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The Office of Ordnance and the Parliamentarian land forces, 1642–1648

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REPOSITORY RECORD

Lewis, David E.. 1976. "The Office of Ordnance and the Parliamentarian Land Forces, 1642–1648".
Loughborough University. <https://hdl.handle.net/2134/19437>.

The Office of Ordnance and the Parliamentarian land forces
1642-1648

by

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A doctoral thesis submitted in partial fulfilment of the
requirements for the award of Doctor of Philosophy of the
Loughborough University of Technology

September 1976

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Preface

I should like to express my gratitude to Dr. Ian Roy for his advice and assistance during the preparation of this thesis. I have also benefited from exchanges with Dr. Howard Tomlinson on the subject of the seventeenth century Ordnance Office. Finally I wish to acknowledge the cooperation of the Kent Archives Office, the London Museum and the Armouries Library at the Tower of London.

All dates in the text are given in the modern style.

D.E.L.

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Abbreviations

Add. Mss	Additional Mss. series, British Library
<u>B.I.H.R.</u>	Bulletin of the Institute of Historical Research
<u>C.J.</u>	Commons Journals
C.L.R.O.	Corporation of London Records Office
<u>C.S.P.D.</u>	Calendar of State Papers, domestic series
<u>D.N.B.</u>	Dictionary of National Biography
E.	Exchequer series, Public Record Office
<u>E.H.R.</u>	English Historical Review
<u>Econ. Hist. Rev.</u>	Economic History Review
G.L.	Guildhall Library
Harl. Mss.	Harleian Mss. series, British Library
K.A.O.	Kent Archives Office
L.M.	London Museum
S.P.	State Papers series, Public Record Office
<u>V.C.H.</u>	Victoria County History
W.O.	War Office series, Public Record Office

Chapter One

The Ordnance Office Records

An investigation into the means by which the Parliament carried on the War during the years 1642 to 1648 must take into consideration the role of the Office of Ordnance at the Tower of London. A study of the financial and administrative aspects of the Civil Wars would be incomplete without an examination of the ways in which the parties supplied their respective forces with arms, ammunition, clothing and equipment of all kinds. The extent to which they were successful in this sphere has a bearing on other aspects of the conflict.

In monetary terms, the resources allocated by Parliament to the procurement of munitions, clothing and equipment for its forces on land appear small in comparison with some other items of military expenditure such as soldiers' pay. Lack of pay had an adverse effect on the strength and effectiveness of an army, and indeed it might have political as well as military repercussions, yet the consequences of a deficiency of munitions could obviously be significant too.

The Ordnance Office had since the fifteenth century assumed a central position in the procurement, storage and distribution of munitions to English armies and garrisons, even though it had not acquired a monopoly of those tasks. This fact alone makes it worthwhile to investigate the effect of the outbreak of the Civil Wars upon the personnel and routines of the Office and then the way in which it functioned during the years of conflict that ensued.

The Ordnance Office has been the subject of study during the period of its history stretching from the time of its inception to the early eighteenth century, but there has so far been no account of the institution as it was maintained by the Parliament during the Civil War years. On the other hand, an edition of the

records of the Ordnance Office maintained by the Royalists at Oxford between 1642 and 1646, has been compiled. This work also refers to certain of the Parliamentary Ordnance Office records.¹

The Ordnance Office of the Tudor and the post Restoration eras has recently been the subject of dissertations.² In addition, Aylmer's thesis dealing with certain government departments in the reign of Charles I incorporates a detailed study of the Ordnance Office down to the outbreak of the Civil Wars. Professor Aylmer's subsequent work in the field of seventeenth century administration also pays some attention to the Ordnance Office, although again without any special consideration of the Civil War period.³ Another recent dissertation, on the subject of naval administration during the Commonwealth and Protectorate, contains a short account of the Ordnance Office during those years.⁴

A number of other works concerned with sixteenth and seventeenth century English political, economic and administrative history have made some reference to the Ordnance Office records, without being specifically concerned with the Office itself. Hogg's account of the Royal Arsenal contains a chapter dealing with the origin and development of the Ordnance Office which makes some use of the sixteenth and seventeenth century records of the Office.⁵ An account of the Surrey gunpowder mills in the Victoria County History utilizes a number of Ordnance Office records, as does Stern's description of gunmaking in seventeenth century London.⁶ Finally,

1 Roy, I. The Royalist ordnance papers

2 Ashley, R. The organisation and administration of the Tudor Office of Ordnance B.Litt. thesis, University of Oxford

Tomlinson, H.C. The organisation and activities of the English Ordnance Office, 1660-1714 Ph.D. thesis, University of Reading

3 Aylmer, G.E. Studies in the institutions and personnel of English central administration, 1625-42 D.Phil. thesis, Univ. of Oxford

Aylmer E.H.R. vol. 72 1957 pp. 240-246

Aylmer The King's servants and The state's servants.

4 Hammond, W.N. The administration of the English navy, 1649-1660 Ph.D. thesis University of British Columbia

5 Hogg, O.F.G. The Royal Arsenal

6 V.C.H. Surrey vol. 2 pp. 306-329

Stern, W.M. J. Arms and Armour Soc. vol. 1 Mar. 1954 pp. 55-100

some recent works on particular aspects of Civil War and Commonwealth history have made use of one or two of the Ordnance Office records.¹

The information provided by the records of the Parliamentary Ordnance Office is essentially quantitative. The records are above all a source of facts and figures relating to prices, contracts, wages and allowances, stores received and delivered out. Information about the day to day life of the Office and of the people who worked there is relatively limited. The records therefore lend themselves more readily to a study of the role of the Office in supplying the Parliamentary forces than to a close examination of the inner workings of the Office and of the activities of those employed at the Tower.

The Ordnance Office records may be divided into five categories. The quarter books record the fees and other allowances granted to members of the salaried establishment. These were payable out of the ordinary allowance of £6,000 a year which the Office was supposed to receive in quarterly instalments.² Officially, the quarter books were presented to the Exchequer as a record of expenditure incurred which was charged to the ordinary allowance. However, the quarter books record entitlements only and not the payments that were actually made in any given quarter.

The books of debentures contain copies of the debentures made out to contractors who did not receive settlement in cash or "ready money" for the stores which they had brought in. Following the receipt and proving of the stores at the Tower, the supplier was issued with a bill. Upon presentation of this bill, a debenture was made out by the officers of the Ordnance and a copy subsequently entered in the book of debentures. A debenture merely records the existence of a debt and does not in this case constitute an

1 Holmes, C. The Eastern Association and the English Civil War
Worden, B. The Rump Parliament

2 See below p. 13

undertaking by the Ordnance Office to pay the amount stipulated.¹ After the debenture had been issued the bill became void, although they were sometimes retained. The book of debentures for land service is in fact accompanied by a sheaf of these bills.

The minute book consists of copies of warrants for deliveries out of the stores, details of contracts made by or on behalf of the Ordnance Office, records of quantities of gunpowder brought into the Tower and copies of letters to and from the officers. There is only one minute book available for the Civil War period, which is unfortunate because it is the most informative record of the workings of the Ordnance Office. However, some of the information found in the minute book is also available for different periods in the books of warrants and deliveries. A volume containing contracts made by the Committee of the Army and notified to the Ordnance Office, which is held in the London Museum, may consist in part of the original documents from which the records of contracts in the minute book were compiled. Alternatively, the contents may have once formed part of another minute book which is now lost.

The receipts books give details of supplies brought in by contractors for examination and storage at the Ordnance Office. Regular deliveries of gunpowder in accordance with long term contracts are normally recorded in the minute book and in the books of warrants and deliveries also. For the most part the receipts books relate to the stores procured for Sir Thomas Fairfax's army between 1645 and 1648. There are separate alphabet books giving details of supplies brought in for the trains of artillery of the Earl of Essex and the New Model Army in 1644 and 1645, wherein are recorded the amounts brought in by each contractor.

The books of warrants and deliveries contain copies of warrants for issues out of the stores along with notes of deliveries.

¹ Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 21

In some cases the warrants and the corresponding deliveries are recorded in the same book, in others they are to be found in separate ledgers. These books also contain details of some contracts made by the officers of the Ordnance. Warrants emanating from the House of Commons are normally to be found in the Commons Journals too, whilst those issued by the Committee of Both Kingdoms are summarized in the Calendar of State Papers, domestic series.

There is an element of repetition in the Ordnance Office records, owing to the fact that the officers were required to maintain records in duplicate. There are some minor discrepancies between different copies of the same document with regard to names, dates and quantities. These are no doubt due to faulty transcription. The entries in the ledger books were made up from the original documents after the transaction had taken place, sometimes months later.

The Ordnance Office records alone cannot provide a complete picture of the working of the Office because they do not deal adequately with the financial aspects. This is also true of the records relating to the Office before 1642, since a considerable proportion of the money expended by or on behalf of the Ordnance Office derived from extraordinary allowances sanctioned by the Privy Council and from advances by the Treasurer of the Navy. It is therefore necessary to consult the Exchequer records. The situation during the Civil Wars is complicated firstly by the fact that the post of Lieutenant of the Ordnance, which constituted the normal channel for the disbursement of Ordnance Office funds, was in abeyance part of the time; and secondly because the existing pattern of public finance was disturbed by the novel measures introduced by the Parliament for the purpose of financing the war.

There is a roll in the Pipe Office series of declared accounts which covers Ordnance Office receipts and expenditure during the period 1642 to 1651, but its usefulness for our purposes is qualified on a number of counts. It deals largely with sums of money received

from the Navy Treasurer and expended on the Fleets. Since it was drawn up by the principal officers it does not include sums of money handled by the Lieutenant of the Ordnance. The accounts are in fact a record of the sums received by the senior officers and disbursed during the periods 1642 to 1644 and 1645 to 1647 when there was no Lieutenant. The latter's own accounts have been discovered in a very fragmented form only.

These disadvantages are offset by the fact that the bulk of the expenditure incurred by and on behalf of the Ordnance Office for land service during the Civil Wars is recorded in the Commonwealth Exchequer Papers. The most important categories of documents in this series are those relating to the settlement of debentures and to the discharge of warrants for payments to contractors by the army treasurers.

It is impossible to describe fully the business of providing munitions, clothing and equipment to the Parliamentarian forces by confining our attention to the Ordnance Office alone. It is necessary to consider also the activities in this field which went on outside the ambit of the Tower. Again, this is true of the situation before 1642 as well. Especially during the earlier stages of the Civil Wars, large amounts of munitions, clothing and equipment were delivered to the Parliamentarian forces apparently without reference to the Ordnance Office. Here too the Commonwealth Exchequer Papers are the primary source of information, in particular the warrants directed to the Treasurer of the Army, Sir Gilbert Gerard, by the Committee of Safety and the Earl of Essex. In the same way we must pay some attention to the manner in which the various local forces and garrisons sought to obtain munitions and equipment for themselves over and above what they might be allowed out of the Ordnance Office stores.

Another factor affecting the value of the Ordnance Office records is that of completeness. We have the word of those charged

with investigating the Office at various times in its history and the declaration of at least one principal officer that record keeping at the Tower left something to be desired. Failure to record the transactions of the Office in sufficient detail, failure to keep records up to date and even the falsification and deliberate destruction of documents are some of the shortcomings related in the pre Civil War period. It is unlikely that the situation was totally transformed thereafter.

Furthermore, some Ordnance Office records were almost certainly lost during the two centuries after the Civil Wars. The bulk of the seventeenth and eighteenth century records of the Office were removed from the Tower to the Public Record Office upon the dissolution of the Board of Ordnance in 1855. However, some records had already been sold and others had been retained in the hands of individuals who had connections with the Ordnance Office. Yet more were disposed of or destroyed at the time of the final clearance.¹

For this reason it is probable that documents relating to the Civil War period are numbered amongst the missing records. The composite volume of Ordnance Office records in the London Museum incorporates one or two fragments of different categories of documents, which suggests that they formerly belonged to ledgers that are now lost. If there are indeed gaps in the extant records, this may help to account for those instances when the various sets of figures derived from our analyses of the ledgers cannot be completely reconciled.

Some of the records which were dispersed have subsequently found their way to the Public Record Office. Of the remainder, several relating to the Civil War years are in the British Library, whilst there is in the London Museum a volume of Ordnance Office documents which was compiled in the last century.² It is possible

1 Barter, S.E. J. Soc. Archivists vol. 3 no. 4 1966 p. 196

2 *ibid.*

that there are a few more documents or fragments still to be discovered, perhaps concealed by the vagaries of the arrangement at the Public Record Office or elsewhere. This is suggested by the fact that one set of Ordnance Office receipts has been found bound into a volume of the Commonwealth Exchequer Papers and not with the companion records in the War Office series wherein the ledger books of the Ordnance Office are normally to be found.

The Ordnance Office records are most abundant during the years 1644 to 1648, and it is in this period that the role of the Office in supplying the Parliamentary forces on land can be most clearly determined. The availability of the different categories of records during the Civil War years is indicated in Table one.¹ Approximately one third of all the records relate exclusively to the land forces, with a further one third devoted to provision for the Navy and the remaining third comprising entries which relate to both land and sea service.

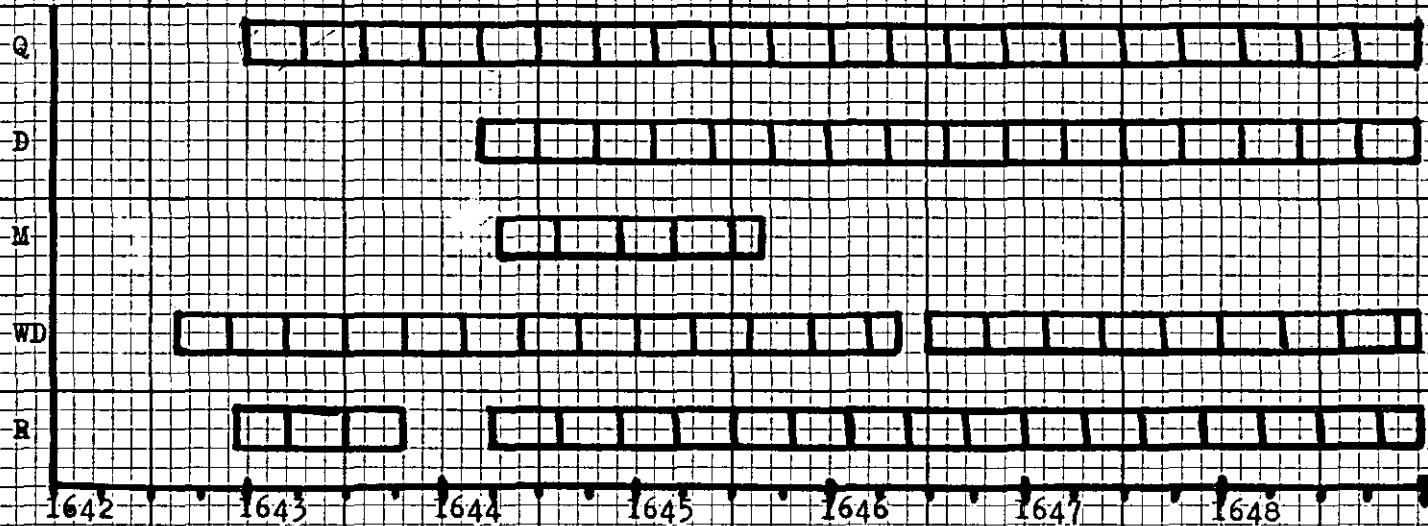
An important limitation of the present work is that it is concerned almost entirely with the part played by the Ordnance Office in supplying the Parliamentary forces on land, the exceptions being the chapters dealing with the Ordnance Office establishment and the remuneration of employees which are relevant to the activities of the Office as a whole. The ordnance administration in the field, that is, the train of artillery, is likewise excluded from consideration except insofar as provision was made for it out of the Ordnance Office stores. The train was not part of the central organisation at the Tower in any case.

The supply of the Navy is considered only when it has a bearing on the conflict on land, as in the case of the borrowing of Navy stores for land service. This limitation of the scope of the work was made primarily on the grounds of expediency, for it was felt that the quantity of records was sufficient to support a separate

¹ See p. 9

Table One

The Availability of Ordnance Office Records for the Civil Wars



Q - Quarter books
 D - Debenture book
 M - Minute book
 WD - Warrants and deliveries books
 R - Receipts books

N.B. Records relating solely to provision for the Navy have been excluded.

study of one aspect of the activities of the Ordnance Office. Also, to submit the entire bulk of the Ordnance Office records and their associated Commonwealth Exchequer Papers documents to the same kind of detailed analysis would make for a considerably greater undertaking.

Other reasons for this decision include the belief that although the Parliamentarian navy played an important role during the Civil Wars, the decisive conflict took place on land; and that since the Ordnance Office was a body traditionally orientated towards making provision for the Navy above all, an assessment of the extent to which it was able to meet the demands created by prolonged and widespread fighting on land would be of more immediate interest.

Chapter Two

The Ordnance Office Before the Civil Wars

The Ordnance Office of 1642 had assumed its characteristic features during the Tudor era. The organisation, the routines and the scale of the Office had been formalised by the middle years of Elizabeth's reign, whilst the most significant developments had occurred earlier, during the reign of Henry VIII in particular. That phase of expansion under the early Tudors had no subsequent parallel until after the Restoration, and in each case the impetus to growth and change was provided by an increase in the scale of English military and naval activity.

The later sixteenth and the early seventeenth centuries are therefore years of comparative stability in which the Ordnance Office underwent no remarkable development. As we shall see, a number of recurrent themes pervade the history of the Office during this period and indeed continue beyond the outbreak of the Civil Wars. The relative stability experienced during the Elizabethan and early Stuart periods was not peculiar to the Ordnance Office, but is said to be characteristic of central administration as a whole during that time.¹

The Office of Ordnance had its antecedents in a department of the Royal Household known as the Privy Wardrobe, which in common with other organs of a formerly peripatetic government became settled in London, in this case at the Tower, where in the course of the fourteenth century it assumed the functions of procuring, storing and distributing munitions in association with the merchants and artificers of London. At some stage during the earlier fifteenth century the functions of the Privy Wardrobe at the Tower were adopted by the Office of Ordnance and the Armoury, which developed as separate institutions.²

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 6

2 Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 21-23, 26

The real impetus to the development of the Ordnance Office was provided by the early Tudors and by the military activities of Henry VIII's reign in particular. Those activities included an attempt to reduce England's dependence on foreign sources for the supply of munitions and essential war materials by encouraging domestic production, military expeditions overseas, the construction of coastal defence works and the expansion of the Navy. The establishment and growth of the English cast iron gunfounding industry during the sixteenth century was of significance to the development of the Ordnance Office since the distribution of ordnance and shot was to remain pre-eminently a function of the Office down to 1642 and indeed continued to be so during the early years of the Civil Wars.

The task of supplying ordnance became all the more important when in 1569 the Ordnance Office took over from the Navy Board responsibility for the provision of munitions to the Fleet which was the principal user of ordnance and shot procured for the state. At the same time the Ordnance Office assumed responsibility for ordnance stores at the dockyards of Woolwich, Deptford, Chatham and Portsmouth.¹ However, this arrangement never proved to be a wholly satisfactory one and from time to time proposals were put forward for making provision for land and sea service the responsibility of separate departments. In 1642 and again in 1654 it was proposed that the office of Master of the Ordnance for the Navy should be revived. In 1655 the Ordnance Office was placed under the control of the Admiralty Commissioners and from then until 1660 the Navy exercised control over the procurement of ordnance. The division of responsibilities between the Ordnance Office and the Navy as regards the supply of munitions was never clearly defined and it continued to cause friction between the two administrations in the later

1 Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 81-82

seventeenth century.¹

During the reigns of Henry VII and Henry VIII the number of principal officers increased from three to eight and the patent of the first Lieutenant of the Ordnance, the most important executive officer of the Tudor and early Stuart Ordnance Office, dates from 1543. From 1546 the Lieutenant and the other senior officers assumed responsibility for the handling of Ordnance Office funds and a form of accounting was adopted which continued until 1670, although it was distorted during the Civil War period.² When during the 1570's a number of under clerkships were created in the gift of the senior officers the establishment at the Tower had more or less assumed the form in which it existed at the outbreak of the Civil Wars.³

There were a number of interrelated factors affecting the working of the Ordnance Office during the later sixteenth and earlier seventeenth centuries. They concerned the administration and financing of the Office and they posed problems which were still unresolved upon the outbreak of the Civil Wars. In the first instance, the Ordnance Office never enjoyed sufficient financial resources to enable it to have a real measure of autonomy or to allow it to effect complete control over the acquisition of munitions for the forces on land and sea.

The Ordinary allowance of £6,000 a year to which the Office was entitled by Privy Seal dormant was insufficient to cover expenditure even in years of little or no military activity. In any case the allowance was not paid regularly, with the result that the purchase of munitions needed for an expedition or a Fleet, or simply the provision of expensive items for the stores, had to be paid for out of the Exchequer upon special estimates sanctioned by the Privy Council or out of funds advanced by the Treasurer of the Navy. The

1 Johns, A.W. Mariner's Mirror vol. 14 1928 p. 28

Tomlinson, H.C. E.H.R. vol. 90 Jan. 1975 pp. 21, 25-27

2 Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 47-48

3 op. cit. p. 128

logical development of this was that the Privy Council should go a step further and itself deal with merchants and artificers, which it occasionally did.¹

Since the Privy Council was authorizing much of the extraordinary expenditure of the Ordnance Office, which in some years far exceeded that of the ordinary, it had a vested interest in the way in which the Office was run. Thus the series of commissions of inquiry which were appointed by the Council to investigate the Ordnance Office between 1553 and 1633 were prompted not only by a desire to conduct an independent inquiry into what was going on inside a body concerned with national security and to look into administrative abuses, but also to effect a measure of supervision over an institution which was spending money that to some extent the Council itself had made available.

Suggestions of mismanagement and deficiencies in the stores were given particular emphasis when the outbreak of war focused attention upon them. The greater expenditure and consequent accumulation of debts fostered by a war or some military venture naturally gave additional emphasis to the desire for an investigation into the running of the Ordnance Office. The close association of the Office with the Navy, the administration of which was also the object of criticism and investigation, tended to throw the shortcomings of the Ordnance Office into greater relief.² Then in 1624 the situation at the Tower was given added prominence by the impeachment of Lionel Cranfield, Earl of Middlesex, since some of charges of corruption and misdemeanours brought against him involved the Ordnance Office.³

The subject matter of the various commissions of inquiry changed little. The usual terms of reference required the commissioners to take inventories of the stores in order to

¹ Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 14, 15

² Tawney, R.H. Business and politics under James I p. 152

³ Prestwich, M. Cranfield p. 425 ff.

establish what was available and to account for money that had been spent, to improve administration by laying down guidelines and with particular emphasis on improved record keeping, since this was fundamental to the efficient running of the Ordnance Office and to an effective check on its activities. Complaints about defective records and the falsification of records were a recurrent theme.

In the investigations of the earlier seventeenth century, the emphasis appears to have shifted somewhat from the need to improve administrative efficiency towards the desirability of reducing the cost of the Office, a reflection of the economic difficulties of the Crown under the early Stuarts. One question considered by the commissioners before the Civil Wars was that of the justification for retaining artificers on the salaried establishment at the Tower, paying them salaries in addition to the money which they received for work done on contract. Another matter for consideration was that of the ability of the Ordnance Office to discharge effectively the burden placed upon it, particularly in time of war. Doubts about this were increased when the Office assumed responsibility for the supply of munitions to the Navy and so gave rise to the question of whether or not it was appropriate for the Ordnance Office to undertake the supply of both land and sea forces.

One of the earliest of the commissions of inquiry into the Ordnance Office was that of 1553. It considered, amongst other things, the position of the retained artificers, but achieved little. A later commission appointed in 1567 made the oft repeated call for more detailed record keeping. In fact, the unreliability of and the lack of precision in the records were reasons why the Council was reluctant to accept the officers' own statements as satisfactory evidence of how the Ordnance Office was being run. The importance of keeping adequate records was stressed by further commissions in 1582 and 1589 which prescribed regulations for the proper maintenance of

the ledger books. All records were to be maintained in duplicate and the books were to be made up every two months.¹ However, the effectiveness of these recommendations depended ultimately on the cooperation and integrity of the officers of the Ordnance themselves. The fact that the injunctions were repeated by successive commissions of inquiry suggests that they did not make very much impression.

The appointment of the Earl of Essex as Master of the Ordnance in 1597 was the occasion for the issue of further instructions concerning the administration of the Ordnance Office. "We would prevent your falling into the errors of your predecessors, and enable you to reform your inferior officers", wrote the Queen to Essex at the time.²

A commission was then set up in 1598 charged with carrying out a detailed investigation into the Ordnance Office. Amongst other things, the commissioners were to define clearly the duties of the principal officers, stop payment of the annual allowances which the officers were awarding to themselves and their clerks and reform abuses in the handling of Ordnance Office funds. The commissioners made an inventory of the stores and laid down a new establishment. It was stipulated that no records were to be removed from the Tower, an annual account of issues and receipts and a report on the stores were to be given to the Lord Treasurer, artificers engaged on special commissions were not to be retained without proper authority, full records of issues and receipts were to be kept and there were to be regular examinations of the books.³

However, this attempt to improve the administration was either unsuccessful or had no lasting effect, for in 1619 another Commission on the Ordnance was established which investigated much the same matters and made similar recommendations to those of its

¹ Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 77, 99-101

² C.S.P.D. 1591-7 pp. 381, 383

³ ibid.
Hogg, O.F.G. The Royal Arsenal vol. 1 pp. 50-51, 53

Elizabethan predecessor. The commissioners consisted of Lionel Cranfield and nine other individuals. In 1616 Cranfield held the offices of Master of the Great Wardrobe, Master of the Wards and Chief Commissioner of the Navy.¹ In these capacities he was instrumental in carrying out administrative reforms between 1617 and 1620, during which time an attempt was made to reorganise various departments of government and to put them on a sound financial footing. The commissioners' report, which appeared in 1620, was one of several which strongly criticized the conduct of government at the time. Similar commissions of the Privy Council had been set up in 1617 and 1618 to investigate the Household and the Navy respectively.²

Apart from considering the state of the magazine, the Commission on the Ordnance once more attempted to lay down guidelines for the administration of the Ordnance Office. The Commission was concerned with confirming earlier orders governing Ordnance Office practice and with ensuring that traditional procedures were observed, as well as with creating precedents. The Commission's report has survived and since its terms of reference were typical of the inquiries into the Office in the pre Civil War era, its findings will be considered in some detail.

The Commission recommended a reduction in the size of the Ordnance Office establishment. The position of Clerk of the Deliveries was to be abolished as a separate office, and the two posts of furbisher created for the maintenance of the small guns were either to be dispensed with when they fell vacant, since the appointees had not performed the tasks required of them, or else the holders were to be compelled to discharge their duties. The number of artisans was also to be reduced. The new allowances created since 1595, without warrant or precedent, for a bowyer, fletcher,

1 D.N.B. vol. 5 p. 14

2 Prestwich, M. Cranfield pp. 211-212
Aylmer, G.E. E.H.R. vol. 72 1957 p. 231

carpenter, wheelwright, smith, ladlemaker and cooper were an unnecessary burden. Of the twenty permanent labourers, some never worked, many seldom worked and none worked for the whole year. The Commission declared that they should receive payment only for the work that they actually did.¹

In 1641, however, the office of Clerk of the Deliveries was still in existence, together with the posts of furbisher, bowyer, fletcher, carpenter, wheelwright, smith, ladlemaker and cooper. The number of labourers on the establishment remained at twenty.² It is possible that despite the Commission's strictures there were in fact practical reasons for retaining the services of these artificers.

The Commission also made recommendations concerning the duties of the officers. The Lieutenant of the Ordnance was to inform the other officers of all demands for payment made by suppliers as well as of receipts issued by him. There was a history of embezzlement by senior Ordnance officials. The Lieutenant, who acted as Treasurer, was enjoined to make payments in the presence of the other officers and within fourteen days of receiving the money. No money was to be handed over unless the claimant possessed a debenture.

Short term borrowing of surplus Ordnance Office funds by the Lieutenant for his own purposes had not necessarily been regarded as improper, but clearly the scope for financial abuses was considerable. Certain Masters and Lieutenants ended up by owing large sums to the Crown. With regard to the duties of the other officers, the Commission declared that the Clerk of the Ordnance was to keep yearbooks containing records of all warrants, copies of letters and contracts, inventories of the stores and details of receipts and deliveries of stores. Nothing was to be issued without a warrant. No new posts were to be created nor exceptional wages, fees and travelling expenses allowed without the King's warrant.³

1 Add. Mss. 36,777 ff. 16-17

2 W.O. 54/15 unfol.

3 Add. Mss. 36,777 ff. 21-24

Yet this comprehensive review of the organisation and activities of the Ordnance Office still failed to produce any lasting improvement. The military adventures during the years 1625 to 1629 revealed serious deficiencies in the stores and prompted a further series of inquiries. The increase in Exchequer payments to the Ordnance Office, much of it upon special estimates, which was sanctioned by the Privy Council during these years also served to attract the attention of that body. In the summer of 1629 the Surveyor of the Ordnance and the Storekeeper were briefly incarcerated for misdemeanours. An inquiry into the Office had been ordered in 1626 and in 1629 a report prepared on the instructions of the Lord Treasurer charged the officers of the Ordnance with mismanagement and fraud and with permitting excessive prices in contracts.¹

A commission formed in 1630 was also asked to consider the question of salaries. This was fundamental to a thoroughgoing reform of the Ordnance Office and the first commission appointed after the Civil Wars took steps to deal with this problem. A new commission was formed in 1633 and during this period the Office was under more or less continual surveillance though without any significant results. The question of Ordnance Office reform was taken up again after the Civil Wars and during the Commonwealth era a remodelling of the establishment was brought about.²

Another feature of the Ordnance Office in the later sixteenth and earlier seventeenth centuries was the prevalence of internal dissensions amongst the employees of the Office, especially the senior officers and their clerks. These disputes arose partly out of the issue of appointments to positions in the Ordnance Office and they were accompanied by charges and counter charges of maladministration and corruption. The filing of charges of

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 49, 64

Aylmer E.H.R. vol. 72 1957 p. 242
2 See below pp. 87-89

malpractice by officers and even under clerks against other officials at the Tower became a tradition which continued down to the Civil Wars and beyond. Sometimes the disputes were so intense that they prompted outside intervention. Such disagreements could also undermine the system of checks and balances devised in an attempt to ensure the honest and efficient administration of the Ordnance Office, since the system depended on the integrity and co-operation of the officers in the performance of their tasks.

Underlying the personal rivalries and jealousies was the fact that the senior officers held their posts by patent and they tended to regard themselves as owing allegiance to the Crown rather than to the Master or Lieutenant of the Ordnance. Furthermore, the senior officers were inclined to take advantage of any weakness or absence on the part of the Lieutenant to consolidate their own positions. This made it more difficult for the latter as principal executive officer to assert his authority over his fellow officers who resented what they regarded as an infringement of their privileges. Hence attempts were made to discredit the Lieutenant and other officers by accusing them of malpractice, with the plaintiffs appealing to the Crown and to ministers for justice.

The rather haphazard way in which the administration of the Ordnance Office was conducted, along with obvious deficiencies in the methods of record keeping and accounting and the existence of a certain amount of actual fraud and maladministration made it relatively easy to bring such charges. The accusations most commonly made by the disputants were those of falsification of records and embezzlement of money and stores. There is no doubt that some provisions purchased for the Ordnance Office stores were subsequently sold to contractors and in some cases re-sold to the state. In 1586 the Surveyor of the Ordnance charged the Clerk of the Ordnance, the Purveyor of Materials and the Storekeeper with

embezzling more than £7,000. This was ^{only} one of a series of disputes and accusations of malpractice amongst the officers in the late sixteenth century. These have been seen not simply as internal differences but also as having links with political controversies in the country at large.¹

Disagreements in the Ordnance Office are epitomized by one well documented dispute between the Lieutenant, Sir John Heydon, and the other principal officers in the early 1630's, when the two sides put their cases to the Crown at some length. Heydon was a forceful and energetic official who involved himself more closely in the running of the Ordnance Office than many of his predecessors. His differences with the other officers may have been exacerbated by his belief that the £8,000 debt claimed by the Crown against the estate of his brother, who preceded him as Lieutenant of the Ordnance, was excessive, and his suspicion that his brother had been the victim of malpractices by the other officers.²

The officers set out what they held to be the established procedures for running the Ordnance Office and they reiterated some of the rules prescribed by the commission of 1619. One of the points at issue concerned the method of book keeping employed and the way in which expenditure and outstanding debts were to be recorded. The officers defended their administration of the Office and declared that they could not accept some new practices introduced by the Lieutenant because they did not consider them either necessary or important enough to justify changes in routines.³

In his rejoinder the Lieutenant of the Ordnance suggested that the officers' motives in petitioning the King were firstly to forestall further examination of the quarter books which were supposed to substantiate claims for payments out of the Ordinary.

1 Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 130-140

2 Tomlinson, E.M. History of the Minorities pp. 138-139

3 S.P. 16/179 no. 51

Aylmer, G.E. E.H.R. vol. 72 1957 pp. 242-243

allowance of the Office and secondly to justify the present administration by showing that it was in accordance with established procedures. The Lieutenant declared that only a regular survey of the stores would make it possible to account satisfactorily for money spent, since the records maintained by the officers were too unreliable..

The attitude of the officers was inspired, he believed, by the fear that their malpractices would be discovered. The Keeper of the Stores was accused of claiming payment for greater quantities of stores than had actually been received, in collusion with merchants and artificers. The Clerk of the Ordnance fixed prices and made out debentures without being subject to any real scrutiny. He had arrogated the role of treasurer and submitted claims for payment on the basis of records prepared by himself. Many unwarranted payments and allowances had been charged upon the ordinary allowance which was intended primarily for the replenishment of the magazine. The Lieutenant declared that the practice of transferring large debts from one quarter's accounts to another had begun during the tenure of office of the present Clerk. He called for the restoration of proper procedures for running the Ordnance Office.¹

Heydon continued to concern himself during the 1630's with the proper administration of the Office. He laid down guidelines for the running of it and in November 1636 he complained that in the absence of the Storekeeper through illness his job had been carried out by his clerk without any supervision by the other officers.²

Although the Ordnance Office was often associated with charges of corruption and mismanagement, it is unlikely that it was worse in this respect than other departments. The shortcomings of the Office were symptomatic of a rudimentary bureaucracy, which was characterized by the importance of fees and gratuities, the

1 S.P. 16/230 no. 42

2 Harl. Mss. 429 ff. 178-179

appointment of officers for life and on individual patents and the absence of a clear distinction between public interest and private advantage in discharging an office.

The existence of administrative deficiencies was recognized, but schemes for reform were compromised by the financial weakness of the Crown. One factor which was common to these attempts at reform was the desire to reduce the cost of the Ordnance Office. Financial and administrative abuses were as much a symptom of the Crown's economic difficulties as they were a cause. The commissioners who criticized the conduct of the officers of the Ordnance no doubt had justification for doing so, but perhaps they did not altogether recognize the difficulties under which the officers were required to perform their duties, especially with regard to the inadequate financial provision made for the Office.

The persistent failure to endow the Ordnance Office with the necessary resources to enable it to discharge its functions properly was a major cause of inefficiency at the Tower and it also encouraged administrative abuses as the officers sought to compensate for the lack of money. Another prerequisite for improved administration was the provision of regular and adequate salaries. The officers drew attention to the need for proper financing of the Office in their petitions, such as those of February 1636 and August 1641, in which they asked for the regular payment of the standing allowance and for the paying off of the arrears which had accumulated.¹ Nevertheless, the problem of financing the purchase of munitions satisfactorily remained unresolved during the Civil Wars and afterwards.

¹ Harl. Mss. 429 f. 156
C.S.P.D. 1641-3 pp. 104, 109

Chapter Three

The Ordnance Office Organisation During the Civil Wars

As a resort to force became increasingly probable during the summer of 1642, both King and Parliament naturally sought possession of the country's principal magazine together with the allegiance of its employees. The wider one-sided contest for control over the machinery of government was reflected in the disputes between the officers of the Ordnance and Parliament during the spring and early summer of 1642 over the right to issue warrants for deliveries out of the stores.

The officers replied to demands from the Commissioners for Irish Affairs for the issue of munitions by declaring that warrants could only be made out upon the authority of the King or the Privy Council. Such an attitude made their removal from office by Parliament only a matter of time. On the 28th June the King forbade the issue of stores without his consent. Next day the officers were brought before the House of Lords and dismissed, although no steps were taken to enforce the order until two months later.¹

With the King excluded from the centre of power and the apparatus of government effectively in the hands of his opponents, Parliament was not only able to keep the Tower magazine in its hands but was favourably placed to retain the majority of the employees of the Ordnance Office too. Political loyalties apart, members of the Office might be detained in London either by persuasion or by sheer practical necessity, since upon would be Royalists lay the onus of surrendering their posts and quitting London if they wished to join the King.

During August 1642 Parliament took effective steps to secure control of the Ordnance Office. On the first day of the month, the Commons ordered the Lieutenant of the Tower not to permit arms and ammunition to be shipped from the Tower wharf without the

1 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 pp. 38-39, 83-84

approval of Parliament.¹ Then on 20th August Parliament ordered the exclusion from the Tower of such officers as refused to submit to its authority. The officers were required to hand over their keys to such persons as the Committee for the Defence of the Kingdom appointed to receive them. The custody of the arms and ammunition in the stores was to be entrusted to those whom the Committee thought fit to exercise it. Four days later Parliament was reported to be in possession of the Ordnance Office.²

On the evidence provided by the quarter books, the outbreak of the Civil War had no significant effect upon the size and nature of that part of the establishment whose members were in receipt of a salary payable out of the standing allowance due to the Ordnance Office. No such records are available for the year 1642, but it is possible to compare the ordinary establishments of 1641 and of 1643. Only a proportion of those actually engaged in work at the Tower or otherwise connected with the Ordnance Office are listed in the quarter books.

In the final quarter of 1641 the ordinary establishment consisted of :-³

Lieutenant of the Ordnance

Surveyor of the Ordnance	Clerk of the Ordnance
Keeper of the Stores	Clerk of the Deliveries
Master Gunner of England	Keeper of the Small Guns
Keeper of the Rich Weapons	
Clerk to the Master of the Ordnance	
8 clerks (and one temporary clerk)	
Plumber	Ladle-maker
Carpenter	Wheelwright
Fletcher	Bowyer

1 C.J. 1640-42 p. 699

2 W.O. 55/1754 f. 1

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 74

3 W.O. 54/15 unfol.

Cooper 2 furbishers (one vacant)

2 proofmasters Messenger

20 labourers

By the first quarter of 1643, the only changes in the size of this establishment were that the posts of Lieutenant of the Ordnance, clerk to the Master of the Ordnance and ladlemaker were no longer occupied, the number of clerks had been reduced to seven and there was only one proofmaster. The vacant post of furbisher had by now been filled.¹ The offices of Keeper of the Stores and of Keeper of the Rich Weapons continued to be held by the same person as in the past.

On the other hand, changes of personnel during 1642 were quite considerable, as is revealed by a comparison of the names of those listed in quarter books for the respective periods.²

Last quarter, 1641

First quarter, 1643 -

Lieutenant of the Ordnance

Sir John Heydon (R)

Surveyor of the Ordnance

Francis Coningsby

George Payler

Clerk of the Ordnance

Edward Sherborne (R)

John White

Keeper of the Stores

Richard Marsh (R)

John Faulkener

Clerk of the Deliveries

Thomas Eastbrooke (R)

Stephen Darnelly

Master Gunner of England

James Wemyss

James Wemyss

Keeper of the Small Guns

James Paulfreyman

James Paulfreyman

1 W.O. 54/16 unfol.

2 W.O. 54/15; 54/16 unfol.

(R) denotes those members of the ordinary establishment in 1641 who are known to have joined the King at Oxford

Last quarter, 1641First quarter, 1643Keeper of the Rich Weapons

Richard Marsh (R)

John Faulkener

Clerks

Howard Strachey

John Whitworth

Edward Stevens (R)

John Hooper

William Forster sen.

Joseph Hutchinson

William Forster jun.

