers to salt fish as a permissible substitute for the beef ration, the amount of fish could be either a quarter of a Dutch ling, or eight herrings, or one large cod, or one and a half small cod. An example from the end of our period can be seen in the provisions supplied to the English garrison of Tangier, where a full week's provisions per man was calculated at five pounds of biscuit, two pounds of wheat, two pounds of salt beef, two pounds of salt pork, four pints of dried peas, three pints of oatmeal, four ounces of oil and half a pound of butter.

A garrison under siege had similar problems to an army on the march, as it had to be supplied 'with such Meats and Drinks as are most fit to preserve; these are Corn, Grain, and Meal of several kinds, Stock-fish, Herrings, and all other Salted-fishes, Salted and Hung-fishes, especially Beef and Bacon, Cheese, Butter, Almonds, Chesnuts, and Hazel-nuts, Wine, Beer, Malt, Honey, Vinegar, Oyl, Tobacco, Wood and Coal for Firing, and as many living Oxen, Cows, Sheep and Swine, Hens and Turkeys as can be conveniently fed'. Some variety in rations or fresh food was considered essential to keep the soldiers healthy since, as the Earl of Cork commented, salt beef, barrelled biscuits and butter, with water to drink made only for a 'rich churchyard and a weak garrison'.

MILITARY LIFE

From a civilian perspective the popular activities of a professional soldier were drinking, whoring, smoking and gambling with cards or dice. The commanders of several Parliamentary Armies during the English Civil War, including the New Model Army, set higher standards than this and modelled their behaviour on the well-disciplined and Godly army of the Swedish King Gustavus Adolphus. The best of their men fought for a cause they believed in, and despised mere 'mercenary soldiers', but the New Model was exceptional. Most soldiers who made their living in military service during our period actually did find a major part of their amusement in exactly the way civilians feared. The diarist Samuel Pepys gave a useful, if somewhat jaundiced, summary of military life in the English

Soldiers gambling in camp, c.1650. This is from an 18th-century engraving by Jacques-Philippe Le Bas of a 17th-century painting by Philips Wouwermans, now in the National Gallery. Note that Jacques-Philippe Le Bas engraved the painting in reverse.



garrison at Tangier in North Africa during the reign of Charles II in his *Notes on Tangier*: 'Nothing but vice in the whole place of all sorts, for swearing, cursing, drinking and whoring. No going by a door almost but you hear people swearing and damning, and the women as much as the men. In so much that Captain Silver, a sober officer of my Lord's, belonging to the Ordnance, did say he was quite ashamed of what he heard himself in their house, worse a thousand times than the worst place he ever was in, in London.' But then, there wasn't much to do in Tangier.

The behaviour of soldiers depended on the standards imposed by their commanders, and their ability to enforce those standards. All armies throughout this period were governed according to *Laws and Ordinances of Warre* published by the government that raised them or the general who led them. These were formally read out in front of the regiments, as many, probably most, infantrymen could not read, and set out the penalties for breaking military regulations and the military perspective of *Duties to God* and *Duties Morall*. The clauses were quite specific, and where a military regulation specifies an exact crime, it is a useful guide to what was actually going on. Specific mention was made of blasphemy, cursing, neglecting divine worship, drunkenness, rape, ravishment, unnatural abuses, adultery and theft. There were also clauses to control the activity of victuallers or sutlers, one being that 'No Victualler shall entertain any souldier in his House, Tent or Hut, after the Warning-piece at night, or before the beating of the Revelee in the morning.' The ability of even a determined commander to enforce these regulations depended on the degree of control he was able to establish over his army, and this in turn depended ultimately on whether he could pay them. There would always be regiments and individual soldiers who remained loyal to their commander in any circumstances, and who followed a religious or moral code of behaviour. However, many soldiers would fall quickly into bad habits; without pay or adequate supplies of food and clothing they would turn to theft to survive. Some commanders, and the garrison commander in Tangier must have been one of them, cared little for their men's adherence to religious or moral duty as long as they could fight. Some turned a blind eye in the short term with the intention of strengthening discipline once they could pay their men. Ultimately poor



Soldier gambling in the Tangier garrison. Detail from an engraving by Wenceslaus Hollar, c.1669.

Detail of the sign hung from a sutler's tent - flagon and bough.



discipline weakened an army's ability to fight and caused hostility amongst the civilian population on whom they were billeted or from whom they drew their supplies.

This perspective, of soldiers as a threat to the society they lived in, is only one side of the coin. Once a soldier had been in service for several years, or he joined a veteran regiment, he became part of a separate military way of life. This had unwritten rules outside the general's published *Laws and Ordinances of Warre*, and was based on a sense of pride in their profession and a sense of fellowship with their comrades, particularly those in their file, squadron or company. There is less direct evidence for this, but a good example is provided by the failed attack by a New Model infantry regiment on Castle Cornet in Guernsey. A number of prisoners were taken by the Royalist garrison and shipped to the nearby island of Jersey. The New Model regimental commander regularly sent funds for the relief of his men and his messenger, a drummer according to the convention of the day, 'brought an English half-crown, worth twenty-seven sous, for each of the prisoners, some of whom also received shirts and stockings. Others who had friends [amongst the soldiers] in Guernsey received from them half a pound of tobacco each, sewn up in linen packets on which their names were written, also spices, such as cloves and cinnamon. These men all had such an affection for each other that those who were going and had good clothes on their backs or good shoes on their feet, gave them to their less fortunate comrades that were being left behind, and took their worn and shabby raiment in exchange.'

There were other activities in camp. The ballad of *The Gallant She-Soldier* written in 1657 describes the activities of a woman who enlisted as a soldier in the same regiment as her husband. She was not detected until she became pregnant, or at least until it became impossible to conceal the facts from the regiment's officers any longer. The ballad includes the following description of a soldier's life and amusements:

For exercising of her Armes, good skill indeed had she,
And known to be as active as any one could be,
For firing of a musket, or beating of a drum,
She might compare assuredly with any one that come.

For other manly practices she gain'd the love of all,
For leaping and for running or wrestling for a fall,
For cudgels or for cuffing, if that occasion were,
There's hardly one of ten men that might with her compare.

Yet civill in her carriage and modest still was she,
But with her fellow souldiers she oft would merry be;
She would drink and take tobacco, and spend her money too,
When as occasion served, that she had nothing else to do.

The 'Gallant She-Soldier', who was said to have served as 'Mr Clarke', was not unique although it was certainly very rare to find women soldiers. There is another example dating from 1672 where out of 200 men levied in the West Country there were 'two women that had entered themselves for soldiers in men's apparel'.

BATTLE

Army deployment

The unit formation in which our infantry was formed was designed to make the best use of the different weapons with which its men were armed. The general commanding an army sought to form up his units in an army deployment where one unit could support another. At the beginning of our period, infantry equipped in the modern fashion carried arquebuses, muskets and pike and would be deployed in a style copied from the Spanish Army. However, the change to modern weapons had not been completed by 1588 and English commanders had to consider how to deploy an army where some infantrymen were equipped with traditional weapons and others with modern weapons. The accompanying illustration (p.48) shows the deployment of an English army, under the command of the Earl of Leicester, which was armed with this mixture of weapons for a review by Queen Elizabeth at Tilbury Camp in August 1588. The English veteran Sir John Smythe, who favoured the retention of longbowmen, made the reasonable point that the Earl of Leicester's 'Low Countrie Captaines' had no experience in using archers and



Late 16th-century infantry formations.

'by their unskillfull placing of the Archers had taken away the whole effect of the volées of their arrowes'.

The Spanish had a small number of large units, with a deep centre of pikemen and sleeves of 'shot', arquebusiers and musketeers. The Dutch military reforms of Prince Maurice of Nassau introduced a new deployment system during the 1590s based on the use of a larger number of small units (battalions) with soldiers drawn up ten deep. Dutch battalions were drawn up to fight in three successive lines where the battalions in the second line could support those in the first, and the third provided a reserve to exploit a victory or cover a retreat. Dutch battalions fought in pairs, one alongside the other; each battalion of about 500 men consisted of a centre of pikemen flanked by wings of arquebusiers and musketeers. The key to the quick deployment of a Dutch army was the organisation of Dutch brigades, usually comprising four regiments, and the standardisation of training of the soldiers. Uniformity, a uniform response to order by all the soldiers in his army, was the foundation of Prince Maurice's changes, a concept summarised by John Bingham, an English officer who had served in the Dutch Army, in his book *The Tactiks of Aelian* (London, 1616):

How Careful and industrious Prince Maurice was of famous memory (the father of Souldiers) to establish an uniforme Order and Discipline amongst us.