John Smith

Andrew Bassano

Edward Hutchinson

Hugh Lockett

Robert Bevis

Robert Bevis

William Bevis

William Bevis (temporary)

John Newport (absent) (R)

Plumber

Joseph Day

Daniel Judd

Ladle-maker

William Beacham

Smith

Thomas Hodgskins

Carpenter

Mathew Banks

John Pitt

Wheelwright

Thomas Bateman

Thomas Bateman

Fletcher

David Powell

David Powell

Bowyer

John Jefferson

John Jefferson

Cooper

Alexander Norman

Alexander Norman

Furbishers

Robert Steadman

Robert Steadman

George Fisher

Last quarter, 1641First quarter, 1643Proofmasters

John Lanyon

William Franklin

John Duvarrio

Messenger

Nicholas Cox

Nicholas Cox

Labourers

Hugh Flood

Hugh Flood

John Leverett

James (?John) Leverett

Thomas Archer

Thomas Archer

George Bishop

George Bishop

Humphrey Woodall

Humphrey Woodall

Thomas Luger

Thomas Luger

Thomas Perrin

Thomas Perrin

Richard Bailey

Richard Bailey

John Merry

John Merry

Peter Smith

Peter Smith

William Payne

William Payne

John Freeman

John Freeman

Henry Loxam

Henry Loxam

Thomas Sparks

Thomas Sparks

Richard Thomas

Richard Thomas

John Evans

John Evans

John Cash

John Cash

John Moorey

John Moorey

John Lowe

John Lowe

Roger Preston

Roger Preston

The precise reasons for the changes revealed here can in certain cases be ascertained, in others they must remain a matter for speculation. Some can be explained in terms of active support for the King. Indeed, the Ordnance Office has been described as one

of the departments in which the incidence of Royalism was rather greater than the average for the central administration as a whole.¹ Political and religious sentiments were no doubt important factors which influenced the conduct of officials during 1642, yet their overall effect is difficult to assess. The senior officers of the Ordnance do not on the whole appear to have been influenced by financial considerations, for they would have stood a better chance of obtaining the arrears of fees and allowances to which they were entitled in 1642 by supporting Parliament.

A few individuals may have based their decisions on their assessment of the likely outcome of the conflict and concluded that it would be more expedient to maintain their allegiance to the King. It is more probable, however, that for mundane reasons a greater number decided to acknowledge Parliament and remain at their posts. The active Royalists were confined largely to the senior officers who could leave London and join the King more readily than the lower grades of employees who would have been more dependent on the Ordnance Office and on London for their livelihood.

The position of the more substantial of the artificers who possessed commercial and manufacturing interests of their own was akin to that of the outside contractors who continued to serve the Ordnance Office because their assets were located within the area then controlled by the Parliament. Apart from the principal officers, only two other members of the ordinary establishment, both under clerks, are known to have become members of the Royalist Ordnance Office. It is reasonable to assume that they were motivated at least in part by their ties with the respective officers whom they had served at the Tower. Yet in spite of the fact that the under clerkships were in the gift of the senior officers, there were instances before 1642 when under clerks remained at their posts following a change of officer. This became more of a usual

¹ Aylmer, G.E. The King's servants p. 406

occurrence after the Civil Wars.¹

The Lieutenant of the Ordnance, Sir John Heydon, was apparently the first to declare himself for the King. He was an experienced Ordnance official who had held office since 1627. In June 1642 the King unsuccessfully sought Heydon's assistance in procuring munitions from the stores at the Tower and in the Minories and despatching them by way of Newcastle to York.²

Heydon became Lieutenant of the Royalist Ordnance Office at Oxford. On 23rd August 1642 three members of Parliament were directed to go to Heydon's house in the Minories and remove to safe keeping the arms, ammunition and stores there. Nevertheless, settlements of debentures issued by the officers of the Ordnance continued to be made at the Tower in Heydon's name during September and October 1642, no doubt because the original contract had been made out whilst he was in office.³

The House of Lords resolved on 17th August 1642 that the Surveyor of the Ordnance, Francis Coningsby, the Storekeeper, Richard Marsh, and the Clerk of the Ordnance, Edward Sherborne, be taken into the custody of the Gentleman Usher and prevented from entering the Tower. After a short period of detention they were released, whereupon Marsh and Sherborne went to the King.⁴

Edward Sherborne was a recusant Catholic and consequently would have been disqualified in any case. He had secured the reversion to the Clerkship of the Ordnance, held by his father, Edward Sherborne senior, in 1638. He succeeded to the post at the beginning of 1642 and was restored to office in 1660, when he was

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 106

Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 2 p. 616

2 Q.S.P.D. 1641-3 p. 343

3 C.J. 1640-3 p. 732

SEP. 28/1D ff. 542, 560

4 W.O. 55/1754 f. 8

Roy, I. The Royalist ordnance papers pt. 1 p. 13

still claiming arrears due to his father.¹ He was also a minor poet.

Thomas Eastbrooke, the erstwhile Clerk of the Deliveries, was also a Royalist, although less prominent in this respect than the other principal officers who went to the King. Francis Coningsby, who had been Surveyor of the Ordnance, has been described as either a Royalist or a neutral. A former clerk of his, John Lucas, received a debenture for travelling expenses in August 1642 which was finally settled in May 1644, so Lucas cannot have gone to Oxford.²

The exclusion of Sherborne, Coningsby and Marsh was followed by the appointment of new officers by Parliament. The replacement of Crown appointees raised legal and constitutional issues which could not be settled in the political climate prevailing during the earlier years of the Civil Wars, when only a minority in Parliament was considering the implications of a complete and final breach with the King. As a result, the new appointments at the Ordnance Office were not formally ratified until several years later.³

An order of the Committee for the Defence of the Kingdom on 22nd August 1642 appointed George Payler, "late Pay Master of Barwicke", as Surveyor of the Ordnance, and John Faulkener as Keeper of the Stores.⁴ Berwick was one of the strongholds whose ordnance establishment was overseen from the Tower. It is possible that Payler's appointment was secured through the influence of Robert Scawen, who sat in the Commons for Berwick and who was a member of the Committee of the Ordnance Office and subsequently chairman of the Army Committee. Payler maintained his connection with Northumberland, for he sat as a Militia Commissioner and as a

1 W.O. 54/15 unfol.

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 74 note, 98

Aylmer The King's servants p. 80

Roy, I. The Royalist ordnance papers pt. 1 p. 11 note, pt. 2 p.444 note

2 Aylmer, G.E. E.H.R. vol. 72 1957 p. 246 note
S.P. 28/17 f. 453

3 C.J. 1646-8 p. 642

4 W.O. 55/1754 f. 2

Commissioner of Assessment for that county on several occasions during the Civil Wars. Perhaps that was one reason why in 1649 he was criticized by the Clerk of the Ordnance, John White, for leaving most of his work to be done by his fellow officers.¹

A further order of 8th September 1642 appointed John White, "late citizen and hosier of the City of London", as Clerk of the Ordnance. The City merchant community was involved in all aspects of Parliamentary financial and military administration. In June 1643 the Commons ordered that White be granted possession of the house formerly occupied by Edward Sherborne. However, by another order of the following month White was allocated rooms in Sir John Heydon's former house in the Minories.² The Master Gunner of England, James Wemyss, adhered to the Parliament. He was a Scotsman who had come to London and engaged in the practice of gunnery and the making of ordnance at Vauxhall during the 1630's. He carried out work for the Ordnance Office at that time. He was appointed Master Gunner in 1638.³

During the Civil Wars the post of Lieutenant of the Ordnance was entrusted to members of Parliament who played an active part in the Commons and who were identified at the time of their appointment with the moderate section of opinion in Parliament which sought restraints upon the royal prerogative whilst being averse to attempting the total military defeat of the King as a precursor of radical political and religious changes.⁴

Yet the custody of a key department such as the Ordnance Office was naturally bestowed upon an individual whose adherence to the Parliamentary cause was unquestionable. The first holder of the office of Lieutenant during the Civil Wars was John Pym, the leader of that rather amorphous body of moderate opinion in the

1 Hammond, W.N. The administration of the English navy p. 32

Reid, W. Guilddhall Misc. vol. 2 no. 8 Sept. 1966 p. 325

2 W.O. 55/1754 f. 8

C.J. 1643-4 pp. 133, 170

3 D.N.B. vol. 20 pp. 1159-1160

Härl. Mss. 429 f. 188

4 Pearl, V. E.H.R. vol. 81 1966 p. 493

Commons which has been called the 'Middle Group' and which under Pym's influence played a prominent part in Parliament during the first two years of the Long Parliament. Pym was appointed Lieutenant in November 1643, although he had already ceased to play a part in the Commons owing to illness. He died soon afterwards.¹

His successor was Sir Walter Erle, who was a strong supporter of the Earl of Essex and an active member of the faction led by Pym and Hampden from the early days of the Long Parliament. He was a member of several committees. Erle may have had some previous military experience. He sat in the Commons for Weymouth and upon the outbreak of the Civil War he was commissioned as a colonel in the Parliamentarian army and appointed governor of Dorchester. In August 1643 he was allowed £18 from the Treasurer of the Army with which to buy saddles for his troop of horse.²

Erle's appointment as Lieutenant of the Ordnance was not entirely undisputed, however, An order for his appointment was sent to the Lords on 12th December 1643, but on 3rd January following they in turn proposed Colonel William Davies, who had commanded a regiment of foot in the Earl of Essex's army, for the office in recognition of his services and of the losses that he had sustained. Then on 12th January 1644 the Lords were reminded of the original order in favour of Erle, with which they eventually concurred on 22nd February after a further communication from the Commons. Shortly before this, an attempt by the Lords to oppose the passing of a revised ordinance for the establishment of a Committee of Both Kingdoms with the power to oversee the conduct of the war, had ended unsuccessfully.³

1 Pearl, V. E.H.R. vol. 81 1966 p. 495

Gardiner, S.R. History of the Great Civil War vol. 1 p. 255
C.J. 1643-4 p. 303

2 Keeler, M.F. The Long Parliament pp. 165-166
S.P. 28/264 ff. 178, 179

3 C.J. 1643-4 pp. 339, 357, 397, 405

Firth, C.H. and Davies, G. The regimental history of Cromwell's army vol. 1 p. xv

Pearl op. cit. pp. 494 note, 513 note
Gardiner op. cit. vol. 1 pp. 305-306

The fact that active members of the Commons such as Pym had been and Erle still was, were appointed to the post of Lieutenant, the former when he was already incapacitated by illness, suggests that as in the past the office was not regarded as being necessarily a full time one. The day to day administration of the Ordnance Office was largely in the hands of the other officers and their clerks. If Erle did take up residence in the Minories it can only have been for a short time, since the Lieutenant's house was taken from him in April 1645 and not restored until three years later.¹

The Ordnance Office records throw no light upon the changes of personnel amongst the clerks. It was the exception rather than the rule for under clerks to remain at their posts after the departure of the officer whose patronage they enjoyed. This factor no doubt accounts for most of the changes. Death or infirmity may have accounted for others. Those clerks serving officers who had gone to the King would almost certainly have been removed whether or not they decided to go to Oxford too.

In fact, two clerks, John Newport and Edward Stevens, who were on the establishment at the Tower in the last quarter of 1641, are known to have gone to Oxford since their names appear in a list of the members of the Royalist Ordnance Office in February 1644. Stevens had been clerk to Sir John Heydon and followed his master to Oxford.²

There is a similar lack of information in the Ordnance Office records regarding the changes that occurred amongst the artificers. Disregarding posts that were previously unfilled, there were only three changes of personnel amongst the artificers during 1642, and one of these, that of the proofmaster, was due to the death of the existing incumbent.³ As in the case of the under clerks, appointments to minor posts such as those of artificer were

1 C.J. 1646-8 p. 532

2 Roy, I. The Royalist ordnance papers pt. 1 p. 13 note, pt. 2 p. 397

3 W.O. 47/1 p. 337

For the possible identification of the other proofmaster as a Royalist see p. 60

traditionally in the gift of the principal officers.¹ However, in the latter instance this factor does not seem to have been instrumental in bringing about significant changes of personnel. Appointments to all posts on the ordinary establishment during the Civil Wars were either made by Parliament or were subject to its approval.

The term 'artificer' should not be defined too closely in this context. The scale of the activities of some of the Ordnance Office artificers and the numbers of persons that they employed suggests that they more closely resembled manufacturers and merchants than artisans in the strictest sense.² They did not necessarily carry out work exclusively on behalf of the Ordnance Office. It is likely that some of them had workshops of their own outside of the Tower and the Minories which they had established before they were retained by the Ordnance Office. The fletcher, David Powell, was situated outside the City in Chiswell Street, Finsbury, according to the poll tax return of 1641. He may also have had premises elsewhere, however. The bowyer, John Jefferson, and the smith, Thomas Hodgskins, are recorded as being located at the Tower.³

None of the artificers who were at the Tower in 1641, and who did not remain there after the outbreak of the Civil War, is to be found in lists of the Royalist ordnance establishment. However, it should be borne in mind that the artisans whose names are recorded in these lists represent only a proportion of the total workforce employed in furnishing the stores at Oxford.

It is possible that the plumber at the Ordnance Office during the Civil Wars, Daniel Judd, is the person of that name who was styled 'purveyor to Sir William Waller' in 1644 and who shipped munitions to the garrison at Newcastle in 1648. He is believed to

1 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 p. 187

2 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 16-17, 108

3 Dale, T.C. Members of the City companies in 1641 pp. 112, 206

have been living in Pudding Lane, Eastcheap, in 1638. Subsequently, a Daniel Judd purchased the lands of Rochester Chapter and in 1650 was the proprietor of a gunpowder mill at Ospringe near Faversham in Kent. It is not known at what date Judd acquired the mill, but if the identification with the Ordnance Office artificer is correct then it is possible that the powder which he supplied to the Office during the Civil Wars came from this source. In 1649 Judd was described as a "busy Committee man and sequestrator of Royalist estates". Daniel Judd of the Ordnance Office was one of those artificers who were removed from the salaried establishment as a result of the reforms proposed by the commissioners of 1649.¹

The cooper, Alexander Norman, retained his post in 1642. He appears to have been a conventional kind of master craftsman. He had apprentices bound to him, although whether they worked for him at the Ordnance Office premises or elsewhere is not known. He also played an active part in the affairs of the Company of Coopers, of which he was a liveryman. He attended court meetings fairly regularly, although on one occasion he was fined 16d for arriving late. In the annual election of 1646, he was nominated for the post of under warden but was not chosen. He was subsequently elected for the year 1647-8. He was then nominated for upper warden in 1648 but was not elected. Norman is the only member of the ordinary establishment of the Civil War years to appear in a list of members of the City companies drawn up in 1651, although the list is not exhaustive. He was a widower aged 56 in 1644 or 1645 when he obtained a license to marry again.²

Other artificers belonging to the ordinary establishment who

1 C.S.P.D. 1625-49 addenda p. 714

Mungeam, G.I. J. Arms and Armour Soc. vol. 6 no. 3 1968 p. 56

Add. Mss. 34,315 f. 70; 35,332 ff. 72-75

Chalklin, C.W. Seventeenth century Kent pp. 156, 205

Percival, A. The Faversham gunpowder industry p. 2

See below p. 87

2 G.L. Ms. 5602 vol. 3 passim

Whitebrook, J.C. London citizens in 1651 pp. 9, 26

Dale, T.C. Members of the City companies in 1641 p. 129

are recorded in the poll tax returns of 1641 comprise the smith, Thomas Hodgskins, and the bowyer, John Jefferson, who were freemen of the Blacksmiths' Company and the Bowyers' Company respectively. The fletcher, David Powell, is listed as a former warden of the Fletchers' Company.¹

The messenger at the Ordnance Office, Nicholas Cox, was another survivor from the pre Civil War days. However, he was described in 1649 by his superior, John White, Clerk of the Ordnance, as "a great swearer, negligent in his business and as bad as can be". He was subsequently dismissed.²

The two furbishers, Robert Steadman and George Fisher, were to become long standing servants of the Ordnance Office. Fisher was a gunmaker who also held the office of Under Keeper of the Small Guns in the Tower Armoury. He continued as a furbisher until 1664. Steadman, who was already at the Tower in 1642, was a cutler and gunmaker of St. Katherine's by the Tower. He was likewise confirmed in his post at the Restoration.³

Subsequent changes of personnel during the Civil War period can most readily be detected in the case of members of the ordinary establishment, since the names are recorded in the quarter books. The changes are not on the whole very numerous. The post of Lieutenant of the Ordnance was filled at the end of 1643, although the first incumbent died shortly after his appointment. The quarterly allowance to the Lieutenant was granted until March 1645 and was then suspended until June 1647, when it was resumed and continued until the end of the Civil Wars. The entries in the quarter books record entitlements and not actual payments. Apart from the Lieutenant, the number and titles of the senior officers remained unchanged down to 1648.

1 Dale, T.C. Members of the City companies in 1641 pp. 106, 112, 206

2 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 325

3 *ibid.*

Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 p. 69

S.P. 28/49 f. 515

The numbers of under clerks fluctuated during the years 1643 to 1647:-

Quarter Beginning	<u>Jan. 1643</u>	<u>Oct. 1643</u>	<u>Oct. 1645</u>	<u>Apr. 1647</u>
	7	9	7	9

These fluctuations were due to the appointment of two additional clerks for the Lieutenant of the Ordnance and their subsequent removal during the two year period between 1645 and 1647 when that office was in abeyance. Nevertheless, the Lieutenant's clerks continued to work for the Ordnance Office and on behalf of their master during the interval.¹

The numbers of labourers retained on the ordinary establishment also underwent small fluctuations:-²

Quarter Beginning	<u>Jan. 1643</u>	<u>Jan. 1646</u>	<u>Oct. 1646</u>	<u>Apr. 1647</u>
	20	19	18	16

Quarter Beginning	<u>Apr. 1648</u>	<u>July 1648</u>	<u>Oct. 1648</u>
	18	17	20

While making some allowance for death and incapacity, the causes of these variations must remain a matter for speculation. They cannot be correlated with and actual or inferred changes in the level of activity at the Ordnance Office. Even during the lull in hostilities during the latter part of 1646 and in 1647, when work on behalf of the Navy is taken into consideration there was probably a greater amount of work to be done at the Tower at that time than during the earlier years of the Civil War. In any case it was not normal practice to vary the size of the ordinary establishment in this way.

Some labourers who had apparently left the establishment may have been employed on extraneous duties, perhaps on the defence works about London or at other forts or naval yards. Some labourers may have been involved in the country wide survey of ordnance and

1 W.O. 54/16; 54/17 unfol.
S.P. 28/48 ff. 268, 270
2 W.O. 54/16; 54/17 unfol.

other munitions that was made in the summer of 1647. Others may have simply taken work elsewhere or, like the two clerks, continued to work at the Ordnance Office without receiving any ordinary fees. As employees of the Office they should have been exempt from impressment. Finally, the number of artificers retained on the ordinary establishment remained unchanged at twelve during the Civil War period.

A study of the personnel involved in the changes of the Civil War years reveals that some were retained for a short time only whilst others were restored to the establishment after a period of absence. Owing to the special circumstances created by civil war, there was a degree of uncertainty about the tenure of those officers who had been appointed by Parliament at the beginning of the War.

We should regard the conditions of these Civil War appointments as being closer to those of 'during pleasure' and 'during good behaviour' than to those of tenure for life. Appointment for life had been commonplace before the Civil Wars, although the King had decreed in 1637 that the practice should cease with regard to the Ordnance Office and other administrative departments.¹ On one occasion during the Civil Wars, however, the House of Commons recommended tenure for life. In August 1647 it was proposed that William Billers should be granted the position of Clerk of the Deliveries upon those terms.²

Sir Walter Erle was awarded an allowance as Lieutenant of the Ordnance from March 1644 until March 1645. There followed an interval of two years before the allowance was again granted in the quarter ending June 1647.³ Yet, as we shall see, Erle did not abruptly cease to perform any of the duties of Lieutenant in March 1645. His removal and subsequent restoration to office must be seen in the context of political developments between 1645 and 1647.

1 Aylmer, G.E. The King's servants p. 123
Aylmer The state's servants p. 82

2 C.J. 1646-8 p. 271

3 W.O. 54/16; 54/17 unfol.

On 3rd April 1645 the Self Denying Ordinance was finally passed. This required members of Parliament to relinquish all military and civil offices, whether by appointment of Parliament or otherwise, at the end of forty days. However, in the final draft of the ordinance there was no specific objection to the reappointment of members to an office. Sir Walter Erle was one of the members of Pym's old 'Middle Group' whose standpoint was rendered increasingly untenable by the political and military developments of 1644 and 1645. In company with a number of other members of that group, Erle gravitated towards the emerging Presbyterian party between 1644 and 1646. He was not, however, consistently identified with the Presbyterians before 1646. He was appointed to the Committee of the Army which was set up in March 1645 to organize provision for the New Model Army.¹ This alone ensured that he would retain some connection with the Ordnance Office.

Notwithstanding the Self Denying Ordinance and the cessation of Erle's allowance as Lieutenant in March 1645, there is some uncertainty in the Ordnance Office records regarding his status in the late spring of 1645. The last recorded warrant of that year which is addressed to the Lieutenant and the officers of the Ordnance is dated 9th June. Thereafter warrants are addressed to the senior officers only. Yet a debenture dated 16th May refers to Erle as the "late Lieutenant General of the Ordnance".² The Commons had already decided in the previous month that the use of the Lieutenant's house in the Minories should be given to other persons.³

Before Erle's departure from office, the Ordnance Office itself had been under investigation and there are signs of a recurrence of the internal disputes which had marked the history of

1 C.J. 1644-6 p. 78

Underdown, D. Pride's purge pp. 68-69

Gardiner, S.R. History of the Great Civil War vol. 2 p. 188

Pearl, V. E.H.R. vol. 81 1966 pp. 513 note, 519

2 W.O. 47/1 p. 262

W.O. 49/82 f. 33

3 C.J. 1646-8 p. 532

The Office before the Civil Wars. In October 1644 the House of Commons appointed a committee to examine the patents granted to former Lieutenants of the Ordnance and to consider the differences between the Lieutenant and the other officers with a view to trying to settle them.¹

Then in December 1644 the principal officers were required to render an account of the money which had been received and disbursed by them between the time of their own appointment and that of Sir Walter Erle as Lieutenant of the Ordnance. Furthermore, the Clerk of the Ordnance was to provide an account of all the munitions which had been issued and sent to Hull since 1637. The disposal of the contents of the magazine which had been at Hull was to be investigated.² Similar inquiries into the disposal of stores had been conducted before the Civil Wars.

Whatever the nature of the dispute between Erle and his fellow officers, which occurred within eight months of the Lieutenant's appointment, it appears to have contained some of the ingredients of earlier controversies, such as the handling of Ordnance Office funds, the filling of posts at the Office and the authority of the Lieutenant over the other officers.³ Perhaps, after more than a year without a Lieutenant, the Parliamentary officers of the Ordnance were reluctant to accept the superimposition of such an official in 1644.

Yet Sir Walter Erle was not normally present at the Tower and the senior officers continued to exercise responsibility for the day to day administration of the Office. The officers were concerned, as in the past, to give the appearance of maintaining the correct procedures with regard to the issue of munitions. No doubt they did this partly in order to safeguard themselves against censure should any irregularities be discovered, but they may also have wished to

1 C.J. 1643-4 p. 673

2 S.P. 28/21 f. 236

3 Add. Mss. 36,777 f. 21

Aylmer, G.E. E.H.R. vol. 72 1957 pp. 242, 243

Tawney, R.H. Business and politics under James I p. 172

give the impression that they were capable of running the Office on their own account.

In certain instances Sir Walter did not act in accordance with established procedures, but it is not clear whether this was culpable behaviour or whether it was the result of financial stringency and military necessity. In July 1644 the officers disclaimed responsibility for the issue of a quantity of match and shot provided by Erle and "not according to y^e Order and Custom of this Office, nor doth it belong to y^e Account of y^e rest of y^e Officers..." On 8th July the officers wrote to Erle begging him to get a warrant for 40 barrels of powder which had been delivered from the stores in the previous May.¹ There is a note against an entry dated 12th April 1645 in one of the Ordnance Office receipts books to the effect that a quantity of ironwork brought in for the repair of field carriages was paid for by Sir Walter Erle "without bill or certificate from this Office".² As can be seen from their accounts, most of the money received by the senior officers themselves came from the Treasurer of the Navy. They received little for spending on land service.³

During the two year period from 1645 to 1647 when Erle was not holding the office of Lieutenant of the Ordnance, he continued to perform some of the duties associated with the post. He remained in possession of Ordnance Office funds and made payments to suppliers. Erle's account of money received by him from the Army treasurers between April and June 1645 and paid out by order of the Committee of the Army shows that he received a total of £4,000 during that time, out of which he disbursed £2,388 for stores procured by the Army Committee and delivered to the Ordnance Office. The remainder was spent on stores for the Master of the Fireworks and for the train of artillery, "which past not y^e Office of y^e Ordnance".⁴

1 W.O. 47/1 pp. 61, 62

2 W.O. 55/1664 p. 14

3 E. 351/2664

4 S.P. 28/140 ff. 4-8

Erle retained money for the purchase of munitions for the Navy after he had ceased to hold office, together with the unspent portions of the receipts from the excise which had been allocated to the purchase of munitions for land service. He also continued to make payments to debenture holders upon warrants from the Committee for Powder, Match and Shot until he was restored as Lieutenant in 1647.¹ He was in frequent contact with the Ordnance Office anyway as a member of the Committee of the Army. In July 1645 he contracted for supplies for the public stores upon the instructions of the Committee for Powder, Match and Shot and the Army Committee.²

The extent of Erle's activities during the period that he was not in office is indicated by the payments made in August 1647 to his two clerks, George Hockenhull and Michael Dewey, for carrying money and drawing up the accounts of the money and stores received and disbursed by Sir Walter Erle between March 1645 and August 1647. Hockenhull and Dewey were not members of the ordinary establishment during that time. They also received payment for acting as sub-treasurers to Erle for the same period, in which capacity they received and disbursed £21,661 12s 10d.³

Nevertheless, it cannot be said that the post of Lieutenant was essential to the administration of the Ordnance Office. The office was again in abeyance between 1652 and 1660. Erle was in any case active in other spheres. On 5th July 1645 he was instructed to bring in an ordinance for collecting the arrears of money formerly allotted to the provision of the Earl of Essex's new train of artillery in the previous autumn. The money was now to be used for the purchase of match and shot for the Ordnance Office stores.⁴ In February 1646 Erle was given the task of deciphering captured Royalist documents, although he may not have actually done the work himself.⁵

1 S.P. 28/31 - 28/40 passim

2 L.M. 46-78/709 f. 65

3 S.F. 28/48 ff. 268, 270

4 C.J. 1644-6 p. 196

5 op. cit. p. 443

Then on 25th May 1647 the House of Commons ordered that the office of Lieutenant of the Ordnance be restored to him, notwithstanding an ordinance to the contrary which had been passed earlier. The Lords approved this measure two days later.¹ A year later, in April 1648, the Commons rescinded the order of April 1645 permitting other persons to use the Lieutenant's house in the Minories and restored possession to Sir Walter Erle.²

The political background to Erle's restoration as Lieutenant is provided by the attempt during the spring of 1647 by Presbyterians in Parliament, with considerable support in the City, to assert themselves in the face of widespread unrest in the country, the estrangement of the Army and Parliament and the expression of radical political and religious sentiments both in the ranks of the Army and in the City.

A section of Presbyterian opinion sought unsuccessfully to dispense with the Army and to secure a political and religious settlement of their own making along the lines of orthodox Presbyterianism and a negotiated settlement with the King. Many Presbyterian merchants in the City were impelled to support this course of action not only by the desire to settle their own financial grievances but also by fear of the Army and of the propagation of extreme political and religious opinions which threatened to undermine the established order in the City. The actions of the Presbyterians led to the enforced departure of eleven of their leaders from the House of Commons on 26th June 1647, followed by the entry of the Army into London at the beginning of August.

Although he was not adversely affected by these events, Sir Walter Erle had become one of the principal members of the Presbyterian group by 1647. He was designated one of the commissioners

1 C.J. 1646-8 pp. 182, 188

2 op. cit. p. 532

who were to attend the King when he was moved to Holdenby House in Northamptonshire following his release by the Scots in January 1647. The ordinance of 25th May which restored Erle to the Ordnance Office came at the moment when the Presbyterians' political influence was at its highest point during that year. The ordinance was sent to the Lords together with another, also sponsored by the Presbyterians, which provided for the disbandment of the Army.¹

There was a semblance of opposition to Erle's re-appointment from within the Army. This was natural enough in view of the state of relations between Parliament and the Army at the time, and the fact that the Army's magazine at the Tower was to be entrusted to a member of a faction that was potentially hostile to the Army. Fairfax's committee of officers concerned with appointments recommended that Thomas Hammond, General of the Artillery, should become Lieutenant of the Ordnance.² It is not clear whether or not Sir Walter Erle and the Ordnance Office were directly involved in the abortive design to raise a Presbyterian force to oppose the Army, but had Erle done anything significant in this way he would presumably have been removed when Fairfax took control of the Tower in August 1647.

Subsequently Sir Walter Erle was appointed to the Presbyterian inspired committee of Lords and Commons formed to consider the terms of a proposed treaty with the King in June 1648. He acted as a teller in important debates on the topic and on account of his political position he was one of those arrested in Pride's Purge of 6th December 1648. He was released on 25th December and removed from his post as Lieutenant of the Ordnance in January 1649. His position was thereupon eagerly sought after by would be office holders in the Commons.³

1 Underdown, D. Pride's Purge pp. 78-81, 373 appendix

2 Aylmer, G.E. The state's servants p. 358 note

3 Keeler, M.F. The Long Parliament p. 167

Underdown op. cit. pp. 101-102, 147, 168 note, 251

Pearl, V. in Aylmer ed. The Interregnum p. 29 ff.

Upon the death of the Clerk of the Deliveries, Stephen Darnelly, in 1644, he was replaced by Thomas Haslerig. There followed some of the controversy and reversals of judgements which had at times accompanied appointments to positions in the Ordnance Office before the Civil Wars. The situation was further complicated by the uncertain constitutional position created by the Civil Wars, since the principal officers normally held patents granted by the Crown.

On 13th August 1644 the Committee of Safety declared that Haslerig had been appointed as Clerk, although six days later the Committee for the Ordnance Office ordered the officers of the Ordnance to attend with such records as they had of appointments of officers and a statement of the authority whereby the present officers held their posts. Thomas Haslerig is listed as Clerk of the Deliveries for the final quarter of 1644. The decision was confirmed by an order of the Committee of the Revenue on 25th March 1645.¹

Yet the appointment was still not in fact settled, because during April and May 1645 Sir Walter Erle appended notes to warrants presented to the Ordnance Office stating that Haslerig's appointment was not to be regarded as final until the decision of Parliament had been made known. The position was subsequently taken from Haslerig and given to William Billers, who had been appointed an under clerk at the beginning of 1646.²

In the final quarter of 1646 Billers was entered in the quarter book as Clerk of the Deliveries. Then in the following year an order of the Commons dated 3rd August 1647, which was approved by the Lords, dismissed Billers and confirmed Haslerig in the post.³ But shortly afterwards, on 11th August, the Commons made a further

1 W.O. 47/1 pp. 84, 88, 203-204

W.O. 54/16 unfol.

2 S.P. 28/28 ff. 127, 129

W.O. 54/16 unfol.

3 C.J. 1646-8 p. 267

W.O. 54/16 unfol.

order restoring Billers as Clerk and granting him tenure for life. An ordinance to this effect was introduced on 19th August.¹

These reversals were no doubt influenced by political developments at the time, for in August 1647 there occurred the resurgence of the Independent faction in Parliament and the entry of the Army into London. There may also have been a link with another order of the Commons on 11th August instructing the Committee of the Army to discover what arms, ammunition and stores had been removed from the Tower and on whose authority. Fairfax himself had just been appointed Lieutenant of the Tower. The Presbyterians may have secured the removal of some munitions from the stores for the use of the forces which they had been preparing to raise.²

Although the position of Master Gunner of England is recorded in the quarter books throughout the Civil Wars, the name of James Wemyss ceases to appear therein after June 1647. Wemyss served with Sir William Waller's army during 1643 and 1644, being the only one of the principal officers of the Ordnance Office who actually took the field. He was present at the battles of Cheriton (29th March 1644) and Cropredy Bridge (29th June 1644). At the latter engagement Waller's army was accompanied by some "guns of Weems' invention, being more easy of carriage". These were probably the light field pieces known as 'leather' guns, consisting of a brass core bound with cord and enclosed in a leather casing. Wemyss patented this weapon, although he did not invent it.

He was taken prisoner at Cropredy Bridge whilst accompanying some pieces of ordnance placed in the van of the Parliamentary army.³ For at time he was imprisoned at Ludlow and the King was alleged to have offered to restore him to the post of Master Gunner in return for his allegiance. Shortly after his capture, the Earl of Essex

1 C.J. 1646-8 pp. 271, 280

2 op. cit. p. 271

3 Bulstrode, Sir R. Memoirs pp. 99-100

D.N.B. vol. 20 pp. 1159-1160

Ross, W.G. Military engineering p. 31

Adair, J. Roundhead general pp. 106, 148

asked the Committee of Both Kingdoms to attempt an exchange, for without Wemyss Sir William Waller's train of artillery would suffer, "a man of his abilities is not to be lost", whilst the Royalists would have a valuable acquisition if he could be persuaded to join them.

On 2nd October 1644 Colonel Meldrum proposed to the Committee of Both Kingdoms that Wemyss be exchanged for Sir Thomas Tyldesley. Wemyss continued to be allowed his ordinary fee as Parliamentarian Master Gunner and he returned to his post either late in 1644 or in 1645. He appears to have left the Ordnance Office at some time during the latter half of 1647. He was still there presumably in September of that year since a debenture for his travelling expenses was settled at that time. In the following year he returned to Scotland and subsequently served against the Parliament as General of the Artillery in the Scottish army.¹

A warrant of November 1647 refers to Nicholas Wollaston as Master Gunner of England, although his name does not appear in the quarter books for 1647 or 1648. It was not unusual for an individual to perform the duties of an office for a period, sometimes lasting several years, before his appointment received official confirmation. Wemyss was debarred from holding office by an act of January 1649 concerning the regulation of officers of the Navy and Customs, although he had already left. Nevertheless, in April 1649 the commissioners appointed under the act were considering how to evict Wemyss's wife and family from the Master Gunner's house at the Artillery Ground. In the same month Nicholas Wollaston formally took over the post of Master Gunner.²

The most frequent changes of personnel belonging to the ordinary establishment of the Ordnance Office during the Civil Wars

1 D.N.B. vol. 20 p. 1160
C.S.P.D. 1644 pp. 351-352; 1644-5 p. 6
 S.P. 28/45 f. 108
 W.O. 54/17 unfol.

2 Add. Mss. 35,332 f. 61
 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 324

occurred amongst the under clerks. Some were employed for only a short time, whilst others appear to have left only to return at a later date. Thus William Shrimpton and Robert Needler remained on the ordinary establishment for only three months, from October to December 1643.¹ Whether they resigned or were dismissed, or continued at the Tower in some other capacity, we do not know. John Smith ceased to appear in the quarter books at the end of 1643, but his name was restored nine months later.² Smith and one or two other clerks received some payments from the officers of the Ordnance during the time that their names were not recorded in the quarter books.³ These were probably contributions towards the reduction of arrears of salary accumulated at an earlier date.

The temporary absences of some clerks from the establishment does not necessarily mean that they had severed their connections with the Ordnance Office in the meantime. One or two at least continued to work for the Office, whilst others may have carried out duties elsewhere, perhaps at one of the principal garrisons or naval establishments whose defences and ordnance stores were administered from the Tower.

An earlier example of this is afforded by the case of John Newport, who sent to the North on the King's service in 1640. During his absence William Bevis was appointed to perform the duties of a clerk at the Tower.⁴ Since there were few changes of personnel amongst the senior officers during the Civil Wars, they cannot have been more than a partial cause of the more numerous changes that occurred amongst the under clerks. There were in fact some long serving clerks. Robert Bevis had been at the Ordnance Office since 1632 at least.⁵

Sir Walter Erle informed his officers in a letter of 24th

1 W.O. 54/16 unfol.

2 *ibid.*

3 E. 351/2664

4 W.O. 54/15 unfol.

5 Harl. Mss. 429 f. 98

February 1644, two days after his own appointment had been confirmed, that he had appointed George Hockenhull and Michael Dewey as his chief clerk and second clerk respectively. The letter reached the Ordnance Office on 19th June 1644.¹ Although Hockenhull and Dewey were absent from the establishment along with their master between June 1645 and June 1647, they maintained their association with the Ordnance Office, assisting Erle with the disposal of Ordnance Office funds and carrying out duties in connection with the procurement and delivery of munitions for the Army. It was stated in August 1647 that they had until then received no allowance for these services.²

Another clerk, William Billers, who was first appointed at the beginning of 1646, subsequently became Clerk of the Deliveries, as we have seen. This is the only recorded instance of a promotion within the Parliamentary Ordnance Office, although such promotions did occur in the later seventeenth century.³

The sole change of personnel amongst the retained artificers occurred in July 1647, when William Franklin was replaced as proofmaster by William Roberts. But here the evidence of the quarter books appears to conflict with that of a debenture of May 1648 made out to Franklin for field duties at the Artillery Ground and payable out of the estimates for the Winter Guard. On the other hand, there is an earlier debenture addressed to "William Roberts proofmaster" which relates to the proving of ordnance for the Navy during the previous summer.⁴ Franklin's debenture may in fact relate to duties performed before July 1647, or perhaps both he and Roberts were for a time engaged in proving.

The other possibility is that this was another case of

1 W.O. 47/1 p. 55 .

W.O. 54/16 unfol.

2 S.P. 28/48 f. 270

W.O. 54/16; 54/17 unfol.

See above p. 43

3 W.O. 54/16 unfol.

Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 p. 205

See above p. 46

4 W.O. 54/17 unfol.

S.P. 28/48 f. 299; 28/54 f. 23

uncertainty over the status of appointments made in the Ordnance Office during the Civil Wars. On 29th July 1645 the Committee of the Revenue asked the officers of the Ordnance whether or not William Roberts was a suitable person for the position of proofmaster "now void". The officers replied that Roberts was unknown to them. They knew only that he had been recommended by several members of Parliament. They declared that Franklin had carried out the work satisfactorily for the past four years since the death of the last proofmaster, although his appointment had not so far been ratified. "And wee conceive it absolutely necessary to have a prooffe M^r and one will serve".¹

In addition to the work done by the proofmaster, proving was also undertaken by the Master Gunner and in the case of hand guns by the furbishers and by the two proofmasters appointed by the Company of Gunmakers.² In a statement dated about 1630 the officers of the Ordnance refer to the Master Gunner of England "and the other proofmaster". The Master Gunner was entitled to an allowance of £12 a year out of the Exchequer for proving ordnance and gunpowder, although he almost certainly did not receive it during the Civil Wars.³

In all, five of the artificers together with the messenger, who belonged to the ordinary establishment in 1641, were still members thereof in 1648.⁴ There is no correlation between changes of personnel during the Civil Wars and the position of the employees concerned in the Ordnance Office hierarchy. The number of changes which occurred amongst the labourers is similar to that found amongst the under clerks. Several labourers, including Peter Smith, John Merry, Thomas Luger and William Payne were already on the

1 W.O. 47/1 p. 337

2 C.S.P.D. 1645-7 p. 492

W.O. 47/1 p. 233

W.O. 55/1646 pp. 23, 313, 334

G.L. Ms. 5220 vol. 2 unfol.

3 S.P. 16/179 no. 51

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 105

4 W.O. 54/15; 54/17 unfol.

establishment in 1641 and remained there until the end of the Civil Wars. Luger was dismissed in 1649 but was reinstated at the Restoration.¹

So far no reference has been made to the post of Master of the Ordnance. During the Civil War and Interregnum period the office was in abeyance, although it had virtually become a sinecure by 1642. The post was occupied at that time by the Earl of Newport who for a short time continued as the Royalist Master of the Ordnance. On the Parliamentary side the nearest equivalent to this office was that of General of the Artillery. In the Earl of Essex's army this position was held initially by the Earl of Peterborough. After his defection in April 1643 he was not replaced.² The post of General of the Artillery also existed in other Parliamentary armies.

The forty-five or so members of the ordinary or salaried establishment at the Ordnance Office represented the nucleus of the organisation only. The total workforce was considerably in excess of this number. As far back as 1571 the number of craftsmen and labourers alone has been put at 112. This figure, however, includes a proportion of casual workers.³

There are a number of identifiable groups within this sector of the organisation. There was a body of manufacturers, merchants and tradesmen who supplied the Ordnance Office on a regular basis with certain munitions, equipment and raw materials, as well as with such services as cartage and pest control. Some if not all of them carried out other work besides that which they undertook on behalf of the Office, and a number received fees or allowances in addition to payment for the work that they actually did, although they were not in receipt of a salary as such.⁴

1 W.O. 54/15; 54/17 unfol.

Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 325

2 Peacock, E. The army lists p. 22

D.N.B. vol. 13 p. 850

3 Ashley, R. The organisation and admin. of the Tudor Office of Ordnance p. 76

4 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 107

The Ordnance Office organisation embraced the subordinate office of the Armoury which was also situated at the Tower. The Armoury was concerned specifically with the storage and maintenance of small arms. Of those who worked there, the Keeper of the Small Guns and the two furbishers were members of the ordinary establishment. One of the furbishers also held the post of Under Keeper of the Small Guns, for which he was entitled to an allowance out of the Exchequer.

Then there were the gunners who served at the Tower. They were not a charge upon the ordinary allowance of the Ordnance Office, consequently their names do not appear in the quarter books. The full complement of gunners was one hundred, but it is doubtful whether the establishment was up to strength. The gunners did not necessarily devote all their time to their duties but also carried on other jobs in the Tower and elsewhere. Before the Civil Wars at least some of the gunners' positions were held by individuals who also served the Ordnance Office in other capacities such as those of under clerk, furbisher and proofmaster.¹

Another section of the labour force comprised the employees of the Ordnance Office artificers and other tradesmen who belonged to the organisation. Finally, there is the question of how many persons were working at the Office without any clearly defined status, such as Sir Walter Erle's clerks Hockenull and Dewey between 1645 and 1647 when they were not members of the ordinary establishment. They apparently received only an ex gratia payment for their services during that time.²

The Ordnance Office organisation also embraced the members of subordinate ordnance establishments such as those at Woolwich and Portsmouth. The payment of these officials was not a charge upon the sum allowed for the maintenance of the organisation at the Tower, and

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 107

2 S.P. 28/48 f. 270

since their duties were concerned with provision for the Navy, they have not been taken into consideration. It should also be remembered that the Ordnance Office was only one of a number of departments which were located in the precincts of the Tower. Some of those who worked for the Office could also be carrying out duties connected with the upkeep of the Tower as a whole.

The Ordnance Office could be requested to provide workmen for service outside London. In October 1642 the Committee of Safety instructed the officers of the Ordnance to send "two able Master Workemen to Portsmouth and the Isle of Wight" to make and repair gun carriages there.¹ These men may have been hired in London for the purpose rather than sent from the Tower.

The more important of the non-salaried members of the Ordnance Office establishment were, like some of the salaried artificers, manufacturers and merchants in their own right. They included the gunfounder John Browne, the gunpowder manufacturers Samuel Cordwell and John Berisford, and John Freeman, who provided match. Browne was the King's Gunfounder and Cordwell the former holder of the gunpowder patent. The activities of these major suppliers will be considered at a later stage.²

Amongst those retained by the Ordnance Office but not in receipt of a salary was Edward Byworth, Master Carman to the Office, who was engaged in transporting munitions and materials to and from the Tower. He had been working on behalf of the Office since 1627 at least. He received payments totalling £28 5s 10d from the officers of the Ordnance between November 1642 and December 1643, mostly for the cartage of naval stores.³ In November 1644 he handled ordnance and other munitions required for a siege of Donnington Castle near Newbury. He received a debenture worth £2 in August 1647 for the use of his servants, horses and carts in transporting carriages, wheels

1 W.O. 55/387 p. 19

2 See chapters six and seven

3 Harl. Mss. 429 f. 23
E. 351/2664

and ironwork between the artificers' workshops and the Tower.¹ Byworth did not work solely for the Ordnance Office. A certificate issued in March 1646 by the Committee of Fortifications for the City stated that he was owed £35 for carrying ordnance to various forts around London.²

The Ordnance Office ladlemaker during the Civil Wars was Richard Ward. He is not listed in the quarter books although a ladlemaker had been included in the ordinary establishment in 1641. Other tradesmen belonging to the non-salaried sector of the establishment include Thomas Hall, described in April 1643 as "turner to the Ordnance Office", and William Weekesley, "rat killer to the Ordnance Office", who was responsible for the control of vermin in the storehouses.³ The Ordnance Office painter, Anthony Hancock, was employed in the painting of carriages and waggons. He also played a part in the business of the Company of Painter Stainers. He was quite a regular attender at court meetings and he served as upper warden for the year 1645-6.⁴ These last named workers do not figure very prominently in the book of debentures for land service or the records of payments for work done. Therefore it seems unlikely, unless they did a great deal of business in connection with the Navy, that they were wholly dependent upon the Ordnance Office for their employment.

The total labour force of the Ordnance Office incorporated the servants and other employees of the artificers and tradesmen who belonged to the establishment. The exemption from impressment to which the latter were traditionally entitled was extended to their own employees by special dispensation. In April 1644 a number of artificers and others belonging to the Office had their servants exempted from impressment. The carpenter was given immunity in respect of 11 men, the smith 8 men, the carman 6 men, the wheelwright

1 W.O. 49/82 ff. 64, 92

2 C.S.P.D. 1645-7 p. 381

3 S.P. 28/6 f. 3; 28/39 f. 545; 28/52 f. 470

4 S.P. 28/56 f. 315

G.L. Ms. 5667 vol. 1 passim

5 men and the ladlemaker 2 men.¹ Most probably other men were employed in addition to these, their numbers fluctuating in accordance with the amount of work available. The master craftsmen had their apprentices. The cooper, Alexander Norman, had one apprentice bound to him in December 1642 and presented another to the Company of Coopers on completion of his apprenticeship in November 1646.²

Conversely, impressment was resorted to when additional workmen were needed urgently. The Committee of Both Kingdoms issued a warrant in April 1645 for the impressment of 8 carpenters and 6 smiths for the wheelwright and the smith at the Ordnance Office. Their services were required in making carriages for the New Model Army's train of artillery.³

It may be worth noting that the poll tax return of 1641 records a number of persons following trades connected with the business of providing munitions and military equipment and who were situated in the Minories, yet they are not recorded anywhere as contractors to the Ordnance Office. They include two blacksmiths and a bowyer. Perhaps these craftsmen supplied the Office indirectly as subcontractors or were employed by members of the establishment there. Yet the Minories were not wholly tenanted by people ostensibly connected with the Ordnance Office. There were others there who are described as following such trades as those of trunk maker and baker.⁴

It is difficult to delineate clearly the Ordnance Office organisation. The dividing line between an employee of the Office and an outside contractor who supplied the stores regularly was not a clear cut one. Many of those who were evidently members of the establishment had outside interests too. The major suppliers of ordnance and gunpowder were located outside London altogether. Some individuals fulfilled the roles of employee and of contractor at the

1 W.O. 47/1 pp. 16-17

2 G.L. Ms. 5602 vol. 3 ff. 13, 87

3 W.O. 47/1 p. 228

4 Dale, T.C. Members of the City companies in 1641 pp. 99, 100, 113, 309, 310

same time, whilst others appear to have been members of the Ordnance Office at one time and external suppliers at another.

John Norcott, a gunsmith who contracted for the supply of weapons to the Parliament during the Civil Wars, had been a furbisher at the Tower from 1627 to 1633. Other gunsmiths who supplied the Ordnance Office both before and after 1642 include William Watson and William Greaves, both long serving officers of the Company of Gunmakers and both subsequently appointed to positions at the Tower. In 1646 Watson was described as a proofmaster at the Armoury where he was engaged in proving small arms which had been brought to the stores. He was at the same time warden of the Gunmakers' Company.¹

There seems to be no generally applicable rule for determining whether or not any particular individual or any particular task should warrant membership of the salaried part of the Ordnance Office establishment. No doubt tradition, historical accident, personal relations with the officers of the Ordnance and the closeness or otherwise to the Tower of the job in question all played a part.

Therefore the distinction between the salaried and the non-salaried members of the establishment should not be regarded as very significant. For one thing the ordinary fee cannot be equated with a salary in the modern sense since it was not in practice paid regularly and it formed only one and not necessarily the most important element in the remuneration of an Ordnance Office employee. Furthermore, recurrent payments were made to certain members of the organisation who were not in receipt of an ordinary fee, over and above the sums paid in settlement of contracts. Perhaps the only constant factor was the desire of would-be reformers of the Ordnance Office, both before and after the Civil Wars, to reduce the financial burden of the Office and hence to keep the ordinary

1 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 pp. 68-69
W.O. 55/1646 pp. 344, 366, 379
G.L. Ms. 5220 vol. 2 unfol.

establishment as small as possible by seeking to eliminate 'superfluous' and 'unauthorised' posts.

There is a lack of information about the size of the non-salaried component of the Ordnance Office during the Civil Wars, and likewise concerning the changes of personnel that may have occurred during that time. But there is no reason to suppose that the overall size of the establishment, excluding casual labour and workers belonging to Ordnance Office employees, was markedly different from what it had been before the Civil Wars.

What was more significant was the total number of merchants, manufacturers and craftsmen upon which the Ordnance Office could draw, regardless of whether or not the persons concerned were members of the establishment. As we shall see in the chapters dealing with the procurement of munitions and equipment for the stores, those commercial and industrial resources were considerable and with certain exceptions they were equal to the demands placed upon them by the Parliament. When deficiencies in supply did arise, these were due not merely to insufficient production capacity but also to the financial and administrative shortcomings of the Ordnance Office and the Parliamentary war apparatus in general.

We may suppose that the Ordnance Office establishment at the Tower and the Minories, not counting casual labour, impressed workers, sub-contractors and the servants of retained artificers and tradesmen, amounted to around two hundred. If all persons directly or indirectly connected with the Office in London and elsewhere are taken into account, then the total ran into several hundreds at least.

The amount of work created by the replenishment and expansion of the Ordnance Office land stores from 1644 onwards, together with the growth of the Parliamentary navy, implies an increase in the size of the labour force at the Tower, although there is little direct evidence of this in the Ordnance Office records. Most

probably any such growth that took place was represented firstly by an increase in the number of temporary and impressed workers and of men hired by the Ordnance Office artificers; and secondly by an increase in the number of merchants and tradesmen who did business with the Office. The expansion of this fluid and ill-defined outer ring of the Ordnance Office organisation is much harder to discern and to quantify than are changes in the more formal structure of the 'core' of the Office.

There is no reason to suppose that, leaving aside the senior officers and under clerks who are known to have gone to Oxford, other members of the pre-Civil War establishment or their employees actively supported the King in any significant numbers. Nor indeed is it likely that such support was forthcoming to a very great extent anywhere in the areas controlled by Parliament from those with knowledge and skills relevant to the manufacture and use of munitions. The King's offer of a pardon in February 1643 to any Ordnance Office employees who would join him at Oxford led to few if any changes of allegiance.¹

It is possible that the corporate organisation of trades in London made it easier for Parliament to control the movement of skilled labour and thereby to discourage departures to the King. On 11th March 1643 the House of Commons ordered the wardens of the Company of Armourers to ensure that none of their members went to Oxford or elsewhere. Anyone who attempted to do so was to be detained.²

There are one or two instances of artisans making their way to Oxford from London and the South Eastern counties. A London gunsmith named Holloway went there in 1644, taking with him 14 men.³ It was alleged in 1645 that a number of former employees of the gunfounder John Browne had gone to the King.⁴ Whether or not they were sent by Browne, in view of the large number of workers employed

1 Aylmer, G.E. The King's servants p. 410

2 C.J. 1640-3 p. 999

3 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 p. 69

4 C.S.P.D. 1644-5 p. 619; 1645-7 p. 27

by him at his various establishments it is quite possible that a few of them were acquired by the Royalists. One such person was Hugh Richardson who became a brass founder at Oxford. Also serving the Royalist Ordnance Office were Nicholas Sherman, a former armourer at the Tower, and John Lanyon, the principal gunfounder at Oxford, who may have been the proofmaster of that name who was a member of the Ordnance Office establishment in 1641.¹

There is little outward indication that the main characteristics of the Ordnance Office organisation were altered during the Civil War years. Ostensibly, the Office in 1648 still conformed to the pre Civil War pattern. Nevertheless, the seeds of change had been sown. One immediate consequence of the Civil Wars was to direct attention again towards the question of Ordnance Office reform, with the initiative coming this time from Parliament and the commercial interests associated with it instead of from the Privy Council. The outcome was the partial remodelling of the establishment in the early 1650's.²

A more long term and fundamental change engendered by the Civil Wars was that which stemmed from the formation of a standing army and the growth of the Navy which ultimately wrought a transformation of the Ordnance Office such as it had not experienced since the time of the early Tudors. Although these developments may be said to have begun during the Civil Wars, the organisational consequences for the Ordnance Office did not become apparent until later in the century.

1 Roy, I. The Royalist ordnance papers pt. 1 pp. 27, 28 pt. 2 p. 473 note W.C. 54/15 unfol.

See above p. 34

2 See Chapter five

Chapter Four

The Remuneration of Ordnance Office Employees

The remuneration of members of the Ordnance Office establishment was composed of a number of elements. There were the payments allowed out of the ordinary allowance of £6,000 a year to which the Office had been entitled since the sixteenth century. The recipients were the members of the ordinary establishment whose names appear in the quarter books.

The ordinary fee was payable in quarterly instalments, along with standing allowances for administrative expenses which were allowed to some of the principal officers. There were also standing allowances for travelling payable to the Master Gunner of England and to one or two of the artificers. These should be distinguished from extraordinary travelling allowances which were payable out of the Exchequer. Also allowed out of the ordinary were pensions which had been awarded by special dispensation to dependents of former employees of the Ordnance Office.

In addition to payments upon the ordinary, there was a further category of allowances made out of Exchequer funds. In normal circumstances the greater part of Ordnance Office business was engendered by the Navy and in years of military activity payments out of the Exchequer upon extraordinary estimates exceeded the ordinary by a wide margin. The principal source of ready cash for the Ordnance Office between 1635 and 1644 was the Treasurer of the Navy.¹

The patent fees, to which the principal officers were entitled by virtue of their holding their appointments of the Crown by letters patent, were payable out of the Exchequer and not out of the ordinary allowance. Although these fees are mentioned here for the sake of completeness, it is virtually certain that they were not paid during the Civil War period because of uncertainty over the

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 38
E. 351/2664

status of the appointments made by Parliament and because of the innovations in public finance introduced by Parliament in its attempt to raise money to carry on the War. One result of these changes was that the Exchequer no longer occupied the central position in finance which it had done previously.

Also payable out of the Exchequer were a number of extraordinary allowances which were made on a regular basis. Some were paid for the performance of special duties such as proving or serving as a gunner at the Tower. Others were connected with the supply of the Navy and were consequently charged upon the estimates for the Fleets. Travelling charges were likewise payable out of Exchequer funds and were calculated on the basis of a daily subsistence allowance which was awarded to the various categories of employee. These too were mostly connected with naval business and so were charged upon the Navy estimates.

Lastly, there is a group of miscellaneous payments comprising gratuities, percentage fees such as poundage and ex gratia payments for the performance of some special service. The income from these sources was clearly subject to fluctuation and consequently is the most difficult to calculate. Gratuities were normally paid by merchants and tradesmen who had dealings with the officers of the Ordnance. Bonus payments were made occasionally out of the appropriate fund according to whether the work performed was for the land or sea service.

The various fixed value payments allowed on a regular basis to members of the ordinary establishment are set out in Table two.¹ It is important to note firstly that the sums referred to are entitlements and do not necessarily represent the sums actually paid. Furthermore, fees, allowances and other sources of income which did not have a fixed value and which were not payable at regular intervals have been excluded from the table. This variable element

¹ See p. 64

in the remuneration of Ordnance Office employees, including percentage fees such as poundage, extraordinary travelling charges, gratuities and bonus payments, will be considered separately. Nor has the payment of gunners' fees to those who held such positions at the Tower been taken into consideration. Finally, the table is compiled from data in records covering the 1630's and 1640's. The picture which it gives is therefore a composite one that does not relate exclusively to the Civil Wars.

Some of the ordinary and extraordinary allowances payable to employees of the Ordnance Office will now be considered in more detail. The ordinary fees and allowances payable during the years 1643 to 1648 continued unchanged from the pre Civil War era. Also maintained were two pensions allowed to dependents of former employees. The amounts involved were quite substantial. Lady Sarah Brett, widow of Sir Alexander Brett who had been Surveyor of the Ordnance between 1625 and 1627, had been awarded £200 a year for her two daughters. Ellen Johnson, the widow of Barnard Johnson, "one of his Mats Engeniens", had been granted an allowance of £66 13s 4d a year since 1627.¹ The pensions were allowed by special warrant from the King, for such payments were rarely granted *ex officio*. At least one of the above mentioned officers was killed on active service and had been connected with the influential Villiers family.²

In addition to the stipendiary fees and pensions, a number of other allowances were payable out of the ordinary. The Clerk of the Ordnance was entitled to £37 6s a year for writing materials and other requisites.³ A further £200 a year was shared between those principal officers whose clerks were engaged in transcribing warrants, orders, quarter books, debentures and other records.⁴

There were annual allowances for travelling charges payable to the Master Gunner, carpenter and wheelwright, amounting to £14 10s

1 W.O. 54/16 unfol.

2 Aylmer, G.E. The King's servants p. 165

3 W.O. 54/16 unfol.

4 *ibid.*

Table Two

The Annual Value of Certain Regular Fees and Allowances Payable to
Members of the Ordinary Establishment¹

		£	s	d
Lieutenant General of the Ordnance -	ordinary fee	72	0	0
	patent fee	66	13	4
		<u>138</u>	<u>13</u>	<u>4</u> ²
Surveyor of the Ordnance -	ordinary fee	56	0	0
	clerical allownce	50	0	0
	patent fee	36	10	0
	extraord. allownce	50	0	0
		<u>192</u>	<u>10</u>	<u>0</u>
Clerk of the Ordnance -	ordinary fee	68	5	0
	stationery	37	6	0
	clerical allownce	50	0	0
	patent fee	36	10	0
	extraord. allownce	50	0	0
	<u>242</u>	<u>1</u>	<u>0</u>	
Keeper of the Stores -	ordinary fee	40	0	0
	Keeping Rich Weapons	20	0	0
	clerical allownce	50	0	0
	patent fee	54	15	0
	extraord. allownce	50	0	0
	<u>214</u>	<u>15</u>	<u>0</u>	
Clerk of the Deliveries -	ordinary fee	58	5	0
	clerical allownce	50	0	0
	patent fee	18	15	0
	extraord. allownce	50	0	0
	<u>177</u>	<u>0</u>	<u>0</u>	

1 An explanation of the table is given in the text.

W.O. 54/15 unfol.

S.P. 28/55 ff. 193, 197

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2 Excludes income from poundage

		£	s	d
Master Gunner of England -	ordinary fee	70	0	0
	travel allownce	14	10	0
	patent fee	36	10	0
	proving allownce	12	0	0
		<u>133</u>	<u>0</u>	<u>0</u>
Keeper of the Small Guns -	ordinary fee	50	0	0
	patent fee	60	16	8
		<u>110</u>	<u>16</u>	<u>8</u>
Clerk -	ordinary fee	20	0	0
	extraord. allownce	20	0	0 ¹
		<u>40</u>	<u>0</u>	<u>0</u>
Messenger -	ordinary fee	40	0	0
	extraord. allownce	20	0	0
		<u>60</u>	<u>0</u>	<u>0</u>
Carpenter -	ordinary fee	12	0	0
	travel allownce	8	10	0
	extraord. allownce	12	13	4
		<u>33</u>	<u>3</u>	<u>4</u>
Wheelwright -	ordinary fee	12	0	0
	travel allownce	8	10	0
	extraord. allownce	18	5	0
		<u>38</u>	<u>15</u>	<u>0</u>
Fletcher -	ordinary fee	12	0	0
	extraord. allownce	9	2	6
		<u>21</u>	<u>2</u>	<u>6</u>
Furbisher -	ordinary fee	12	0	0
	extraord. allownce	12	3	4
		<u>24</u>	<u>3</u>	<u>4</u> ²
Labourer -	ordinary fee	16	1	8
	extraord. allownce	5	0	0
		<u>21</u>	<u>1</u>	<u>8</u>

1 The clerk to the Clerk of the Ordnance received £30

2 The remaining artificers likewise received ordinary fees of £12

for the Master Gunner and £8 10s apiece for the two artificers.¹ These amounts remained unchanged from year to year and it is doubtful whether they bore any relationship to expenses actually incurred. In any case they were insignificant compared with the large sums allowed in travelling charges upon the extraordinary. The latter were in most cases associated with travelling on naval business and were therefore charged upon the estimates for the Fleets.

The total value of the fees, allowances and pensions charged upon the ordinary allowance of the Ordnance Office amounted to around £1,600 a year between 1643 and 1648, or just over one quarter of the annual value of the ordinary.

Turning to payments on the extraordinary, it is clear that travelling expenses were a significant item of expenditure, as they had been in earlier years. The expenses were incurred in the course of visits to ships, dockyards, and ordnance establishments at such places as Woolwich, Chatham and Deptford, and also Snodland in Kent where the proving of ordnance took place. The officers and their clerks, with the assistance of the labourers, supervised the loading of stores on board ships and the taking of 'remains' or inventories of the munitions left in the magazines of vessels upon their return from sea duty. These practices dated from the early sixteenth century at least. They were, however, an expensive procedure and did not always achieve the desired end of bringing stores back to the Tower.² Ordnance for the Navy were sometimes proved close to their place of manufacture, in which case certain Ordnance Office artificers might attend along with the labourers in order to assist in the task.

The calculation of travelling expenses was based on a sliding scale of subsistence allowances consisting of £2 a day for

¹ W.O. 54/15 unfol.

² Ashley, R. The organisation and administration of the Tudor Office of Ordnance pp. 96-97
Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 24

the Surveyor, £1 5s for the other senior officers, 10s for the under clerks and 3s 4d for the labourers. This was the scale of allowances payable during the 1630ths and it continued unchanged during the Civil Wars.¹ Before and during the Civil Wars individual officers sometimes received large amounts in travelling allowances. Thus the Surveyor received an average of £117 a year from this source in the 1630ths.²

During the Civil Wars extraordinary travelling charges were settled either in cash by the officers of the Ordnance out of funds received from the Treasurer of the Navy, or upon presentation of a debenture which was payable out of the estimates for the Fleets. The issue of such debentures is first recorded in the Civil War period towards the end of 1643. However, between October 1642 and November 1643, a total of £651 18s 11½d was paid in settlement of travelling charges out of the money received from the Treasurer of the Navy.

The amounts paid to different employees varied widely. The senior officers received from £50 to £150 apiece, certain under clerks and the messenger received from £20 to £40 each and the labourers received sums of up to £5 each. During the period July 1645 to January 1647 the amount paid in travelling allowances out of Navy cash amounted to only £249 6s, although such allowances were also settled by debenture during that time.³

There were normally regular phases of activity connected with the Navy, involving the fitting out and the return each year of the ships of the Summer Fleet and the Winter Guard. It appears that during 1646 in particular Ordnance Office employees were absent from the Tower on naval business for considerable periods. Some debentures state that they relate to travelling charges incurred over a six month period, and the sums involved could be quite considerable.

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 88-102

S.P. 28/48 f. 303; 28/49 ff. 429, 437, 449, 461

2 Aylmer op. cit. vol. 1 p. 88

3 E. 351/2664

Thus in February and April 1647 debentures were issued to George Payler, the Surveyor, for £66, and to William Billers, Clerk of the Deliveries, for £96 10s.¹ During the year 1647 as a whole, Billers received a total of £138 6s in travelling expenses out of the Navy estimates, whilst the Storekeeper, John Faulkener, received £58. Other officers and under clerks were allowed quite substantial amounts.²

Since payments for travelling expenses were based on a generous daily subsistence allowance, there is little doubt that they represented a source of profit to the recipients after taking into account the expenses which they had actually incurred. This view is confirmed by the fact that those who were charged with investigating the Ordnance Office from time to time regarded the sums paid out in extraordinary travelling charges, which could amount to more than £1,000 in a year, as excessive and constituting an abuse. It was stated in 1649 that expenditure under this heading amounted to £1,200 a year, or nearly as much as the annual value of the quarter book payments.³ The difficulty lies in determining what proportion of the allowances should be regarded as profit. The principal officers and their clerks benefited most of all from these payments.

Travelling charges in connection with land service were comparatively small and involved chiefly visits to the gunfounders' establishments and to outlying garrisons. The messenger, Nicholas Cox, who naturally received considerable sums by way of travelling allowances, received £8 0s 8d from the Army treasurers on 29th August 1645 for bringing ammunition from Windsor and elsewhere for the use of the Army.⁴ In the summer of 1647 an inventory was made of the ordnance and other munitions in the fortified places of England and Wales. Cox was one of those who took part in the survey, for which he received by order of the Committee of the Navy a subsistence

1 S.P. 28/45 ff. 110, 203

2 S.P. 28/45 ff. 108, 110, 193-207; 28/49 ff. 429, 437, 449, 461

3 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 327

4 S.P. 28/31 f. 477

allowance of 10s a day together with other expenses such as the hire of boats and guides.¹

Apart from travelling charges, there were other allowances payable upon the extraordinary. The proofmaster at the Tower received a special allowance for 'field duties' at the Artillery Ground in Smithfield when he was engaged in proving ordnance there. This was also paid out of the estimates for the Fleets, either upon debenture or in ready cash out of money advanced by the Treasurer of the Navy. In May 1648 the proofmaster received £54 in this connection, probably in settlement of his arrears.² When required to travel to Snodland in Kent to take part in proving he was allowed travelling expenses along with other Ordnance Office employees.³

The Ordnance Office furbisher, George Fisher, who was also Deputy Keeper of the Small Guns, received £40 from the Army treasurers in May 1647 for cleaning and repairing arms.⁴ Again this probably represented a settlement of arrears due to him for his duties at the Armoury, for it was rather a large sum to pay simply as a bonus to someone of his status.

There was an extraordinary allowance payable annually to the senior officers, under clerks, messenger and labourers on the ordinary establishment, and to certain other employees as well, out of the estimates for the Fleets. This amounted to £50 each to four principal officers, £30 to the clerk to the Clerk of the Ordnance and £20 apiece to the remaining clerks, £20 to the messenger and £5 to each of the labourers. During the Civil Wars this allowance was paid in part out of cash received from the Navy Treasurer and in part upon debentures charged upon the estimates for the Summer Fleet and the Winter Guard. In 1645 the allowance was paid by the officers out of cash in hand, but sometimes money was not readily available

1 S.P. 28/48 f. 285

2 S.P. 28/40 f. 286; 28/54 f. 23.

E. 351/2664

3 S.P. 28/49 f. 299

4 op. cit. f. 515

for the purpose, so that payment was delayed or not made in full.¹ In August 1648 the officers and clerks petitioned for payment of their extraordinary allowance. At first they received one half only, and they petitioned again in the following October. The messenger and the labourers, however, were at once paid in full, an indication of their greater dependence on the regular payment of such allowances.²

The extraordinary allowance was also paid to certain persons who were not members of the ordinary establishment, such as William Weekesley, the Ordnance Office rat killer. The total amount paid out in extraordinary allowances by the officers of the Ordnance during the period July 1645 to January 1647 amounts to £455 16s.³ Before the Civil Wars extraordinary payments were made out of the Exchequer to Ordnance Office artificers and others, apart from any fees which they might receive for serving as a gunner at the Tower. Certain gunsmiths and major suppliers such as the gunfounder and the Purveyor of Timber, also benefited.⁴ It is not clear whether such payments were made during the Civil Wars, but if so, they were almost certainly in arrears.

In the case of the gunfounder, John Browne, he was entitled to fees as King's Gunfounder of £36 10s a year for casting brass ordnance, £9 2s 6d for casting iron guns, a total of £45 12s 6d a year. He was also entitled to one annuity £27 7s 6d a year and another of £200 a year which had been made over to him by a Captain Richard Steele who died in 1645. Neither the fees nor the annuities were paid during the period 1640 to 1649, and in the latter year a statement of Browne's arrears in respect of these gives a figure of £1,843 10s.⁵

Turning to remuneration from fees other than the ordinary and patent fees, the most significant source of revenue was that

1 S.P. 28/55 ff. 193, 197
E. 351/2664

2 S.P. 28/55 ff. 193, 197; 28/56 ff. 276, 277

3 E. 351/2664

4 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 107

5 K.A.O. TR 1295/52

derived from the percentage fee known as poundage. This was a method of payment much favoured for the remuneration of paymasters and receivers. The Treasurer of the Navy, for example, took poundage.¹ The Lieutenant was normally the only Ordnance Office official to take poundage, since he fulfilled the role of Treasurer, although the other officers may have done so when they handled funds. For a period of almost three and half years during the Civil Wars, the office of Lieutenant was in abeyance, during which time the principal officers handled large sums on their own account. Between November 1642 and February 1644, and between July 1645 and January 1647, they paid out some £17,000, nearly all of it in connection with provision for the Navy.² During the latter period Sir Walter Erle himself also disbursed a considerable sum, although technically he was not holding office.³

The percentage allowed in poundage was one fortieth, or 6d in the pound. It seems unlikely that poundage was taken only on the ordinary expenditure of £6,000, for it would mean that the income so obtained would have been much less than if poundage were taken on the extraordinary expenditure, or the ordinary and the extraordinary combined, net of fees and allowances.

According to the commissioners appointed in 1649 to regulate the officers of the Navy and Customs, the Lieutenant of the Ordnance on the 'old establishment' of the Office was entitled to £350 a year from poundage. At 6d in the pound this assumes an annual expenditure of £14,000. This figure must be regarded as hypothetical, since in practice Ordnance Office expenditure could vary considerably from year to year.

Other obstacles to the calculation of income from poundage are firstly that the ordinary was frequently in arrears or not paid in full; and secondly that there were periods when poundage was not

1 Beveridge, W.E. Prices and wages in England vol. 1 p. 620
 2 E. 351/2664
 3 See above p. 43

taken at all. Sir John Heydon as Lieutenant of the Ordnance petitioned in 1637 and again in 1640 for the payment of the poundage to which he was entitled.¹ Moreover, the increase in Ordnance Office expenditure during the Civil Wars would not necessarily have led to a greater income from poundage since a large proportion of the expenditure on land service between 1645 and 1648 was paid directly to contractors by the treasurers of the Army.

It is not known what benefit Sir Walter Erle derived from poundage during his periods of office. It is unlikely to have been very great. In April 1652, when it was decided to abolish the office of Lieutenant, it was stated that Thomas Harrison, who had held the post since 1650, was owed poundage of £3,065 14s 6d on an expenditure of £122,629 8s 6d.²

The payment of gratuities by contractors to the principal officers of the Ordnance was an old established practice. The Clerk of the Ordnance had at one time received £50 a year from the licensed gunpowder manufacturer, although payment was discontinued after Samuel Cordwell became holder of the gunpowder patent in 1636.³ Some of the officers received gratuities from suppliers on a percentage basis. The Clerk of the Ordnance stated in 1640 that he received up to $\frac{3}{4}$ d in the pound on stores received from artificers, whilst similar gratuities were paid to the Keeper of the Stores and the Clerk of the Deliveries.⁴

The income actually derived from these gratuities is difficult to estimate. It is not known whether such payments continued during the Civil Wars, but generally speaking circumstances were less favourable to the payment of fees and gratuities during that time. A series of attempts were made during the Long Parliament to curtail

1 Tomlinson, E.M. History of the Minorities p. 142

2 C.J. 1651-9 p. 126

3 V.C.H. Surrey vol. 2 p. 320

4 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 94, 102, 104

such payments, whilst as far as the Ordnance Office was concerned the control exercised over its operations by Parliament and its committees probably left less scope for this kind of payment.¹ Furthermore, much of the supplies for land service procured between 1645 and 1648, although delivered to the Tower, were contracted for by the Committee of the Army.

One result of the payment of fees and gratuities by Ordnance Office contractors was that prices were correspondingly higher than if the stores were obtained from unofficial suppliers or if they were delivered directly to an army, circumventing the Office altogether.² This was one factor which in the past had discouraged the exercise of a monopoly by the Ordnance Office over the supply of munitions, especially in wartime, though it was not the only cause. As we shall see, there is evidence that the prices of some kinds of munitions delivered to the stores declined somewhat in the later years of the Civil Wars when a greater proportion than hitherto of munitions, clothing and equipment for land service was passing through the Ordnance Office.³

Nevertheless, there were a number of discretionary payments or bonuses paid to Ordnance Office employees in respect of services rendered on behalf of the Navy and the land forces during the Civil Wars. The money was provided either out of the Navy estimates or by the Army treasurers. In July 1646 the latter paid £20 to each under clerk and £5 to each labourer on the ordinary establishment in recognition of their services in handling provisions for the New Model Army.⁴ Sir Walter Erle's clerks, George Hockenhull and Michael Dewey, received a total of £93 4s 9d in August 1647 for handling Ordnance Office funds and carrying out work on behalf of the Army since March 1645 when they had been removed from the ordinary

1 Aylmer, G.E. The state's servants pp. 115, 120

2 Stern, W.M. J. Arms and Armour Soc. vol. 1 no.5 Mar. 1954 p. 60

3 See chapter eight

4 S.P. 28/38 ff. 432, 442, 455

establishment along with their master.¹

Then in February 1648 the Army Committee awarded £66 13s 4d each to the senior officers George Payler, John Faulkener, William Billers and John White for their attention to the Committee's business over the years.²

There are great difficulties in assessing the total remuneration of Ordnance Office employees, partly because of the problem of assessing income from fees and gratuities and other sources that may have gone unrecorded; and because of the necessity of making allowance for arrears in the payment of the ordinary and of the extraordinary fees and allowances.

Estimates of the remuneration of certain members of the ordinary establishment are given in Table three.³ It is important to note that the figures given represent an amalgam of ordinary fees and allowances and of extraordinary payments which are known to have been made in the year 1647. That particular year was chosen because records of extraordinary payments are comparatively full in respect of that year. However, it cannot be inferred that the figures represent the actual income of the officials concerned in 1647, for the quarter book payments were almost certainly in arrears then as they had been in the past. Such payments as may have been made on the ordinary during that year would most probably have been a contribution towards the reduction of those arrears, rather than the current year's salary.

Nor can we safely assume that 1647 was a 'typical' year with regard to the remuneration of Ordnance Office employees during the Civil Wars. What is suggested by these calculations is that it was the extraordinary payments which in practice went furthest towards providing something like a regular income. All the known regular fees and allowances have been taken into account, with the

1 S.P. 28/48 ff. 268, 270

2 S.P. 28/51 f. 68

3 See p. 76

exception of the patent fees. No attempt has been made to estimate income from gratuities. The figures given in the table may be compared with those compiled by Professor Aylmer for the 1620's and 1630's, but it should be borne in mind that the two estimates have not been calculated upon exactly the same basis.¹

The estimates of artificers' remuneration for the year 1647 do not include the amounts paid to them in respect of work carried out under contracts made either with the officers of the Ordnance or the Committee of the Army. There is no real guide to the amount of profit made on these contracts. Certain merchants who contracted with the Committee for Irish Affairs in November 1646 supplied various kinds of stores at 1d in the shilling profit, which may or may not be a meaningful guide.² The Ordnance Office artificers also carried out work for customers other than the Office itself, such as the City Militia Committee. In December 1642 the fletcher, David Powell, was reprimanded for disposing of musket arrows which he had made.³ All Ordnance Office artificers and other manufacturers who supplied the Office were faced with a latent conflict of interest between the objectives of the state which tended towards the regulation of the making and distribution of munitions and the restriction of prices on the one hand, and on the other the personal advantage accruing to the manufacturer through disposing of at least some of his output on the open market.

The ability to earn money from contracts may account for the fact that an artificer at the Ordnance Office received a smaller ordinary fee than a labourer. Those investigating the Office both before and after the Civil Wars felt that the retention of the salaried artificers was unjustified and that their work could be done as well by outside contractors. There is, however, a possibility

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 88-105

Aylmer The King's servants p. 208

2 CLJ. 1644-6 p. 698

3 Cal. Proc. Comm. for Advance of Money vol. 1 p. 7

Table Three

Notional Incomes of Certain Ordnance Office Employees in the Year 1647¹

Surveyor of the Ordnance	£222
Clerk of the Ordnance	£212
Keeper of the Stores	£218
Clerk of the Deliveries	£296
Clerk	£40 - £60
Messenger	£111
Artificer	£20 - £40
Labourer	£24 approx.

¹ An explanation of the table is given in the text.

W.O. 54/17 unfol.

S.P. 28/45 - 28/49 passim

that the labourers also undertook work outside the Ordnance Office in addition to their normal duties. It appears that before the Civil Wars at least they were not in regular attendance at the Tower, whilst in 1649 a number of them were dismissed for alleged negligence and absenteeism.¹

There are in addition certain intangible factors which should be taken into account when attempting to assess the remuneration of Ordnance Office employees. The value of an office cannot be calculated from the scales of fees and allowances alone. The Lieutenant of the Ordnance and those of the senior officers who handled Ordnance Office funds had the opportunity of compensating themselves for arrears of salary and other allowances not only by taking poundage but also by using unexpended portions of the money for their own purposes. It was probably this opportunity for manipulating funds which encouraged the Lieutenant to conceal details of his financial transactions from the other officers, a practice remarked upon by the Commission of 1619.²

Allied to this use of Ordnance Office money, the considerable sums awarded to the senior officers, under clerks and the messenger by way of extraordinary travelling allowances may be regarded in part as compensation for the delayed payment of their ordinary fees and allowances. These travelling allowances provided a source of cash even though they were sometimes paid in instalments. There may also have been a similar element of compensation for arrears of the ordinary in the discretionary or bonus payments that were on occasions made to members of the ordinary establishment.

Another source of income provided expressly by the Civil Wars, for those who could lay their hands on it, was that of the sequestered property of actual or suspected Royalists. Sir Walter Erle, as a member of Parliament, was best placed to take advantage

1 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 325

Add. Mss. 36,777 f. 17

2 op. cit. f. 21

of this. He received £1,500 from delinquents' estates.¹ The ability of at least some of the principal officers of the Ordnance to gain access to ready cash is illustrated by the fact that when money was needed for the defence of Newcastle during the winter of 1647-8, among the contributors, who included members of Parliament, was the Surveyor of the Ordnance, George Payler. He provided £1,000 at the request of the Army Committee. The money was subsequently repaid by the Army treasurers.²

Certain of the senior officers and artificers were provided with houses at the Tower or in the Minories. This perquisite should be taken into account when attempting to assess the value of their offices, although during the Civil War period the officers did not have the benefit of a house for the whole of the time that they held office. The smith, Thomas Hodgskins, had a house at the Mint which was maintained by the Ordnance Office. He is referred to in a contract of September 1645 as being "within y^e Tower".³

The more lowly employees of the Ordnance Office were less well placed to compensate themselves for the failure to pay their fees and allowances regularly, although it appears that they were given preferential treatment in the payment of the extraordinary allowances. The labourers received occasional bonus payments from the treasurers of the Army during the later years of the Civil Wars, in addition^{to} their extraordinary allowance out of the Navy estimates, but these could not be relied upon.⁴ A similar situation existed with regard to the outside contractors who supplied the Ordnance Office. It was the small traders and craftsmen, more than the large scale entrepreneurs, who were most in need of regular cash payments and who could least afford to accept deferred payment. Both employee and contractor alike suffered from the inability of the Ordnance Office to honour its commitments properly.

1 Brunton, D. and Pennington, D.H. Members of the Long Parl. p. 171

2 S.P. 28/52 f. 25

3 W.O. 47/1 p. 152

4 L.M. 46-78/709 f. 19

4 S.P. 28/38 f. 435

The question of arrears is inseparable from any consideration of the remuneration of government officials and military personnel during the seventeenth century. The payment of salaries, fees and allowances was frequently months or years in arrears. Another practice, resorted to during the Civil Wars, was to 'respite' or defer payment of the full amount owing and to make a partial settlement only, with a promise to pay the remainder at a later date. Official scales of pay are of somewhat academic interest at this time, both on account of the accumulation of arrears and because the non-salary element in an official's remuneration could be of greater significance. Employees of the Ordnance Office, together with those of other departments of government, did not enjoy regular pay in the modern sense. It was beyond the capacity of seventeenth century governments to provide it.

The history of arrears of the ordinary allowance of the Ordnance Office is almost as long as that of the allowance itself. There is evidence that the allowance was not being paid in the later 1630's, whereas payment of the ordinary for the period 1632 to 1635 was not complete until 1640. In February 1636 the officers of the Ordnance stated that between £17,000 and £18,000 was owing upon the ordinary. This sum presumably includes debts to contractors. Settlement of the arrears and regular payment of the ordinary was requested.¹

It has been estimated that payment of the ordinary and patent fees due to the senior officers was about one and a half years in arrears in 1640, or, in monetary terms there were arrears of about £1,227 due in fees and allowances to the principal officers.² In the final quarter of 1641 the Clerk of the Ordnance, Edward Sherborne, received a debenture upon the ordinary for £120, representing £20

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 40-41
Harl. Mss. 429 f. 156

2 Aylmer op. cit. vol. 1 pp. 87, 95
Aylmer The King's servants p. 161

for each of the six years that he had held the post.¹ He died in December 1641 and was succeeded in the office by his son.