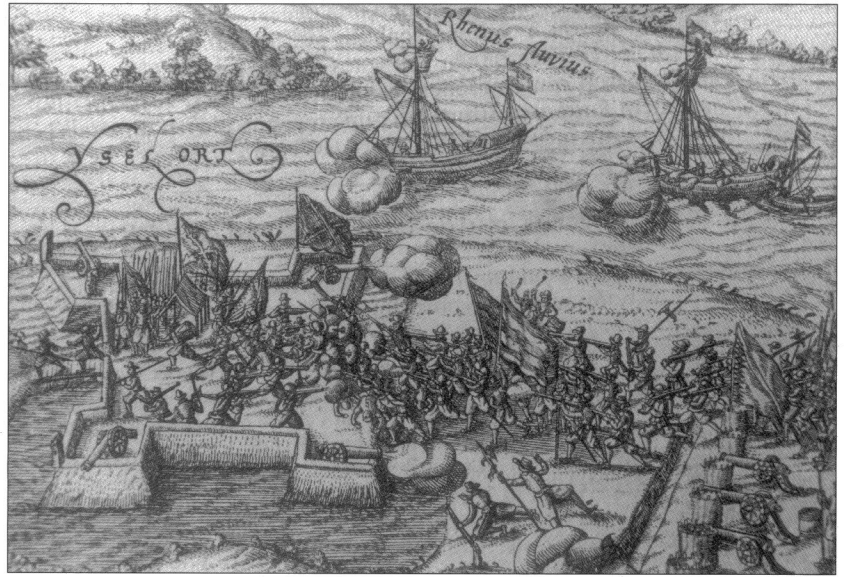
English and Scottish regiments in Dutch service fought in these formations, and English infantry serving in English royal armies during

a series of expeditions in the 1620s and later during the Bishops' Wars were trained to deploy in the same Dutch formations.

The Dutch system was widely copied in Protestant Europe and military theorists in Northern Europe, notably the professional soldier and writer Johann Jacobi von Walhausen, developed variations. The Swedish King Gustavus Adolphus was influenced by the developing military theory in Northern Europe in some of his military reforms, but the new

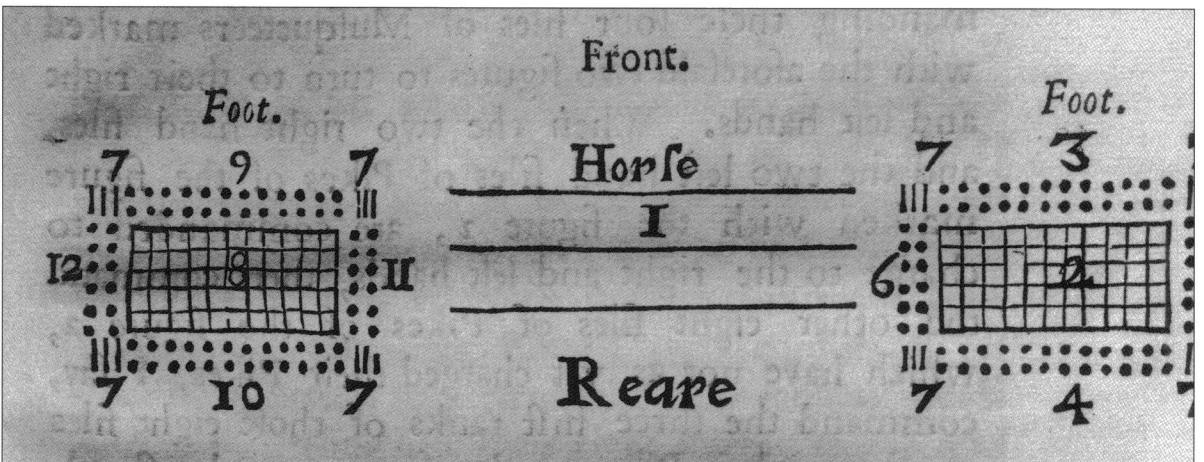
Swedish army deployment, the Swedish Brigade, was his own invention. English and Scots mercenaries served in Gustavus Adolphus's armies and were deployed in Swedish Brigades in his wars in Poland and after he landed in Germany in 1630, in the Thirty Years' War. The Swedish Brigade was abandoned by the Swedish Army and by the Protestant German armies that copied Swedish formations, within two years of Gustavus Adolphus's death at the battle of Lutzen in 1632. The Swedish Brigade was used once during the Civil War when the Royalist General Prince Rupert used it unsuccessfully at Edgehill in 1642, the first battle of the English Civil War. (The battles of Lutzen and Edgehill are described in the Osprey Campaign series nos 68 and 82.) The accompanying illustration (p.48) of the Royalist battle formation at Edgehill shows one of the two versions of the Swedish Brigade formation.

After the Swedish Army abandoned the use of the Swedish Brigade formation a new style, which could be called the German style in contrast to the Spanish, Dutch and Swedish styles, emerged during the



Dutch infantry storming a Spanish fort at the capture of Isselort in 1588. Most are arquebusiers, but note the musketeer supporting his musket on a rest.

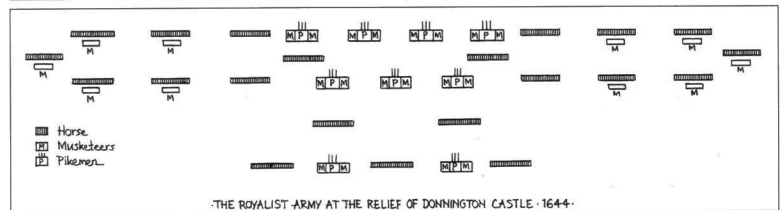
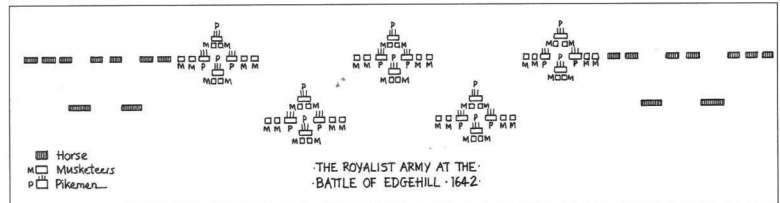
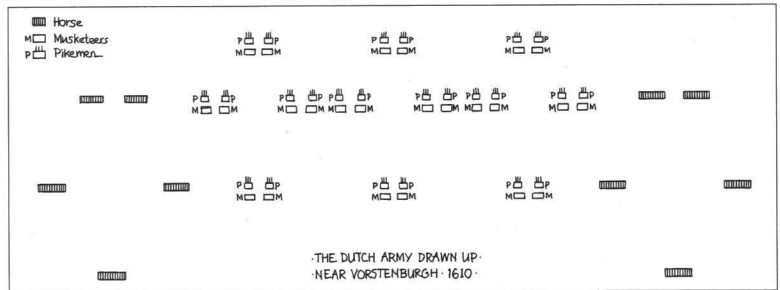
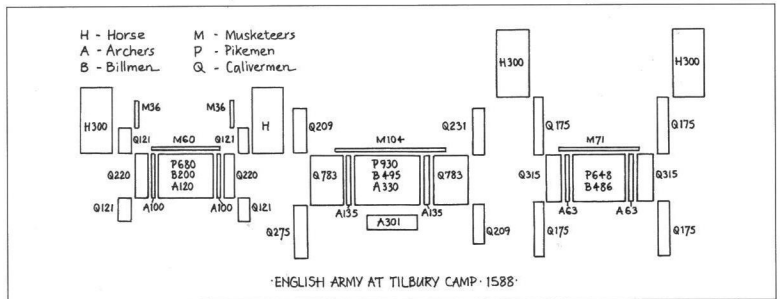
An illustration from George Monk's *Observations on Military & Political Affairs* (1671) showing one of several tactical formations which combined infantry and cavalry.



Thirty Years' War. This was based on the battalion formations introduced by the Dutch, and still placed battalions in three successive battle lines but followed a simpler deployment. There were still some local variations; for example Imperialist German infantry retained a preference for larger units, but this became the style used by all armies for the remainder of the Thirty Years' War and by English infantry until the end of our period.

Skirmish

Army commanders prepared their men to fight full-scale battles, but our soldier would spend more time fighting in siege warfare or in the small actions of warfare: skirmishes, ambushes and surprisals. Although battles were uncommon they could be the decisive moment in a campaign, and this is the reason for a commander's concentration on this form of deployment. For a skirmish with smaller numbers of troops, a commander usually followed similar tactics for their deployment but used smaller numbers of men in each unit. This allowed him to make use of his soldiers' basic training, and kept the flexibility of several units operating in support of one another. However, the classic formations of the day were designed for use in open country where there was space to deploy. Battles such as Edgehill (1642), Marston Moor (1644) and Naseby (1645) were fought on sites where this style could be used. A commander with a weaker force, or simply a better eye for the ground, might choose to fight in enclosed, broken or wooded country,

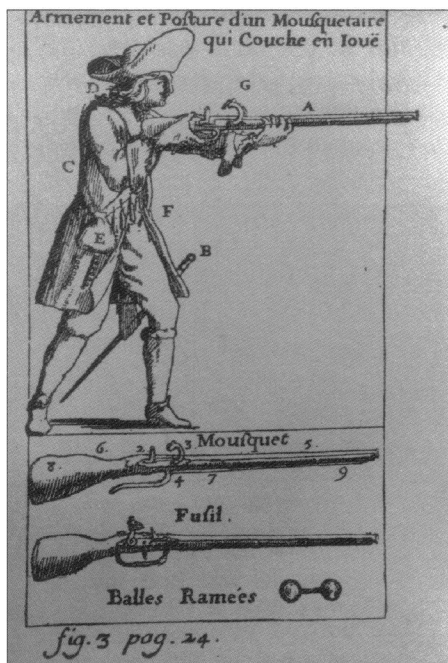


OPPOSITE TOP **Four battle formations.**

- 1 **Elizabethan. A demonstration at Tilbury Camp in 1588.**
 - 2 **Prince Maurice of Nassau, Dutch. A full-army deployment practised on the march to the siege of Julich in 1610. This army included a brigade of English and Scots.**
 - 3 **English Civil War. The Royalist Army at the battle of Edgehill in 1642 using an infantry deployment based on Gustavus Adolphus's Swedish brigades.**
 - 4 **English Civil War. A battle deployment in the new German style planned by Prince Rupert for the relief of the Royalist garrison at Donnington Castle in 1644.**
- Artwork by Derek Stone.