There is no sign of any real improvement in the situation during the Civil Wars. Payment of the ordinary fees and allowances continued only in a makeshift fashion, and although it may not be possible to construct more than a partial picture of the situation from the Commonwealth Exchequer Papers and the declared accounts of the Ordnance Office for the Civil Wars, it is clear that the quarter book payments continued in arrears and that payments were irregular and incomplete. This much is confirmed by statements concerning the arrears of Ordnance Office employees which were made during the Commonwealth era:^{2/18} During the earlier part of the Civil Wars at least, payments upon the ordinary were made largely out of money advanced by the Army Treasurer, Sir Gilbert Gerard, upon the instructions of Parliament or of one of its committees.

*See new
vol. 10*

By order of the Commons on 20th December 1642 some Ordnance Office employees received their salaries in this way. The Surveyor, the Storekeeper and the Clerk of the Ordnance were awarded £300 in partial payment of their entitlements, the money being paid in instalments during 1643. Greater consideration was shown towards the messenger and the labourers, who in March 1643 were allowed a year's salary, although even then it was not paid in full during that year.³

In fact various small sums were paid to the messenger and the labourers during the course of 1643. Then by an order of the Committee of Safety on 28th October 1643, £150 was paid by the officers of the Ordnance to Stephen Darnelly, the Clerk of the Deliveries, a sum equivalent to two and a half years' ordinary fees. In February 1644 sums ranging from £5 to £17 were paid to certain under clerks and former clerks whose names had ceased to appear in the quarter books.⁴ In all, the amounts paid out of the money imprest by the Army

1 W.O. 54/15 unfol.

2 See below p. 82

3 S.P. 28/262 f. 111; 28/263 ff. 49, 100

4 E. 351/2664

Treasurer, by way of remuneration, between January 1643 and February 1644 amounts to about £1,000, compared with the annual value of the quarter book payments of about £1,600. This sum of £1,000 excludes extraordinary allowances and travelling charges.

There is little further evidence concerning the payment of ordinary fees and allowances during the Civil Wars, other than statements that certain individuals were not receiving payment. The officers of the Ordnance stated in a letter of July 1645 to the Committee of the Revenue that William Franklin had performed the duties of proofmaster for about four years since the death of the former proofmaster who had held the post "by warrant". Yet he, Franklin, "hath had noe entertain^t or pay in any kinde". This was not strictly true, for on 27th April 1643 he received £10 from the officers for field duties and for proving ordnance for the Fleet.¹

During the Civil Wars some members of the ordinary establishment carried out the duties of an office for a considerable time before their appointments were confirmed or otherwise. Yet this fact did not preclude their receiving payment in the meantime, for their names were duly entered in the quarter books. In the sixteenth century the patenting of an office had often served to regularize a situation that already existed.²

The appointments of the three senior officers, George Payler, John White and John Faulkener were not finally ratified by Parliament until July 1648.³ When an important post was involved it might be necessary to get someone to carry on the job without waiting to obtain approval through official channels. Apparently it was not until July 1645 that the question of appointing a proofmaster was considered officially by the Revenue Committee.⁴

The Master Gunner of England stated in a petition dated 1st

1 W.O. 47/1 p. 337
E. 351/2664

2 Ashley, R. The organisation and administration of the Tudor Office of Ordnance p. 57

3 C.J. 1646-8 p. 642

4 W.O. 47/1 p. 337.

December 1646 that he had received no ordinary fees since the beginning of the present Parliament. There is certainly no record of any such payments to him during the First Civil War, although on the other hand he was serving as Sir William Waller's General of the Artillery for part of that time. In response to Wemyss's petition, the Navy Committee declared that they were unable to pay his salary and ordered Sir Walter Erle to pay him £50 on account.¹

A petition of all members of the ordinary establishment was brought before the Commons on 20th July 1648, whereupon it was referred to the Navy Committee with instructions to make provision for their arrears and future payment. It is not clear whether this petition refers to nonpayment of the ordinary fees and allowances or of the annual extraordinary allowance paid by the Committee of the Navy out of the estimates for the Fleets.²

For further information about the amounts which were paid, or not paid, in fees and allowances during the Civil War years we have to look to the period after 1648. In August 1654 it was stated that the arrears due to the Surveyor of the Ordnance, the Storekeeper, the Clerk of the Ordnance and the Clerk of the Deliveries amounted to £4,026 12s 9½d and extended over a period of 11 years.³ The total value of the ordinary fees and allowances to which these officers would have been entitled over an eleven year period amounts to about £5,500. If the patent fees are added to this sum the total is around £6,300. It appears therefore that partial payments by way of fees and allowances were made in the later years of the Civil Wars as they had been in 1643.

In the case of one officer in particular, the Clerk of the Ordnance, John White, his arrears and those of his clerks were said to amount to £1,627 14s 9½d in 1653.⁴ This sum is equivalent to just under eight years' payments of the ordinary fees and allowances due

1 C.S.P.D. 1645-7 p. 492

2 C.J. 1646-8 p. 642

3 Hammond, W.N. The administration of the English navy p. 282

4 *ibid.*

to them, or between six and seven years' if the Clerk's patent fee is included. The Ordnance Office was burdened with large debts throughout the Commonwealth and Protectorate years and therefore it seems unlikely that the arrears of ordinary fees and allowances incurred during the Civil Wars were ever paid in full.

Finally, in April 1652 it was stated that the Lieutenant of the Ordnance, Thomas Harrison, who had held office since 1650, was owed £366 in salary and other allowances, not counting the large sums due to him by way of poundage.¹ In the same year a number of artificers were removed from the ordinary establishment and were awarded payment for their past three and a half years' service.² So far as can be judged from the records, the remuneration of members of the ordinary establishment during the Civil Wars was composed largely of irregular contributions towards the arrears of their ordinary fees, the extraordinary allowances and travelling charges paid out of Navy funds and occasional discretionary payments by the treasurers of the Army.

After taking into account arrears and partial payment of fees and allowances, it is reasonable to assume that Ordnance Office employees derived from their various sources of income a livelihood that was quite satisfactory by the standards of the time. This statement takes no account of any income which may have been earned from activities outside the Tower. The artificers and craftsmen who worked for the Ordnance Office were the least dependent on their official earnings to sustain themselves since they had outside interests.

Posts within the Ordnance Office had their attractions even during the Civil War period. There does not seem to have been any shortage of applicants for offices when they fell vacant. The holding of public appointments in the Ordnance Office and elsewhere in the

1 C.J. 1651-9 p. 126

2 W.O. 54/18 unfol.

apparatus of government during the seventeenth century did not necessarily mean great wealth, except for a small minority, but it did offer advantages in the shape of a reasonable income and relative security of tenure which together with other fringe benefits were as real then as they are today.

Chapter Five

Ordnance Office Reform After the Civil Wars

Although a consideration of the proposals for reform which were advanced and to some extent put into practice during the Commonwealth period lies strictly speaking outside the scope of this work, some attention will nevertheless be paid to them. The proposals stemmed from an inquiry that was held immediately after the Civil Wars and was therefore concerned with conditions at the Ordnance Office as they were during that conflict. Secondly, the reforms are of interest in that they echo the spirit of other investigations held in the earlier seventeenth century.

An ordinance of 16th January 1649 dismissed the Navy Commissioners and established the Committee of Merchants for Regulating the Navy and Customs, also known as the Committee of Merchants and the Committee of Regulators. The commissioners included a number of City aldermen and merchants, some of whom had supplied munitions and clothing to the Parliamentary armies and to the Ordnance Office during the Civil Wars.¹ The Committee devoted much of its time to a consideration of the reorganisation of the Offices of the Ordnance and of the Armoury. In this respect it was akin to the commissions which had from time to time investigated the Ordnance Office before the Civil Wars. This time, the commission was made up of a different type of person and its conclusions were rather more drastic.

The commissioners were charged with examining records and determining the suitability for continued employment of officers employed under the jurisdiction of the Navy, Customs and other supply departments at or near the Tower. They were also authorised to review salaries and to dispense with posts which they considered superfluous. Officers could be dismissed for undesirable political associations or

1 C.J. 1648-51 p. 401

Hammond, W.N. The administration of the English navy p. 22

See Chapter six

for general misconduct. Senior officers such as Sir Walter Erle and James Wemyss, who fell into the former category, had already been removed and were now formally disbarred. The terms of reference of the commissioners were therefore more far reaching than those of previous investigators.

Once again an inquiry brought to light dissension amongst the officers themselves. The Clerk of the Ordnance, John White, laid complaints against a number of his fellow officers and subordinates, including the Surveyor, George Payler. As a result, the messenger, Nicholas Cox, and a number of labourers were dismissed, although Payler survived.

The commissioners then proposed a drastic reduction in the size of the ordinary establishment at the Tower. Those officers who remained were to be paid an adequate salary instead of an income composed of various fees, allowances and gratuities. The model for the reformed establishment provided for a Clerk of the Ordnance, a Keeper of the Stores, a Master Gunner, a Deputy Storekeeper at Portsmouth, two furbishers and twenty labourers. The Master Gunner was to take over the duties of the proofmaster, whose office was to be abolished. Ordinary allowances for such purposes as stationery and travel were to be stopped. The senior officers were to pay for any under clerks which they might employ, and any materials that they might need, out of their salaries.

The Navy Committee was not entirely satisfied with the commissioners' proposals, and the office of Surveyor was restored to the establishment. The powers of the Committee of Merchants were gradually undermined and it proved unable to take effective action in support of its recommendations. Disagreements between the two committees continued until April 1650, when the business was brought before the Rump Parliament. On 23rd April the commissioners' powers

in relation to the officers of the Ordnance and Armoury were revoked.¹ An indication of the extent to which the proposed changes in the Ordnance Office establishment were subsequently implemented can be obtained from a study of the quarter books for the early 1650's.

On the evidence of the quarter books the size of the ordinary establishment and the scale of fees and allowances continued little changed during the period January 1649 to December 1652 from what they had been during the Civil Wars. Nevertheless, during 1652 changes were made which were in line with the reforms proposed by the commissioners. The office of Lieutenant of the Ordnance was abolished in April and the number of artificers was reduced to two, both furbishers. In the last quarter of the year the other artificers who had been members of the ordinary establishment were paid for their last three and a half years' service.²

The reformed establishment introduced at the beginning of 1653 is set out in Table four.³ Comparing the figures with those in Table two, it will be seen that the sums now awarded in salaries were in most cases more or less the same or a little lower than the gross values of the ordinary fees and allowances, the patent fees and the regular extraordinary allowances which had been payable formerly. The exceptions were the under clerks, who were not only retained on the establishment but also appear to have received rather more than before. However, members of the new establishment may still have received certain other payments in addition to their salaries.

If the prospect of income from extraordinary travelling charges and from gratuities was indeed now completely lost, then this would have been all the more serious if the new salaries were not paid regularly and in full. Without such payment the effect of the reforms would have been nullified, for we have already suggested that the considerable amounts paid in the form of extraordinary travelling

1 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 pp. 319-341

C.J. 1648-51 p. 401

Hammond, W.N. The administration of the English navy p. 24

2 W.O. 54/18 unfol.

3 See p. 88

Table Four

The Salaried Establishment of the Ordnance Office in 1653¹

	Annual salary		
	£	s	d
Surveyor of the Ordnance	190	0	1 ²
Clerk of the Ordnance	215	7	3
Keeper of the Stores	216	13	3
Clerk of the Deliveries	155	19	10
Master Gunner of England	121	0	0
Keeper of the Small Guns	66	5	10
Clerk	60	0	0
Clerk	48	0	0
5 clerks @	40	0	0
2 furbishers @	12	0	0
Messenger	60	0	0
20 labourers @	21	0	0

1 W.O. 54/18 unfol.

2 This was the amount allowed to a deputy who took the Surveyor's place whilst he was serving as a Navy Commissioner. The Surveyor himself was entitled to £250 a year (see Hammond, W.N. The administration of the English navy p. 489 note)

allowances and discretionary payments may to some extent have been substitutes for the regular payment of standing fees and allowances. However, at about this time the Admiralty Commissioners sought to invert this argument by suggesting that since the principal officers had received extraordinary payments from the Army and Navy Committees during the Civil Wars they should now have only one half of the arrears of their ordinary fees and allowances which were due to them.¹

The proposals of the Committee of Merchants of 1649 were carried out to the extent that some members of the 'old establishment' were removed even though the drastic changes recommended were not accepted in full. Nearly all of the senior officers retained their posts and the only major reduction in numbers occurred in respect of the artificers. There was also a step forward in that an attempt was made to reform the method of paying Ordnance Office employees, a step that was inseparable from any thoroughgoing overhaul of the Office. It was the first time that this particular problem had been tackled.

Yet the success of Ordnance Office reform depended ultimately on improvements in government administration and finance generally. Because the chronic weaknesses of seventeenth century governments in these spheres persisted and because of the arrears of pay and other debts inherited from the old Ordnance Office, it was impossible to make a clean break with the past and start the Office on new lines in 1653. The debts of the Office in the form of arrears of fees and allowances and sums due to contractors declined from their high level of £143,862 in February 1651, but they remained at between £40,000 and £60,000 down to the end of the decade.²

It may be that the new scales of pay which accompanied the reformed establishment represented more of a model for change than a veritable new departure in the years before the Restoration. The changes coincided with a reform of the administration of the Navy

1 Hammond, W.N. The administration of the English navy pp. 282-283

See above p. 77

2 Hammond *op. cit.* p. 283

which was effected in December 1652, when new Admiralty and Navy Commissioners were appointed.¹

Another strand running through suggestions for the reform of the Ordnance Office during the earlier seventeenth century was the feeling that the Office did not have the capacity to provide munitions on the scale required by land and sea forces in the event of military activity on a significant scale. In practice, the Ordnance Office undertook only a part of the burden since in case of war or upon the formation of an expeditionary force merchants and manufacturers were called upon to supply directly a great deal of what was needed, especially for the land forces. Nevertheless, there were still doubts about the ability of the Ordnance Office to provide satisfactorily those items for which it was primarily responsible. These included ordnance and their associated equipment, round shot and explosive devices.

During the inquiries into the running of the Ordnance Office in the early 1630's, it was suggested that the business of providing for the Navy should be hived off and made the responsibility of a separate office. This proposal was again put forward during the Commonwealth period, by which time the greatly increased scale of provision necessary for the land forces as a result of the formation of a standing army and the continued growth of the Navy made separate provision for each service appear a satisfactory solution to some observers.²

The Navy Commissioners rejected a suggestion made late in 1650 that they should have responsibility for the supervision of the Ordnance Office, but in April 1651 it was formally proposed that the Office be relieved of the responsibility for Navy munitions. Complaints about the shortage of ordnance and gunners' stores for the Fleet were given added emphasis by the First Dutch War of 1652-4. Then in April

1 Aylmer, G.E. The state's servants p. 40

2 op. cit. p. 39

Aylmer E.H.R. vol. 72 1957 pp. 245, 246

1652 Parliament considered placing the naval side of the Office under the Navy Commissioners, but the only action taken was to abolish the post of Lieutenant of the Ordnance. A year later the Admiralty Commissioners were instructed to consider ways of improving the running of the Ordnance Office, but again nothing definite emerged. The Office was subordinate to an Ordnance Committee of the Council of State from 1650 to 1653. Shortly afterwards the Admiralty Commissioners were authorised to contract for ordnance stores for both land and sea service and in January 1655 they were also given the power to issue warrants for the payment of members of the salaried establishment of the Office. These acts together with the decline of military activity on land meant that once again the Ordnance Office was associated predominantly with the supply of the Navy. The Commissioners' control over the Office was formalised in December 1655 and this arrangement continued until the Restoration. The officers of the Ordnance had themselves been opposed to changes in the function and organisation of the Office.¹

The Surveyor, George Payler, who in 1652 became the most senior official at the Ordnance Office, was appointed a Navy Commissioner with a salary of £250 a year. He had the task of acting as a liaison between the Tower and the Navy Office, but the arrangement was not a success and difficulties in the relationship between the two organisations persisted. Payler continued in this capacity until 1660 and in the meantime his place at the Ordnance Office was taken by a deputy.²

At the Restoration there was a more or less complete reinstatement of the pre Civil War establishment of the Ordnance Office. The offices of Master and Lieutenant of the Ordnance and of Keeper of the Rich Weapons were restored, along with those artificers'

¹ C.J. 1651-9 pp. 125, 126

Hammond, W.N. The administration of the English navy pp. 271-273

² Johns, A.W. Mariner's Mirror vol. 14 1928 p. 52

Tomlinson, H.C. E.H.R. vol. 90 Jan. 1975 p. 21

Hammond op. cit. p. 489 note

places which had been abolished in 1652. In some cases the same individuals who had served at the Tower during the Civil Wars were either confirmed in their posts or restored to their old positions.

Amongst those confirmed in office or restored were the furbishers Robert Steadman and George Fisher, the bowyer John Jefferson, the carpenter John Pitt, the cooper, Alexander Norman, by then over seventy years of age, the fletcher David Powell, the smith Thomas Hodgskins and the wheelwright Thomas Bateman. Two clerks of the Civil War era, John Hooper and Jeffrey Fleetwood, were confirmed in their posts at the Restoration. This marked the continuation of a process, which began in a small way before the Civil Wars, whereby under clerks came to be regarded as permanent officials in their own right rather than the personal servants of the senior officers. This trend was to continue during the later seventeenth century.¹

At the Restoration the old method of remunerating Ordnance Office employees was likewise restored, although as we have seen the amounts granted in standing fees and allowances did not in theory differ very greatly from the amounts allowed to the establishment of 1653, where the corresponding post existed at the time.² Some years after 1660, however, steps were again taken to reform the way in which Ordnance Office employees were paid. Private fees were gradually withdrawn in return for monetary compensation and salaries were increased.³

During the later Stuart period the Ordnance Office underwent considerable expansion and there were changes in the nature of the organisation and in the methods of administration. Nevertheless, many of the administrative and financial problems of an earlier period persisted. There were still disputes over appointments to

1 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 2 p. 616, appendix A

2 See above p. 88

3 Tomlinson op. cit. vol. 1 pp. 213-215; vol. 2 appendix A

places at the Tower and recurrent difficulties were experienced in securing the money needed to pay contractors. As in the past, the Ordnance Office lacked the resources to carry out effectively the tasks with which it was entrusted.¹

The increase in the size and resources of the Ordnance Office was insufficient to keep pace with the growth in the scale of provision for the forces on land and sea that was necessary at a time when military activity was more intense and on a larger scale than during the years before 1642. But in spite of this the activities of the Ordnance Office during the later seventeenth and early eighteenth centuries were of a different order to those of the first half of the seventeenth century. The prevailing impression is that the Parliamentary Ordnance Office had more in common with the institution of Tudor times than with the Office of the late Stuart period.

¹ Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 p. 190 ff. vol. 2 p. 560
Tomlinson E.H.R. vol. 90 Jan. 1975 pp. 36-37, 38

Chapter Six

The Parliamentarian Contractors

The principal sources of arms, ammunition, clothing and equipment supplied to the Parliamentarian forces, both through the Ordnance Office and otherwise, were merchants and manufacturers. They dealt in munitions made both in England and abroad and they were supplemented by other casual sources such as supplies seized from the enemy. These merchants and manufacturers, who represented the traditional suppliers of the Ordnance Office, comprised the regular providers of basic munitions such as gunpowder and shot, and artificers and traders in London who together with employees at the Tower provided the bulk of the arms and equipment.

The involvement of merchants in the business of supplying military stores and their links with the Ordnance Office began at an early stage. From the later fourteenth century London merchants and artificers were participating in the procurement of munitions for the Privy Wardrobe at the Tower, whilst some Masters of the Ordnance in the fifteenth and sixteenth centuries were themselves merchants or manufacturers of munitions.¹

The existence of significant financial, commercial and manufacturing resources constituted the chief advantages to the Parliament of its uninterrupted control of the City and its environs. The number and scale of the contracts made by or on behalf of the Ordnance Office, representing as they did only a part of the total amount of war materials made available to the Parliamentarian forces, bear witness to the extent of those resources.

Although manufacturers and traders with premises in or near London might be constrained to undertake work for the Parliament whether or not they positively supported its cause, there existed in the City a body of merchants which was already identified before the

1 Ashley, R. The organisation and admin. of the Tudor Office of Ordnance pp. 22-23, 28-30

outbreak of war with the political and religious interests predominating in Parliament and which actively supported the latter when the conflict began. It has been suggested that military contracts were given to merchants with colonial connections because they were accustomed to providing similar commodities to colonists.¹ But this cannot be regarded as the overriding reason for the prominent role of merchants on the Parliamentary side.

Indeed, it was this section of the London merchant community which provided the financial and material bases upon which the Parliamentary war effort rested. Merchants and tradesmen provided money and participated in the collection and custody of Parliamentary war revenues. Merchant-financiers who supported Parliament expected to have a share in the control of revenue and expenditure. They exercised close control over finance throughout the Civil Wars. For example, the advance of £80,000 by the City in order to make possible initial provision for the New Model Army in February 1645 was accompanied by the appointment of Sir John Wollaston and seven other London merchants and aldermen as treasurers of the Army.²

However, even within the body of merchants and traders who supported the Parliament, there was by no means unanimity of opinion. Suppliers of victuals, clothing and munitions were prominent in the abortive attempt by Presbyterians in Parliament and in the City during 1646 and 1647 to dominate Parliament and dispense with the Army. But whereas some of them combined their desire for a Presbyterian form of church government with the goal of a negotiated peace with the King, others were closer to the Parliamentary Independents in their political views. It was during this period that differences between Parliament and the Presbyterian merchant community which had been the mainstay of its support became most

1 Farnell, J.E. Econ. Hist. Rev. 2nd ser: vol. 16 1964 p. 445

2 Pennington, D.H. in Fisher, F.J. ed. Essays in the economic and social history of Tudor and Stuart England p. 184

pronounced. Those differences were inspired in part by the financial grievances of the latter as well as by political and religious issues.¹

Association with commercial interests was to become a feature of the Rump Parliament. Amongst the merchants who were prominent in matters of government and commerce during the Commonwealth were some who had supplied the Parliament with clothing and munitions, such as William Pennoyer, Richard Hill and Owen Rowe.² The administrative activities in which they were involved included schemes for the reform of the Navy, the Customs and the Ordnance Office.

That group of merchants which supported the Parliament at the outset has been identified as one which was prominently associated with colonial ventures and the interloping trade. The group played a major part in the opposition to the King within the City. Few of its members had held important municipal or commercial offices before 1642 and few of them were really wealthy. The majority of them were either City aldermen or members of the Common Council during the Civil Wars and a number of them served in the trained bands. Men of similar backgrounds were of course to be found in the House of Commons and indeed in the Ordnance Office itself. Sir Walter Erle was associated with colonial enterprises in the 1620's and at least one of the new officers of the Ordnance who replaced the excluded Royalists was a City trader.³

On the other hand this particular section of the merchant community which was most clearly identified with the Parliamentary cause should not be regarded as completely different, economically and socially, from those merchants who were connected with major trading companies such as the East India Company and the Levant

1 Pearl, V. in Aylmer, G.E. ed. The Interregnum pp. 34, 39, 44

2 Worden, B. The Rump Parliament pp. 167, 256-257

Farnell, J.E. Econ. Hist. Rev. 2nd ser. vol. 16 1964 pp. 441-442, 443

3 Pennington, D.H. in Ives, E.W. ed. The English Revolution p. 66

Pearl, V. London and the outbreak of the Puritan Revolution pp. 240-246

Keeler, M.F. The Long Parliament p. 166

W.O. 55/1754 f. 8

Company and who were prominent in the political and commercial life of the City before 1642. Not all of the latter were actively opposed to the Parliament during the Civil Wars. In fact, a small number of merchants belonging to the East India Company were sympathetic to the Parliamentary cause. As we shall see, some of those merchants who were prominent in the field of Parliamentary war finance and munitions procurement were either freemen of the East India Company or else they participated in its trading ventures during the Civil Wars.

A leading member of the Parliamentary merchant group was William Pennoyer, who had engaged in colonial enterprises in America, privateering in the West Indies and interloping in the East Indies.¹ During the Civil Wars he obtained arms for the Parliament. The Committee of Safety contracted with him and another merchant, Richard Hill, for the delivery of arms; and following a petition to the Commons by Pennoyer negotiations were entered into with him concerning the purchase of arms which were apparently secured on the Continent. Agreement was reached on 10th September 1644. The consignment was a considerable one, and on 14th October the Commons issued instructions for the disposal of part of it comprising 360 carbines, 300 pairs of pistols, 180 backs, breasts and pots and 2,000 muskets. Despite his previous interloping activities, Pennoyer subscribed to the Second General Voyage of the East India Company during 1647-8. However, his third instalment was refused by the Company in December 1648 because it was overdue. In the following year he acted as an intermediary in the purchase of the Company's saltpetre by the state. At the same time he was appointed to the Committee of Merchants charged with regulating the officers of the Navy and Customs, and as such he was connected with the projected reform of the Ordnance Office.²

Richard Hill, of Lime Street, was a substantial merchant and

1 Brenner, R. Past and Present no. 58 Feb. 1973 pp. 80-82, 93-94

2 C.J. 1643-4 pp. 622, 652

Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 321

Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 308, 349, 350, 351

shipowner and a member of the Cordwainers' Company. He was of Devonshire origin and he had extensive business connections in the West Country. He also traded with the Continent and with North America. On 2nd June 1643 he was appointed a treasurer of the moneys received at Goldsmiths' Hall from sequestrations. He was associated with William Pennoyer in the purchasing of munitions and stores for the Parliament.

Hill sold imported saltpetre to the Parliament which was then delivered to the gunpowders makers. He also provided some powder. In September 1644 he received two debentures from the officers of the Ordnance, one worth £192 for 48 barrels of powder and the other worth £228 7s 6d for saltpetre. Hill was likewise to become a member of the Commission of 1649. He again held office during the Commonwealth and Protectorate⁽¹⁾ and was elected an alderman.¹

The clothier Thomas Atkins of Bassishawe in the City served as an alderman for Lime Street ward from 1642 to 1658 and he was Lord Mayor during 1644-5. He was a yeoman of the Drapers' Company and in 1641 he was elected a freeman of the East India Company. Like Sir John Wollaston, the future Army treasurer who was also a freeman of the East India Company, Atkins was exceptional amongst the Parliamentarian merchant community in that he had held important offices in the City before 1642. He lent more than £2,000 to the Parliament between 1642 and 1649 and he sat in the Commons for Norwich from 1645 to 1653. He provided clothing and other items for the Parliamentarian forces. Between 1642 and 1645 Atkins held the rank of colonel in the trained bands.²

Stephen Estwicke, (or Eastwicke), of Fish Street Hill was a

- 1 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 321
Hill, R.H.E. Devon Notes and Queries vol. 4 1906-7 pp. 50, 145
Farnell, J.E. Econ. Hist. Rev. 2nd ser. vol. 16 1964 p. 448
W.O. 47/1 p. 102
W.O. 49/82 ff. 12-13
- 2 Pearl, V. London and the outbreak of the Puritan Rev. pp. 241, 312-313
Beaven, A. The aldermen of the City of London vol. 2 p. 64
Dale, T.C. Members of the City companies in 1641 p. 148
Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 p. 198.

haberdasher and alderman for the Dowgate and Bridge Street wards from 1650 to 1657. He had once been imprisoned for refusing to pay ship money. A liveryman of the Girdlers' Company, he was one of the principal suppliers of clothing to the Parliamentarian forces and early in the War he had charge of a store of clothing and equipment out of which the Earl of Essex's army was furnished in 1642.

Estwicke was also connected with the supply of munitions. He was one of the main agents charged by the Committee of Safety with arranging the procurement of large amounts of arms from the Continent in the first months of the Civil War. As a member of the City Militia Committee he was involved in the purchase of munitions by that body, making arrangements with the Army Treasurer, Sir Gilbert Gerard, for the payment of contractors. Estwicke was another of the commissioners appointed in 1649 to regulate the officers of the Navy and Customs.¹ Clothing was also supplied in large quantities by Francis Peck, a member of the City Council and a draper of Watling Street.²

Thomas Andrewes of New Fish Street was a merchant and linen draper who served as an alderman for Tower ward from 1642 until 1649. He played a leading part in the financing of the Parliamentarian war effort. Together with Stephen Estwicke he organised the purchase of a large quantity of arms from France in the early days of the War. In May 1643 Andrewes himself provided a large number of weapons worth £1,728 for the Committee of Safety. In September 1645 he provided 4 tons of flemish match for the New Model Army. Andrewes also headed a group of merchants who supplied gunpowder to the Ordnance Office stores early in 1648. He had the livery of the Leathersellers'

1 Pearl, V. London and the outbreak of the Puritan Rev. p. 315
 Beaven, A. The aldermen of the City of London vol. 2 p. 73
 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 320
 Dale, T.C. Members of the City companies in 1641 p. 224
 S.P. 28/1A f. 85; 28/261 ff. 284, 428; 430-1; 28/262 f. 317

2 Pearl op. cit. p. 323
 S.P. 28/9 f. 319

Company and was likewise a member of the Committee of Merchants of 1649.¹

Andrewes was associated with the East India Company despite his activities as an interloper during the 1640's. In September 1647 he refused to take the oath of allegiance for admission to the freedom of the Company because it contained a profession of allegiance to the King. He and other dissenters were nevertheless allowed to participate in the subscription for the Second General Voyage of the Company during 1647-8 on giving an assurance that they would do nothing prejudicial to the Company's interests. Together with Stephen Estwicke and others, Andrewes had taken part in an earlier venture to the East which had resulted in their goods being seized by William Courteen's creditors. In November 1648 they were refused permission by the East India Company to send out a ship on their own initiative to recover their goods. Two years later Andrewes became a governor of the Company.²

Owen Rowe, a silk merchant of Coleman Street, was a liveryman of the Haberdashers' Company and a member of the City Council. He was active in colonial ventures in North America and the West Indies. He also served in the trained bands. When the Presbyterian dominated Militia Committee was reformed under pressure from the Army in July 1647, Rowe was one of those appointed to the new committee. He was a member of the court which tried the King and he signed the death warrant. Consequently he was imprisoned at the Restoration but was not executed. Along with another merchant, John Bradley, Rowe was the Committee of Safety's chief purchasing agent for arms in the English market. From July 1642 until the next summer the two accumulated a large amount of munitions from their own purchases and through the purchases of the

1 Pearl, V. London and the outbreak of the Puritan Rev. pp. 309-311

Beaven, A. The aldermen of the City of London vol. 2 p. 66

Dale, T.C. Members of the City companies in 1641 p. 272

Mungeam, G.I. J. Arms and Armour Soc. vol. 6 no. 3 1968 p. 55

S.P. 28/51 f. 333; 28/54 f. 84; 28/140 ff. 142, 143; 28/261 f. 284; 28/264 ff. 352, 353

W.O. 55/1662 p. 73b

2 Pearl op. cit. p. 282

Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 222-223, 224, 305

City Militia Committee which were delivered into their hands. They also acquired some munitions from abroad on behalf of the Committee of Safety. During the First Civil War Rowe delivered arms and ammunition to Essex's army and to other forces as well.¹

Walter Benge, who supplied carbines, muskets and pistols to the Army between 1646 and 1648 was a member of the Armourers Company and seemingly a man of some substance. His name was impressed upon the companies list of 1651 with a stamp and in 1648 he presented a small cup to the Armourers Company. He possessed two houses, one in Blackfriars and the other in the Minories. Yet at his death his assests, amounting to £400, were exceeded by his liabilities. He had also contracted with the Ordnance Office before the Civil Wars.²

Merchants continued to provide munitions, clothing and equipment for the Parliamentarian forces throughout the Civil War, both by way of the Ordnance Office stores and by direct deliveries to the principal armies and garrisons and to local forces also.³ The more important of these merchants have been mentioned, but there were many others. On 22nd February 1643 the officers of the Ordnance recorded the receipt of about 5 tons of flemish gunpowder, 500 muskets and 50 pairs of pistols from two merchants, Everard Weberley and Francis Webb, in accordance with an agreement made between the Committee of Safety and themselves on 18th January 1643.⁴

Amongst the contractors who supplied the New Model Army there were Richard Downes, a clothier, Christopher Nicolson, linen draper, and Michael Rayner, leather seller, who between them sent to the Ordnance Office stores large quantities of coats, breeches,

1 Pearl, V. London and the outbreak of the Puritan Revolution p. 324
D.N.B. vol. 17 p. 345

Farnell, J.E. Econ. Hist. Rev. 2nd ser. vol. 16 1964 p. 442

Dale, T.C. Members of the City companies in 1641 p. 233

S.P. 28/2A f. 7; 28/2B f. 670; 28/261 - 28/263 passim

2 W.O. 49/82 f. 103

W.O. 55/1663 f. 58

S.P. 28/1D f. 568; 28/140 f. 134

Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 p. 81

Whitebrook, J.C. London citizens in 1651 pp. 5, 12-13

3 See also chapter ten

4 W.O. 55/1660 f. 8

shirts, and knapsacks.¹ Other merchants who supplied the Ordnance Office included Captain Thomas Bostock, "citizen and girdler of London", who provided carbine belts. He was a member of the Haberdashers' Company and had a house in Snow Hill, Holborn.²

The manufacturers of gunpowder, ordnance and shot were amongst the most important contractors supplying the Ordnance Office. In turn, the most prominent of these suppliers were former holders of patents from the Crown who were obliged to contract with the Parliament if they wished to retain control of their works, maintain access to the London market and perhaps eventually secure payment of the sums owed to them by the state. These works were located in Surrey, Sussex and Kent, counties which were predominantly under Parliamentary control. Before the Civil Wars Samuel Cordwell had held the contract to supply gunpowder to the Crown, in which he acquired a half share in 1636. His works were at Chilworth near Guildford.³

The other principal powder manufacturer who supplied the Parliament was John Berisford. The output of Cordwell and Berisford accounted for by far the greater part of the powder manufactured in England for the service of the Parliament. There are records of powder being received from a few other persons, such as John Samin, George Boreman and Thomas Fossan, but their contributions were small in comparison. Boreman, or Bowerman, is described as being of Stockwood near Sherborne in Dorset. He generally supplied powder to places in the West for the use of the Navy rather than to the Tower. In any case the Royalist presence would have restricted his ability to supply the Parliament during the First Civil War.⁴ The other

1 W.O. 47/1 pp. 209, 210

W.O. 55/1662 pp. 26b, 75b (a denotes a sequence numbered from the front of the book and b that numbered from the back)

2 S.P. 28/37 ff. 335, 337

Mungeam, G.I. J. Arms and Armour Soc. vol. 6 no. 3 1968. p. 55

3 V.C.H. Surrey vol. 2 p. 319

4 W.O. 47/1 p. 80

W.O. 49/82 f. 100

W.O. 55/1660 f: 7

S.F. 28/44 f. 320; 28/47 ff. 101, 115

major source of supply was represented by merchants who purchased gunpowder on the Continent, chiefly in the Netherlands.

The provision of ordnance and shot for the Parliamentary forces was largely in the hands of John Browne, who had been appointed King's Gunfounder by Charles I, and ^{of} his eldest son. Their works were situated in the Weald district of Kent and Sussex. John Browne was a member of a family which had produced iron ordnance since the late sixteenth century and continued to do so for much of the seventeenth. In 1614 he was granted a monopoly of the casting of iron and brass ordnance for the Navy, and in the following year he was appointed founder of iron ordnance to the Office of Ordnance.¹

The manufacture of weapons, clothing and equipment for the Ordnance Office was shared by the artificers belonging to the Office and by others working in and about the City. The Ordnance Office plumber, Daniel Judd, was contracted with mainly for lead shot and match. He was the principal supplier of musket shot during the Civil Wars and he also supplied a considerable amount of match. His contracts included those for 7 tons of lead shot and nearly 4 tons of match in July 1644.² Between June and December 1645 Judd delivered to the New Model Army's store 43 tons of musket shot, one ton of pistol shot, 36½ tons of match, 200 coats and 200 pairs of breeches. On 20th March 1646 he delivered 10 tons of match and on 5th February 1648 a debenture was made out to him in respect of 30 tons of musket shot and 30 tons of match.³

Thomas Hodgskins, the master smith at the Tower, contributed ironwork and metal implements and tools. A contract was made with him in August 1644 for the provision of 397 pickaxes and in the following

1 Straker, E. Wealden iron p. 162

K.A.O. TR 1295/49

2 W.O. 49/82 ff. 2, 5

Add. Mss. 25,585 f. 69

3 W.O. 49/82 f. 96

W.O. 55/1662 pp. 76b-77b; 55/1663 f. 83

November for 6 cwt of ironwork for a culverin field carriage, together with associated hoops, bars, bolts, pins and chains. In January 1645 he was awarded a debenture in respect of blacksmiths' and armourers' tools for the new train of artillery intended for the Earl of Essex's army. Between April and September 1645 Hodgskins provided 1,400 pickaxes and 2 tons of iron for the New Model Army. In March 1646 he delivered 7 tons of ironwork for wheels, 2 tons of iron, 500 pickaxes and a set of blacksmiths' tools. A more unusual task was the making of three sentinel bells with clappers for which he received a debenture in November 1648.¹

The master carpenter, John Pitt, supplied chiefly carriages and associated woodwork. For the Earl of Essex's new train he contracted in September 1644 to make two field carriages and an additional fore-carriage for 2 three-pounder guns. Twenty further carriages were contracted for in the following month for six-pounder, demi-culverin, saker and three-pounder, together with ancillary equipment for ordnance. Repairs to other carriages were also carried out. For the New Model Army Pitt delivered in June and August 1645 carriages for cannon, demi-cannon and mortar, together with gins, crowlevers and slings for mounting the ordnance. These were followed by a set of carpenters' tools and large quantities of nails in March 1646.²

A debenture was made out to Alexander Norman, master cooper at the Ordnance Office, on 18th February 1645 in respect of 50 double casks and 75 pieces of hoops. Included in the amount allowed was the sum of £9 16s 8d for "10 days work by several men in opening and heading up powder at 20d per day".³

In addition to wheels and axles, the master wheelwright, Thomas Bateman, provided fore-carriages, waggons and carts. In

- 1 W.O. 49/82 ff. 7, 55, 57, 61, 106
W.O. 55/1662 p. 48b; 55/1663 f. 81
- 2 W.O. 49/82 ff. 13, 40, 45
W.O. 55/1662 p. 71b; 55/1663 f. 82
- 3 W.O. 49/82 f. 20

November 1644 he was contracted with for wheels, axle-trees and fore-carriages for "three battering pieces for the army". Altogether in October and November 1644 he delivered into the stores for the new train of artillery nearly fifty waggons, carts and tumbrils, along with wheels, axle-trees, fore-carriages and barrows. In April and May 1645 Bateman supplied a further 32 waggons for the New Model Army. These vehicles were not necessarily made wholly by him but were probably assembled in conjunction with the smith and the carpenter. In the summer of 1647 gun carriages were required for the island of Jersey, and Bateman contracted to supply wheels, axle-trees and fore-carriages.¹

Outside the Tower, the Ordnance Office relied upon a large number of contractors for the provision of weapons, clothing and equipment. During the years 1644 to 1646 around 110 persons, excluding members of the Ordnance Office ordinary establishment and regular contractors such as Samuel Cordwell and John Browne, were contracted with at one time or another.²

Most of the information about contractors to be found in the Ordnance Office records is derived from the extensive transactions made on behalf of the New Model Army in 1645 and 1646. Contracts were made by the Committee of the Army with individuals, groups and corporations. One of the first of these was one made with the gunsmiths Richard Jones, John Norcott, William Fell, John Watson, William Watson "and thir ptn.^{rs}" Yet on other occasions one or more of them was contracted with separately.

Several of the gunsmiths who supplied the Ordnance Office during the Civil Wars had done so in the early 1630's or even earlier. Two of them, John Watson and John Silke senior, are recorded as having contracted with the Office in 1627. Watson and William Greaves (or Graves) were amongst those involved in an abortive

1 W.O. 49/82 ff. 62, 91-92

W.O. 55/1662 pp. 2a, 46b

Add. Mss. 25,585 f. 70

2 W.O. 55/1662, 55/1663 passim

scheme for the establishment of a contract with gunsmiths for the regular supply of firearms for the state. Another gunsmith, John Norcott, was employed at the Tower as a furbisher between 1627 and 1633.¹

Individual contributions from gunsmiths during the Civil War period include 1,548 muskets from Richard Jones and 1,170 from John Norcott in April 1645; 459 muskets and 397 pairs of pistols from William Fell between May and July 1645; and 4,560 muskets and 1,094 pairs of pistols from William Watson and his co-workers between April and July 1645.² Most of the gunsmiths supplying the Ordnance Office were members of the Gunmakers' Company, although they probably subcontracted some of their work. John Watson was Master of the Company from 1640 to 1644, William Greaves during 1644-5 and William Watson from 1645 to 1648. Both Watsons and Greaves also served as wardens of the Company at various times during the 1640's.³

The principal suppliers of match for land service to the Ordnance Office stores were John Freeman and Thomas Steventon. They were contracted with for 8 tons of match by the Army Committee in March 1645 and for another 4 tons in June 1645. Freeman also provided some gunpowder for the Ordnance Office and for the Committee of Safety, although the amounts were not very great.⁴ On 3rd February 1643 he brought in a small quantity of flemish powder. Freeman has been identified with the labourer of that name who was employed at the Ordnance Office from 1637 until his dismissal in 1649, but this seems unlikely.⁵

1. W.O. 47/1 pp. 208, 210

Harl. Mss. 429 ff. 8, 123

Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 pp. 69, 73

2 W.O. 55/1663 ff. 6, 8, 9, 13, 16-18, 20-22, 32

3 G.L. Ms. 5220 vol. 2 unfol.

4 W.O. 47/1 pp. 208, 267

W.O. 55/1660 f. 7

5 Reid, W. Guildhall Misc. vol. 2 no. 8 Sept. 1966 p. 325

Harl. Mss. 429 ff. 186-187

The first recorded receipt of match from Freeman occurs in August 1644. On 16th July 1644 the officers of the Ordnance had contracted with him for "good and serviceable English match" for the stores. Between 7th October and 8th November 1644 he turned in over 11 tons of match "towards y^e furnishing y^e Lord Generals traine of artillery". In April and July 1645 he delivered a further 11 tons for the New Model Army. Other contributions from Freeman are recorded in a debenture awarded him for match and powder provided in January 1646 for the Committee of the Eastern Association and in another debenture of June 1648 for 10 tons of match brought in for land service.¹

Thomas Steventon was contracted with for 7 tons of match on 6th September 1644 and thereafter he was a regular supplier of that commodity. Between April and August 1645 he provided 11 tons for the New Model Army. Amongst the debentures made out to him are one of December 1645 in respect of 10 tons of English and flemish match, another of April 1646 for 7 tons of match, and another of February 1648 for 6 tons of match.² A certain amount of match was also provided by Daniel Judd of the Ordnance Office. On 18th December 1645 the Committee of the Army contracted with him for the delivery of 50 tons over the ensuing six months. By the following June he had supplied 56 tons.³

A few contracts were made with the guilds into which London trades were largely although not exclusively organised. During the seventeenth century the significance of the guild as a form of economic organisation was declining for a variety of reasons. The gradual expansion of production outside the guilds naturally

1 W.O. 47/1 p. 68
 W.O. 49/82 ff. 67, 95
 W.O. 55/1662 pp. 5a, 34b
 2 W.O. 47/1 p. 99
 W.O. 49/82 ff. 78, 79, 95
 W.O. 55/1662 p. 55b
 3 L.M. 46-78/709 f. 88
 W.O. 55/1663 ff. 73, 83
 S.P. 28/140 ff. 110, 114, 119

weakened their position, whilst the traditional craft guilds came increasingly under the control of wealthy merchants who exercised influence both individually and collectively through their membership of the mercantile guilds or livery companies. Furthermore, during the earlier seventeenth century the Crown had used the granting of incorporation as a revenue raising device and the consequent proliferation of guilds tended to diminish their overall influence.

Therefore by the time of the Civil Wars the significance of the guilds was becoming increasingly a social and ceremonial one rather than an economic one. To a decreasing extent did the business followed by a member of one of the City companies correspond to the trade with which that particular company was nominally associated. This process of dissociation had gone furthest in the livery companies such as the Grocers and Haberdashers.¹

Membership of City companies was widespread amongst suppliers of the Ordnance Office. Apart from the more prominent merchants to whom we have already referred, other contractors who are known to have been either liverymen or freeman include the saddlers, William Deacon and William Platts, both members of the Saddlers' Company. Nathaniel Humphries, who provided bandoliers and cartridges for the New Model Army, was a member of Ironmongers' Company, whilst the same items were also supplied by Thomas Roach (or Roche), a member of the Haberdashers' Company.²

Membership of the City companies as recorded in the poll tax returns of 1641 ranged from less than one hundred for small companies like the Bowyers to between three and five hundred for larger companies such as the Blacksmiths, Coppers, Drapers and Leathersellers. However, the poll tax returns are not wholly accurate in this respect and they do not include the names of

1 Coleman, D.C. Industry in Tudor and Stuart England pp. 20-22

2 Mungeam, G.I. J. Arms and Armour Soc. vol. 6 no. 3 1968 pp. 56, 57
W.O. 55/1662 p. 25b; 55/1663 ff. 7, 52, 66

apprentices.¹

One of the numerous companies formed during the earlier seventeenth century was the Company of Gunmakers, founded in 1637 but not recognized in law until 1656, after prolonged opposition from the Armourers' and Blacksmiths' Companies. John Watson and William Greaves, originally members of the Blacksmiths' Company, were amongst those responsible for forming the new company. Nevertheless, the Blacksmiths' Company continued to include some gunmakers amongst its members during the Civil Wars and the Interregnum. The poll tax returns of 1641 list John Watson, William Watson and William Greaves as liverymen of that company.²

The Gunmakers' Company contracted in 1639 and 1640 for the supply of hand guns to the Ordnance Office. In December 1639 the Company undertook to provide 1,600 muskets a month, whilst in May 1640 this figure was increased to 2,000 a month. Thus there are some precedents in the period immediately before the Civil Wars for the large scale delivery of arms to the Ordnance Office stores on something like a regular basis. The practice of making collective contracts with the Gunmakers' Company, which then distributed the work amongst its members, was continued during the Commonwealth period. The majority of the members of the Company supplied the Ordnance Office stores during the Civil Wars.³

The Army Committee contracted in March 1645 with the Company of Cutlers for swords and belts and with the Sadlers' Company for saddles and their accessories. Shortly afterwards the Sadlers delivered 600 saddles into the stores. Contracts were also made with individual cutlers and sadlers. On 11th July 1645 Thomas Freeman, Warden of the Cutlers, contracted for the delivery of 2,000 swords and belts.⁴

1 Dale, T.C. Members of the City companies in 1641 passim

2 op. cit. pp. 100, 101

3 Stern, W.M. J. Arms and Armour Soc. vol. 1 Mar. 1954 pp. 58-60, 66, 70-73
Fisher, F.J. in Ives, E.W. ed. The English Revolution pp. 81-82
G.L. Ms. 5220 vol. 2 unfol.

4 W.O. 47/1 pp. 208, 209, 299

W.O. 55/1662 p. 17b

A few women were numbered amongst the contractors. Elizabeth Betts and Elizabeth Worrall, "widow Worrall", provided saddles for the New Model Army, whilst another widow, Elizabeth Thacker, contributed pikes. Elizabeth Betts sent in 450 cavalry and dragoon saddles between April and August 1645, Mrs. Worrall delivered 200 saddles during and July 1645 and Mrs. Thacker supplied 700 pikes in the same two months. Yet another woman contractor was Hester Leverland, the widow of Joshua Leverland, who provided carpenters' and wheelwrights' tools.

These women presumably maintained workshops previously run by their husbands. Elizabeth Thacker was the widow of Robert Thacker, pikemaker, who had supplied the Ordnance Office before the Civil Wars. Perhaps Elizabeth Betts was the "widow Betts" who in 1638 rented a house in East Smithfield for which she paid a rent of £2 in that year.¹

Brief mention may be made of some of the numerous other artificers and tradesmen who fulfilled the needs of the Parliamentarian forces at this time. John Munnings supplied horse harness, of which he brought in 494 between March and July 1645.² Jenkin Ellis and Francis Marriott, shoemakers, provided jointly 12,000 pairs in April and between July and October 1645.³ Edward Tench, joiner, supplied 80 drums in May and July 1645; and John Snow, tentmaker, 200 tents in April 1645. Snow subsequently became master tent maker to the army in Ireland during the Commonwealth.⁴

John Gace (or Gase), of Eastcheap, was a turner and a past Master of the Turners' Company who contracted mainly for the supply

- 1 W.O. 47/1 pp. 209, 235, 236
W.O. 55/1662 pp. 6b, 15b, 52b
W.O. 49/82 ff. 41-42
S.P. 28/4D ff. 560; 28/6 f. 3
Dale, T.C. The inhabitants of London in 1638 vol. 1 p. 219
- 2 W.O. 47/1 p. 209
W.O. 55/1662 p. 1b
- 3 W.O. 47/1 p. 210
W.O. 55/1662 pp. 21b, 67b
- 4 W.O. 47/1 pp. 210, 211
W.O. 55/1662 pp. 8b, 45b
Mungeam, G.I. J. Arms and Armour Soc. vol. 6 no. 3 1968 p. 58

bandoliers, shovels and spades. During October 1644 he brought in 1,700 shovels and spades, 30 hair tilts and sorses and 60 lanterns, all for the Earl of Essex's new train of artillery. For the New Model Army Gacé delivered 3,200 bandoliers and 1,700 shovels and spades between April and September 1645. Gacé was one of those traders who played a prominent part in the attempt by Presbyterians in London to assert themselves in the face of Parliament and the Army during 1646 and 1647.¹

In addition to the deliveries mentioned here many of the contractors continued to supply the Ordnance Office stores until the close of the Civil Wars, although the largest contracts are to be found in the years 1645 and 1646. Some of the suppliers had, like the gunsmiths, dealt with the Ordnance Office before 1642. They include Michael Reynolds, who provided sheepskins, and the pikemaker John Edwards, both of whom had been doing business with the Office since 1627 at least.²

The Ordnance Office contracts also afford some evidence of the places of work of lesser known suppliers. Similar information can of course be derived from the poll tax returns. Many of the contractors were located either in the vicinity of the Tower or nearby in the City. With the growth of the Ordnance Office during the sixteenth century, numbers of artificers, instrument makers and mathematical practitioners with a special knowledge of ordnance and munitions had established themselves in the neighbourhood of the Tower. The Minories, which became Crown property in 1563, were the site of the workshops and residences of some of those who were connected with the Ordnance Office. The gunmakers were established chiefly in the Minories, Tower Street and at East Smithfield and Whitechapel. Amongst the gunsmiths with premises in that area were

1 W.O. 47/1 p. 211

W.O. 55/1662 pp. 6a, 31b

Pearl, V. in Aylmer, G.E. ed. The Interregnum pp. 34, 217 note

Dale, T.C. Members of the City companies in 1641 p. 355

2 S.P. 28/1D f. 558

Harl. Mss. 429 f. 23

John Norcott, Henry Cox, John Watson, William Watson, John Eales, William Greaves and William Gardner.¹

Other contractors whose neighbourhoods are recorded include John Penbury, founder, of Tower Street; and Francis Butcher, hosier, of St. Katherine's by the Tower. A little more distant from the Tower were John Murden, gunsmith, of Charing Cross; and William Deacon and George Langley, sadlers, of Fleet Street. In Friday Street, near St. Paul's, there were the leather workers Mathew Appletree and Michael Rayner. The latter had a house there for which he paid a rent of £30 in 1638. Outside the City proper there were Peter Andrews, harness maker, of St. John's Street, Clerkenwell; and Michael Reynolds of Bermondsey Street, Southwark, who provided sheepskins.² Some of the contractors referred to here also supplied the Navy stores, and indeed they were bringing in munitions and equipment for the Fleets from the early days of the Civil Wars. Likewise some of them were probably employed in the winter of 1646-7 when the Committee for Irish Affairs contracted for military stores for the forces in that country.³ Contractors who are known to have furnished the Ordnance Office stores virtually throughout the Civil War period include John Watson, gunsmith, John Gace, turner, and John Freeman who provided match and gunpowder.

One question concerning outside contractors is that of whether or not sub-contractors were employed, and, if so, to what extent. The short time within which large quantities of arms and ammunition were frequently delivered to the stores for the New Model Army indicates that either the orders were met wholly or partially out of existing stocks, or else the task of making and supplying them was subcontracted by the person in whose name the contract had been made.

1 L.M. 46-78/709 ff. 73, 81

Stern, W.M. J. Arms and Armour Soc. vol. 1 No. 5 Mar. 1954 p. 80

Dale, T.C. Members of the City companies in 1641 pp. 100, 101

2 L.M. 46-78/709 ff. 88, 95

W.O. 47/1 pp. 210-211, 236

Dale op. cit. p. 273

Dale The inhabitants of London in 1638 vol. 1 p. 136

3 C.J. 1644-6 p. 698; 1646-8 p. 136

Although the Ordnance Office records offer no positive information on this matter, it is apparent from other sources that sub-contracting in the gunmaking trade existed before the Civil Wars. Many gunmakers appear to have been in effect assemblers of components made by others. They farmed out work and 'borrowed' guns from each other when they had to meet orders quickly. There were groups of gunmakers who carried out work for government contractors. One of the complaints made by the latter was that workmen whom they employed by the day attempted to secure higher wages if they knew that a large contract had to be fulfilled quickly. There is every reason to suppose that sub-contracting along these lines continued during the Civil War period.¹

A similar practice is suggested in the case of the cutlers by a petition of Abraham Ivory, a London cutler, to the Committee of Safety. He stated that he had supplied £31 worth of swords, scabbards and other items in December 1642 to Benjamin Stone on the understanding that they were needed to make up an urgent order for the Parliament. The delivery was recorded in Stone's name and although he had received payments from the Treasurer of the Army, he had not kept his promise to pay the petitioner for his share of the consignment. Stone had since died and his relatives were said to be attempting to deprive the petitioner of his money.²

In addition to those already described, munitions were brought to the Ordnance Office from a number of other sources during the Civil Wars. With regard to imports, England had never been self-sufficient in arms, ammunition and essential war materials. There were varying degrees of dependence upon purchases from foreign sources, with saltpetre, match and gunpowder numbered amongst the commodities that were most consistently imported.

It is not possible to construct a comprehensive picture of

1 Stern, W.M. J. Arms and Armour Soc. vol. 1 Mar. 1954 pp. 60, 81, 82
2 S.P. 28/263 f. 96

the nature and quantities of the munitions that were imported for the use of the Parliamentary forces during the Civil Wars. Nor can it be stated with any real accuracy what proportion of the imports found their way into the Ordnance Office stores. Munitions for the use of local forces and for the forces in Ireland were obtained on the Continent. Many transactions were arranged by provincial merchants and the supplies brought in through local ports.¹

An undetermined quantity of imported munitions was delivered to the Tower from a ship at Harwich, probably in the late spring of 1643. The consignment must have been a considerable one, for one merchant alone, Francis Webb, was authorized to receive £1,620 16s 8d from the Army Treasurer, Sir Gilbert Gerard, for his share of the delivery. Perhaps this was part of the large purchase arranged by Thomas Andrewes and Stephen Estwicke in the previous year. The officers of the Ordnance had already contracted with the master of this same ship, John Giles, for the supply of gunpowder for the stores.²

A certain amount of Dutch or Flemish match and gunpowder was brought into the stores between 1644 and 1648 by regular contractors, whilst large quantities of imported saltpetre were needed as they had been before the Civil Wars. Arms and equipment were also imported from the Netherlands but generally speaking they appear to have gone to the stores acquired on behalf of the Committee of Safety by Owen Rowe and John Bradley and to local forces rather than to the Tower.

The overall impression regarding imports is that during the earlier stages of the Civil Wars munitions of all kinds were sought abroad, whereas in later years imports consisted predominantly of munitions which were in particularly short supply, like match and gunpowder, and such essential raw materials as saltpetre and non-

¹ See chapter ten

² S.P. 28/261 f. 284; 28/263 ff. 61, 178-179

ferrous metals. One reason for this trend was that the numerous regional and local forces which augmented the demand for munitions at the outset were disappearing by 1645, whilst English manufacturers had had an opportunity to organise themselves for production on a larger scale than hitherto.

Although the Ordnance Office was customarily responsible for negotiating contracts with the merchants and manufacturers who delivered munitions, equipment and clothing to the stores at the Tower, the officers did not, except in certain limited circumstances, enter into contracts upon their own initiative during the Civil War period. The authority to make contracts was vested in Parliament and when the officers of the Ordnance negotiated contracts, they generally did so in accordance with instructions issued to them.

This was not in fact so very different from the situation that had existed before the Civil Wars, since the officers of the Ordnance had never enjoyed autonomy in the business of placing contracts. The ordinary allowance which was intended for internal use by the officers was insufficient for large scale purchases and frequently went unpaid for considerable periods. The accumulation of debts to suppliers also made it difficult for the officers to make fresh contracts for the replenishment of the stores. The Ordnance Office was ultimately dependent therefore upon the Exchequer for the settlement of its debts and for the underwriting of large contracts. Authorization for such expenditure had to be obtained, for example, in the shape of estimates submitted to the Privy Council. This external supervision of the Ordnance Office was continued and indeed reinforced during the Civil Wars by Parliament and the committees concerned with the administration of the war.

Instructions to the officers of the Ordnance came directly from the House of Commons in some instances. By orders of 14th October and 6th November 1644, the House directed that money be made

available to Sir Walter Erle, Lieutenant of the Ordnance, for the purchase of arms and equipment for the Earl of Essex's army, which were then duly provided.¹ The Commons also voted on 4th October 1644 a supply of money for a new train of artillery for Essex and the necessary items were ordered through the Ordnance Office.²

More commonly, instructions to arrange contracts emanated from one of the Parliamentary committees which were set up for the purpose of administering the strategic, logistic and financial aspects of the war effort. Even so, initiative for such action may have come originally from the Commons as a whole. The committees which were most concerned with the procurement of ordnance stores at various times were the Committee of the Navy, the Committee of Safety, the Committee of the Army and the Committee Appointed to Contract for Powder, Match and Shot. There were also committees formed for the purpose of overseeing established departments such as the Mint and the Ordnance Office.³ The functions and degrees of authority enjoyed by these committees differed considerably.

Their functions and spheres of influence were not mutually exclusive nor were they delineated absolutely clearly in the matter of procurement for the Ordnance Office stores. Although the Committee for Powder, Match and Shot was technically responsible for the provision of ammunition and other munitions upon its formation in 1645, the function of this committee and that of the Army and Navy Committees continued to overlap during subsequent years. On 20th May 1648 all three committees were requested by the House of Commons to provide the ordnance and ammunition required by Cromwell who was then in South Wales.⁴ Whatever its theoretical powers in relation to procurement, no committee could do more than the financial resources at its disposal would permit of.

1 W.O. 49/82 ff. 58-64

2 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 736-737
W.O. 55/1662 pp. 3a, 9a
Add. Mss. 25,585 ff. 69-71

3 Aylmer, G.E. The state's servants p. 10
W.O. 47/1 p. 88

4 C.J. 1646-8 p. 566

The Committee of the Navy, which was in existence throughout the Civil War period, was one of the first Parliamentary committees to acquire executive powers. The Committee was originally formed in August 1641 and after being allowed to lapse for a time it was reestablished in the following November. The financing of the Navy was a primary concern of the Committee. On 5th August 1642 it was given control over Navy finances and it assumed responsibility for making and settling contracts and for forming yearly estimates of naval expenditure. On account of the importance of customs duties to naval revenue, the Navy Committee merged with the Committee of the Customs. Although the Navy Committee played a permanent role in the administration of the Navy during the Civil Wars, its functions seem to have overlapped to some extent those of the Admiralty Committee which was created in April 1645 upon the resignation of the Earl of Warwick as Lord High Admiral and which continued in existence until Warwick was restored to office in the summer of 1648.¹

The administration of naval supply resembled the organisation of the Ordnance Office in a number of ways. The Navy Office was itself situated on Tower Hill and the two bodies had much in common with regard to organisation, administrative procedures and problems of finance. Although the Navy Committee was not primarily concerned with provision for land service, it nevertheless negotiated contracts for the supply of gunpowder that was used by the land forces as well as by the Navy. This practice continued until the formation of the Committee for Powder, Match and Shot which then largely but not completely took over responsibility for the provision of ammunition for the land and sea forces. On the 8th October 1644, the Navy Committee made a contract with the gunpowder makers John Berisford and Samuel Cordwell. Some or perhaps all of this powder was used for land service. Powder ordered under this contract was still being

¹ Aylmer, G.E. The state's servants p. 10

Hammond, W.N. The administration of the English navy pp. 9-10, 18

received for land service in December 1645.¹

The Navy Committee was also involved indirectly in the provision of munitions for the land services in that deliveries to the Navy magazine, particularly those of ammunition, were frequently pre-empted for the armies in consequence of the shortfall of supplies for the latter. A receipts book entitled "Supplies furnished to the Summer Fleet 1644" contains some entries relating to powder, match and shot which are endorsed "land service". This suggests that they may have been intended originally for the Navy.²

Conversely, in or about May 1647 after the fighting on land had subsided, the Committee of the Navy cancelled two debentures made out to Samuel Cordwell in December 1646 and April 1647 for the supply of a total of 360 barrels of powder. The powder was re-allocated to the Navy stores.³ On 6th February 1645 the House of Commons ordered the Navy Committee to consider the report of the Committee of Both Kingdoms concerning deficiencies in the magazine at the Tower and to bring in an ordinance for the regular supply of munitions for land and sea service.⁴ The Committee for Powder, Match and Shot was established in the following June.

The Committee of Lords and Commons for the Safety of the Kingdom, or Committee of Safety, was formed on 4th July 1642 and remained in existence until 1645, although its competence was gradually restricted by other newly created bodies during the summer of 1643. The Committee was discredited by the generally unfavourable course of the War during 1643, but continued to give instructions to the Ordnance Office. Its duties included arranging for the purchase and delivery of war materials, and issuing instructions for the payment of suppliers, subject to the surveillance of Parliament as a whole.

At the beginning of the War the Committee of Safety was

1 W.O. 49/82 ff. 25, 77

2 Add. Mss. 25,585 ff. 44, 51, 55-56, 65

3 W.O. 49/82 ff. 84-85

4 W.O. 47/1 p. 169

See below p. 121,

responsible for instigating the purchase of arms both in England and on the Continent.¹ It continued to make arrangements for the supply of munitions by merchants, gunpowder makers and artificers during 1643 and 1644. In February 1643 the Committee procured quantities of powder and weapons from merchants for the Ordnance Office stores. On 24th February 1644 the Committee gave orders for the procurement of gunpowder from Samuel Cordwell, powdermaker, which was received at the Tower at intervals during the ensuing months.²

The Committee of the Army was set up in March 1645 under the chairmanship of Robert Scawen and with Sir Walter Erle as one of its members. Scawen was also chairman of the committee concerned with the internal administration of the Ordnance Office.³ The Army Committee was endowed with responsibility for contracting for all the arms, ammunition, equipment and clothing required for the summer's campaign, that is, for the New Model Army.

On 24th March 1645 the Army Committee ordered the officers of the Ordnance to receive into their charge and to prove all munitions and other stores which had been contracted for. The Committee's powers were renewed on 15th January 1646. It was empowered to contract for all victuals, arms, ammunition and other necessaries for the Army and the train of artillery as the Commons should direct or as the Committee should think fit.⁴

The Army Committee made numerous contracts involving large quantities of munitions during 1645 and the early part of 1646. These were duly notified to the officers of the Ordnance.⁵ The Committee continued to make contracts on behalf of the Army until

1 Glow, L. E.H.R. vol. 80 1965 pp. 291-292, 294, 297, 308

Notestein, W. Amer. Hist. Rev. vol. 17 1912 p. 478

2 W.O. 47/1 pp. 5, 9, 18, 21

W.O. 55/1660 ff. 7-8

3 W.O. 47/1 pp. 96-97

4 C.J. 1644-6 p. 78

Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 p. 828

W.O. 47/1 p. 205

5 op. cit. pp. 208-211, 289-290

L.M. 46-78/709 passim

the end of the Civil Wars. During 1648 it assumed responsibility for procuring munitions for certain garrisons as well. The contracts made by the Committee were generally sent to the Ordnance Office in batches accompanied by instructions to the officers to "take notice hereof and see That the provisions be answerable to the agreem^{ts} And for as many Provisions as they shall receive in and allow to certifie the same unto this Committee".

However, it was not uncommon for formal notification of a contract to reach the Ordnance Office after the provisions mentioned therein had already been delivered into the stores. Thus a contract for the supply of muskets and pistols made by the Army Committee on 22nd November 1645 was received at the Office on 19th December, eleven days later than the date of the receipt of the stores. Another letter from the Committee dated 16th January 1646 giving details of contracts for the supply of muskets, pistols, and pikes was received by the Surveyor on 19th March, by which time some of the arms had already been brought in. From December 1645 the officers of the Ordnance were required to mark each batch of munitions delivered to the Army magazine with a serial number for identification purposes and perhaps also to ensure that the oldest stocks were issued first.¹

The establishment of the Committee for Powder, Match and Shot was foreshadowed in June 1644 when the Committee of Both Kingdoms resolved to inform the Commons of the shortage of gunpowder and to request the setting up of a committee with power to contract for powder. By then the question of gunpowder for land service had become critical, for reserves were virtually non-existent and new supplies were being pre-empted for the most urgent needs of the moment.

Then on 27th January 1645 the Committee of Both Kingdoms decided to urge the Commons to expedite the ordinance for the provision of powder and other ammunition.² On 6th February the

1 L.M. 46-78/709 passim
W.O. 55/1662 p. 77b; 55/1663 passim
2 C.S.P.D. 1644 p. 232; 1644-5 p. 275

Commons ordered that the report of the Committee of Both Kingdoms concerning the replenishment of the stores be referred to the Navy Committee which was to bring in an ordinance for "y^e constant supply and furnishing the Stores wth all provision both for Sea & land".¹

Accordingly, the Navy Committee asked the officers of the Ordnance to certify what munitions "are fitt to be furnished into y^e Stores for the yeere according to y^e last yeares proport̄ion" and what stores for this purpose were already in the Tower. The officers were also to make an estimate of the sums needed for the stores that would have to be purchased.² Such an approach was more relevant to the needs of the Navy than to those of the armies.

An ordinance for the appointment of a committee authorized to contract for powder, match and shot and charged with overseeing the Ordnance Office was passed by the Commons on 30th June 1645 and approved by the Lords on the following day.³ This was twelve months after the matter had first been raised by the Committee of Both Kingdoms. The solution of the problem of munitions supply therefore depended ultimately on the speed with which Parliament acted as well as on the appropriateness of the measures which it took. It was not until the War had continued for almost three years that Parliament actually set about creating the administrative machinery necessary for the provision of munitions on a regular basis. Yet such a step carried the implication that the War would continue indefinitely and it is not surprising that political issues took precedence over considerations of military efficiency. It was the reorganisation of the Parliamentary armies that effectively prepared the way for the reform of munitions supply.

On 31st July 1645 the new Committee for Powder, Match and Shot put into effect its powers to supervise the receipt and issue of munitions at the Tower by instructing the officers of the Ordnance

1 W.O. 47/1 p. 169

2 op. cit. p. 325

3 C.J. 1644-6 pp. 190, 191

to state how many of the 678 barrels of powder received from Samuel Cordwell since the second of that month had already been issued and for what purpose. In future, the officers were to present weekly summaries of the issues of ammunition in order that adequate provision for the magazine could be made.¹ There was however a precedent for such regular checks. In January 1641 the Storekeeper was ordered to provide a monthly return of the amount of gunpowder in store.²

Sir Walter Erle was a member of the Committee for Powder, Match and Shot, whose chairman was Giles Greene, likewise chairman of the Navy Committee. The latter committee continued to contract for powder which though technically for the use of the Navy was at least in part supplied to the land forces.³ Despite the fact that some of its members served on other committees concerned with the administration of the war effort, the Navy Committee could not be expected to have full knowledge of the needs of the land forces and indeed it may have shared the misgivings felt by the Navy itself at being asked to hand over some of its munitions for other purposes. The demand for munitions on land was subject to greater fluctuation than that created by the sea forces which was associated with something like a regular pattern of summer and winter activity. There was no military equivalent of the annual estimates of naval expenditure compiled by the Navy Committee, inaccurate though they proved to be.

The Committee for Powder, Match and Shot was primarily engaged in the business of dealing with gunpowder manufacturers. Although it was in theory responsible for the provision of any kind of munitions that might be required, in fact the supply of powder, match and shot remained its principal concern. The Committee also effectively took over the responsibility for the stores at the Tower which had hitherto been exercised by the Committee for the Ordnance Office. The Committee remained in existence until the end of the

1 W.O. 47/1 p. 325

2 C.S.P.D. 1640-1 pp. 449-450

3 W.O. 47/1 p. 283

Second Civil War.¹

The Committee of Both Kingdoms, formed in February 1644, was not normally involved at first hand in the making of contracts. One exception was the provision of saltpetre, in which the Committee of Safety had also been concerned, for under the terms of an ordinance of 7th February 1646 the Committee of Both Kingdoms contracted with various persons for the supply of petre to the gunpowder makers.² However, since the Committee was concerned with the overall direction of the Parliament's military activities and frequently issued warrants for delivery from the Ordnance Office stores it was involved indirectly in the business of supply.

The Committee made requests to the House of Commons or to an appropriate committee asking them to find ways of providing arms and ammunition together with means of paying for them. These requests were based upon estimates of the requirements of fresh levies that were being raised or upon demands that were communicated to the Committee by commanders in ^{the} field, by the governors of fortified places and by the Ordnance officers themselves who reported to the Committee concerning the state of the magazines.³

There were in fact some instances when the Committee of Both Kingdoms did issue direct instructions for procurement of munitions. Sir Walter Erle was instructed on 16th September 1644 to make arrangements for the casting of 12 guns for the Earl of Essex's new train of artillery. The gunfounder John Browne was directed by the Committee to utilise metal acquired from Holland for the purpose.⁴

Following the breach with the Scots, the English members of the old Committee of Both Kingdoms eventually constituted the body which in 1648 was known as the Derby House Committee. It was not directly concerned with contracting for munitions, although it inherited the problem of

1 W.O. 49/82 ff. 35-36, 79-89

W.O. 55/461 f. 16

Add. Mss. 35,332 f. 17

2 C.S.P.D. 1648-9 p. 35

3 op. cit. 1645-7 p. 191

4 op. cit. 1644 pp. 508-509

organising the provision of saltpetre.¹

One significant factor to which we have briefly alluded and which affected both the procurement of munitions and the issue of warrants for deliveries from the Ordnance Office stores was that there was a degree of overlap in the function and personnel of those committees which were involved in the maintenance of the Parliamentary war effort. The dividing lines between them were not always clear cut. Thus the activities of the Committee of Safety and of the Committee of Both Kingdoms encroached upon one another, whilst the functions of the Committee for Powder, Match and Shot impinged on those of the Army and Navy Committees in the field of procurement and issuing of stores.

The activities of these various committees were also interrelated in that to some extent they shared the same personnel. There was a core of members of Parliament who were involved in the task of munitions procurement for much of the Civil War period. Some of these men were active in the wider sphere of Parliamentary finance and administration too and consequently they served on other committees besides those referred to here. This proliferation of committees made it possible for individuals with special knowledge and skills to exercise them in more than one sphere at the same time. The multiple committee memberships held by Giles Greene and others may be ascribed in part to this desire to make use of their abilities.² In political terms however this factor facilitated the influencing of the conduct of the war by a small group of members of Parliament. Control over the execution of policy could be as important as control over its formulation.

Giles Greene, who like Sir Walter Erle held a seat in Dorset, was a member of the Committee for the Ordnance Office and then of the Committee for Powder, Match and Shot which took over responsibility

1 C.S.P.D. 1648-9 pp. 35-36

C.J. 1646-8 p. 261

2 Hammond, W.N. The administration of the English navy p. 26

for the supervision of the Office in June 1645. He was also chairman of the Navy Committee, and naturally he was appointed to the Admiralty Committee which exercised some of the functions of the Lord High Admiral whilst that office was in abeyance between 1645 and 1648. Greene was associated with the 'Middle Group' in Parliament led firstly by John Pym, and then by Oliver St. John during the years 1643 to 1645. He has tentatively been identified as a Presbyterian during later years. In December 1648 he was secluded in Pride's Purge along with Sir Walter Erle.¹

Robert Scawen sat for Berwick, although he too had connections with the West Country. He had been associated with military matters before the outbreak of the Civil Wars and had held a financial post under the Crown. He also was a member of the Committee for the Ordnance Office and then became chairman of the Committee of the Army which was formed to manage the contracts for the supply of the New Model Army. For this service Scawen was voted the sum of £2,000 in 1646. During the period of his chairmanship from 1645 to 1648 his views have been identified with those of the old 'Middle Group', although such opinions were becoming untenable by that time.²

Other members of the Committee for the Ordnance Office were to serve on the Committee for Powder, Match and Shot and in some cases on other committees as well. Sir Robert Pye, who sat for Woodstock, served on both the above mentioned committees. He had acquired experience of naval and financial matters before the Civil Wars. He was Auditor of the Exchequer of Receipt and retained his position despite being suspected of Royalist sympathies at one time. Pye was associated with that group in the Commons which was in favour of a peace settlement in the early years of the War. Subsequently he

1 W.O. 47/1 p. 97

Keeler, M.F. The Long Parliament p. 194

Underdown, D. Pride's Purge pp. 168 note, 374

Hammond, W.N. The administration of the English navy p. 17

2 W.O. 47/1 p. 97

Pennington, D.H. in Fisher, F.J. ed. Essays in the economic and social history of Tudor and Stuart England p. 185

Keeler op. cit. p. 335

Underdown op. cit. p. 385

became a Presbyterian.¹

John Rolle was a London merchant who sat for Truro. His committee memberships included seats on the Committee for the Ordnance Office, the Navy Committee and the Committee for Powder, Match and Shot.² Another member of these same three committees was Alexander Bence, who was likewise a merchant and sat for Aldeburgh until 1648. Both Rolle and Bence were members of the Admiralty Committee too.³ Finally, Sir Walter Erle himself was appointed to the Army Committee in March 1645, about the time that he ceased to hold the office of Lieutenant of the Ordnance. Shortly afterwards he also joined the Admiralty Committee.⁴ Again in 1645 he acted as chairman of a sub-committee appointed to consider an aspect of the long drawn out business of the East India Company's trading privileges. An ordinance on this subject had been brought before the Commons two years previously. Giles Greene was also a member of this sub-committee.⁵ There may be said to be a connection between this matter and that of munitions supply insofar as the importation of saltpetre would be affected by the nature of any decision on the regulation of trade with the East.

Apart from the committees which were concerned with military administration from the centre, the committees responsible for overseeing counties that were associated for the purposes of defence and providing resources for the war effort sometimes arranged for the making of contracts through the Ordnance Office. The most important of these committees, the Committee of the Eastern Association, arranged contracts in December 1645 for the supply of arms through

1 W.O. 47/1 p. 97

Pennington, D.H. in Fisher, F.J. ed. Essays in the economic and social history of Tudor and Stuart England p. 185

Keeler, M.F. The Long Parliament p. 317

Aylmer, G.E. The state's servants p. 353 note

Underdown, D. Pride's Purge p. 383

2 W.O. 47/1 pp. 97, 303, 309

Keeler op. cit. p. 327

3 W.O. 47/1 pp. 97, 303, 309

Keeler op. cit. p. 106

4 Hammond, W.N. The administration of the English navy p. 17

5 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 115, 134

the Office for the use of the forces in Lincolnshire and at King's Lynn.¹

When the officers of the Ordnance were themselves responsible for making contracts, they usually did so at the instigation of one or other of the foregoing committees. However, the officers seem to have exercised the right to make contracts for the cleaning and repair of weapons. These were made both with the furbishers employed at the Ordnance Office and with gunsmiths and cutlers in the City.²

The overall pattern of contracting was such that clothing, gunpowder, match and shot were supplied in the main by a limited number of substantial contractors who were usually contracted with for large quantities. Sometimes they were required to deliver over an extended period of time as much as could be provided for a given sum of money or as much as they could make with the materials available. These large and expensive contracts were however outnumbered by the generally smaller contracts for the supply of arms and equipment which were spread over a wider range of individuals. Although the total amounts delivered in this second category were large, the quantities stipulated in individual contracts were often quite small. The result was a proliferation of small contractors who were able to share the market with more substantial merchants and manufacturers, although in some instances tradesmen and artificers combined either in their craft guild or in private associations for the purpose of carrying out contracts. These features of Ordnance Office contracting are also to be found during the Commonwealth period.³

In a number of instances we find laid down in the contracts the technical specifications of the munitions, clothing or equipment and also instructions concerning the rate at which they were to be delivered to the Tower. Sometimes the contract merely states that the provisions are to be "according to the pattern in the Tower", but in

1 W.O. 49/82 ff. 65-67

2 W.O. 47/1 pp. 1, 20, 177

3 Hammond, W.N. The administration of the English navy p. 151

other cases it goes into considerable detail, presumably with a view to ensuring a reasonable degree of standardisation in an age of small scale production and hand tools which made uniformity difficult to achieve.

A contract made by the Army Committee on 14th February 1646 with the City merchant Richard Downes for the provision of coats, breeches and stockings lays down the colour and pattern of the garments in detail and declares "although it may be impossible for any person to undertake y^e sayd provisions exactly suitable for goodness to any pattern for y^t many will be better and some may be a little worse yet it is y^e resolution of y^e said Contractor and he does hereby promis that as neere as he can none of y^e said provisions ...shall be worse than y^e patternes presented to y^e honourable Com^{ttee} or such as they shall appoint...shall have power to refuse any of them against which there is inst. exceptions".¹

Another contract of 30th April 1646 for the supply of bandoliers states that they are to be "of wood wth whole Bottoms to be turned wth in and not bored, the Heade to bee of wood and to bee layd in oyle, vizt Three times over and to be coloured blew wth blew and white strings, wth strong thred twist and wth good belts..."²

Control over the specifications and quality of arms such as muskets, pistols and swords was also effected by the appropriate livery companies who appointed their own proofmasters. There is, however, some evidence of concern over the quality of firearms supplied to the Ordnance Office. Apart from the recorded instances of substandard weapons being delivered to the stores, the court of the Gunmakers' Company discussed procedures for proving guns on several occasions during the Civil Wars.³

From a comparison of the dates on which contracts were agreed with the dates upon which the provisions were received into the

1 L.M. 46-78/709 ff. 27-28

2 op. cit. f. 67

3 W.O. 47/1 pp. 230, 233
G.L. Ms. 5220 vol. 2 unfol.

stores we can get an impression of how long it took to complete a contract, although on the other hand these dates were not always recorded with absolute accuracy. In many cases delivery dates were specified in the contract itself.

Four thousand pairs of shoes ordered for the New Model Army were to be delivered "by Saturday next Seavenight". The contract was made with Jenkin Ellis and Francis Marriott and it was notified to the Ordnance Office on 1st April 1645. Two thousand pairs were sent in by Marriott six days later, but the first recorded delivery from Ellis is dated 11th July 1645.¹ Yet another contract made with Ellis on 5th January 1646 for the delivery of 4,500 pairs of shoes of various sizes was successfully complied with.²

There is a record of a contract made with John Penbury on 3rd April 1645 whereby 5 tons of musket shot were "to be deliv'ed wth in 14 daies". The date of the receipt of the final consignment is given as 25th April.³ On the other hand 10 tons of musket shot and one ton of pistol shot ordered from Daniel Judd for the New Model Army on 22nd November 1645 and required by 1st January 1646 were received into the stores on 8th December.⁴ Another contract recorded at the Ordnance Office on 4th April 1645 required George Langley and Nathaniel Rawlinson to provide 300 saddles for dragoons, one hundred by the following day and the remainder a week later. The order was complied with, although the saddles were not new.⁵ A more long term contract was that made with John Thacker on 23rd December 1645 for the supply of 400 pikes at the rate of 100 a month. This too was successfully met.⁶

1 W.O. 47/1 p. 210

W.O. 55/1662 pp. 21b, 67b

2 L.M. 46-78/709 f. 71

W.O. 55/1663 f. 66

3 W.O. 47/1 p. 211

W.O. 55/1662 p. 44b

4 L.M. 46-78/709 f. 13

W.O. 55/1662 p. 77b

5 W.O. 47/1 p. 211

W.O. 55/1662 p. 18b

6 L.M. 46-78/709 f. 16

W.O. 55/1663 ff. 61, 78

Contracts for the repair of weapons generally prescribed a date by which they were to be returned to the stores. The officers of the Ordnance issued 257 muskets on 5th April 1644 to George Fisher, Robert Steadman and William Ridgway for cleaning and repair. They were to be returned to the stores on or before the 19th of that month.¹

This question of the length of time required to obtain munitions for the stores is worthy of further consideration since it would be an important factor when supplies were needed urgently. The factors which might have been expected to influence the length of time taken to complete a contract include firstly the size of the order; secondly, the size of existing stocks held by the contractor or of those to which he had access if he was acting as a middleman rather than a manufacturer; thirdly, the availability of raw materials and fourthly the question of finance.