OPPOSITE BOTTOM
Loose skirmishing shot – a la disbandada. Loose shot at the mercy of opposing cavalry as they had no defence.

BELOW **Illustration of a musketeer from the *Sieur de Gaya's Traite des Armes* (Paris, 1678).**



particularly if he was weaker in cavalry. In some parts of the country he had little choice, as open ground was hard to find. In these circumstances a soldier's personal fighting qualities meant more than the unit drill he had been taught, and experienced musketeers were the most useful type of soldier for this type of combat. An example is provided in Sir James Turner's account of the debate over the route to be taken by the Scots in their invasion of England during the Second Civil War. Sir James recommended an invasion route through Yorkshire rather than Lancashire, 'and for this reason only, that I understood Lancashire was a close country, full of ditches and hedges, which was a great advantage to the English would have over our raw and undisciplined musketeers, the Parliament's army consisting of experienced and well trained sojers and excellent firemen; on the other hand Yorkshire being a more open countrey, and full of heaths, where we might make use of our horse and come sooner to push of pike.'

FIRING SYSTEMS

Spanish deployments required the use of firepower and pike together, but increasingly firepower was seen as the battle-winning element. Don Barnardino de Mendoza outlined this Spanish perspective at the close of the 16th century in his *Theorica y Practica de Guerra* (Madrid, 1595, English translation by Sir Edward Hoby, 1597):

the greatest parte of victories which is gayned at this time, is by having obteyned them with artillerie or readines of harqueburerie by their livelie voleyces, disordering the squadrons of the enemie in such manner as they put them in rowte, and defeating them, except, seldome-times the squadrons of pikes.

The key to success was the ability to use tactics that optimised the potential killing power of matchlock 'shot', arquebuses and muskets. The Spanish developed tactical formations that placed their arquebusiers and musketeers either in skirmishing parties formed wholly of 'shot', or flanking a central body of pikemen. The Englishman Robert Barret, who had served in the Spanish Army, commented in his *Theorike and Practike of Moderne Warres* (London, 1598): 'The shot ... may be practised in the like or semblable sort, either alone by themselves, or placed in two grand sleeves along be the flanks of their squadron or battallions.' By the 1590s the Spanish were developing ways of firing by rotating one rank through another to maintain a constant fire, and Spanish officers were well practised in maintaining constant firing through using 'sundrie troupes, of 30, 40 or 50 in a troupe, the one to second the other', a style seen by Robert Barret as 'another order of discharging of troupes of Muskets in vollie, the which I have seen used by the Italian and Spaniard'. The Dutch recognised the importance of firepower in their military reforms during the 1590s when they reduced the depth of their infantry formations to ten

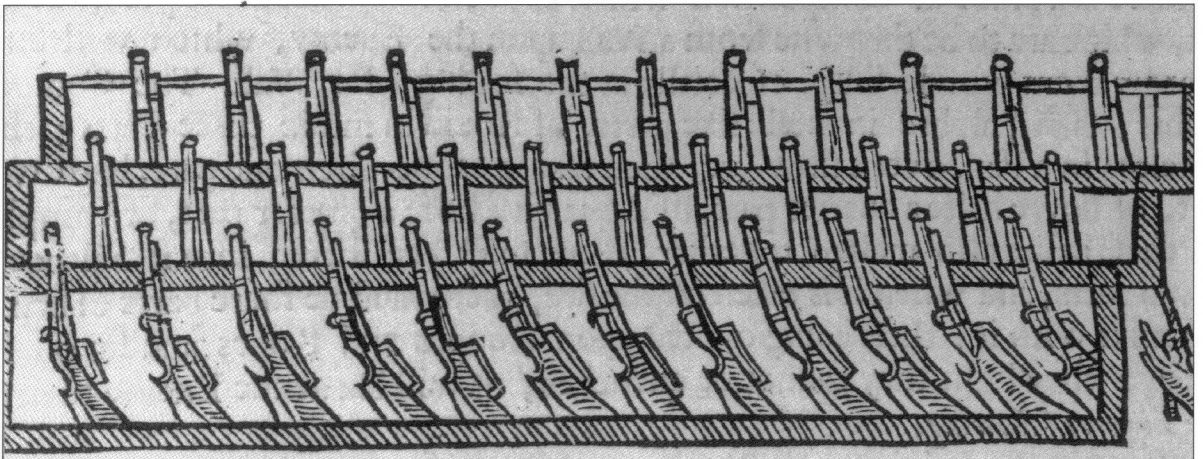
men and introduced superior systems for continuous firing, rank by rank. The advantage of a shallower formation was simply that, as Sir James Turner commented, 'the more hands a Captain can bring to fight, the more shrewdly he will put his enemy to it', as 'fifteen hundred six deep at every volley pours one hundred Leaden Bullets more in the enemies bosom, than the fifteen hundred ten deep.'

Spanish, English and Dutch military theorists used variations on the countermarch for their continuous firing practice, the first two by re-inventing it and the third by copying the countermarch from classical Roman military theory. However, the main firing system used by the Dutch Army was not the countermarch, but a system based on the sub-units of a company, the squadron or division of between three and six files of arquebusiers or musketeers. Several divisions would be formed up alongside one another, with a space of six feet between them, the front rank of each division would fire, then face to the right and march to the rear of the division by marching down the interval between divisions. The objective of this firing system was to achieve, through training, a level of competence that ensured that by the time the last soldier in the file ten men deep had fired, the soldier who was originally in the front rank had reloaded and could fire again. This was a relatively straightforward firing system, and Sir James Turner considered that, 'It is not possible that by this way of giving fire, there can be the least confusion, or anything like it, if Officers be but half men.'

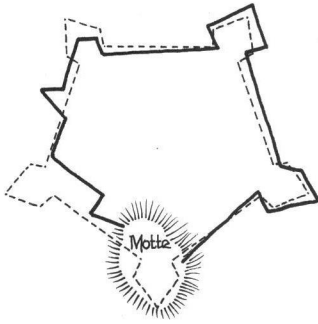
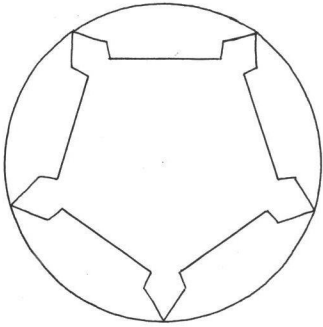
The Swedish army of Gustavus Adolphus reduced the depth of the unit to six. Swedish infantry used a similar firing system to the Dutch, although with the option of firing two ranks together rather than one at a time. Their most innovative tactic was the 'Swedish Salvee', firing three ranks together. Sir James Turner described this process of firing 'at two several times' by:

three ranks together, the first kneeling, the second stooping, and the third standing, these having fired, the other three ranks march through the first three, and in the same postures fire likewise. But here I shall desire it to be granted to me that which indeed is undeniable, that when the last three ranks have fired, the first three cannot be ready to fire again the second time. Next

A frame of musket barrels used to fire one massive volley from a set position. A useful weapon in defence of fortification walls.