A study of the Ordnance Office records does not reveal a definite correlation between completion periods and the size of contracts. In the majority of cases where records of deliveries are available, the supplies were received within 21 days of the date of the contract. In quite a number of instances deliveries were made within 7 days. As we have seen there could be an interval of several days or even weeks before contracts made by the Army Committee were formally notified to the officers of the Ordnance. Furthermore, the dates of the entries in the receipts books are not necessarily an indication of the days on which the stores actually reached the Tower. The provisions were supposed to be examined and proved before they were accepted into the stores. Ordnance, round shot and gunpowder were generally manufactured outside London and some allowance must be made for transit time which could be affected by bad weather.

Firearms contracts generally took longer than the average to complete, 20 to 28 days in some cases, although quite a number of such contracts were completed within a shorter period of time. Apart

from the complexity of the manufacturing process, which required special skills, the necessity of submitting new guns for proving may also have contributed to longer delivery times. A contract made with various gunmakers in December 1645 for the provision of up to 300 muskets apiece stipulated that the snaphance muskets were to be delivered by each contractor at the rate of 25 a month, and the matchlock muskets at 50 a month. In the majority of cases the specified quantities were delivered on time.¹

Contracts for the supply of holsters also tended to take longer than most to complete, up to two months in certain instances. This may reflect the intricacy of the manufacturing process, the length of time required to prepare the leather, and perhaps a shortage of raw materials.

It is clear that many orders were fulfilled wholly or partially from a supplier's own existing stocks or else they were met by purchasing supplies elsewhere. Some large contracts were completed within a few days or indeed one day. Even after making allowance for possible inaccuracies in regard to the dates of contracts and receipts, it is apparent that the supplies could not have been manufactured in the time available. For example, a contract for 2,000 pairs of shoes is recorded as having been made on 10th July 1645, followed by delivery to the stores next day.²

This suggests that the process of obtaining munitions for the Ordnance Office stores need not necessarily have been a slow one compared with procurement outside the Office, provided that some reasonably satisfactory administrative and financial arrangements existed. In the case of the New Model Army the officers of the Ordnance were not themselves responsible for placing the contracts. This dealt with another objection to procurement through the Ordnance Office, namely, that prices were inflated due to the payment of

1 L.M. 46-78/709 ff. 79, 81
W.O. 55/1663 passim

2 W.O. 47/1 p. 297
W.O. 55/1662 p. 67b

fees or gratuities by contractors.

The time taken to complete a contract could be extended if there were delays in proving the munitions or if they were found to be unsatisfactory. Sometimes supplies were delivered without having first been proved. The Army Committee ordered the officers of the Ordnance on 25th April 1645 not to accept any more pistols from John Tucker or his agents. Tucker had been contracted with for 1,200 pairs. In reply, the officers stated that they had so far received 910 pairs of pistols from Tucker, 300 of which they had not inspected. A further 690 pairs were delivered by Tucker in the following month. Other suppliers of pistols included Samuel Bartlett "at the Excise Office", whose 200 pairs of Dutch firelock pistols included 187 pairs without proof marks, of which in turn 117 pairs were found to be under bore. On 1st May 1645 the Army Committee directed that these pistols be returned to Bartlett who was to take them to the gunsmiths for proving.¹

There is no evidence that the period of large scale ordering on behalf of the New Model Army in the spring and summer of 1645 had the effect of depleting suppliers' stocks with the result that delivery times were extended in subsequent months. Moreover, these orders, although large, were not unprecedented. Apart from munitions for the Navy, contractors had previously been called upon to supply large quantities both through and outside of the Ordnance Office to the English armies in the Bishops' Wars, to the first Parliamentary armies and to the forces in Ireland.

With regard to the other factors such as the availability of raw materials and finance, which may have influenced contract completion times, the Ordnance Office records shed little light upon them. The shortage of saltpetre from both domestic and foreign sources undoubtedly had an adverse effect upon the rate of production of gunpowder, whilst the preparation of match was similarly handicapped

¹ W.O. 47/1 pp. 208, 230, 233

W.O. 55/1663 ff. 11, 17, 18

by the lack of suitable materials. During 1643 the manufacture of firearms in London was hampered by a shortage of coal as a result of Royalist-held Newcastle being blockaded by Parliamentary ships.¹

A lack of money was more likely to prevent the making of a contract in the first place rather than to delay its completion. However, a shortage of funds may well have undermined some large open ended contracts which depended upon the allocation of money on a continuing basis. This was the fate of the arrangement instituted for the provision of English saltpetre to the powder manufacturers.²

Finally, there are a number of occasions when a record of a contract has neither a corresponding record of delivery in the Ordnance Office receipts books nor any record of payment to the contractor in the Commonwealth Exchequer Papers. There are also cases where the quantities stipulated in the contract do not appear to have been delivered in full. It is impossible to say categorically whether or not this is due to deficiencies in the records, but the number of contracts which were ostensibly left unsatisfied is not large enough to affect materially the account of the nature of procurement for the Ordnance Office land stores that has been built up from the available records.

1 Roy, I. The Royalist ordnance papers pt. 1 p. 14

Howell, R. Newcastle and the Puritan Revolution p. 154

2 See below p. 190

Chapter Seven

Deliveries to the Ordnance Office Land Stores, 1643 to 1648

Closer consideration will now be given to the provision of the more significant kinds of munitions, equipment and clothing for the Ordnance Office stores for land service during the Civil Wars. An attempt will be made to estimate the quantities so delivered, relying upon the evidence primarily of the books of receipts and of debentures. Yet it is doubtful whether these records provide a complete picture since they are almost certainly not comprehensive. In the first place, some of the relevant records may simply not have survived. Secondly, the entries in the ledgers were made from time to time from the original receipts, whilst full and accurate record keeping had never been a characteristic of the Ordnance Office.

According to the officers of the Ordnance in their statement of 1630, the procedure to be followed was that after the supplies had been delivered to the Tower, proved and accepted into the stores, the contractor was issued with a bill signed by the Surveyor of the Ordnance and the Storekeeper, which he then presented to the Clerk of the Ordnance. The latter made out a debenture and entered a copy in the ledger. The original bill thereupon became void, although the officers declared that "they have been all wayes to be kept upon file".¹ On the other hand the issue of debentures accounts for only a part of the provisions obtained for the Ordnance Office during the Civil Wars. Between 1645 and 1648 the number of debentures made out by the officers was far exceeded by the number of payments in cash made to suppliers, mostly by the Army treasurers.

Furthermore, supplies from abroad and from contractors in England which were delivered directly to the armies and garrisons without passing through the Tower are with but few exceptions not included in the Ordnance Office records. But despite their limitations, these records do make possible a quantitative assessment

of a major part of the Parliamentary war effort, especially with regard to the provision of gunpowder, match and shot and to the upkeep of the New Model Army.

The monopoly as a form of economic organisation had with government encouragement proved more durable in the field of munitions production than in other spheres of industrial and commercial enterprise. Although legal monopolies had been abolished before the outbreak of the Civil Wars, the situation on the Parliamentary side with regard to the manufacture of war materials was not in fact very different from what it had been during the 1630's.

The number of significant producers of gunpowder, ordnance and shot remained small and the former Crown patentees were prominent amongst them. This situation was brought about by the scarcity of raw materials, which had to be channelled to the few major producers who had been contracted with; the existence of only a small number of large scale works for making gunpowder and ordnance; the difficulty of financing and building new plant under civil war conditions and the fact that large scale and continuous production of munitions for the Parliament could only be carried on in areas which were militarily secure and possessed adequate communications with London.

Government interest in the manufacture of munitions was fostered during the sixteenth century by awareness of the importance of ensuring access to arms, ammunition and essential raw materials from the point of view of national security. The granting of monopolies facilitated control by the state of the activity in question, benefited the Crown financially through the sale of patents and in theory at least it safeguarded the patentee from competition. Another possible advantage was that a monopoly reduced the risk of overproduction and consequent financial loss in a sphere of activity where demand was typically unstable. When the state was the principal customer then the success of the venture depended on the readiness of the Crown to take a regular supply and to make satisfactory payment

for what it received. Frequently this did not happen and state contractors resorted to selling at least a part of their output on the open market which could be a more profitable business.

During the early seventeenth century opposition grew both in Parliament and in the country at large to the restrictions upon commercial and industrial activity in general and to the powder and saltpetre monopolies in particular. The monopolies system was also undermined by the failure of the patentees to produce munitions in sufficient quantities, particularly at times of exceptional demand. Imports were from the outset an important source of supply.

However, in spite of public opposition to monopolies, there were factors which favoured the existence of some form of licensed production as the most likely means of providing a regular and adequate supply of munitions to the state as well as the potential to meet increased demand in the event of war. Such an arrangement, if successful, would also mitigate the adverse effects of fluctuations in the level of demand upon the munitions trades and so prevent them from becoming unduly run down.

In the early 1630's an unsuccessful attempt was made to ensure a ready and adequate supply of firearms by giving certain armourers and gunsmiths in London an exclusive contract to provide handguns for the state. However, the arrangement was not approved and in subsequent years the gunmaking trade was said to be in a depressed state owing to lack of demand. Eventually the conflict with Scotland led to a standing arrangement being made with gunmakers through the Ordnance Office for the supply of weapons during 1639 and 1640.¹

Munitions were exempt from the Statute of Monopolies of 1624, which abolished such devices in other fields of endeavour. However, there was a growing amount of unauthorised manufacture of gunpowder in particular during the 1620's and 1630's. Furthermore, concessions

1 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 pp. 56-60

were made which weakened the position of the monopolists. In 1636 the King attempted to revive the gunpowder monopoly and bestowed it upon two new patentees, George Collins and Samuel Cordwell.¹

Because of the importance of gunpowder, the supply of this commodity during the Civil Wars will be considered at some length. The principal powder mills of England were located in Surrey and Kent. The new patentees worked mills at Chilworth, near Guildford, whilst their predecessors had carried on the work at Long Ditton, near Surbiton and at other places south of London. On 17th November 1642 the King ordered the complete destruction of the Chilworth mills to prevent their being used by the Parliament, but this was apparently not done, for in July 1643 the Royalist General of the Ordnance referred to the Parliament's main powder works near Guildford which was "not guarded at all".²

In fact the safety of the Surrey mills was a recurrent source of concern to the Parliament. On 24th November 1642 the House of Commons ordered two members, Vassall and Ashe, to give instructions for the seizure of the Temple powder mills together with the brimstone, saltpetre and other materials there.³ The Earl of Essex directed Colonel Samuel Jones, governor of Farnham Castle, on 5th July 1643 to survey the Surrey powder mills together with the defence works and bridges about them, authorising him to take whatever steps were necessary to improve the fortifications. Then on 3rd April 1644 the Committee of Both Kingdoms called for an investigation into the security of the Surrey mills.⁴ A Commons order of 21st October 1644 instructed Sir Richard Onslow to inform the Committee of Both Kingdoms of the condition of the powder mills in Surrey and to take steps to

1 Nef, J.U. Industry and government in France and England pp. 89-96
V.C.H. Surrey vol. 2 p. 319

2 Roy, I. The Royalist ordnance papers pt. 2 p. 359
The Pythouse papers p. 53

Nef op. cit. p. 90

3 C.J. 1640-3 p. 863

4 S.P. 28/8 f. 75

V.C.H. Surrey vol. 2 p. 321

ensure their safety.¹

There were also mills near Bow and at Rotherhithe, although the length of time for which they were in operation and the quantities of powder that they produced during the Civil Wars are uncertain. The Derby House Committee was instructed by the Commons on 3rd June 1648 to consider the security of the mills at Bow.² The "weekly payment" to men engaged in powder making, referred to in an order to the Army Treasurer, Sir Gilbert Gerard, for the payment of £5 to Richard Hill on 3rd June 1643 presumably related to the making of powder in London.³ On 9th May 1644 the Committee of Both Kingdoms directed that all gunpowder in London, whether manufactured there or imported, should be held at the Tower pending the disposal of it by the owners.⁴ Finally, there was an old established powder mill at Ospringe near Faversham in Kent. Gunpowder was being manufactured there in 1649 when the proprietor was Daniel Judd. It is possible that this powder was used by the Navy as it was during the 1650's.⁵

The supply of saltpetre was fundamental to the manufacture of gunpowder. There were no known deposits of saltpetre in Europe, but a method of producing artificial petre was introduced to England in 1560. Powder mills were also established during Elizabeth's reign.⁶ The government made arrangements with saltpetre commissioners for the delivery of saltpetre to the licensed powder manufacturers, but on account of the unpopularity of the saltpetre men, which stemmed from their encroachments on private property and in particular from their requisitioning of carts for transporting the liquid petre to their works, governments were sensitive to complaints about their activities except when a shortage of gunpowder gave an additional

1 C.J. 1643-4 p. 671

2 op. cit. 1646-8 p. 583

3 S.P. 28/7 f. 471

4 C.S.P.D. 1644 p. 154

5 Percival, A. The Faversham gunpowder industry pp. 2, 3
Chalklin, C.W. Seventeenth century Kent pp. 156, 205

See above p. 36

6 Bovill, E.W. Mariner's Mirror vol. 33 1947 p. 183

urgency to their task.

This attitude persisted from the time of Elizabeth to the Commonwealth era. In April 1649 a committee was formed to consider the supply of saltpetre "without the disturbance that will be made by making it at home". Shortly afterwards the acute shortage of powder led to a proposal that the domestic production of saltpetre be recommenced, but the government was not moved to take action until the situation became critical as a result of the First Dutch War of 1652-4.¹

In any case the saltpetre commissioners had not always been able to supply the quantities which they had undertaken to provide. During the 1620s and 1630's they ceased to possess the right to make saltpetre exclusively and supplies were also obtained from abroad. In fact the production of saltpetre in England was never satisfactory, for the output was of indifferent quality as well as being insufficient in quantity. The chief provider of high grade saltpetre from 1626 onwards was the East India Company.² Domestic production represented a supplementary source and a partial safeguard against the interruption of imports in time of war.

The great demand for gunpowder during the Civil Wars led the Parliament to intervene directly in the business of providing saltpetre. By 1644 it had become clear that the supply of ammunition, and of gunpowder in particular, was the most crucial aspect of the provision of munitions. In consequence, ordinances intended to ensure a regular supply were necessary. A series of measures was introduced whereby saltpetremen were appointed, as they had been in the past, to supply the powder contractors. At the same time large quantities of foreign saltpetre were purchased from merchants.

An ordinance of May 1643 appointed men who were to dig for

- 1 Ferris, J.P. Proc. Dorset Nat. Hist. Soc. vol. 85 1963 pp. 158-159
 Hammond, W.N. The administration of the English navy pp. 277, 278, 279
 2 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 pp. 272-273
 Chaudhuri, K.N. The English East India Company p. 189

saltpetre. It was stated that larger amounts of powder were needed, whilst the foreign saltpetre and powder available ~~was of~~ inferior quality. Some countries had prohibited the export of those commodities.¹ Another ordinance introduced on 7th December 1644 which dealt with the provision of saltpetre and ammunition referred both to the appointment of saltpetre men who were to supply the powder contractors Samuel Cordwell and John Berisford; and to the purchase of foreign saltpetre from William Courteen and William Toomes.²

Courteen, (or Curteen), was the son of Sir William Courteen, a very wealthy merchant who during the 1630's headed an association trading with the East in competition with the East India Company. He died in 1636 and disputes over his estate prevented his son from acquiring a significant share of his fortune. William Courteen carried on the long standing dispute between his father's Association and the East India Company, but he was unable to take much advantage of the difficulties created for the Company by the conflict between King and Parliament. Many of the leading members of the East India Company were Royalist sympathizers, whilst the Company was unable to secure the confirmation of its privileges and the exclusion of interlopers from the trade with the East. The Company and William Courteen tried unsuccessfully to settle their differences by negotiation and the matter was left in the hands of Parliament. Courteen was hampered by serious financial difficulties and by the misfortunes which befell the ships which he sent to the East. Being unable to satisfy his creditors, he withdrew to the Continent in 1643 or 1644. He died in Italy in 1655.³

An agreement was made between the Committee of Safety and Courteen in January 1644 for the refining of 180 tons of saltpetre imported from the East Indies. Courteen was to receive £5 per

1 C.J. 1643-4 p. 97

2 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 578-579

3 D.N.B. vol. 4 pp. 1259-1260

Pearl, V. London and the outbreak of the Puritan Revolution p. 88

Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 passim; 1644-49 pp. x, xi

hundredweight. On 4th April 1644 the Commons ordered that a proportion of the saltpetre bought from Courteen sufficient to make 600 barrels of powder for the Navy be delivered to Sir Walter Erle. Shortly afterwards, on 20th April, the Committee of Safety instructed Erle to deliver to John Berisford 10 tons of saltpetre which he would likewise received from Courteen. The petre was to be taken in part settlement of a debt due to Berisford for powder supplied to the Ordnance Office.¹

The officers of the Ordnance were directed by the Commons on 10th September 1644 to receive into the stores gunpowder refined by John Berisford from 2 tons 12 cwt of saltpetre provided by Richard Hill, a City merchant, and to issue debentures accordingly.² William Courteen and others supplied 26½ tons of foreign saltpetre from which Berisford made powder under a contract with the Navy Committee in October 1644. By the same contract Samuel Cordwell received 36 tons 3 cwt of saltpetre from the same source.³ At least part of this powder was used for land service.

Although the financial and legal disputes with the East India Company dragged on, Courteen had withdrawn from the Eastern trade by about 1644, so that it appears unlikely that he provided any more saltpetre.⁴ It is not clear how much saltpetre was made available by the East India Company during the Civil Wars for the use of the Parliament. Commercial activity was naturally curtailed by the political uncertainties engendered by the Civil Wars and the Company was reluctant to commit itself too extensively to trading ventures in the East whilst the confirmation of its monopoly of that trade remained in doubt.

1 C.J. 1643-4 pp. 364-365, 448

C.S.P.D. 1644 p. 129

2 W.O. 47/1 p. 102

W.O. 49/82 ff. 13, 14

3 op. cit. ff. 26, 29

4 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. xi, xiii

The D.N.B. article on Courteen implies that he actually went bankrupt in 1643, but this is contradicted by the court minutes which state that he had still not been declared bankrupt in 1646.

Imports of saltpetre by the Company were probably well below the average of 200 tons a year in the early 1630's. The real expansion of the Company's saltpetre trade did not occur until after the Civil Wars. An ordinance intended to confirm the Company's privileges was not considered by the House of Commons until November 1643, nor was it passed until March 1647, whereupon it was rejected by the Lords.¹ Before the Civil Wars the Company had been selling up to 50 tons of saltpetre a year to the licensed gunpowder maker. Thereafter it adhered to a strictly commercial policy and was not prepared to make supplies available to the Parliament on more favourable terms than hitherto. The practice seems to have been one of selling to the highest bidder, sometimes employing a broker to dispose of the petre. The Parliamentary gunpowder manufacturers usually bid for whatever was available, but they were not successful in every case. In November 1645 all the East India Company's saltpetre was sold to Samuel Cordwell for £4 10s a hundredweight, payable in three months. But in the following year, a bid of £4 a hundredweight for all of the Company's saltpetre by a former overseer of one of the Company's trading establishments in Java, was rejected and one of the committees was authorised to dispose of the petre at £4 5s.²

Another ordinance concerning the domestic supply of saltpetre was made on 7th February 1646, but the provision of English petre was hampered by the inadequacy of the Parliament's measures for financing munitions procurement, as well as by the practical problems of the collection and manufacture of the materials. By an order of the Committee of Both Kingdoms of 13th April 1646, two thirds of all the saltpetre made by saltpetre men in certain counties was to be delivered to Samuel Cordwell and the remainder to John Berisford.³

In the later years of the Civil Wars Berisford took over from

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 p. xxvi; 1644-49 p. 196

2 Chaudhuri, K.N. The English East India Company p. 189

3 Sainsbury op. cit. 1644-49 pp. 112, 156

3 V.C.H. Surrey vol. 2 p. 321

Cordwell in bidding for the East India Company's saltpetre. In June 1647 he bought through a broker all that was available for £1,500, although he had to assign to the Company as security for payment a debt due to him for gunpowder supplied to the Navy Committee. At £4 a hundredweight this amount would have been about 18 tons. In the following year he was less successful. It was reported in April 1648 that several persons were interested in buying the East India Company's saltpetre and two months later it was resolved to put the consignment up for sale. Berisford's offer of £3 5s a hundredweight was rejected and the saltpetre was eventually sold to a Richard Clutterbuck for £3 12s.¹

The Derby House Committee ordered on 23rd March 1648 that Robert Cordwell be allowed the same proportion of domestic saltpetre that had been given to his brother Samuel. The Committee also stated that although the ordinance of February 1646 had provided for the delivery of about £12,000 worth of saltpetre, perhaps 150 tons, to Cordwell and Berisford each year, no permanent arrangement had been made for the payment of the saltpetre men. As a result, the powder makers were unable to pay for the saltpetre and the former were left with a great deal of it on their hands.² Licensed production of saltpetre had therefore ceased by 1648 and did not resume until 1656. The powdermakers themselves preferred imported saltpetre, although supplies from abroad were likewise impeded by financial difficulties. Failure to make satisfactory arrangements with the East India Company for the settlement of contracts had the effect of reducing supplies from that source.³

In 1649 the Council of State attempted to re-establish the regular supply of saltpetre by the East India Company. The Council negotiated for the Company's stocks, employing the merchant William

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 206, 208, 222, 263, 278, 290., 296

2 C.J. 1648-9 pp. 35-36
C.S.P.D. 1645-7 p. 411

3 Hammond, W.N. The administration of the English navy pp. 281, 493 note

Pennoyer as an intermediary. The latter's offer of £3 10s a hundredweight was refused and the Company insisted upon the £4 5s, "ready money", at which they had originally offered the saltpetre to the Ordnance Office.¹

By 1640 Samuel Cordwell seems to have acquired sole charge of the Chilworth Mills. In December of that year he certified that as Royal Gunpowder Maker he had delivered for land and sea service the equivalents of 6,480 barrels of powder in each of the years 1636-7 and 1638-9, and 5,778 barrels in 1639-40. His contract required him to supply 6,480 barrels a year. His work was apparently hampered by insufficient amounts of saltpetre. He requested and was granted permission in 1637 to take saltpetre imported by the East India Company, but again complained of inadequate supplies. On the other hand, English saltpetre men claimed at the time that Cordwell refused to accept supplies from them.

In February 1639 it was stated that the amount of saltpetre produced in England was insufficient by about 50 tons for the gunpowder maker to supply the annual amount of powder for which he had contracted. In November 1641 the total deficiency was put at over 100 tons.² The East India Company had saltpetre at its disposal from which the deficit could have been made up, but the continuance of supplies from this source depended upon satisfactory arrangements for payment by the state. With the re-establishment of the gunpowder monopoly by the King in 1635, the Company had agreed to sell all of its saltpetre to the Crown at £4 a hundredweight. In the early 1630's imports by the Company amounted to around 200 tons a year, of which a proportion was re-exported to Amsterdam.

The Company declared in June 1640 that saltpetre worth £2,733, amounting to about 34 tons at £4 a hundredweight, had been delivered to Cordwell in the previous October, but payment had not been made

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 346, 349, 350, 351

2 Nef, J.U. Industry and government in France and England pp. 90-91, 95
V.C.H. Surrey vol. 2. p. 310

within the stipulated period. Shortly afterwards it was stated that a total of £4,744 was owed to the East India Company by the Crown in respect of saltpetre delivered to Cordwell.¹ The powder maker in turn claimed that part of the consignment delivered to him in October 1639 was defective and he asked for a reduction in price accordingly. This was refused by the Company who declared that had they been allowed to re-export the saltpetre it could have been sold for £5 a hundredweight instead of the £4 accepted in England. At the same time, however, Cordwell asked the Privy Council to arrange for the regular purchase of supplies from the East India Company. Such a scheme presupposed the existence of adequate financial provision, but it was the lack of this which hampered the supply of munitions both before and during the Civil Wars. In September 1640 Cordwell was offered 50 tons of saltpetre by the East India Company, whilst in February 1642 he contracted for all of the Company's petre at £3 10s a hundredweight.²

Meanwhile Cordwell had become concerned at the threat to his monopoly. On 31st March 1641 he petitioned the King, declaring that if he proceeded to manufacture the amount of powder for which he had contracted and the gunpowder patent were to be revoked, he would be left with large stocks on his hands and consequently he would be ruined. However, this did not prevent the abolition of his monopoly, already undermined by the illicit manufacture of powder in London and elsewhere. In addition to supplying the state, Cordwell also repaired defective gunpowder for the East India Company before the Civil Wars.³

On 1st August 1642 Cordwell was directed by the House of Commons to provide 20 barrels of powder "at the agreed rates" for the city of Norwich, an arrangement not generally found in later years when large contracts for the supply of the Ordnance Office stores

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 pp. 44, 73

Chaudhuri, K.N. The English East India Company pp. 189, 190

2 Sainsbury op. cit. pp. 12, 14, 88, 232

3 C.S.P.D. 1640-1 p. 303

V.C.H. Surrey vol. 2 pp. 310, 319, 320, 321

Sainsbury op. cit. pp. 7, 34, 101, 102, 221

predominated.¹ By order of the Commons on 2nd March 1643, Cordwell, having been appointed to make gunpowder for the Parliament, was authorised to transport saltpetre and other materials to his works at Chilworth without hindrance. His first recorded deliveries for land service to the Ordnance Office stores during the Civil Wars took place in July 1643.²

In reply to a request from the Navy Committee on 27th July 1644 for a statement of the quantity of gunpowder available for the use of the Navy which had been delivered under a contract made by the Committee of Safety, the officers of the Ordnance declared that as to the contract "wee knowe nothing of it", but they had received instructions from the Committee of Safety dated 24th February 1644 whereby they were to receive into the stores all the gunpowder brought in by Cordwell. This they had done. Since that time 2,400 barrels of powder had been delivered by the powder contractors, of which nearly two thirds had been employed for land service. Of this amount, Cordwell had supplied 1,300 barrels.³

In March 1644 the Committee of Both Kingdoms ordered Cordwell to send all his powder to the Tower as soon as it had been made and not to keep more than 7 tons of saltpetre at his works. Then in the following September the Surrey county committee reported that they had taken charge of 517 barrels of powder at Weybridge, which they were instructed to send to the Tower. The Commons directed that Cordwell be examined by the Committee of the Tower in view of the directive that he had been given earlier. The Committee of Both Kingdoms acknowledged the receipt of this powder on 14th September, and two days later the House of Commons was asked to find some means of satisfying the owners of it. But the matter was raised again in

1 C.J. 1640-3 p. 698

2 op. cit. p. 988

W.O. 55/1660 ff. 12, 13

3 W.O. 47/1 pp. 74, 75

To facilitate comparisons all gunpowder quantities are expressed in barrels. A barrel is taken as representing 100 lbs net weight of powder.

January 1645 when Cordwell was once more told not to keep more than a week's supply of saltpetre at Chilworth and at the same time send his powder to London.¹

Apart from the urgent need for gunpowder, the most likely reason for these injunctions was the fear lest significant quantities of powder and saltpetre should fall into the hands of the Royalists in the event of an attack upon the mills. Another possible factor is that Cordwell was reluctant to deliver further large amounts of powder until he had obtained adequate security for payment together with satisfaction for the supplies already delivered. Like some other contractors during the Civil Wars, he may have made some of his output available in the open market, where there was the prospect of a better return. In January 1644 the East India Company resolved to negotiate with him for the delivery of 100 barrels of powder.² Nevertheless, Cordwell continued to supply the Ordnance Office until his death in 1648, when he was succeeded by his brother Robert.³

Amongst the contracts undertaken by Samuel Cordwell for the Parliament was one made with the Navy Committee on 8th October 1644, whereby he received 51 tons 15 cwt of saltpetre, from which 15 tons 11 cwt were deducted to pay for 370 barrels of powder, the balance of 495 barrels sent to the stores from Weybridge. From the remaining 36 tons 4 cwt of saltpetre Cordwell manufactured 965 barrels of powder. Additional quantities were made from English saltpetre.⁴ On 1st July 1645 the Navy Committee ordered the officers of the Ordnance to receive and prove powder made by Cordwell from both domestic and foreign saltpetre under another contract. The powder was to be employed in equal measure for land and sea service.⁵

The Committee for Powder, Match and Shot stated on 31st July 1645 that Cordwell had delivered 678 barrels of powder to the stores

1 C.S.F.D. 1644 pp. 58, 500-501, 504, 508

C.J. 1643-4

V.C.H. Surrey vol. 2 p. 321

2 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 p. 5

3 C.J. 1648-9 p. 35

4 W.O. 49/82 f. 29

5 W.O. 47/1 p. 283

during that month. In their summary of the receipts and issues of gunpowder during the period 2nd July to 4th August 1645, the officers of the Ordnance stated that a total of 793 barrels had been received. Their next weekly statement for the period 4th - 11th August records that a further 100 barrels had been delivered.¹

The other major powder contractor to supply the Parliament, John Berisford, did so for almost the whole of the Civil War period. During the summer of 1643 he provided powder for the Committee of Safety's magazine in the custody of Owen Rowe and John Bradley.² The Committee ordered the Army Treasurer on 26th May 1643 to pay Berisford £450 immediately for gunpowder which he had delivered. The money was paid on that same day.³ Yet eleven months later it was stated in the Commons, on 30th April 1644, that Berisford had not received payment in full for 600 barrels of powder which he had provided. Such a quantity would have been worth around £2,500. In part settlement of this debt, the Committee of Both Kingdoms had on 20th April 1644 ordered that 10 tons of foreign saltpetre be delivered to him.⁴ According to the statement made by the Navy Committee, Berisford sent to the stores some 1,100 barrels between February and July 1644.⁵

In May 1644 Sir Walter Erle reported to the Commons that he had spoken to Berisford about the provision of powder for the Earl of Essex's army and that the former was willing to supply 300 barrels provided he received an initial cash payment of one third of the total price together with security for the remainder. An ordinance was introduced to facilitate this.⁶

This illustration of the hand to mouth nature of the Parliament's financial arrangements is another indication of the fact that deficiencies in the supply of munitions were not simply the result of insufficient manufacturing capacity, but were also due to

1 W.O. 47/1 pp. 325, 329-331, 340

2 S.P. 28/264 ff. 27-30, 56-60

3 S.P. 28/7 f. 253

4 C.J. 1643-4 p. 474

C.S.P.D. 1644 p. 129

5 W.O. 47/1 p. 74

6 C.J. 1643-4 p. 518

financial causes. As the demand for munitions continued so confidence in the Parliament's ability to pay for them dwindled. Although certain contractors may have been constrained to supply the Parliament by virtue of the location of their works, this did not mean that they were totally subservient and prepared to make deliveries upon any terms. Parliament could scarcely afford to dispense with their services and it might have been difficult to find competent replacements to finance and operate their works.

Berisford participated along with Cordwell in the contract made with the Navy Committee on 8th October 1644. He received $26\frac{1}{2}$ tons of foreign saltpetre, from which he manufactured 709 barrels of powder. He also made powder from domestic saltpetre.¹ For the New Model Army he delivered 1,230 barrels during 1645 under contracts made with the Army Committee.² In the first seven months of 1646 he delivered 200 barrels a month to the Army magazine at the Tower. For the remainder of the Civil War he was the principal supplier of gunpowder for land service. In those later years Berisford was also engaged in repairing defective powder for the East India Company, a task undertaken earlier by Samuel Cordwell.³

From the entries in the receipts and debentures books it is possible to form an estimate of the quantities of gunpowder received for land service at the Ordnance Office during the Civil Wars. However, these figures cannot be regarded as definitive and they account for only a part of the total amount of gunpowder provided for the Parliamentary land forces. The inadequacies of the records themselves, which sometimes give conflicting sets of figures for the same period [of time], the fact that not all gunpowder was brought to the Tower before being issued and the frequent pre-emption of 'navy' gunpowder for land service all make it impossible to build up a very

1 W.O. 49/82 f. 26

2 W.O. 55/1662 p. 50b; 55/1663 ff. 51, 67 74; 55/1664 p. 19
S.P. 28/140 ff. 104, 113, 117, 120

3 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49
pp. 172, 281

accurate picture. In spite of this, it is probable that the Ordnance Office records are more comprehensive in respect of deliveries of gunpowder to the stores than is the case with other kinds of munitions.

A summary of the deliveries of gunpowder to the Ordnance Office stores for land service is given in Appendix one. It will be seen that such deliveries did not assume significant proportions until 1644, no doubt on account of the shortage of funds for the purchase of ammunition. Thereafter the financial ordinances enacted by Parliament provided an erratic and still inadequate revenue. Deliveries rose to a peak of nearly 5,000 barrels in 1645, declining to between 2,000 and 3,000 a year subsequently. The contribution by Thomas Andrewes and other merchants in 1648 may have been occasioned by the difficulty in financing the purchase of English saltpetre.¹

A number of the lesser suppliers of gunpowder referred to were to achieve greater prominence during the 1650's. Amongst the major powdermakers recorded in 1656 were Daniel Judd, John Freeman and John Samin. Freeman also supplied saltpetre and small ordnance. Samin too was involved in saltpetre production whilst Thomas Fossan, another small supplier of the Civil War period, obtained permission in 1655 to search for saltpetre in the West Indies.²

The figures for deliveries given in Appendix one may be compared with the 6,480 barrels a year which Samuel Cordwell contracted to provide for land and sea service between 1636 and 1640.³ After the Restoration the manufacture of gunpowder was considerably expanded in order to cater for the increased demands of the Army and Navy, yet the old problems remained. Some domestic saltpetre production was still necessary and there were still difficulties in financing the production of both petre and gunpowder, especially during wartime. The output of gunpowder and the number of manufacturers

¹ See below p. 190

² Hammond, W.N. The administration of the English navy pp. 152, 279, 280, 492 note

³ See above p. 144

fluctuated in these later years, yet in 1687 there were eight major powder makers with a total annual output of more than 30,000 barrels.¹

There were occasions during the Civil Wars when gunpowder was sent directly to the place where it was required rather than to the Tower. On 14th September 1644 the Committee of Both Kingdoms directed Samuel Cordwell to send 200 barrels from Kingston to the siege of Basing House. Two months later he was told to send 60 barrels from his mills to Farnham Castle.² In addition, there are some quantities of powder which are not recorded in the Ordnance Office receipts books and so may not have been sent to the Tower. These comprise 500 barrels provided by John Berisford in 1645 and 1646 and 100 barrels delivered by George Boreman to places in the West in July 1647.³

The manufacture of ordnance and iron round shot was characterized both before and during the Civil Wars by the concentration of production in the hands of a small number of manufacturers and by the location of the principal works in the Weald district of Sussex and Kent. Only a small proportion of ironworks were capable of casting ordnance, although practically all of them would have been able to cast shot. One reason for this was that in the later sixteenth and earlier seventeenth centuries it was the practice of governments to regulate the number of foundries capable of casting iron ordnance with the object of exercising closer control over the disposal of the output.⁴

Iron gunfounding was also carried on in the Forest of Dean, Worcestershire, Shropshire, Denbighshire and Staffordshire, but during the Civil Wars the furnaces and forges were in some instances put out of commission and in others they were either worked for the Royalists during the First Civil War or else were too remote to be of more than occasional service when Parliamentary forces were in

1 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 1 pp. 274, 282; vol. 2 pp. 560, 576

2 W.O. 47/1 pp. 134, 190

3 S.P. 28/31 ff. 453, 539-540; 28/36 ff. 232-233; 28/47 ff. 101, 115

4 Jenkins, R. Trans. Newcomen Soc. vol. 44 1971-72 pp. 146-147

the vicinity.

The chief gunfounding establishments of the Brownes included those at Brenchley and Horsmonden in Kent and Brede in Sussex. John Browne stated in 1613 that he was casting ordnance at Brenchley, where he employed 200 men, and at four works in Sussex. In 1625 he claimed to be employing nearly 1,000 men at his various establishments. Works employing hundreds were quite exceptional in the seventeenth century. Even within the ironfounding industry the typical unit of production was small and output was limited by modern standards. Generally speaking, demand was neither large enough or reliable enough to justify really large scale production except in isolated instances, and even then there was no immunity from the effects of fluctuations in the level of demand. It has been estimated that the gunfounding industry as a whole employed a labour force of not more than a 1,000 in the reign of James I.¹

During the Civil Wars the Brownes supplied ordnance from at least two other furnaces in Kent, at Cowden and Barden, in addition to those at Brenchley and Horsmonden. John Browne the younger, son of the former Royal Gunfounder, declared at his examination before the Committee of Both Kingdoms in June 1645 that he and his father had three furnaces which were used for casting whole and demi-culverins and round shot.²

Ordnance were also made at foundries in and about London, in particular those which were cast in non-ferrous metal and special weapons such as the 'leather' guns. The latter were for a time constructed at the Vauxhall factory under the direction of James Wemyss, although the foundries there were eventually abandoned by the Parliament. One account states that the 'leather' guns employed

1 Coleman, D.C. Industry in Tudor and Stuart England p. 36

Jenkins, R. Trans. Newcomen Soc. vol. 44 1971-72 p. 145

(?) Straker, E. Wealden iron p. 162

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 16 note

2 C.S.F.D. 1644-5 p. 607

Chalklin, C.S. Seventeenth century Kent p. 137

by Sir William Waller's army were made at Lambeth.¹

In September 1643 4 falcons and 10 cases of drakes were provided by William Burrows and Richard Broome, founders, by order of the Committee of Adventurers for the forces in Ireland. In August 1647 Burrows was awarded a debenture for bringing brass ordnance from Coventry to London. These were probably unserviceable pieces which were to be recast. Burrows was a member of the Founders' Company, serving as Under Warden during 1642-3, Upper Warden during 1650-1 and Master during 1657-8.²

On the other hand, there does not appear to have been any significant production of ordnance in London during the Civil Wars. The repair of a foundry at Houndsditch was under consideration in 1640, at an estimated cost of £150, whereupon John Browne offered to prepare his foundry in Kent for the casting of 10 tons of brass ordnance at a charge of £100. The Houndsditch foundry may have been the one which, together with another on Tower Hill, the officers of the Ordnance were asked to survey in 1633 with a view to restoration.³ Yet Browne may have had difficulty in meeting the demand for ordnance in 1640, for in July of that year he offered to purchase all of the East India Company's iron guns at an independent valuation.⁴

Browne was most likely the chief source of brass ordnance during the Civil Wars as well as of iron guns. During the 1630's he had produced considerable numbers of brass guns for the Navy, although that task was strictly speaking the prerogative of Thomas Pitt, the licensed founder of brass ordnance. Pitt does not seem to have supplied the Parliament during the Civil War period, but he was

1 Thorpe, W.H. Trans. Newcomen Soc. vol. 13 1932-3 p. 84

A military memoir of Colonel John Birch pp. 87-88

Ffoulkes, C. The gunfounders of England p. 50

2 C.S.P.D. 1641-3 p. 483

Parsloe, G. Wardens' accounts of the Company of Founders pp. 317, 339, 355

S.P. 28/47 f. 570

3 C.S.P.D. 1640-1 p. 365

Harl. Mss. 429 f. 120

4 Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 p. 68

carrying out work for the East India Company during that time and in 1650 he was again sharing the production of brass ordnance with John Browne. As King's Gunfounder Browne was entitled to fees of 2s a day for casting brass ordnance and 6d a day for casting iron ordnance. His manufacturing interests extended over a wide range of ironware in addition to guns and shot.¹

The manufacture of ordnance from non-ferrous metal for the Parliament, chiefly for use as field guns, was limited by the supply of metal available, as it had been before 1642. Recourse was made to imported metal and to metal obtained from recasting broken ordnance, bells and other sources of non-ferrous metal.