SIEGE



·Cambridge· Castle·

·Medieval motte replaces one bastion·

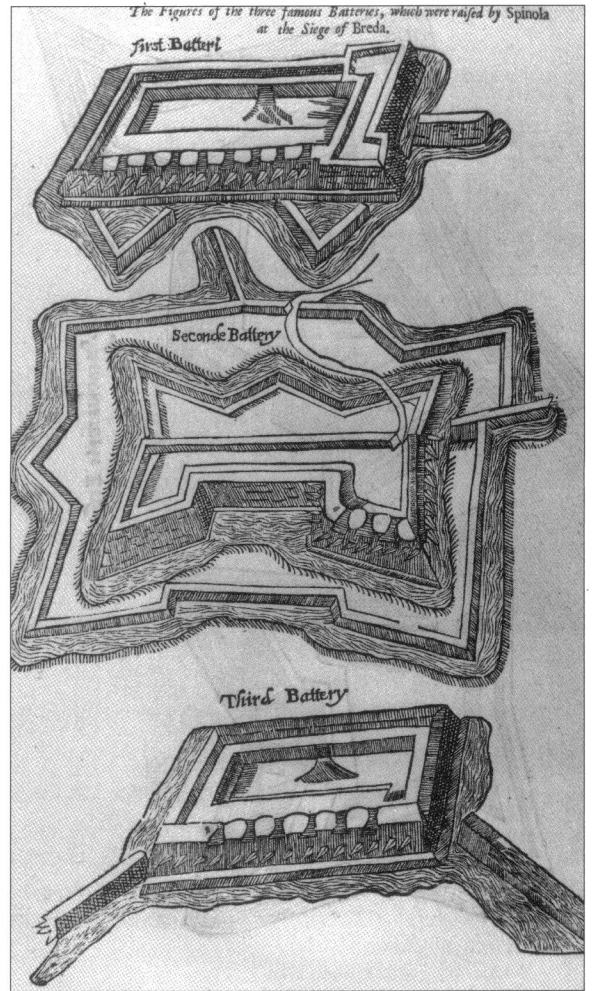
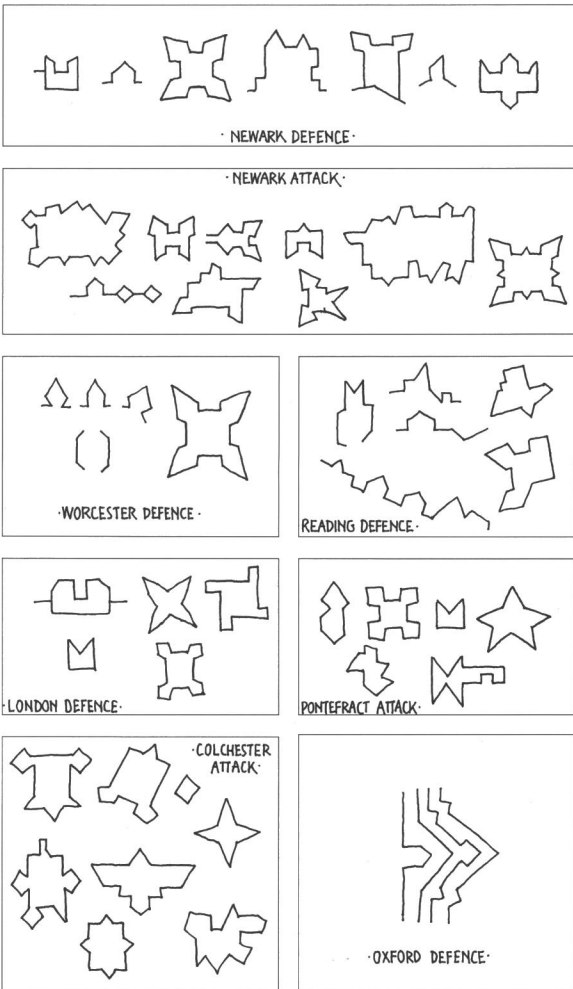
Theory and practice: The pentagon was seen as one the optimum styles of fortification. A practical engineer still made use of the pentagonal model but made adjustments to suit the ground he had. Research by Mike Osborne. Artwork by Derek Stone.

The new style of fortification, developed in Italy during wars in the 16th century, was widely used by both sides in the Netherlands during the Dutch revolt against Spanish rule. This was known as *alla moderna* – the modern style – in Italy, and as the *Trace Italienne* outside it. During the 17th century some Northern European military writers, such as Sir James Turner, also drew a distinction between the modern style of fortification and the style *È l'antique* – the ancient or antique way. The latest style had the advantage that it was designed to make the best defensive use of artillery firepower, but had the disadvantage of being hideously expensive. The cost was worthwhile for a city or fortress in a war zone, as it could provide greater security in a very uncertain world, but there was little appetite for the expense in cities and towns in any area that saw little warfare. England, protected by the English Channel from modern armies and their artillery siege trains, had few places fortified in the modern style.

Sir James Turner gave the following definition:

A siege properly so called, is, when an Army invests the place, entrencheth it self, makes Approaches, Redoubts, Batteries, Zaps, Galleries and Mines, and after all that, either leaves it or takes it by surrender or assault. The forming of and carrying on of a siege is no small Master-piece of a General, to whose own spirit, conduct and prudence, many circumstances must be left; as to the consideration of the nature, strength or weakness of the place he is to besiege, the season of the Year, the stout or weak resistance he may expect from the Garrison within, of which and of the abilities of the Governour he should have good Intelligence: He should also have a serious consideration of his own Provisions, Money, Meat and Munitions; and many more particulars, of which, and concerning which, no definite or certain rules can be given. And before he form or lay down his Siege, he ought to weigh and consider well all the advantages and disadvantages that may accrue to him: As to whether the gaining the Town or Castle he Besiegeth will counterpoize the loss of men.

Whatever the technicalities – and siege warfare became an increasingly technical art during the 17th century – the final deciding factor would be the courage and determination of the soldiers who must attack or defend a fortification. Sir James Turner summarised this with the comment: 'some judicious persons, who have observ'd the practice of our Modern Wars in Europe these sixty years by-past. Especially in the long German War, where many Forts were taken and re-taken, where many places only fortified in the ancient way, remain'd inexpugnable, notwithstanding obstinate Sieges form'd against them, having in them but small Garrisons if Souldiers, assisted by stout and resolute Inhabitants; whereas other places of great importance, fortified with all the new Inventions of Art, have either suddenly been taken by force, or soon brought to surrender on Articles.' Essentially, the deciding factor in the defence or offence of a fortification lay not with the technical



expertise of the engineer who designed and built a fortress or the engineer who designed and set in motion the besieger's lines of approach and attack. The ability of the commander of either side to inspire his men was critically important, but the key factor would always be the willingness of the soldier to fight and to continue fighting in the face of artillery bombardment, casualties, starvation and disease.

The impact of these advances in military technology on our matchlock musketeer was that he was the man who had to defend the fortifications, ancient or modern, or dig the besieger's trenches and be part of the storming party attacking a breach. Siege warfare was deadly to the ordinary soldier, whether he was besieger or besieged, and a general would think very carefully before committing his army to the siege of a major fortress. Heavy casualties were inevitable when storming a breach, but an army would suffer as much, probably more, during a long siege, as both the besieging army and the besieged garrison would be decimated by disease. A long siege would also mean starvation for the besieged garrison, weakening their ability to fight and their resistance to disease. English and Welsh soldiers gained experience in modern siege warfare throughout our period while serving as allies, volunteers or mercenaries with the Dutch Army. English Royal armies drew

ABOVE LEFT **Examples of defensive and offensive fortifications used during the English Civil War. Research by Mike Osborne. Artwork by Derek Stone.**

ABOVE RIGHT **Examples of batteries raised by the Spanish General Ambrosio Spinola at the siege of Breda in 1624.**



A maimed soldier from the seal of the Committee for Wounded and Maimed Soldiers. This soldier, crippled in the English Civil War, still wears his uniform coat. By permission of Partizan Press ECW Picture Library.

experienced officers and men from the English regiments in Dutch service for campaigns and sieges in Ireland, France, Spain and Portugal. From a European perspective, English and Welsh soldiers were seen as good fighting soldiers for storming a breach or defending one, but they disliked digging trenches.

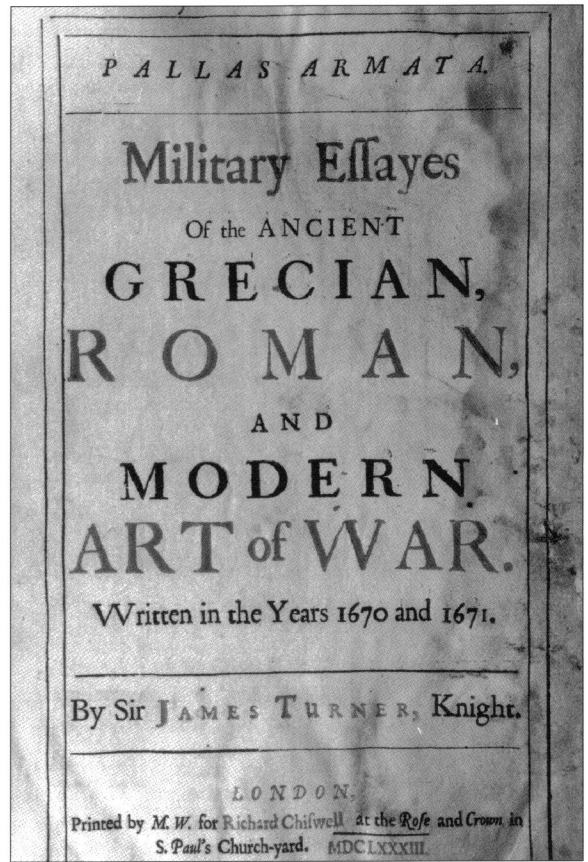
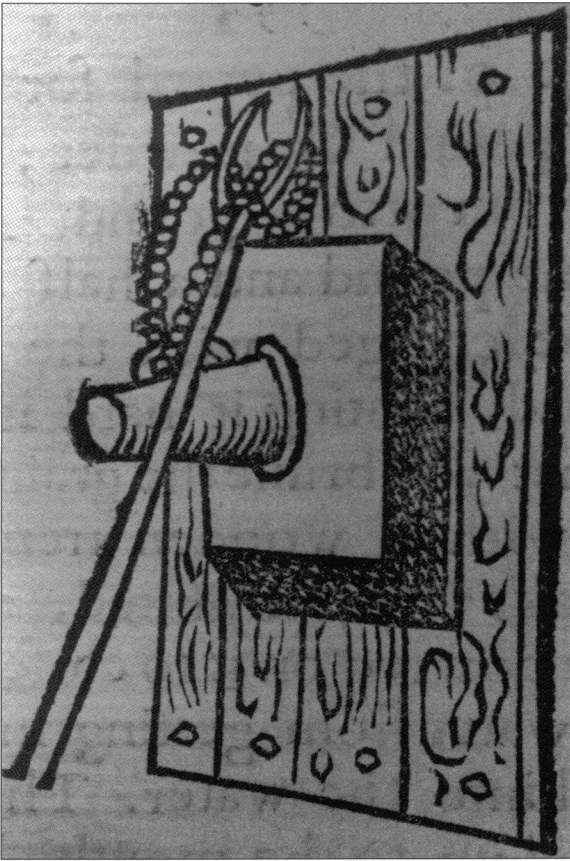
At the outbreak of the Civil War few places were fortified in the modern style, and experienced engineers, men who could design a fortification or set out siege lines, were few and far between. Both sides made use of European engineers. Throughout England and Wales cities and towns were hurriedly fortified, some according to the best practice of the day, and others from a wide variety of expertise. The control or capture of many of these strongpoints became a focus for some, but by no means all, of the campaigns during the English Civil War, as the only way to raise a siege was to threaten the besiegers with an army of comparable or greater strength. This left the besieging general with the choice of marching away or concentrating his army to fight a major battle, examples of the latter choice being the first battle of Newbury (1643), fought after the relief of the Royalist siege of Gloucester, and the battle of Marston Moor (1644), fought after the relief of the Parliamentary siege of York.