The production of ordnance for the state had not afforded sufficient work to support the Brownes' enterprise. In 1619 they were making all the iron ordnance ordered by the government, yet over half of their total output was taken by the Dutch. Access to the market was essential if the business was to remain viable. John Browne declared in 1620 that casting guns for the state occupied him for about 10 days a year only.² The low level of military activity in England and the financial difficulties of the Crown depressed demand from that quarter, but at the best of times the gunfounding industry could not exist by supplying the state alone.

The greater part of the ordnance made by the Brownes for Parliament went to the Navy as it had done in the past. Between July 1643 and February 1644 John Browne received £3,095 15s 10½d from the officers of the Ordnance in respect of ordnance and shot provided for the Navy. A further £2,415 17s 6½d was paid to him between February 1646 and January 1647 for supplies for the Fleets of 1645 and 1646. The latter payments may have been in part at least settlement for the

1 Harl. Mss. 429 ff. 121, 157, 159-160

K.A.O. TR 1295/52

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 2 pp. 968-969

Jenkins, R. Trans. Newcomen Soc. vol. 44 1971-72 p. 149

Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 p. 12

2 Jenkins op. cit. pp. 147, 148

60 guns that Browne was required to cast for the Navy in March 1645.¹ Deliveries of new ordnance to the land forces during the Civil Wars were small by comparison.

Even at this time, some of the ordnance made by the Brownes were purchased by the Dutch. John Browne the younger stated in June 1645 that guns for disposal in the open market or to merchants were delivered to the London ironmonger Samuel Ferrars. At that time Ferrars was said to have ordered 300 small pieces.² The Brownes did not however, make ironwork for carriages and other military equipment supplied to the Ordnance Office. This work was carried out mostly by the master smith at the Tower.

On 7th October 1642 John Browne petitioned the House of Commons for a decision on the disposal of 20 pieces of ordnance ordered from him in 1640 by someone who had since left the country. The guns were now impounded at the Tower. Browne asked that either they be taken for the use of the state or else he should be allowed to sell them. His petition was referred to the Navy Committee.³

During the early years of the Civil Wars large numbers of ordnance were utilized on the extensive defence works which were erected about London. Few if any of these appear to have been made by the Brownes expressly for this purpose. The House of Commons ordered on 10th November 1642 that all the ordnance made by the Brownes in Kent be sent to London. Yet at that time John Browne was apparently laying off men for want of work.⁴ Faced with the immediate problems of equipping and maintaining an army, it would have been difficult for the Parliament to have provided ready cash for large scale purchases of ordnance for land service.

1 E. 351/2664

C.S.P.D. 1644-5 pp. 359, 633

2 Ffoulkes, C. The gunfounders of England p. 76

C.S.P.D. 1644-5 p. 607

3 op. cit. 1641-3 pp. 400-401

C.J. 1640-3 pp. 787, 798

W.O. 55/387 pp. 11, 13

4 C.S.P.D. 1645-7 p. 27

In April 1643 the Commons decided that 8 brass ordnance in John Browne's hands should be removed to the Tower and kept there for the rightful owner. Furthermore the Committee for Examinations was to inquire into the whereabouts of some mortar shells made by Browne and to establish how 12 shells came to be between the walls surrounding Lambeth House.¹ As in the case of Samuel Cordwell, there is a suggestion that Browne may have been reluctant to commit a high proportion of his output to the Parliament without greater security for payment. As we have seen, some of his guns went to the Dutch, and in 1645 he was selling some pieces privately in the London market.² The officers of the Ordnance were ordered by the Committee of Safety on 5th July 1643 to deliver to Browne all the broken pieces of ordnance at the Tower for recasting into new guns at the rate of £16 10s a ton. Then on 12th September 1643 he received 4 tons of chambers from the Tower for casting into drakes and other small pieces of ordnance.³

The replacement of the Earl of Essex's train of artillery following the surrender of his army in Cornwall in September 1644 created a fresh demand for brass field pieces. On 16th September the Committee of Both Kingdoms instructed Sir Walter Erle to arrange for the casting of 12 drakes. John Browne was told to alloy some metal received from Holland "with such metal as he shall think fit" and he was to cast as many three-pounder drakes as possible.⁴

During the Civil Wars John Browne was involved in commercial disputes and was suspected of political intrigue. He was a party to a Chancery suit in which his agent, John Pearson of Philpott Lane, Eastcheap, was also involved. Pearson claimed to have been engaged in selling Browne's products and in protecting his gunfounding patent. He alleged that Browne owed him large sums and that he had himself

1 C.J. 1640-3 p. 843; 1643-4 p. 37

2 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 2 p. 971

3 W.O. 55/460 ff. 23, 30

Add. Mss. 34,315 ff. 23-24

4 C.S.P.D. 1644 p. 509

purchased Browne's patent for him. Browne in turn accused Pearson of embezzlement.¹ But in spite of the dispute Pearson continued to act as Browne's agent. According to John Browne the younger, ordnance for disposal in the open market were sent to Pearson from the ironworks whilst those intended for the Ordnance Office stores passed through his hands on their way to the Tower.²

Pearson himself contracted for the supply of munitions to the Parliament, although the work may have actually been carried out by Browne. On 28th June 1645 the Army Committee contracted with Pearson for 300 round shot. In the following month he received a debenture for providing $2\frac{1}{4}$ tons of round shot for the garrisons of Pembrokeshire.³ Pearson was one of those who gave evidence when the Brownes were examined by the Commons as suspected Royalist sympathizers, in the summer of 1645.

During the winter of 1644-5 there had been a series of Royalist intrigues in Kent which culminated in an unsuccessful uprising in April 1645.⁴ The Royalists had entertained hopes, groundless or otherwise, of securing the allegiance of the Brownes. A letter written in May 1645 by Sir Thomas Walsingham, a member of a leading Kentish family, to Lord Digby, suggested that John Browne was a reluctant supplier of munitions to the Parliament and that he might support a Royalist invasion of Kent. This letter had fallen into the hands of the Parliament.⁵

The Commons ordered on 23rd June 1645 that Browne and his son be taken into custody and their papers confiscated.⁶ They were examined before the Committee of Both Kingdoms. One of the allegations

1 Edwards, I. Trans. Denbighshire Hist. Soc. vol. 9 1960 p. 35

2 W.O. 47/1 p. 17
S.P. 28/19 f. 214
C.S.P.D. 1645-7 p. 84

3 W.O. 47/1 p. 290
W.O. 49/82 f. 69

4 Everitt, A.M. The Community of Kent and the Great Rebellion pp. 212-216

5 C.S.P.D. 1644-5 pp. 607, 608

6 C.J. 1644-6 p. 183

made against Browne was that he had attended the King at the time of the Five Members incident. Another of Browne's sons, Thomas, was a Catholic. In his will John Browne left him the sum of £2,000 "when he shall be converted to the Protestant religion". At the hearing a former employee stated that Browne had sent four men to cast ordnance for the King "about four years previously", whilst Pearson declared that one workman, Hugh Richardson, who had left Browne two years previously, was now at Oxford. He was in fact working there as a brass founder. John Browne senior denied any knowledge of a Royalist design against Kent. In the course of a second examination on 24th July, he stated that about two and half years beforehand thirty men had left his works as there was nothing for them to do. Richardson had been dismissed for misappropriating money.¹

The charges against Browne were presumably not regarded as having been substantiated, for after ordering his release "upon good security" on 28th August 1645 to await the decision of the House, the Commons directed on 28th December 1645 that his ironworks be restored to him "in the interests of the state".² The need for his services may have been such as to induce Parliament to discount any suggestion of disloyalty. Browne's works had been bestowed in the meantime upon Samuel Ferrars and Thomas Foley. The latter were now to be compensated by Browne for the expenditure that they had incurred in undertaking a contract for the Navy Committee.²

Ferrars, of Thames Street in Tower Ward, was worthy of inclusion in a list of potential contributors to a loan of £200,000 to the Crown in 1640.³ Foley was a member of a prominent family of

¹ C.S.P.D. 1644-5 pp. 607, 619; 1645-7 p. 27

Straker, E. Wealden iron p. 164

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 2 p. 971

Roy, I. The Royalist ordnance papers pt. 2 p. 473 note

K.A.O. TR 1295/23 f. 1

² C.J. 1644-6 pp. 255, 390

³ Aylmer op. cit. vol. 2 p. 971

Dale, T.C. London citizens 1641-3 p. 35

ironmasters established about Stourbridge in Worcestershire but with widespread business interests in Britain and Ireland. In 1643 he participated in a venture to manufacture iron in Virginia. Thomas Foley's father, Richard Foley, supplied ordnance and shot to the King during the First Civil War. During the Commonwealth and Protectorate, Thomas Foley manufactured brass and iron ordnance for the Navy on a large scale. He was an acquaintance of the former Army Chaplain Richard Baxter and of Major General James Berry, a prominent figure during the Interregnum. Yet Foleÿ was apparently not an enthusiastic supporter of Cromwell's regime.

These two families of ironmasters, the Foleys and the Brownes, were connected by marriage. Thomas Foley married John Browne senior's daughter Anne. He was an executor of Browne's will in which he was left £3,000 for himself with a total of over £1,000 left in trust for his children.¹ The Foleys also had business contacts with the Parliamentarian Sir Thomas Myddleton who was involved in ironworking ventures chiefly in Denbighshire and Shropshire. There is a record of a payment of £200 supposed to have been made to Sir Thomas by Robert Foley, another of Richard Foley's sons, in 1643 but which was not in fact settled until "after the warres" in 1649. About 1647 a slitting mill was established by Sir Thomas Myddleton and his partners at Wolverley near Kidderminster. The mill supplied iron products to the Foleys and was eventually acquired by them. Robert Foley was appointed ironmonger to the Navy Office in 1660.²

No doubt the Foleys, like the Brownes, were motivated by practical considerations in their dealings with one party or the other during the Civil Wars and Interregnum. The manufacturing interests of the Foleys lay primarily in the field of ironmongery and hardware. Although their principal works were at Stourbridge,

1 Palfrey, H.E. Trans. Worcs. Arch. Soc. vol. 21 1944 pp. 5, 6
 D.N.B. vol. 7 pp. 355-356
 K.A.O. TR 1295/23 ff. 1, 3

2 Palfrey op. cit. p. 7
 Edwards, I. Trans. Shropshire Arch. Soc. vol. 56 1957-60 pp. 190, 195
 Rowlands, M.B. Masters and men pp. 64, 73, 88

they were able to maintain their contacts with London during the Civil Wars through Thomas and Robert Foley.

Meanwhile the Navy Committee had been instructed by the Commons in December 1645 to ensure that John Browne appeared before the House when required to do so and did nothing prejudicial towards the Parliament. Browne continued to contract with Parliament until his death in 1652. During these remaining years he was given control of six additional furnaces in Sussex and Surrey, although it is unlikely that all or even some of these were capable of casting ordnance.¹

At his death Browne's interests were taken over by another son, George, his son in law Thomas Foley and Nathaniel Powell. But they did not retain the predominant role as a supplier of ordnance to the state that John Browne had performed. The expansion of the Navy during the Commonwealth created a demand for guns and shot which could not be met from the Wealden ironworks alone. In 1653 government sponsored ironworks were established in the Forest of Dean.² Yet some idea of the scale of John Browne's operations can be gained from an inventory of ordnance, shot and materials lying at Brenchley and Horsmonden, which was drawn up about 1650. There were 130 guns ranging in size from demi-culverin to demi-cannon valued at some £6,200, together with smaller pieces worth a further £4,200. There were also 170 tons of round shot valued at £2,300 and quantities of coal, wood, metal and tools worth a further £2,360. In his will John Browne left a total of over £13,000 in legacies to members of his family.³

The Ordnance Office receipts books record the delivery of a large quantity of munitions by John Browne during 1643. It is unlikely that such large amounts were procured expressly for land service although some may well have been used for that purpose. The

1 C.J. 1644-6 p. 390

Aylmer, G.E. The state's servants p. 39

Straker, E. Wealden iron p. 164

2 Hammond, W.N. The administration of the English navy pp. 275, 276, 490 note

3 K.A.O. TR 1295/23 ff. 2-3; 1295/54 unfol.

munitions comprised 17,314 round shot, 4,120 hand grenades and 36 brass ordnance. During the same period 1,328 round shot and 105 grenades were delivered to the Ordnance Office by Owen Rowe.¹ The delivery of a further 910 round shot and 3 iron ordnance by Browne during 1644 is recorded in a ledger ostensibly listing receipts of munitions for the Fleet, although the entry is marked "land service".² Again these were probably ordered for the Navy but were pre-empted for land service. Browne also made deliveries to the Parliamentarian forces directly. Captain Peter Cannon, Purveyor General to the Earl of Essex's train of artillery, recorded the receipt of $3\frac{1}{2}$ tons of round shot from him on 13th and 20th May 1644.³ Deliveries of ordnance and shot by John Browne to the Ordnance Office stores for land service are summarized in Appendix two. The quantities delivered for the use of the Navy during these years were of course much greater.

Deliveries to the Ordnance Office land stores of the more significant kinds of munitions other than gunpowder, ordnance and shot are recorded in Appendix three. The contributions of individual contractors are not identified there, although the names of the more prominent suppliers have been mentioned already.⁴

It will be seen that by far the greater quantities were received during the later years of the Civil Wars from 1645 onwards, when procurement was largely in the hands of the Army Committee and of the Committee for Powder, Match and Shot. During the period March 1645 to April 1646 the value of the known contracts notified to the officers of the Ordnance by the Army Committee amounts to £59,206 0s 10d. The records of contracts which are now available are most likely incomplete.⁵ On the other hand, there were considerable quantities of some kinds of munitions, particularly ordnance and shot, which were already in store in 1642 and consequently available for distribution during the earlier

1 W.O. 55/1660 ff. 13-14, 22

2 Add. Mss. 25,585 f. 44

3 S.P. 28/15 f. 28

4 See chapter six

5 W.O. 47/1 passim

L.M. 46-78/709 passim

years of the Civil Wars.¹ These stores were virtually exhausted by the end of 1644.

Additions to the Ordnance Office land stores during the first year and a half of the conflict are scarcely noteworthy. They consisted mostly of small amounts of gunpowder and arms. At the same time the officers of the Ordnance purchased some items of equipment for the use of local forces, such as bullet moulds for Lord Fairfax, field carriages for the Earl of Manchester and gunners' instruments for Sir William Brereton. These were paid for out of money received from the Army Treasurer, Sir Gilbert Gerard, who advanced £1,059 to the officers of the Ordnance between November 1642 and October 1643. This sum may be compared with the £6,103 advanced by the Navy Treasurer during the same period, out of which £4,300 was spent on Navy stores and associated freight charges between November 1642 and February 1644. These provisions were brought in by Ordnance Office artificers and by outside contractors, most of whom subsequently contracted for the supply of the land stores.

It is clear therefore that virtually the whole of the resources available for the procurement of munitions, clothing and equipment for the Parliamentary forces were until 1644 channelled outside the Ordnance Office and through the Committee of Safety and its agents, the City Militia Committee and through direct links between suppliers and the various armies.²

Apart from conventional deliveries, the Ordnance Office stores were from time to time augmented by the return of arms and equipment which had been issued earlier and by the seizure of stores of munitions which either belonged to or might be secured by the enemy. The magazine established at Hull for the English army raised in the Second Bishops' War was then the largest in the country. It was transferred to London in April 1642 after the King had attempted to

1 See chapter eleven

2 S.P. 28/264 ff. 20, 206, 207, 238

E. 351/2664

See also chapter ten

gain control of Hull. A further addition to the Tower magazine came in September 1642 when a ship arrived from Hull with 1,000 tents and 850 pairs of pistol holsters sent by Sir John Hotham who was then governor of that place.¹

Furthermore, a considerable quantity of arms was seized at the royal armoury at Greenwich at the beginning of the Civil Wars.² In August 1643 a fortuitous supply of munitions was obtained from a Danish ship detained in the Thames with a large cargo of arms intended for Newcastle.³

In the same way that munitions in the magazines of ships of the Fleet at sea were still regarded as being part of the Navy stores, to which unexpended portions were to be returned, so arms and ammunition which had been issued out of the Tower for land service formed part of the total resources of the Ordnance Office.

The reorganisation of the Parliamentary armies at the end of 1644 made a proportion of these munitions available for redistribution. This was the case with the trains of artillery in particular. On 23rd April 1645 the Army Committee ordered that all the ordnance, ammunition and equipment belonging to the Earl of Manchester's former train of artillery, which had been sent from Cambridge, be delivered into the stores. On the following day 5 field guns, a mortar, ammunition, carts, gunners' implements, tools and other accessories were brought to the Tower and to the Minorities.⁴ Other contributions from the former army of the Eastern Association included a quantity of arms from the magazine at King's Lynn which was sent to the Tower in March or April 1645 for the use of the New Model Army, and a small amount of clothing forwarded by the High Collector for Cambridgeshire in March 1647.⁵

1 C.J. 1640-3 p. 753

C.S.P.D. 1641-3 p. 333

W.O. 55/1754 f. 7

2 Roy, I. The Royalist ordnance papers pt. 1 p. 13

3 C.J. 1643-4 pp. 199, 204, 211, 244

4 W.O. 47/1 p. 229

W.O. 55/1664 pp. 21-23

5 S.P. 28/29 f. 296; 28/41 f. 376

Captain Peter Cannon, formerly purveyor general to the train of artillery in the Earl of Essex's army, still had some stores in his possession in 1645. On 28th March the Army Committee directed him to deliver them to the Tower. A week later the House of Commons made an order threatening Cannon with arrest if he refused. An undated note by Cannon, apparently written at this time, lists 200 spades, 130 barrels of musket shot, board tilts, grease and boxes of tools, all of which he had bought, which constituted "those provisions not yet delivered". He asked that the rent of the storehouse be paid for, "amounting to VIII^{li} for two years" and requested an order for the delivery of the above items.¹ Finally, a total of 2,645 muskets belonging to the Army which had been repaired and cleaned at the expense of the Army treasurers were returned to the stores by the Commissary in February 1648.²

Besides the deliveries of stores contracted for by the Army Committee which are included in Appendix three, there is a category represented by munitions ordered by the Committee and paid for by the Army treasurers, but not recorded in the Ordnance Office receipts books. Since it is not clear whether or not these provisions were brought to the Tower, they have been listed separately in Appendix four. Swords, clothing and footwear figure prominently in this category, as do suits of armour, (backs, breasts and pots), although the latter have not been included in the appendix. With the exception of the cutlers and armourers, most of the suppliers of these provisions are known to have supplied the Ordnance Office stores on other occasions.

With regard to shoes and stockings, these were sometimes delivered directly by local manufacturers whilst the Army was on the March. There is no obvious explanation of the infrequent appearance of swords and suits of armour in the Ordnance Office receipts books.

1 C.J. 1644-6 p. 101

2 W.O. 47/1 p. 221

2 S.P. 28/51 ff. 263, 265, 267; 28/140 ff. 136-142

Only 300 swords are recorded as having been delivered to the land stores during the Civil Wars. Other weapons such as pistols, muskets and pikes are in most cases recorded in the receipts books. In the absence of definite information it has been assumed that the quantities of munitions listed in Appendix four were not in fact brought to the Tower.

Lastly, we may briefly survey the organisation of munitions procurement on the Royalist side, although a direct quantitative comparison cannot readily be made. Deliveries to the stores at Oxford are selectively recorded in the edition of the Royalist ordnance documents. However, the records of receipts and deliveries relate to the magazine with the Army in the field and to the magazine maintained by the Royalists at Reading until 1644 as well as to the stores at Oxford. The most significant deliveries to the Royalist Ordnance Office appear to have taken place during 1643 and the earlier part of 1644, at which time deliveries for land service to the Parliamentarian Ordnance Office were at a low level.

Although lacking an established focal point for manufacture and trading in munitions, the Royalists nevertheless had access to considerable resources in terms of English and foreign munitions during the First Civil War. At Oxford and Bristol in particular, existing manufacturing facilities were utilised and expanded and new ones were created. Local craftsmen and tradesmen were employed together with foreign artificers and one or two former employees at the Tower.

The manufacture of essential commodities such as saltpetre, gunpowder and match was organised at Oxford and foundries for casting in iron and non-ferrous metal were set up. A number of wealthy City merchants such as Sir George Strode and Sir George Bynion at Oxford and John Shaw at Antwerp were involved in the procurement and custody of munitions and clothing for the Royalists. For ordnance, round shot and related munitions the ironworks of Shropshire, Worcestershire and

the Forest of Dean were relied upon.¹

As on the Parliamentary side, deliveries to the Ordnance Office stores at Oxford did not by any means represent the total amount of munitions made available to the Royalist forces. It was impossible to achieve the manufacture of sufficient quantities of arms and ammunition in the areas controlled by the Royalists, therefore imports were of great importance. Because of the land locked situation of Oxford, access to ports such as Bristol, Weymouth and Newcastle was essential. The particular importance of Bristol was reflected in the presence there of an Ordnance Office official, Richard Marsh, with his clerks between 1643 and 1645, during which time he was responsible for organising the importing and manufacture of munitions.²

An examination of the quantities of munitions delivered to the stores at Oxford during 1643 shows that the amounts compare favourably with those received at the land stores of the Ordnance Office at the Tower in the same year. Yet procurement for the Parliamentary forces was taking place on a considerable scale at that time even though the Ordnance Office did not figure prominently in it. Nor is there any suggestion of deliveries to the Royalist Ordnance Office on a scale comparable to that enjoyed by its Parliamentary counterpart between 1645 and 1648. The powder maker at Oxford in 1643, William Baber, rarely delivered more than 10 barrels at a time, whilst large scale receipts of any kind of munitions occur infrequently.³

Taking into account procurement from all sources for the forces of both King and Parliament, it is clear that the Royalists were unable to match the breadth and depth of the manufacturing and commercial resources available to the Parliament, although on both sides lack of money prevented the exploitation of English and foreign

1 Roy, I. The Royalist ordnance papers passim

2 *ibid.*

3 Roy *op. cit.* pt. 1 pp. 64-122

See Appendices one, two and three

sources of supply to their fullest potential. Whilst he was at Bristol, Richard Marsh declared early in 1644 that given the necessary funds he could organise the production of a ton of musket shot and at least 15 barrels of powder a week. In the following year he promised an annual output of 15,000 muskets and 5,000 pikes provided that money could be made available.¹

At a time when the Royalist war effort was faltering during 1644 and 1645, that of the Parliamentarians was to rise to new levels in 1645 and 1646 in spite of the effects of financial and administrative deficiencies. At the same time the role of the Ordnance Office in procurement for the Parliamentarian forces was revitalised after a period during which little had been done to offset the outflow of accumulated munitions from the Tower.

The central importance of one city, London, in the procurement and distribution of munitions was not reproduced on the Royalist side. A number of places, such as Oxford, Bristol, Worcester, Weymouth and Newcastle, played a part in the manufacture, importation and distribution of munitions, but neither individually nor collectively did they possess the manufacturing and commercial resources and the established trading connections of the capital. Bristol came closest to fulfilling a comparable role for the King, but the Royalists did not have the means to develop the city adequately as a centre of war production and ultimately they were deprived of Bristol's resources through being unable to guarantee its security.

Because of this network characteristic of munitions procurement and distribution on the Royalist side, the loss of one or more of these key towns, or the interruption of communications between them, was of serious consequence. Such a process began in 1644 and there soon followed a series of defeats in the field which fatally undermined the King's military position and so rendered superfluous the Royalist Ordnance Office unless fresh manpower

¹ Roy, I. The Royalist ordnance papers pt. 1 pp. 38-39

could be obtained. By contrast procurement for the Parliamentary Ordnance Office was carried on within a relatively compact and secure area of South East England which was also well situated for contacts with the Continent. Although Parliament was often concerned about security in London and the adjoining counties, it was the distribution of the munitions once acquired to outlying armies and garrisons which presented more of a problem for much of the Civil War period.

Chapter Eight

The Cost of Munitions

In considering the prices paid for munitions, clothing and equipment delivered to the Ordnance Office stores during the Civil Wars, a distinction may be made between on the one hand those commodities which experienced perceptible fluctuations in price and on the other those supplies which underwent little or no change in price. In the first category are to be found such 'basic' munitions as gunpowder and match for which there was a continuous and heavy demand. The second group comprises such items as clothing, tools and pieces of equipment for which demand was on occasions high, as when an army was preparing to take the field. Many of the commodities in this last category were not of an exclusively military nature and were widely used in everyday life. Finally, for the purposes of comparison, some prices of munitions which were not supplied through the Ordnance Office have been included, together with examples of prices paid on the Royalist side.

The sources of information about prices are the records of contracts and debentures and the warrants for payments to contractors by the Army treasurers, which are to be found in the Commonwealth Exchequer Papers for the years 1645 to 1648. Records of prices paid for stores during the first two years of the War are not available, although this was not a period when deliveries to the Ordnance Office land stores were very significant.

The prices allowed for many kinds of munitions were either determined by those obtaining in earlier contracts or else they corresponded to the ruling market price for the commodities in question. Such prices may well have undergone little change since before the Civil Wars. The undercutting of contractors by unofficial suppliers of the Ordnance Office stores, of which there is some evidence before 1642, is less likely to have occurred during the

Civil Wars.

The Commission on the Ordnance of 1619 had pointed to the fact that the prices paid by the Ordnance Office for munitions were higher than those paid to merchants in the open market.¹ Such a discrepancy encouraged direct deals with merchants rather than procurement through the Ordnance Office. It was this factor which allied to the inability of the Office to provide of its own volition a wide range of munitions quickly and in quantity accounted for the traditional reliance upon the merchant community for much of what was required when raising an army. In the earlier years of the Civil Wars something of this system persisted with regard to the procurement of munitions for the Parliamentary forces. However, as the conflict continued the process of procurement became increasingly subject to regulation by Parliament with the Ordnance Office serving as a repository of the munitions acquired. There is some evidence that this trend had the effect of reducing some of the disadvantages of procuring munitions through the Ordnance Office.

The urgent needs of the Parliamentary forces and the weak financial position of the Parliament strengthened the hand of contractors with regard to price and the terms of payment. In July 1644 Sir Walter Erle reported that he and the other officers had been unable to reach agreement with John Freeman on the price of 100 barrels of powder, and asked that Freeman be permitted to take them away again.²

In certain instances carriage and labour costs were specified as separate elements in the price to be paid. This usually applied to bulk commodities such as gunpowder and round shot which were transported to the Tower from outside London and to cases where some special activity such as the setting up of equipment was involved.

The availability and cost of ammunition is of vital importance

1 Add. Mss. 36,777 f. 19

2 W.O. 47/1 p. 72

in any conflict. The movements of prices paid for gunpowder, match and musket shot delivered to the Ordnance Office land stores during the Civil Wars are shown on the graphs in Appendix five. Although this aspect is not considered here, it should be borne in mind that much of the munitions and equipment referred to was also needed for the Navy and that provision for the Parliamentary land forces represented only a part of the total demand.

The fluctuations shown on the graphs should not be interpreted too closely, since the data from which they are derived represents only a proportion of the total number of transactions involving the provision of ammunition which actually took place. However, in the case of both gunpowder and match, there is a broadly similar trend not only for each of the two categories of munitions but also for each variety of gunpowder and match. Prices rose to a peak during the years 1645 and 1646 when demand from the English and Scottish forces was at a high level, and declined thereafter. A comparison with the quantities of gunpowder and match delivered during this same period shows a broadly similar trend, with the exception of an upsurge in the last year of the War.¹ It is interesting to note that during the 1650's the price of gunpowder delivered to the Ordnance Office stores ranged between £3 16s and £4 16s a barrel.²

Gunpowder made in England from foreign saltpetre was somewhat dearer, on average by about 5s or 10s a barrel, than that made from English saltpetre. Records of deliveries of foreign gunpowder to the Ordnance Office stores are not numerous, but they indicate that barrel for barrel such powder cost more or less the same as English powder. Some foreign powder sold to the Committee of Safety during 1643 was about 5s a barrel cheaper than its English counterpart.³ Likewise Dutch or Flemish match was roughly the same price, or even cheaper in some instances, than the English product. However, a true

1 See Appendices one and three

2 Hammond, W.N. The administration of the English navy p. 493 note

3 S.P. 28/264 ff. 27, 28, 309, 310, 371, 372

comparison of the prices of domestic and imported munitions must take into account the additional costs incurred in procurement and shipment from the Continent.

The price of saltpetre was the most significant element in the price of gunpowder. At the beginning of the Civil Wars, the price of saltpetre sold by the East India Company to the licensed powder maker was £3 10s a hundredweight. By 1645 the price had risen to £4 10s a hundredweight, falling again to £3 12s in 1648. In the following year the Company's saltpetre was secured for the state at £4 5s a hundredweight.

Although in some years prices were driven up by competition between the Parliamentary gunpowder makers and other would be purchasers, it appears that over the Civil War period as a whole price levels were determined more by the cost of obtaining the saltpetre in Java and by the rate of exchange for the rials of eight in which the transactions were made. The Company pointed to these factors in justification of its demand for a higher price for its saltpetre in 1649. In February 1648 the Company had agreed to pay the owners of a chartered vessel £22 10s a ton for shipment of saltpetre up to a maximum of 50 tons.¹

On the other hand, the number of persons willing and able to buy the East India Company's saltpetre if the state were excluded was small. There was a risk that the Company would be left with unsold saltpetre, which could not be re-exported, if it demanded too high a price. Similarly, the English saltpetre makers were left with stocks on their hands due to the inability of Parliament to finance purchases by the gunpowder manufacturers. Saltpetre was imported not only by the East India Company but also by William Courteen and other merchants such as Richard Hill in the early years of the Civil Wars.²

Turning to the cost of English saltpetre, the price is

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 p. 232; 1644-49 pp. 112, 259, 296, 346

2 See above pp. 140, 141

recorded as being equivalent to £4 1s 4d a hundredweight in August 1644, whilst in March 1645 the price of "foreign" saltpetre is given as £4 15s. For gunpowder made with saltpetre provided by the Parliament the contractors were allowed £1 per barrel.¹

From 1644 to 1646 the demand for ammunition was maintained at a high level not only by the requirements of the English and Scottish armies, but by those of local forces and garrisons as well. During these years an increasing number of places fell into the hands of the Parliament, and the more important of them had to be defended. Significantly, it was also at this time that there is most evidence of the importing of ammunition for the Ordnance Office stores. On the other hand, the price of musket shot supplied to the Office does not follow any particular trend. It appears that despite its importance as a commodity, the price of lead shot was not clearly responsive to the fluctuations of supply and demand. Nevertheless, there were serious shortages of lead shot during 1645 in particular. The prices of other kinds of ammunition remained relatively stable compared to those of gunpowder and match. The cost of round shot remained around £12 or £13 a ton, whilst hand grenades continued to sell for 2s 6d each.

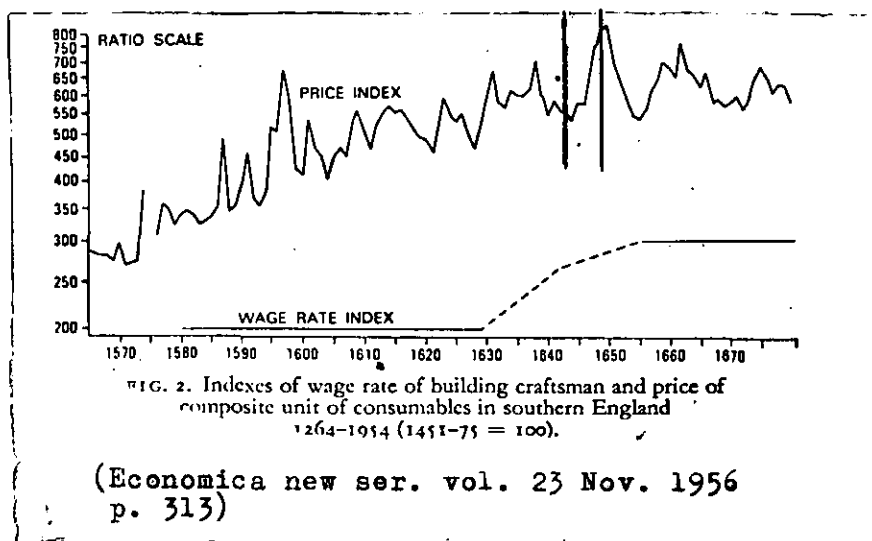
Although the prices of 'key' munitions such as gunpowder were subject to the influence of such obvious factors as the level of demand and the availability of raw materials, there are a number of other indeterminate factors which may also have influenced prices. They include the attitudes of suppliers, the financial standing of Parliament and the extent of price inflation during the Civil War period. During the Commonwealth, for instance, the price of gunpowder was influenced to some extent by the source of revenue upon which the contract was secured. The powder makers were prepared to reduce the price slightly in return for better security.² This same

1 W.O. 49/82 f. 14

2 Hammond, W.N. The administration of the English navy p. 281

consideration may also have applied during the Civil War period.

It is interesting to note that a composite index of the prices of essential commodities such as foodstuffs, fuels and textiles, reproduced in part here, suggests that during the seventeenth century as a whole there was comparative stability of prices; and that during the 1640's in particular prices moved downwards slightly during the earlier years of the Civil Wars and then moved more sharply upwards between 1647 and 1650, in the latter year reaching their highest level of the century.¹



The trend of essential commodity prices shown here is the reverse of that displayed by the prices of gunpowder, match and some other kinds of munitions which appear to have declined somewhat in the later years of the Civil Wars. The factors governing the prices of essential commodities and of munitions are not of course identical.

Because gunpowder and match were needed more or less continuously, and because the demand for them was directly related to the level of military activity, the prices of these commodities were the most responsive to external influences. As we shall see, the prices of other sorts of munitions, equipment and clothing supplied to the Ordnance Office stores for land service tended to experience less variation with no obvious correlation with the ebb

¹ Phelps Brown, E.H. and Hopkins, S.V. Economica new ser. vol. 23 Nov. 1956 p. 313

and flow of military activity. The demand for such munitions and equipment tended to be more sporadic than that for ammunition and it was generally at its highest level when an army was preparing for the field or when losses had to be made good. The prices of some of the more significant kinds of munitions, equipment and clothing which were at various times recorded during the Civil Wars are listed in Appendix six.

Not all the commodities supplied to the Ordnance Office stores were of an exclusively military nature. In addition to those items referred to in Appendix six, a wide range of tools, implements, covering materials, chemicals and other requisites was procured. Although the demand created by an army preparing for the field may have had some local influence on prices and perhaps created temporary scarcities, it is likely that the prices paid for commodities which were also in everyday use corresponded to those prevailing in the open market. A survey of prices paid for certain naval stores, including candles, tallow, twine, textiles and metals, indicates that during the Civil Wars prices remained fairly stable with no definite trend either upwards or downwards.¹ This confirms the impression that the prices of such commodities were not significantly affected by demand from military sources during the Civil Wars.

The prices paid to contractors for many kinds of munitions and equipment were no doubt similar to those prevailing before the Civil Wars. As long ago as 1620 Ordnance Office contractors were being paid 17s 6d for a musket, 3s 2d for a pike and £10 to £13 a ton for musket shot.² Minor variations in price during the Civil War period should not be regarded as very significant since there are a number of imponderables which may have influenced the prices allowed in individual contracts. It is nevertheless clear that there was no general upward trend in prices insofar as provision for the Ordnance

1 Beveridge, W.E. Prices and wages in England vol. 1 pp. 672-673

2 Add. Mss. 36,777 f. 19

Office land stores is concerned. As we have seen, there is a suggestion of a downward trend after 1645 in certain cases.

There are a number of possible reasons for such a trend. The predominant position of the Army Committee in the business of procurement from 1645 onwards may have enabled it to hold down prices by bargaining more effectively, contracting for larger quantities and by appearing to offer somewhat better prospects for payment. There is some evidence that the prices secured by the Army Committee were somewhat lower than those charged by the same contractors to other customers. In May 1645 the gunsmith William Fell sold matchlock and snaphance muskets to Colonel John Browne for 13s and 17s each respectively, at a time when he and other gunsmiths were supplying the Army magazine at the Tower for 11s 6d and 15s 6d respectively.¹ Insufficient though they proved to be, the financial and administrative measures introduced for the upkeep of the New Model Army offered prospective suppliers a better chance of payment than did previous arrangements. Accordingly, they may have been more willing to accept lower prices.

Furthermore, the position of suppliers was by 1645 being weakened in theory at least by a decrease in the number of potential buyers on the Parliamentary side as a result of the reduction of local forces and garrisons which had previously been competing for supplies. The disorganised state of the market and the host of official and private buyers at the beginning of the Civil Wars would naturally have tended to drive up prices. The gradual disappearance of these conditions may have contributed to a decline in price levels after 1645.

The remodelling of the Parliamentary armies was accompanied by a reorganisation of the business of procurement, so that a decrease in prices paid by the Parliament may have been due to administrative as well as economic factors. Another possibility is that the Army

¹ S.P. 28/30 f. 18
W.O. 47/1 pp. 208, 210

Committee may have insisted on the use of cheaper materials with simpler workmanship. The price of weapons such as pistols varied considerably according to the elaborateness of the design. Yet the formation of the Army Committee cannot alone be held responsible for any reduction in price levels. The prices of gunpowder and of match seem to have declined somewhat in the later stages of the Civil War, whilst responsibility for the procurement of these commodities was shared by the Committee for Powder, Match and Shot and the Army and Navy Committees.

Three years of war may have provided contractors with the opportunity to organise themselves to take advantage of the market afforded by the creation of a large body of soldiery in England which needed arms, clothing and equipment. On the other hand, the continued existence of the New Model Army was by no means a certainty and by 1647 a considerable body of opinion in the City and in Parliament was in favour of disbanding it.

The prices given in Appendix six are in all cases for munitions which are assumed to be new, although it cannot be established in every case that they were not second hand. In April 1645 600 matchlock muskets and 50 snaphance muskets were contracted for with Lieutenant General Hammond. These weapons were probably not new, and the prices paid for them, 10s and 14s respectively, were slightly lower than those normally charged for muskets.¹

It will be useful to compare the prices of munitions and other commodities delivered to the Ordnance Office stores with those paid by other buyers, particularly because in many cases the same suppliers served both the Office and other customers as well. A selection of these prices is given in Appendix seven. It is apparent that in the early stages of the Civil Wars when there was great demand from both the principal armies and local forces upon the resources of the London market, the prices of weapons were higher

1 W.O. 47/1 p. 236

than those subsequently paid by the Army Committee on behalf of the Army magazine at the Tower from 1645 onwards.

Such basic requirements as muskets, swords, pistols and saddles all cost more in the earlier years before they were bought in any quantity for the Ordnance Office land stores. On the other hand, the price of ammunition purchased in the London market does not appear to have differed much from that paid for supplies brought to the Tower.

It is difficult to generalise about the prices paid for munitions in the provinces, since these could vary greatly in accordance with the prevailing conditions. Since there was little of anything available in quantity that was not obtained from London or imported, such munitions as were available in remote areas had an additional scarcity value. Gunpowder was manufactured in several localities but not in sufficient quantity to afford self-sufficiency to any local force or garrison. Local commanders or their agents who resorted to making purchases in London could well find that they were at a disadvantage on account of their comparatively small requirements and often limited funds. Consequently they could be obliged to pay higher prices than those paid by buyers for the principal Parliamentary forces and they might also have to accept inferior quality. The competition for munitions and equipment of all kinds during the First Civil War naturally put the small buyer at a disadvantage.

Sir Samuel Luke's quartermaster Pelham Moore told him on 1st April 1645 that he had bought three cases of pistols for £12 2s 6d "and I told the party I bought them of, they were too dear by £4". Not only weapons were expensive: "Wheelbarrows are very dear viz. 5s a piece though of the slightest making".¹ Yet statements that munitions were available only at high prices do not always seem to have been literally correct. The Scottish commissioners in London

1 Tibbutt, H.G. The letter books of Sir Samuel Luke pp. 494, 500

reported in June 1644 that no pistols were available for less than 40s a pair, in cash, yet in the previous month they were being sold by Owen Rowe for £1 14s a pair.¹

In those areas where they were able to procure munitions in reasonable quantities, the Royalists paid prices which did not differ very much from those paid by the Parliament. During 1643 the Royalists paid £14 to £15 a ton for iron ordnance, £13 to £15 a ton for round shot and £30 a ton for match. At Bristol during the Royalist occupation of the city, musket shot could be cast for £16 a ton and gunpowder could be bought for £4 10s to £5 a barrel. Muskets were available for 18s apiece.²

Imported munitions were of course more expensive, whilst imports were overall a more vital source of supply for the King's party than they were for the Parliament. The latter not only bought directly from the Continent but also dealt with the trading companies and the English and foreign merchants in London who had established contacts overseas. In December 1643 a Royalist agent in Antwerp negotiated the purchase of muskets at £1 3s each, pistols at £2 16s a pair and match at £37 a ton.³

1 Meikle, H.W. Correspondence of the Scots Commissioners p. 33

2 S.P. 28/15 f. 8

3 C.S.P.D. 1641-3 pp. 479, 488, 504

Roy, I. The Royalist ordnance papers pt. 1 p. 38; pt. 2 p. 515 note

3 op. cit. pt. 2 p. 373

Chapter Nine

The Payment of Contractors

Ordnance Office contractors, including those who were also members of the establishment at the Tower, were normally paid either in cash or "ready money", or upon presentation of a debenture, or by a combination of the two methods comprising part payment in cash with a debenture for the remainder. Payments in cash by the officers of the Ordnance, the Lieutenant excepted, were made during the Civil Wars out of money advanced by the treasurers of the Army and of the Navy. Since only a small sum was paid to the Office during 1642 and 1643 by Sir Gilbert Gerard as Army treasurer, the majority of these cash payments were made in connection with provision for the Navy. Almost all the contracts for land service which were settled by the officers of the Ordnance during the Civil War period involved the issue of a debenture. These were charged upon the various sources of revenue which were allocated to the Ordnance Office from time to time.