DOCTORS, WOUNDS AND DISEASE

In 1588 a barber-surgeon was, in theory, allocated to each company of infantry, but this changed with the adoption of a regimental system, which saw the provision of two surgeons for each regiment of ten companies, and sufficient pay to cover the cost of employing less qualified assistants or mates. By the beginning of the 17th century the practice was to allocate one surgeon and two surgeon's mates to each infantry regiment, and this continued for the remainder of our period. Sir James Turner gave a good summary of this regimental practice:

The Chirurgeon must be skilful in curing all manner of wounds (so they be not mortal) for many brave Gentlemen get their bones broken with Bullets, which would not so frequently prove deadly to the Patients if they were attended on by good and experienced Artists. The Chirurgeon should be a sober man, and ought to do his duty warily and carefully, since the lives of both Commanders and Soldiers are often in his hands. Besides his monthly pay he should have his Surgeon's Chest furnisht with all manner of Necessaries for curing Wounds of all kinds; and this Chest is to be furnisht at the Princes charge, and all Wounds received in the Prince or States service, he is obliged to cure (if he can) without demanding any thing from the Patients, but all other got accidentally, or by quarreling and Duels, he is not obliged to cure but for payment.

There would always be a competent physician on the general's own staff, but the career of a regimental surgeon did not always attract the most competent medical personnel. Some were so lacking in medical skills that it was said they failed to cure even slightly wounded men. This



small complement of medical personnel would be overwhelmed after a major action, and soldiers' women were often employed to nurse the sick or wounded. Firearms, particularly muskets, caused terrible wounds, and it was usual to amputate a limb if a soldier was wounded in the arm or leg. This was a rough and ready procedure described as, 'You shall have in readiness a good strong form and a steady [one], and set the patient at the very end of it. Then shall there bestride the form behind him a man that is able to hold him fast by both his arms. Which done, if the leg be to be taken off beneath the knee, let there be also another strong man appointed to bestride the leg that is to be taken off, and he must hold fast the member above the place where the incision is to be made, very steadily without shaking, and he that doth so hold should have a large hand and a good grip, whose hand may the better stay the bleeding.'

Wounds received in battle, skirmish or storming the breach of a town or fortress would bring many soldiers to the surgeon's attention, but many more men were lost through disease. The 'Military Discipline' or military practice of the day required soldiers to keep their encampments clean, and officers were required to 'see the Quarters kept cleane and sweet, upon pain of severe punishment'. In practice, sanitation in camp was primitive, and an army encamped for any period of time or in a besieged city or fortified house would be susceptible to infectious disease. This was commonly referred to as 'camp fever' and was probably typhus, a disease transmitted from one person to another through body lice. Bubonic

ABOVE LEFT **A petard. A simple explosive device used to blow in a door. Setting one was a dangerous task, hence the phrase 'hoist (or blown up) by his own petard'.**

ABOVE RIGHT **Frontispiece of Sir James Turner's *Pallas Armata*. Roman and Greek military literature was seen as a useful model for modern war in the late 16th and the 17th centuries.**



Detail from Jacques Callot's *Les Miseres et Les Malheurs de la Guerre*. Depicts soldiers as wandering rogues or bandits.

plague was the most greatly feared disease in the middle of the 17th century, known as simply as 'Plague' or 'The Great Pestilence'. The most famous example was the Great Plague of London in 1666, but there were severe outbreaks in several towns and cities during the English Civil War, particularly during 1644 and 1645, which affected both besieging soldiers and the besieged. Campaigning in winter conditions, often with ragged clothing and often without full rations, also caused severe casualties, probably through pneumonia and bronchitis.

DISCHARGE

Once levied, or recruited as a volunteer, a soldier would continue in service until wounds, age or sickness disabled him, or the unit in which he served was disbanded or its size was reduced from a wartime to a peacetime establishment. Throughout our period the government recognised a moral responsibility towards soldiers disabled through wounds or sickness during their military service. In practice funds were always short, and many former soldiers had no option but to turn to begging, thieving or highway robbery to survive. There was more generous provision during the English Civil War and Interregnum, when soldiers came from a broader spread across society, and after the mutinies of the New Model Army, when army leaders were more influential in government.

The underlying principle, established during Queen Elizabeth's reign, was that soldiers who 'had ventured their lives and lost their limbs, or disabled their bodies in the defence of Her Majesty and the State should at their return be relieved and rewarded' with the funds being provided out of the local poor rates administered by the justices of the peace. From the beginning of the Civil



Sir James Turner, a professional soldier and author of *Pallas Armata* (London, 1683).

War Parliament took a more positive approach, and on the day after Edgehill, the first battle of the English Civil War, published a declaration promising to 'provide competent maintenance for such of them as shall be maimed and thereby disabled', and for the dependants of those killed in service Parliament would 'make provision for the livelihood of their wives and children'. In November 1643 Parliament raised funds for the support of disabled soldiers, widows and orphans, administered by four 'treasurers for maimed soldiers', but these were never sufficient for all of those who claimed relief from it. In May 1650 the treasurers petitioned Parliament for more money or the appointment of new treasurers, as some petitioners seeking support 'threaten us that though they be hanged before our doors or shot to death, they will try whether we be pistol proof or no'. Maimed and disabled soldiers were cared for in the hospitals at Ely House and the Savoy. At the Restoration 'the maimed and disable soldiers previously kept in the hospitals of Ely House and the Savoy' were discharged and placed upon the counties to be provided for under the Elizabethan poor law.

Some soldiers were still supported within the military system by keeping them on the company muster roll but not to require from them 'any other duty than he can well discharge'. Others were given positions in sedentary garrison companies but these solutions could only benefit a few. The close of our period saw the foundation of military hospitals, first Kilmain Hospital in Dublin and later the Chelsea Hospital, which was constructed on land donated by Charles II for the 'relief of old, lame, or infirm soldiers'.

THE LAST WORD

Our last words are from Sir James Turner, a professional soldier writing during 1670 and 1671, with a lifetime of practical experience to form his opinion:

As to the duties and qualifications of Souldiers, whether of Horse or Foot, there be some who make so many of them, that if Princes keep none in their service but such as quadrate with all their properties, they will make but very thin musters. But you may take all the duties of a Souldier (as the Lacedaemonians did) to be three. First, to give exact and perfect obedience to all the lawful commands of Superiours. Secondly, To endure the fatigue, travel, and discommodities of War, whether it be in Marching, or working at Trenches, Approaches, and Sieges, Hunger, thirst, and cold, with an exemplary patience. Thirdly, In time of Battel, Skirmish or Assault, to resolve either to overcome, or dye. But Reader, do not you seek all these in every Souldier, do not seek any of these exactly in any Souldier, for you will not find them; let it be enough if they have some of them in some degree, though not in perfection.

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COLOUR PLATE COMMENTARY

A: ELIZABETHAN INFANTRY, 1588–1603

These show the changes in uniform and equipment during the last years of Queen Elizabeth's reign, from the Armada crisis in 1588 to her death in 1603.

A1: An English caliverman serving in Ireland, c.1581. His appearance is based on contemporary illustrations of English soldiers in Ireland from John Derricke's *Image of Ireland*, 1581.

A2: A London-trained band soldier at the funeral of Sir Philip Sidney in 1587. His appearance is based on Thomas Lant's *The Funeral Roll of Sir Philip Sidney* (1587).

A3: An English soldier in Dutch service. His appearance is based on an engraving by Jacob de Gheyn, c.1589.

A4: An English soldier in Dutch Service (Prince Maurice's Guard), c.1599. His appearance is based on Jacob de Gheyn's arms-handling manual, *The Exercise of Armes*. This was printed in 1607, but the original illustrations were made in the late 1590s.

The first figure carries a caliver, a firearm that uses the same matchlock firing mechanism as a musket. The caliver

fires a lighter ball, 20 bullets to the pound of lead instead of 12 bullets to the pound used for the musket, and is a lighter weapon overall. On his belt he carries a loop of matchcord, a small flask of priming powder and a larger flask for the coarser powder used for the main charge. His defensive armour is a 'jack', a coat made up of small iron plates sewn onto canvas. Note the bulge at the belly, a style that imitates civilian fashion.

The second figure is probably a member of the 'Company exercising Arms in the Artillery Garden' (which survives to this day as the Honourable Artillery Company) rather than an ordinary trained band soldier. He is armed as a musketeer and carries the latest style of equipment. His heavy musket has to be fired from a forked musket rest, and he uses a bandolier strung with bottles containing individual charges of powder instead of a large powder flask. This figure is marching in a funeral procession and carries his weapons reversed.

The third and fourth figures are English soldiers in Dutch service. Both are based on engravings by Jacob de Gheyn and show the evolution of both costume and equipment. The third figure wears a coat with a marked bulge at the belly. Note that he still carries his gunpowder in a flask instead of the bandolier worn by the fourth figure. Also his musket has a curved stock, while the fourth figure carries the new Dutch musket with a straight stock. Both carry a small flask for their priming powder.

B: EARLY STUARTS, 1603–42

These show a progression of styles of dress and equipment from the accession of James I to the outbreak of Civil War during the reign of his son Charles I.

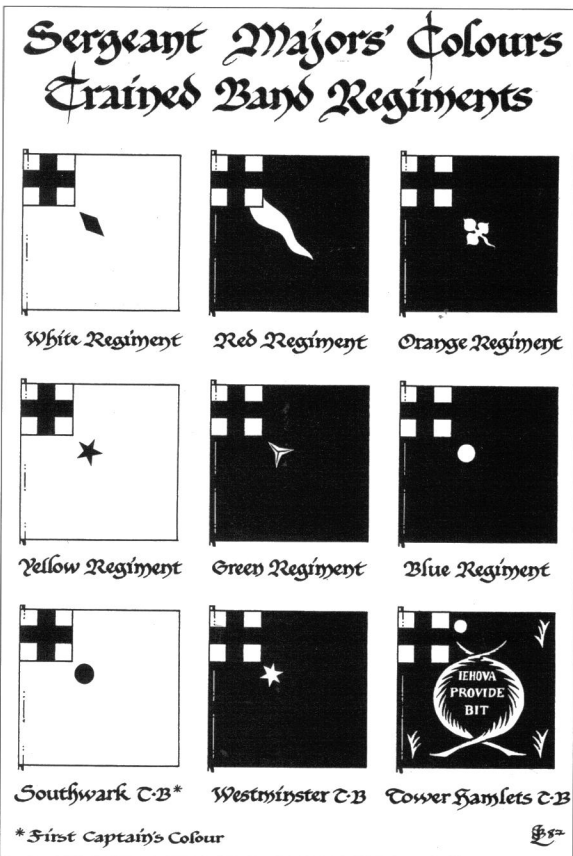
B1 and B2: English settlers in the new colony of Virginia, c.1622. Their costume and weapons are usual for the period, but their armour is based on surviving records and archaeological finds in Virginia.

B3: County-trained band soldier, c.1623. His appearance is based on an illustration in the training manual, *The Military Discipline*, printed in London in 1623.

B4: English musketeer in Dutch service, c.1626. His appearance is based on an illustration in an album painted by the Dutch artist Adriaen van de Venne, 1626.

All the figures have been trained in the Dutch style and each man is illustrated in one of the sequence of movements or 'postures' used to load and fire a musket.

The first and second figures are English settlers in America armed with modern weapons but Elizabethan armour, a jack and a brigandine, and helmets. During an Indian uprising in Virginia in 1622 a quarter of the settlers (men, women and children) were massacred. Pieces of the metal plates from a jack and a brigandine, and pieces of the type of helmet shown have been found in excavations of English settlements of this period. The armour was shipped to the New World cheaply because, although it was obsolete for modern war, it was perfectly adequate as a defence against Indian arrows. The first figure wears a Spanish morion for his helmet and the same type of 'jack' for body armour as figure A1. The second figure wears a burgonet helmet and has a brigandine for body armour. Both jacks and brigandines were made by attaching metal plates to a canvas or leather base, a brigandine by riveting rectangular plates each overlapping the other and a jack by stitching smaller plates



Infantry standards of London-trained band regiments during the English Civil War. Artwork – Dr Les Prince.



Ambrosio Spinola (1569–1630), Genoese banker and commander in chief of the Spanish Army of Flanders.

one alongside the other. From the outside only the rivets of the brigandine or the cross stitching of the jack are visible.

The third figure is a trained band musketeer serving in the county-trained bands. He is equipped and trained according to the Dutch model. He wears his own civilian costume because trained band soldiers did not have uniforms at this time.

The fourth figure is an English soldier in Dutch service. Note the differences in costume between this figure and figures A3 and A4. This soldier wears a helmet according to the Dutch model.

C: THE ENGLISH CIVIL WARS, 1642–60

These show the uniform and equipment in use during the English Civil Wars which commenced in 1642 and ended with the Restoration of the monarchy in 1660.

C1: A Parliamentary musketeer from Colonel John Hamden's regiment (1642).

C2: A London-trained band musketeer (1643–1644).

C3: A Royalist musketeer from the King's Oxford Army (1643).

C4: A New Model Army musketeer (1646).

Each man is illustrated in one of the sequence of movements or 'postures' used to load and fire a musket. The second figure is based on contemporary illustrations of the London-trained bands in Thomas Jenner's training manual, *The Military Discipline*, printed in London in 1642. The other figures are based on surviving records of the issue of equipment and uniform.

The first figure is a Parliamentary soldier from John Hamden's regiment, one of the first to be raised at the outbreak of the Civil War. There was no standard uniform for

Parliamentary infantry in 1642, and each colonel could choose the colour of his soldiers' coats. The first Parliament clothing issue was officially set at coats, shoes, shirts and caps, although there is no record of the issue of caps. This soldier wears his own breeches and a knitted 'Monmouth cap'. His equipment is the standard Dutch-pattern heavy musket and musket rest.

The second figure is a trained band soldier from the City of London. He wears his own civilian clothing with a sleeveless buff coat over it, and carries the same heavy Dutch musket as the first figure. It was unusual for English infantry to wear buff coats in this period, and it was not included in the list of equipment required by statute for militia soldiers. However, the fashion in the voluntary military societies in London was to wear buff coats, and ordinary soldiers in the London-trained bands copied it.

The third figure is a Royalist musketeer from the King's main field army in the south of England, based at Oxford. In 1643 Royalist infantry in Oxford were issued with a uniform issue of red or blue coats, breeches and montero. This may have been an exceptional issue for the year, and several other coat colours are recorded for this army between 1643 and 1645. This musketeer carries the new pattern of lighter musket that did not require a musket rest. Shortages in the supply of bandoliers led to the issue of a pouch containing paper cartridges of powder fastened to his waist belt. Musketeer balls are still carried loose and are not included in the cartridge, and he uses a small flask to carry priming powder. Over his shoulder he wears a snapsack containing spare clothing and rations.

The fourth figure is a Parliamentary musketeer of the New Model Army, c.1646. He carries the same light pattern of musket as the Royalist musketeer beside him. Note the New Model Army bandolier with its wooden powder containers painted blue and the mixed blue and white strings attaching it to his bandolier. All New Model infantry wore red coats, but the regiments could be distinguished one from another by the colour of their coat linings.

D: THE RESTORATION TO THE GLORIOUS REVOLUTION, 1660–88

These show the uniforms and equipment in use from the Restoration in 1660 to the Glorious Revolution of 1688, when the Catholic James II fled in the face of an invasion by the Protestant Dutch leader, William of Orange.

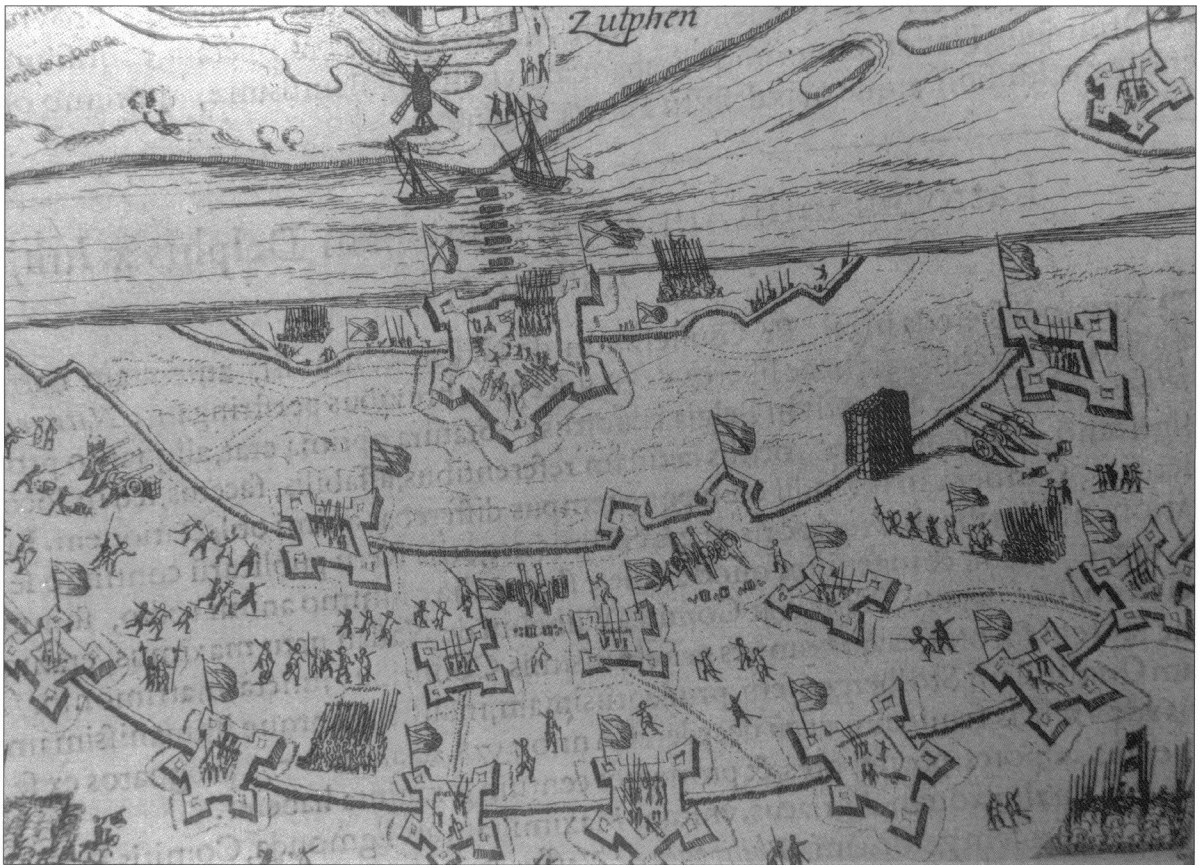
D1: Musketeer, Governor's Regiment, Tangier Garrison (1669). His appearance is based on Wenceslaus Hollar's engravings of the garrison at Tangier in North Africa.

D2 and D3: Musketeers, Earl of Dumbarton's Regiment at the battle of Sedgemoor (1685), one with a matchlock, the other with a flintlock.

D4: Grenadier at Sedgemoor (1685).

The first three figures are illustrated in one of the sequence of movements or 'postures' used to load and fire a musket, from an illustrated Italian manual printed in the 1670s. Note that the balancing hand – the left hand – is further away from the musket butt than in earlier illustrations. This is because the earlier model had a heavier stock, so the balance point is nearer the musket-butt. However, in this lighter model the weight is more evenly distributed.

The fourth figure is based on a French engraving of a grenadier with his musket slung. The first figure is based on



Wenceslaus Hollar's engravings of the garrison at Tangier in North Africa. The other figures are based on surviving records of the issue of equipment and uniform and, for the fourth figure, on the painting of the grenadier Captain Francis Hawley, 1st Foot Guards. Note the change in style of the uniform redcoat between 1669 and 1685. The soldier's coat in 1669 has a much fuller cut. By 1685 the coat was cut more closely and had more shape.

The first and second figures both carry matchlock muskets and bandoliers. The third figure still wears a bandolier but carries a flintlock musket. The musket carried by the fourth figure has a sling to enable him to carry it over his shoulder while he lights the fuse of his grenade. The distinctive grenadier cap was worn instead of a broad-brimmed hat in order to make it easier to put his musket over his head and use the musket sling to keep it out of his way. The grenadier carries his cartridges and priming powder in a pouch on his belt (not in a bandolier), a bag for his grenades and a plug bayonet are attached to his belt.

E: THE DOUBLE-ARMED MAN, 1625-88

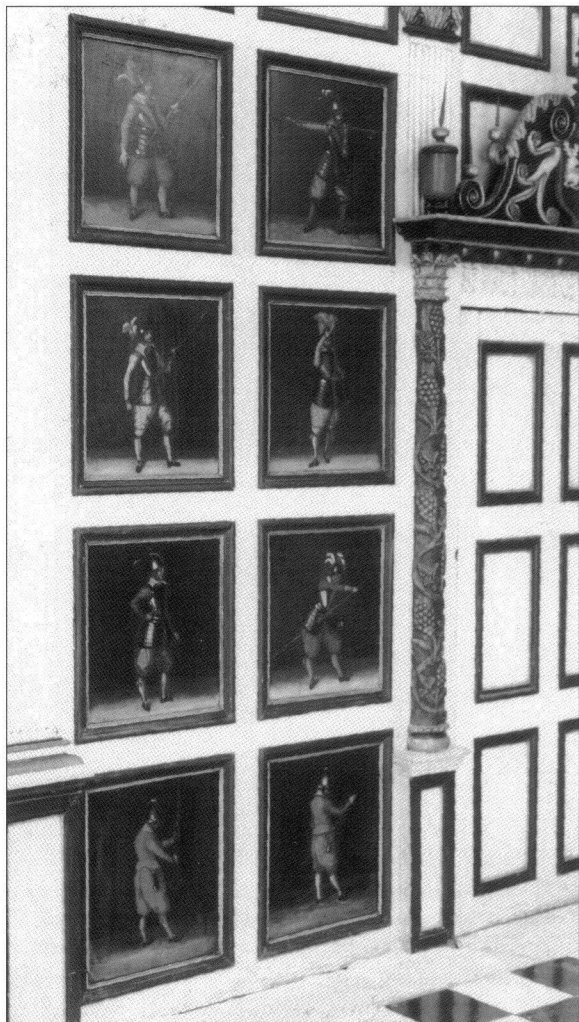
Throughout most of our period infantry battalions were composed of both 'shot' (musketeers and arquebusiers or calivermen) and pikemen. The shot provided the firepower, which was increasingly seen as the key factor in battle. The pike fought alongside the shot against other infantry, but their key role was to defend the infantry battalion against cavalry. The problem facing contemporary commanders was

The siege lines of a besieging army in the Low Countries.

that a high proportion of pikemen in a battalion offered protection from cavalry in the open field but reduced the number of men in the unit able to fire at their opponents. A high proportion of shot offered a concentration of firepower but made the unit more vulnerable to cavalry. An additional practical problem was that the ratio of shot to pikemen increased steadily during our period. The main defence against cavalry was to form a square or circle with the pike sheltering the shot, but this could only work well while there were at least as many pikemen as shot, and by 1642 the optimum ratio for a unit was considered to be three musketeers to two pikemen.

Most European military theorists sought ways to achieve an infantryman who could fight both offensively and defensively. With hindsight, the solution to this problem was the bayonet, which effectively gave each infantryman the potential to be both a musketeer and a pikeman. This was not immediately obvious at the time, and this plate shows some of the experiments which led to the first musketeers armed with bayonets.

E1: The double-armed man with longbow and pike, Society of the Artillery Garden (1639). The equipment and posture are based on the illustrations of William Neade's training manual, *The Double-armed Man* (London, 1625). This was widely used in the voluntary military companies in the 1630s, and the costume of this figure dates from the 1630s.



Panels based on de Gheyn's engravings from the Pages' room at Clifton Hall in Nottinghamshire. By permission of the Nottingham Trent University. Photo by Sue Brown.

E2: Pikeman armed with pike and carbine, Society of the Artillery Garden (1639).

E3: Musketeer armed with musket and half-pike, Society of the Artillery Garden (1639).

E4: Fuzilier, Royal Regiment of Fuzileers, armed with a flintlock musket and bayonet (1685).

The first figure is armed with a peculiarly English solution, using an 'engine' to allow a pikemen to attach a longbow to his pike. He could then fire his longbow from around 400 yards to 120 yards and then prepare to fight as a pikeman.

The second figure is armed with a pike and carries a carbine on the same sort of belt as a cavalryman. The voluntary company in Westminster practised this. A carbine is a shorter-range weapon and would be less effective than a longbow.

The third figure is armed with a musket and a half-pike with a fork attached, upon which the musket can be fired. This was recommended by William Barrieffe in his

Military Discipline, or the Young Artilleryman. This was a cumbersome combination.

The fourth figure is armed with a flintlock musket and a plug bayonet, the solution which started to solve the problem. The disadvantage of the plug bayonet was that it literally plugged the barrel, and the musketeer could not fire while the bayonet was in place. Note that the stance of this figure shows that, at this early stage in the use of the bayonet, a musketeer used his musket with bayonet as if it was a pike.

F: DIGGING THE TRENCH IN THE 1590S

Warfare in the Low Countries was more a matter of siege than open battle. This plate shows English troops in Dutch service digging a trench towards a besieged town. English soldiers were noted in this period as good fighting infantry for battle, skirmish or storming enemy fortifications, but they hated digging trenches.

These men are sapping towards the fortifications of an enemy town, seen in the background. The plate shows how the trench is dug. At the head of the sap is a wheeled sap-head. Behind this different sapping soldiers dig the trench and pass the earth to form a barrier to their left (facing the fortifications). Two men move the wheeled sap-head. Behind them soldiers use picks to break up the ground, and behind them are other soldiers. The first men clear down to the first level of depth and the men behind dig down to the level of depth required.

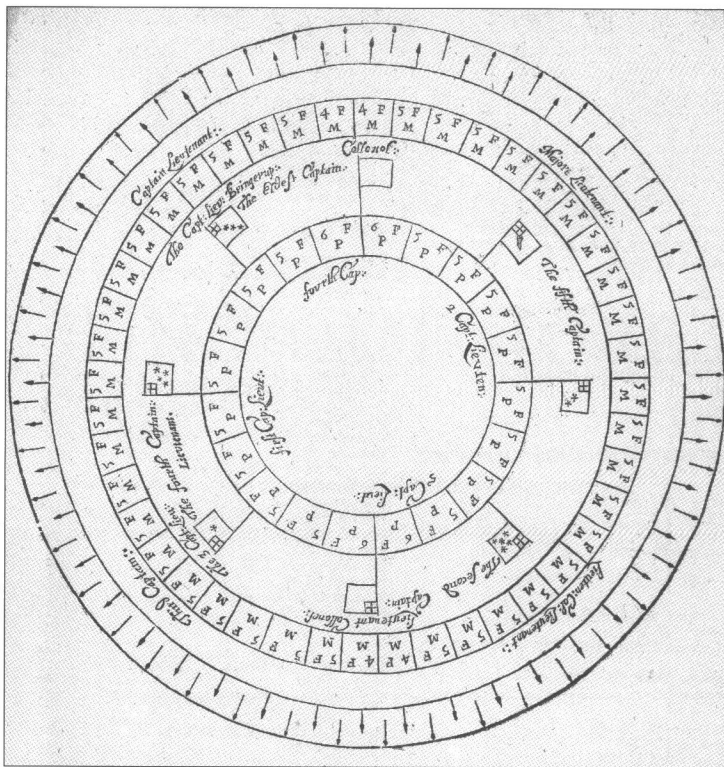
The men doing the digging are calivermen, men who usually carry a lighter matchlock firearm. When digging they have laid aside most of their military equipment – their calivers, powder flasks, swords and scabbards. They keep their waist belts on, and some wear daggers on their belts. Fully armed men guard the soldiers digging the trench, and a musketeer and a caliverman are shown fully equipped as guards.

G: CAROUSING IN CAMP - THE THIRTY YEARS' WAR IN GERMANY

For English soldiers who learnt their trade as mercenary soldiers during the Thirty Years' War in Germany, campaigning became a way of life and the camp became their home. This plate shows a group of soldiers carousing in camp at the sutler's tent, the focus of good times in camp, providing drink, women, cards, dice and a good time generally.

These men were much sought after at the outbreak of the Civil War, but their experience came at a price, as they introduced into England the culture developed during the seemingly endless war in Germany. For example, the Croat mercenary Carlo Fantom joined the Royalist cause and, according to the diarist John Aubrey, gave as his reason: 'I care not for your Cause: I come to fight for your halfe-crowne, and your handsome women: my father was a Roman Catholiqu; and so was my grandfather. I have fought for the Christians against the Turkes; and for the Turkes against the Christians.' Fantom's lifestyle was too much even for the broad-minded Royalist Army, and he was hanged at Oxford for rape.

Commanders in the Parliamentary Army set higher standards, modelled on the early years of the Protestant champion King Gustavus Adolphus of Sweden, and would enforce them if they could find the money to pay their soldiers.



One of several infantry formations intended as a defence against cavalry. This one is from Richard Elton's *The Compleat Body of the Art Military*. The outer row consists of sharpened stakes.

H: MARCHING IN BAD WEATHER

This plate illustrates the reality of soldiers' lives and their appearance on campaign. Throughout our period, our matchlock musketeer was issued with uniform clothing of some sort, sometimes only a coat in the earlier part. As the English Army became professional there were more complete issues of clothing usually on an annual or bi-annual basis, depending on the item of clothing in question. Clothing became ragged between issues, and the everyday appearance of soldiers was a long way from parade appearance. On campaign, clothing and shoes disintegrated more quickly, and soldiers stole additional clothing or made cloaks from blankets.

The plate shows a column of marching musketeers with their captain riding at their head. Although their uniforms and blankets are ragged they retain their discipline and are marching in blocks four across and six deep, with a space of six feet between each block. A soldier tying rags around a worn-out shoe is encouraged by a sergeant to rejoin the column. These are veterans, so they do not march with their muskets on their shoulders as if on parade. Each man carries his musket as he wants, some covering it with blankets, some carrying it upside down under their arms, thus keeping the matchlock mechanism dry and preventing water pouring down the barrel. Others have rags wrapped around the lock and the matchlock mechanism. These men are Royalist infantry during the English Civil War. Some carry the heavy musket, which requires a musket rest, and others carry the new lighter model. Their appearance is based on a painting by Pieter Snaeyers showing infantry of the Spanish Army of Flanders camped around Aire-sur-le-lys in the winter of 1641, but they could be from any army in this period. Their clothing is ragged and they have fashioned makeshift cloaks out of blankets.

I: SKIRMISH IN THE WOODS

Leading commanders of our period saw firepower, field artillery and infantry firepower as the keys to winning battles, but hand-to-hand fighting was still necessary when neither side flinched from the volleys or when it was necessary to fight in broken or wooded ground. This plate shows London trained band musketeers being beaten out of a wood at the battle of Cheriton (1644) during the English Civil War. The London Trained Band Musketeers (distinctive in their sleeveless buff leather coats) are being driven back by a 'commanded' party of Royalist musketeers. The Royalist musketeers are drawn from several regiments for this service and are shown wearing red, blue and yellow uniform coats according to the regiment they were drawn from. The Royalists fire a volley and fall on or charge through the gunpowder smoke.

J: FIRING BY VOLLEYS

This shows musketeers firing in formation, the role that made the matchlock musket the battle-winning weapon of our period. These are musketeers from the Earl of Dumbarton's regiment (the Royal Scots) at the battle of Sedgemoor (1685) firing a volley. They are drawn up three deep for all to fire in one volley, the front rank kneeling, the second stooping and the third standing.

The scene shows a series of blocks of musketeers firing in a line, each block is of 60 matchlock musketeers three deep with a frontage of 20. In the front of the musketeers is a drainage ditch, a particularly effective obstacle in the West Country as the liquid mud in these ditches can be feet thick.

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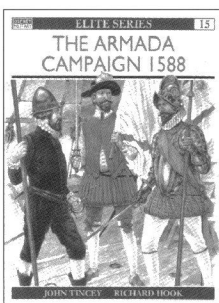
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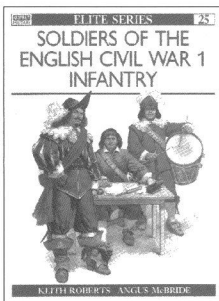
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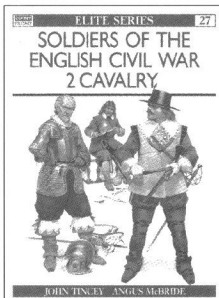
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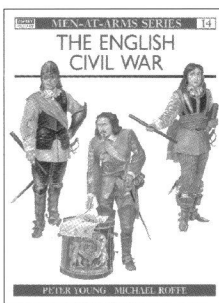
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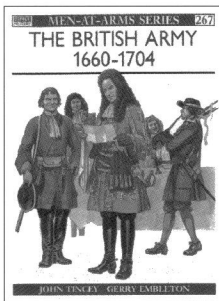
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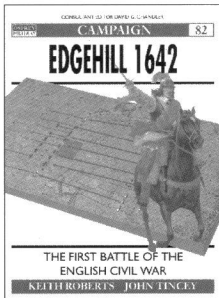
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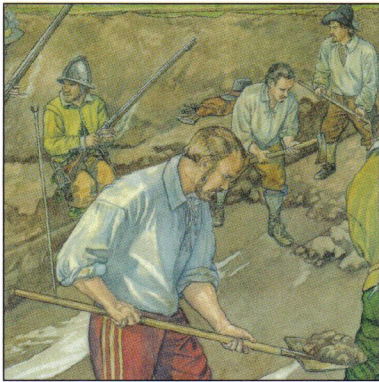
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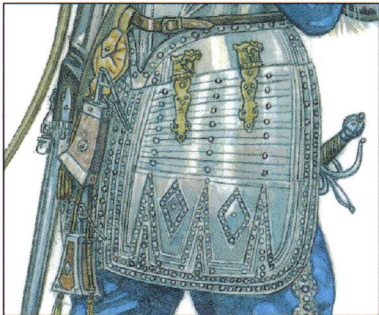
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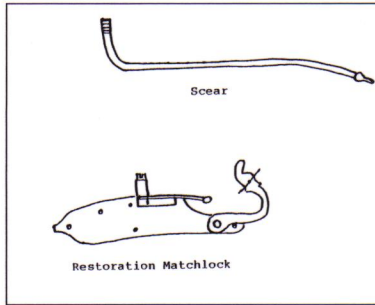
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