Most of the payments in cash for stores brought to the land stores were made by Sir John Wollaston and his fellow treasurers between 1645 and 1648. The payments were made out of the proceeds of the loans and assessments raised for the maintenance of Sir Thomas Fairfax's army. The greater part of the sums expended on supplies for the land stores therefore did not pass through the hands of the officers of the Ordnance, whilst those funds which did go to the Office were handled both by the senior officers and by the Lieutenant. From 1644 onwards the Lieutenant received money from several sources including the excise commissioners, the Army treasurers and the various revenue committees.

The purchase of munitions for the Ordnance Office land stores did not assume significant proportions until 1644. During the first two years of the Civil War large quantities of munitions were purchased outside the Ordnance Office by agents of the Committee of Safety, by the City Militia Committee and by representatives of armies

and garrisons. These were mostly paid for upon warrants issued to the Treasurer of the Army by the Committee of Safety and the Earl of Essex. Yet a considerable proportion of the munitions acquired in these early years was still unpaid for in 1645, when the task of assessing arrears and examining creditors was given to the Committee for Taking the Accounts of the Kingdom.¹

As the War continued and Parliament became less creditworthy, potential suppliers were encouraged to insist upon at least part payment in cash with security for the payment of the remainder. This particularly applied to large scale contractors such as the gunpowder manufacturers, who because of the vital nature of their product and the impossibility of meeting the Parliament's requirements solely out of imported supplies were in the best position to exact satisfactory terms for the settlement of their contracts. Yet they too were owed large sums. Because of the financial difficulties which threatened the supply of munitions, Parliament itself had to intervene directly in the business of settling contracts.

This situation persisted into the Commonwealth period, with suppliers demanding more rapid payment and good security for the delivery of further supplies. By 1655 the officers of the Ordnance were obliged to declare that they would be unable to procure any additional stores for the Navy unless the Treasurer was ordered to settle outstanding debentures up to £10 in value.²

As an illustration of the Parliament's present difficulties, Sir Oliver Luke told his son Sir Samuel Luke, then governor of Newport Pagnell, in November 1644 that arms could only be obtained for cash, "for they will not trust the state with any more".³ Earlier, the House of Commons had resolved on 8th April 1644 to ask the Lieutenant of the Ordnance to ascertain what quantities of gunpowder were available in the City and upon what terms 1,000 barrels with a

1 S.P. 28/264 f. 433

See also chapter ten

2 Hammond, W.N. The administration of the English navy p. 281

3 Tibbutt, H.G. The letter books of Sir Samuel Luke p. 385

proportional quantity of match and shot could be obtained. The ammunition was needed for a projected relief of Gloucester and the establishment of a magazine there. The Lieutenant was also asked to consider how 100 barrels of powder with match and shot could be provided for Sir William Waller's army.¹

In the following June the Lieutenant prevailed upon John Berisford, who was owed large sums, to provide 300 barrels of powder for the Earl of Essex's army. Berisford's terms were an initial payment of one third in cash and as security for the remainder the timber belonging to a recusant's estate in Norfolk. The proceeds of the sale of this wood were also to go towards settling a debt of £504 due to Berisford for powder supplied during the past year. However, on 20th June 1644 the Commons ordered the Lieutenant of the Ordnance to provide one ton of match and one ton of musket shot out of a sum of £500, most of which had been assigned to Berisford.²

Owing to the shortage of ready cash, saltpetre was sometimes employed in part settlement of gunpowder contracts whilst at the same time providing the wherewithal for further supplies of powder. To take the case of John Berisford again, on 20th April 1644 the Committee of Both Kingdoms directed Sir Walter Erle to deliver 10 tons of saltpetre to him. This petre was to be regarded as a settlement of one third of a debt of £2,700 due to him for powder which he had delivered to the Ordnance Office stores. Ten days later it was stated that Berisford was still owed £900. The Commons ordered that the money be paid by the Committee at Haberdashers Hall on 24th June 1644.³

Then on 10th September 1644 it was noted that Sir Walter Erle had "upon his owne Creditt", that is, upon the security of saltpetre provided by the Ordnance Office, procured 118 barrels of gunpowder for the armies of the Earl of Essex and Sir William Waller at a total cost of £490 7s 6d. Seventy barrels had been made by John Berisford

1 C.J. 1643-4 p. 452

C.S.P.D. 1644 p. 98

2 C.J. 1643-4 pp. 518, 536

3 op. cit. p. 474

C.S.P.D. 1644 p. 129

from saltpetre bought by the Parliament from the City merchant Richard Hill. Berisford was allowed £1 a barrel for this powder. Debentures for £70 and £420 7s 6d were made out to Berisford and Hill respectively. The money was to be paid out of such sums as Erle had received since the contract was made and out of such as he would in future receive for the provision of munitions.¹

Another illustration of the complex interlocking nature of payments for munitions is provided by John Berisford's purchase of the East India Company's saltpetre for £1,500 in 1647. He was allowed to take the saltpetre on condition that he made over to the Company as security for payment a debt of £2,500 due to him for gunpowder supplied to the Parliament. On 15th March 1648 Berisford reported to the Company that he would shortly be receiving the £2,500 out of the receipts of the excise, but he would require the return of the debenture in order that he might secure a warrant for payment from the Navy Committee.²

The formation of the Committee for Powder, Match and Shot in June 1645 represented an attempt to bring the problem of munitions supply under control. The Committee was to keep a check on the amounts of ammunition issued out of the Ordnance Office stores, provide for the regular replenishment of those stores and ensure satisfactory payment of contractors. Ultimately, however, the success of the Committee would depend upon the provision of adequate resources for the financing of munitions contracts.

Information about contracts for the supply of the Ordnance Office land stores dates in effect from 1644. The principal sources are the books of debentures and of receipts and the minute book, together with the warrants for payments to contractors and the records of settlements of debentures which are both contained in the Commonwealth Exchequer Papers. Sometimes the method of payment was

1 C.J. 1643-4 pp. 623-624
W.O. 47/1 p. 102

2 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49
pp. 222, 263

specified in the contract. There might be an agreement to supply the goods for cash as in the case of a contract dated 11th July 1644 between the officers of the Ordnance and Daniel Judd for the provision of lead shot and casks; and likewise a contract recorded on 5th April 1645 between the Army Committee and William Kettle for the provision of pad saddles "wth good iron plates & stran bitts" at 17s apiece, "ready money".¹ Nevertheless, the phrase "ready money" should not be interpreted too strictly. In the late sixteenth and earlier seventeenth centuries it could be taken to mean payment within a period of up to six months.²

Furthermore it was a common practice to make cash payments by instalments in order to bring the burden of payment more into line with the irregular and inadequate flow of funds raised under the various fiscal ordinances which were then allocated to the purchase of munitions. In such cases the contract usually stated that there was to be an initial payment of one third or one half with the balance at the end of three or four months. This practice was adopted by the Army Committee particularly in the case of the more expensive contracts for the supply of gunpowder, round shot and clothing. For the delivery of round shot, hand grenades and a mortar in April 1645 John Browne was to receive "halfe in hand & halfe at 3 months".³ A number of contracts were made by the Army Committee with John Berisford for the provision of gunpowder upon the same terms.⁴

Expenditure upon munitions for the Ordnance Office land stores during the Civil Wars will now be considered in detail. We have already seen that such purchases as were made by the officers of the Ordnance for land service during the first 18 months of the War either for the stores or for the use of particular forces were paid for during 1643 and 1644 by the Army Treasurer, Sir Gilbert Gerard, himself, or by the officers with money advanced by him. The total

1 W.O. 47/1 pp. 67, 211

2 Beveridge, W.E. Prices and wages in England vol. 1 p. 623

3 W.O. 47/1 p. 234

4 op. cit. pp. 234, 290

S.F. 26/31 ff. 471, 474

recorded value of these payments is £2,503 5s.¹

This sum includes partial payment for a consignment of imported munitions which it is assumed (was) intended for land service. Only £426 out of the £1,620 owing for this delivery had been paid by March 1644, although in the case of other purchases payment had been made in full. A part of the above mentioned sum of £2,503 was forwarded to the Army Treasurer by the treasurers for sequestrations at Guildhall. On 15th July 1643 the Committee of Safety ordered that £300 raised on delinquents' estates in Surrey be advanced to the officers of the Ordnance for the purchase of ordnance, copper and tin. But according to the officers' accounts, only £100 was actually received by them.²

The officers' accounts show that prior to the appointment of Sir Walter Erle as Lieutenant of the Ordnance they received a total of £1,059 5s from the Army treasurer, compared with £6,100 from the Navy treasurer.³ Total recorded expenditure by the officers on provision for the Navy, land and water carriage, travelling allowances and other allowances between November 1642 and February 1644 amounted to over £7,000.⁴ A certain amount of expenditure out of Navy funds was allowed for the defence of places along the coast such as the Isle of Wight. By way of comparison, the Ordnance Office received £66,993 from the Navy treasurer between 1635 and 1639, an average of £13,000 a year.⁵ The Navy itself was financed largely out of the customs. Out of a total of £1.4m received by the Treasurer between 1642 and 1649, £1.1m derived from this source.⁶

Debentures issued by the officers of the Ordnance in connection with the replenishment of the stores, apart from the purchase of gunpowder, were traditionally supposed to be paid out of the ordinary

1 S.P. 28/263, 28/264, passim

2 E. 351/2664

3 ibid.

4 ibid.

5 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 39

6 Hammond, W.N. The administration of the English navy p. 412 note

allowance of £6,000 a year introduced in the reign of Elizabeth. The remuneration of members of the ordinary establishment at the Tower was also charged in part upon this allowance. The ordinary was not intended to cope with the demands of wartime and it was usually in arrears or lapsed in any case. It has been estimated that between 1627 and 1634 payments on the ordinary averaged about £4,350 a year out of the £6,000 entitlement, whilst in the late 1630's they may not have been made at all.¹

The ordinary allowance therefore has little relevance to the financing of the Ordnance Office stores during the Civil Wars. As in the case of earlier wars, most of the expenditure incurred was extraordinary and had to be settled out of general revenues, although a direct comparison with the situation before 1642 is not possible because of the changes in public finance introduced by the Parliament during the Civil Wars. The effect of these was to provide funds out of several treasuries, so that the central role of the Exchequer was diminished.²

The Ordnance Office book of debentures for land service dates from 1644, together with the corresponding records of settlement in the Commonwealth Exchequer Papers. The latter also include settlements of debentures issued in respect of naval stores which were payable out of the sums allocated for the supply of the Fleets. In some cases an initial payment of one quarter to one half was made by the officers when the debenture was made out.

The total face value of the recorded debentures is given in Table five.³ It is calculated that out of this total sum of £46,142 11s 5 $\frac{3}{4}$ d, the proportion still unpaid on 31st December 1648 amounted to £18,327 4s 0 $\frac{1}{4}$ d. This assumes of course that all records of settlements during the Civil War years have been traced. The value of the debentures issued in respect of land and sea service between

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 35, 40

2 Aylmer The state's servants p. 24

3 See p. 187

Table Five

Face Value of Debentures Issued in Respect of Stores for Land Service1644-48¹

<u>Year</u>	<u>Face Value</u>
1644 (Mar.-Dec.)	£11,206 15s 8½d
1645	16,397 3 6¼
1646	6,943 0 0
1647	5,254 7 1
1648	6,341 5 2
	<hr/> £46,142 11s 5¾d

1 W.O. 49/82 passim

S.P. 28/11 - 28/57 passim

The total for 1644 includes £3,505 9s 5½d for munitions and equipment for a new train of artillery for the Earl of Essex. Of the debentures issued in 1648, some at least were settled during the following year.

1638 and 1642, excluding payments on the ordinary, amounts to £68,000.¹

It will be seen that nearly two thirds of all debentures by value were issued during the years 1644 to 1646. With regard to those debentures which were settled in full, the period of time which elapsed between the issue of the debenture and the date of settlement ranges between one day and three or four months. During 1644 and 1645 the majority of debentures were settled within 28 days of issue and only a small proportion of those settled eventually were still unpaid after two months or longer. Between 1646 and 1648 the proportion of debentures settled within one month was smaller, in spite of the fact that fewer debentures were issued for land service than during the earlier years. By way of contrast, suppliers of naval stores during the Civil Wars and Interregnum received payment from the Navy treasurer about six to nine months after delivery.²

It may not be fair to assume that delay in making payment was always due to a shortage of funds. A debenture could not be made out until the supplier had presented his bill. Then the debenture in turn had to be brought to the Ordnance Office for settlement.³ There is a debenture dated 9th July 1646 and worth £3 4s which was made out to Michael Reynolds in respect of 4 dozen sheepskins. A footnote states that the copy of the debenture was not entered in its proper place in the ledger because the bill was not received by the Clerk of the Ordnance until 15th January 1647.⁴

The settlement of debentures along with other payments to Ordnance Office contractors was made out of sums of money which had been allocated to the provision of munitions for land service out of the various revenues raised under the fiscal ordinances introduced by the Parliament. It is therefore necessary to consider the nature of Parliamentary war finance and to outline the principal financial

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 43

2 Beveridge, W.E. Prices and wages in England vol. 1 p. 624

3 See above p. 3

4 W.O. 49/82 f. 84

measures. As in all aspects of seventeenth-century public finance, it is necessary to distinguish between promise and performance, that is, between the sums which fiscal measures were intended to yield and the amounts actually produced. The disparity between the two was accounted for largely by inadequate machinery for collection, evasion of payment and diversion of money raised to purposes other than those for which it had originally been intended.

With the Parliamentary armies and garrisons creating pressing financial demands at both national and local level, the last of the three factors referred to above was particularly significant. Although the arrangements for soldiers' pay were by no means satisfactory, the potential and actual social and political consequences of nonpayment and arrears, whether they concerned a local garrison or the main army, were such that money was appropriated for the purpose of paying troops and satisfying major creditors in the City which might otherwise have been used for the payment of munitions contractors. Whilst it may be true to say that the soldiery did not necessarily expect to receive their pay in full in the first instance, or even the full settlement of their arrears, they were frequently dissatisfied with the financial provision that was made for them and were prepared to give forcible expression to their grievances.

In addition to the foregoing reasons, the failure to provide adequate sums for the purchase of munitions was due in part to the lack of standing arrangements for the purchase of essential commodities such as gunpowder and saltpetre, with the result that supplies were disrupted. Although the need for such machinery was gradually recognized and steps were taken to create it, in practice the efforts that were made were undermined by the lack of a sound financial basis. A difficulty here was the sheer size of the sums required to maintain large scale land forces in addition to a Fleet. The fiscal machinery of the Civil War period was never equal to the task.

In March 1648 the Derby House Committee reported that the

ordinance of 7th February 1646, whereby contracts were made by the Committee of Both Kingdoms for the provision of about £12,000 worth of saltpetre a year to the gunpowder manufacturers had not been effective because no arrangements had been made for continued payments for the saltpetre. The Derby House Committee requested £2,000 in addition to the sum assigned out of the excise in order to purchase existing stocks of saltpetre and to restart production. In order to ensure a ready supply of saltpetre in the future, £16,000 a year, payable in monthly instalments, should be made available.

The House of Commons directed on 22nd May 1648 that the Committees of the Army and of the Navy consider how a monthly allowance could be made for the purpose of replenishing the stores at the Tower and of purchasing saltpetre. In other words, the Committees were expected to find the money from their own funds. On 15th June, following a report by Sir Walter Erle on the condition of the saltpetre works, the two committees were again instructed to find ways of raising the £2,000 required to procure the saltpetre and the £16,000 a year needed to keep production going.¹ This matter was more logically the concern of the Committee for Powder, Match and Shot, but perhaps it was recognized that the latter committee, which was largely dependent on the excise for its funds, was still less able to do anything about it. In reality, domestic production of saltpetre lapsed and digging by saltpetre men was not sanctioned again until 1656.²

The tendency was to resort to impromptu decisions appropriating money from the most readily available source in order to purchase munitions that were urgently needed or to settle some particular pressing debt. This was encouraged by the fact that, as we have seen, the traditional Crown revenues were replaced and augmented by a diversity of sources of revenue during the Civil Wars, over which there was no central control.³ Those ordinances which were enacted

1 C.J. 1646-8 pp. 568, 601
C.S.P.D. 1648-9 pp. 35-36

2 Hammond, W.N. The administration of the English navy pp. 277, 278

3 Aylmer, G.E. The state's servants p. 24

for the specific purpose of raising money for the purchase of arms and ammunition had to take their place amongst the numerous other fiscal measures imposed by the Parliament.

Moreover, these financial measures and the methods by which they were administered had the effect of alienating the commercial interests in the City upon which the Parliament depended for credit and for the bulk of the supplies needed for carrying on the war. In addition to their grievances concerning the money owing to them, merchants and manufacturers were by the end of the First Civil War expressing their resentment of the financial exactions imposed by Parliament and of the committees and officials appointed to give effect to them.¹

The basis of the Parliamentary system of war finance was laid during 1643. A series of ordinances was introduced, of which the most relevant to the financing of purchases for the Ordnance Office stores were those of the weekly assessment to be raised by the county committees (24th Feb. 1643), the sequestration of delinquents' estates (27th Mar. 1643) and the excise (22nd July and 6th Sept. 1643).² These measures were subsequently modified and extended to meet changing circumstances. A distinctive feature of the ordinances was that they were connected with the maintenance of an army rather than a navy, a fact which contributed to their subsequent unpopularity, especially with regard to the excise.³ Even so, the Navy treasurer received a total of £173,262 out of the proceeds of the excise between 1642 and 1649.⁴

The original excise ordinance was introduced in July 1643 and was later renewed and modified. The duty was payable by manufacturers and it was imposed on a wide range of durable goods and foodstuffs. The original ordinance was replaced by another of 6th September 1643

1 Pearl, V. in Aylmer, G.E. ed. The Interregnum p. 39

2 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 85-100, 106-117, 202-214, 274-283

For the financing of purchases for the New Model Army see below p. 200

3 Hughes, E. Studies in administration and finance p. 122

4 Hammond, W.N. The administration of the English navy p. 412 note

which was intended to extend the scope of the tax and to make it more effective. This ordinance was in turn modified by later ordinances, such as that of 9th January 1644.¹ On 8th July 1644 an excise duty was imposed on alum, copperas, hats, silks and kindred goods in order to raise money to pay artificers and merchants who had supplied munitions to the Parliament.²

On 29th January 1645 the various excise ordinances were renewed until 1st April 1646, although by then the impost had become a focus of popular discontent and was attacked by both manufacturers and consumers. As in the case of other Parliamentary fiscal measures, hostility was aroused not only by the tax itself but also by the bureaucratic apparatus set up to collect it. Attempts to bring in the excise provoked disorders in some areas during 1646 and 1647 and led to the abandonment of the duties on foodstuffs. A further ordinance of 22nd February 1647, inspired by opposition to the excise, justified the imposition and laid down guidelines for its collection. Then on 28th August 1647 the excise was reimposed on all commodities except flesh and salt. However, receipts had declined to a low level by the end of 1646, partly on account of the unpopularity of the excise and the difficulties of collection.³

The officers of the Ordnance received money from the Excise Commissioners from 1644 until the close of the Civil Wars. One third of the receipts of "an additional ordinance for an excise for land service" was allocated to the Ordnance Office for the purchase of munitions. This was the duty introduced in July 1644. By an order of 3rd August following, one third of the receipts was allocated to the settlement of the debts of merchants and artificers who had supplied the Parliament, with the remaining two thirds going to the Ordnance

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 274-283, 364-366

2 op. cit. vol. 1 p. 466

3 op. cit. vol. 1 pp. 611-612, 916-920, 1004-1007

Hughes, E. Studies in administration and finance pp. 123, 125

Underdown, D. Pride's Purge p. 40

Morrill, J.S. Past and Present no. 56 Aug. 1972 p. 49

Office to be divided equally between the land and sea services.¹ The amount expended by the officers of the Ordnance out of receipts under this ordinance from 1644 to 1648 was £5,230 10s 2½d.²

On a number of occasions between 1644 and 1646, when the demand for munitions of all kinds was at a high level, specific sums were advanced by the Excise Commissioners for the purchase of arms and ammunition. On the security of an imprest of £1,000 to Sir Walter Erle, £1,081 19s was paid out in settlement of debentures made out to contractors in September 1644.³

An ordinance of 4th October 1644 allocated the sum of £9,000 for the provision of a new train of artillery for the Earl of Essex's army to replace that which had been lost when the army surrendered in Cornwall. On 19th September the Committee of Both Kingdoms had asked the officers of the Ordnance to estimate the quantities and cost of the stores required to furnish a train of 20 pieces of ordnance, for the provision of which the Committee had already requested £9,000, one third to be paid at once. This sum was approved by the House of Commons on 27th September 1644, the remaining £6,000 was to be paid in two instalments of £3,000 at three monthly intervals. The money was to be raised out of the arrears of the allowance of £30,504 a month for the maintenance of Essex's army which had been granted when the army was reorganised in the previous March. A further ordinance for the collection of these arrears was brought in on 26th December 1644.⁴

In all £1,386 13s 6d was paid out in settlement of debentures issued for supplies for the new train during the latter part of 1644 and early 1645. The value of the unpaid debentures, on the other hand, amounts to £2,166 14s 3½d.⁵ The reason for these arrears was that the

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 466, 484

2 W.O. 49/82 passim
S.P. 28/18 - 28/57 passim

3 W.O. 49/82 ff. 10-15
S.P. 28/18 passim

4 Firth and Rait op. cit. vol. 1. pp. 398-405, 580-582, 736-737
C.S.P.D. 1644 p. 500
W.O. 47/1 pp. 108, 112

5 W.O. 49/82 ff. 39-58
S.P. 28/19 = 28/21 passim

money had not been brought in as prescribed in the ordinances. Much of it was still outstanding in the following summer. On 5th July 1645 Sir Walter Erle was instructed to bring in an ordinance for the collection of the arrears which were then to be spent on the acquisition of match and shot. An ordinance authorising the collection of the arrears in Middlesex, the City of London, Westminster and the borough of Southwark was passed on 24th July 1645.¹ Then on 13th November 1645 the Committee for Powder, Match and Shot ordered that a debenture for £33 issued to John Freeman in respect of match supplied to the Parliamentarian forces in Monmouthshire should be paid out of the sums received through the collection of those same arrears.² There is no record of any settlement, nor is there any evidence that the unsettled debentures as a whole were paid before the end of the Civil Wars.

In accordance with ordinances of 7th and 12th December 1644, the Ordnance Office was allowed the sum of £6,000 for the provision of gunpowder and other essential stores. The money was to be raised by excise duties on flesh, victuals and salt, which were renewed for a further year from 9th January 1645. Sir Walter Erle was to receive £2,000 upon the passing of the ordinance and the balance in monthly instalments of £2,000. The sum actually expended by the officers of the Ordnance in settlement of debentures charged upon these revenues amounts to £5,932 5s.³ The ordinance for £6,000 was renewed in March 1645, thereby increasing the amount allowed to the Ordnance Office for the purchase of gunpowder and saltpetre to £12,000.

Then upon the formation of the Committee for Powder, Match and Shot on 30th June 1645, £12,000 was again allocated out of the receipts from the excise for the provision of munitions. Nine months later, on 20th March 1646, a further ordinance allotted £12,000 out of the excise for the purchase of powder, match and shot for the land

1 C.J. 1644-6 p. 196

2 W.O. 49/82 f. 74

3 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 578-579
W.O. 49/82 ff. 24-30
S.P. 28/18 - 28/28 *passim*

and sea stores. The sums raised under these ordinances, however, fell short of the amounts specified. Actual disbursements in settlement of debentures charged upon these latter ordinances amount to £11,965 4s 6d.¹ An indication of the shortfall in receipts from the excise came in December 1647 when the Committee for Powder, Match and Shot instructed Sir Walter Erle to pay £1,300 on a debenture worth £2,000 with money borrowed from the Excise Commissioners on the security of the allocation of £12,000.²

In December 1645 £2,000 was appropriated from the excise on behalf of Thomas Toll, who sat in the Commons for King's Lynn, in order to pay for arms and ammunition provided for the forces of Lynn and Lincolnshire which were to be employed against Newark. The munitions were procured through the Ordnance Office and in December 1645 and January 1646 the officers accordingly issued debentures to the value of £1,055 to the contractors. However, there is no evidence that they were settled before the end of the Civil Wars.³

The total amount expended out of advances by the Excise Commissioners upon the settlement of debentures for land service during the Civil Wars was £25,595 12s 2½d. The total face value of debentures which are actually stated to have been made a charge upon allocations from the excise and which were still unsettled on 31st December 1648 amounts to some £5,600. However, the actual arrears were almost certainly much greater than this. Many of the unsettled debentures issued during the years 1645 and 1646 were probably intended to be paid out of advances by the Excise Commissioners. They include debentures for the provision of ammunition which were issued in connection with contracts made by the Committee for Powder, Match and Shot, a body whose activities were supposed to be financed primarily out of receipts from the excise. If this group of debentures

1 W.O. 49/82 ff. 31, 35-37

S.P. 28/28 et seq.

C.J. 1644-6 p. 481

2 W.O. 49/82 f. 87

S.P. 28/48 ff. 475, 477

3 W.O. 49/82 ff. 65-67

is taken into account, then the value of the unsatisfied debentures which were a charge upon the excise amounts to some £14,600. If this calculation is correct, more than three quarters of all the debentures for land service still outstanding at the end of the Second Civil War had been payable out of appropriations from the excise. Such a situation would be in accordance with the fortunes of the excise itself during the years 1645 to 1647 when the shortfall of receipts and the lifting of the duties on flesh and salt meant that the large sums allocated to the purchase of munitions failed to materialize on anything like the scale intended.

One category of debentures for which there is no recorded instance of arrears being incurred is that comprising debentures issued for supplies ordered and paid for out of the allowance of £3,008, payable at the rate of £1,504 a month, which was made to Sir Walter Erle in the summer of 1644 to enable him to buy munitions for land service. Although actual expenditure between July and September was £3,945 19s 10d, and so apparently in excess of the sum received, all the debentures were settled.¹

Another source of funds for the settlement of Ordnance Office debentures was provided by the seizure of the assets of active Royalists, the compositions of declared delinquents and contributions exacted from neutrals and passive Royalists. These measures were administered by a committee sitting at Haberdashers' Hall which became known as the Committee for the Advancement of Moneys and a committee at Goldsmiths' Hall which was initially concerned with raising money for the maintenance of the Scottish army and which in 1645 was authorised to deal with compositions.

One such allocation from this source of revenue was made on 11th September 1643 when the Committee of Safety directed the treasurers at Guildhall to make available to John Faulkener, Keeper of the Stores at the Ordnance Office, and to Captain Charles Guest,

¹ W.O. 49/82 ff. 1-13

S.P. 28/17 - 28/18 passim

a total of £1,031 out of such revenues and profits of the Archbishop of Canterbury's estates as were received. The money was to be used to pay for ordnance and round shot cast by John Browne, and for gun barrels from Vauxhall. The Committee added that they wished the money to be paid forthwith, yet records of the amounts received by Faulkener and Guest show that they were paid a total of £367 16s between September 1643 and March 1647.¹

By an order of 12th June 1644 the House of Commons appropriated £500 out of £650 belonging to the Royalist, Thomas Bowker, for use by Sir Walter Erle in buying gunpowder, match and shot for the Parliamentary forces in Lancashire and Yorkshire.² Five days later the Commons directed that £470 be paid out of Haberdashers' Hall to the Lieutenant of the Ordnance for the purchase of 10 tons of match and 10 tons of musket shot. The money was to be provided either from the proceeds of the sale of jewels seized at St. James's Palace or out of the proceeds of the estates of delinquents and recusants "now offered to be discovered".³ Since Sir Walter Erle's accounts are not available for this period, the sums actually provided are unknown.

In accordance with orders of 14th October and 28th November 1644, money was to be made available to the officers of the Ordnance by the Committee at Haberdashers' Hall for the provision of drums, partisans and halberds for the Earl of Essex's army. The House of Commons had previously asked Sir Walter Erle to estimate the cost of these items. In all £207 4s 6d was paid out in settlement of debentures, with all recorded debentures being paid.⁴ Money was also made available at Haberdashers' Hall for the provision of match, shot and field carriages for three battering pieces in accordance with an order of 6th November 1644. Within three days, debentures worth a total of

1 Add. Mss. 5497 ff. 58, 75-77

2 C.S.P.D. 1644 p. 196

3 op. cit. p. 243

C.J. 1643-4 p. 532

4 W.O. 49/82 ff. 58-60

S.P. 28/19 - 28/21 passim

£306 1s 6d had been settled, leaving arrears of £3 6s 8d.¹

During the Second Civil War the sum of £7,000 was allowed for the purchase of munitions out of the fines and compositions received at Goldsmiths' Hall, in accordance with ordinances of 31st August and 2nd September 1648. Debentures to the value of £2,359 6s 8d charged upon this allocation were made out to suppliers between September and November 1648. None of them was settled before the end of that year.²

The remaining debentures which were settled during the Civil Wars were paid for out of various small allocations from different sources. They include a number issued in the summer of 1647 to contractors who brought in carriages and other accessories for ordnance which had been ordered for the defence of Jersey. They were charged upon a special estimate made for this purpose and the total amount expended in settlements was £266 17s 5¼d.³

Money raised for the maintenance of Sir Thomas Fairfax's army between 1645 and 1648 was not normally employed in the settlement of Ordnance Office debentures, although in March 1648 the Army treasurers did settle a contract worth £1,365 for a large consignment of match and musket shot which had been arranged by the Committee for Powder, Match and Shôt.⁴ This was presumably done because the munitions were needed for the Army and the necessary funds were not forthcoming out of the receipts from the excise. The total amount expended in settling all these miscellaneous debentures was £1,835 3s 9¼d.

Summing up the position of the Ordnance Office debenture holders during the Civil Wars, it may be said that whilst those who failed to receive satisfaction within a reasonable period of time were

1 W.O. 49/82 ff. 60-64

W.O. 47/1 p. 109

S.P. 28/20 ff. 5-19

C.J. 1643-4 p. 688

2 W.O. 49/82 ff. 101-104, 108.

3 op. cit. ff. 90-92

S.P. 28/47 passim

4 W.O. 49/82 f. 96

S.P. 28/52 f. 407

in the minority, just over one third of all debentures issued were unpaid or not paid in full at the end of the Civil Wars, a considerable sum of £18,000 was still owed to debenture holders in December 1648. The greater part of these arrears had been incurred during the years 1644 to 1646 and the majority of the unsatisfied contractors were holding debentures which were charged upon receipts from the excise. Both large and small contractors were affected. The principal suppliers of gunpowder and match were owed large sums. The value of debentures issued to Samuel Cordwell during 1645 and 1646 and which were still unsettled at the end of the Civil Wars amounts to around £5,000, whilst the other leading powder maker, John Berisford, was owed sums totalling over £2,000 for supplies delivered in that same period. One of the two main providers of match, Thomas Steventon, also held unsettled debentures worth over £2,000, and the other, John Freeman, was owed several hundred pounds at least.¹

These figures take no account of debts due to these same suppliers for ammunition provided for the use of the Navy. For instance, John Berisford was owed £2,500 in 1647 in respect of gunpowder contracted for by the Navy Committee. This was due to be paid for out of the proceeds of the excise also.²

Delays in making payment to Ordnance Office contractors was by no means a novel development. The problem had existed in the earlier sixteenth century.³ Furthermore it seems that the availability of funds was not the only difficulty. One practice complained of by gunsmiths who supplied the Ordnance Office in 1640 was that the officers resorted to unofficial suppliers who charged lower prices, paying them in cash whilst the regular contractors were obliged to wait for their money.⁴

A number of debentures which were issued before or just after

1 W.O. 49/82 passim

2 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. 222, 263

3 Ashley, R. The organisation and administration of the Tudor Office of Ordnance p. 98

4 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 (Mar.) 1954 p. 60

the outbreak of the Civil Wars were settled in 1644. A debenture made out in June 1642 to Mathew Banks for £26 10s was settled in May 1644.¹ Debentures made out in September 1642 to various gunsmiths for cleaning and repairing muskets were settled on 27th May 1644.² Yet in January 1647 the officers of the Ordnance certified to the widow of John Compton, gunmaker, that payment had not been made for arms repaired by him in 1641.³

The financing of the New Model Army impinges on the Ordnance Office to the extent that the bulk of the large quantities of match, clothing and equipment contracted for by the Committee of the Army and paid for by the Army treasurers between 1645 and 1648 was in the first instance brought to the Tower and for our purposes may be regarded as provision for the Ordnance Office land stores. In addition, the treasurers advanced sums to the Lieutenant of the Ordnance, some of which were spent on supplies for the Army that were brought to the Tower.

The remodelling of the Parliamentary army was accompanied by an endeavour to reform the method of financing armies. An attempt at centralisation was made whereby the county committees were directed to raise £53,436 a month and to remit the money to London. However, as in the past it proved impossible to prevent the diversion of revenues to local uses or the accumulation of arrears. The receipts from the assessments therefore had to be supplemented by loans. A loan of £80,000 by the City was followed by two forced loans for a total of £240,000 in the latter months of 1645.⁴

The largest single item of expenditure was that of pay, and the shortfall in revenue meant that the device of respiting or deferring a proportion of pay was resorted to. Receipts from the assessment in subsequent years were erratic. When the first monthly

1 S.P. 28/1D f. 554

2 S.P. 28/15 ff. 298, 323, 327

3 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 p. 66

4 Gentles, I. B.I.H.R. vol. 48 no. 117 May 1975 pp. 53-54

Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 786-789, 818-819

assessment expired in September 1646, the ordinance was not renewed until March 1647 and money did not start to come in until January 1648. Income from arrears of the original assessment was supplemented by special payments ordered by Parliament and the Army Committee. Although the assessment was renewed again in March 1648, the nominal yield of £60,000 a month was never actually attained.

During the summer of 1646, money was appropriated from the proceeds of compositions administered at Goldsmiths' Hall and from the excise for the partial settlement of the Army's arrears. In these circumstances the attempt to centralize the financing of the Army was unsuccessful and led to the renewal of the practice of paying regiments out of assessments raised in the district in which they were stationed.¹ This could have disadvantages for contractors. Two shoemakers who were paid £377 10s in October 1648 for shoes which they had delivered to the Ordnance Office stores were allowed an additional £2 10s to cover the cost of going to Northampton to get their money out of the assessment collected there.²

Despite these deficiencies, revenue from the monthly assessment was the mainstay of the Army's finances. According to the treasurers' accounts, total receipts from this source between February 1645 and February 1649 were £2.7m. The excise was intended to play an important part in the financing of the Army, but in fact the treasurers received only £124,000 from this source during the period October 1645 to November 1646 and nothing thereafter. The income from loans and delinquents' compositions between 1645 and 1650 amounted to some £538,000.³

The attempt at centralised finance was accompanied by the reorganisation and concentration of the business of munitions procurement for the remodelled Army and in this sphere there was a greater measure of success. The House of Commons resolved on 10th

1 Gentles, I. B.I.H.R. vol. 48 no. 117 May 1975 pp. 56-57

2 S.P. 28/55 f. 275

3 Gentles op. cit. pp. 62-63

Morrill, J.S. Past and Present no. 56 Aug. 1972 pp. 44-50, 53

Cal. Proc. Comm. for Compounding vol. 1 p. 37

March 1645 upon hearing estimates submitted by Robert Scawen that £31,989 be provided for the purchase of arms, equipment and clothing for the horse and foot and £4,406 for the train of artillery.¹ Shortly afterwards, the Army Committee was formed under Scawen's chairmanship to manage the business of procurement. The total value of contracts made by the Committee and recorded at the Ordnance Office between April and August 1645 amounts to £31,233 16s.²

When in December 1645 the Committee was instructed to take steps to bring the Army up to strength and to procure the necessary munitions, the list of arms and ammunition required included 8,000 muskets, 1,000 barrels of powder, 50 tons of match and 30 tons of musket shot. For this purpose £84,847 was allowed out of the receipts from the excise. By and large these munitions were provided during 1646, although they were not necessarily paid for out of the excise.³

The total amount paid by the Army treasurers to contractors who brought stores to the Ordnance Office upon contracts made with the Army Committee between March 1645 and December 1648 was £93,542 11s 5½d. The amount outstanding to contractors on 31st December 1648 was £11,140 2s.⁴ About two thirds of these arrears relate to contracts made during the years 1645 and 1646. In addition, a further £31,118 9s 10d was paid by the Army treasurers upon warrants of the Army Committee to suppliers of provisions for the Army between 1645 and 1648 which are not recorded in the Ordnance Office receipts books. Unless the records themselves are deficient, these stores were not brought to the Tower.⁵

There are no references in the senior officers' accounts to receipts of money from the treasurers of the New Model Army, yet Sir Walter Erle's own account shows that during the period April to June 1645 he received a total of £4,000 from the Army treasurers. Out of

1 C.J. 1644-6 pp. 73, 78

2 W.O. 47/1 passim

3 C.J. 1644-6 p. 388

See Appendices one, three and four

4 S.P. 28/29 - 28/57 passim; 28/352 unfol.

5 ibid.

See Appendix four

this sum £2,388 2s 2d was spent by Erle on stores contracted for by the Army Committee and delivered to the Ordnance Office and £1,610 7s 7d on provisions "which past not y^e Office of y^e Ordnce".¹ In all, therefore, the Army treasurers paid out £119,475 5s 6½d on munitions, equipment and clothing for Ordnance Office stores and otherwise between 1645 and 1648. This compares with a declared expenditure of £257,000 by the treasurers on provisions of all kinds between 1645 and 1651.²

Considering the situation of Ordnance Office suppliers who had contracted with the Army Committee between 1645 and 1648, the impression gained is that they were more fortunate than any other category of contractor who supplied the Parliamentary forces during the Civil Wars, the more so in view of the large quantities of munitions involved. Although they were still owed a considerable amount, £11,000 in all, at the end of the Second Civil War, the number of actual deliveries unpaid for, about fifty, represents just under one ninth of all transactions involving this group of contractors.

This sum of £11,000 is little more than one half of the arrears due to Ordnance Office debenture holders for provisions brought in between 1644 and 1648. Yet the total face value of all debentures issued in connection with the land service during these years is only £46,000, compared with over £100,000 worth of stores brought to the Office by those who had contracted with the Army Committee between 1645 and 1648. Incidentally, the total arrears of £29,467 in respect of munitions for land service still not paid for at the end of 1648 may be compared with the overall debt of the Ordnance Office, including arrears of the ordinary, of £38,147 in 1638.³

As in the case of the debenture holders, both large and small

1 S.P. 28/30 ff. 635-640; 28/140 ff. 4-8

2 Gentles, I. B.I.H.R. vol. 48 no. 117 May 1975 p. 63

3 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 40-41

suppliers were numbered amongst the Army Committee contractors who were owed money. Those who had made expensive contracts for the supply of ammunition and clothing were again owed large sums. The least fortunate group of suppliers probably comprised those who dealt with the Committee of Safety, the City Militia Committee and with agents of local forces during the First Civil War. The failure of many of them to obtain satisfaction is reflected in the series of petitions presented on their behalf. Since their transactions did not normally involve the Ordnance Office, their fortunes have been considered separately.¹

By way of contrast, an exercise in private fund raising towards the close of the Civil Wars gives some indication of the extent of the resources available for investment in spite of the financial demands of the War. The total amount subscribed to the Second General Voyage of the East India Company during 1647-8 was £193,600, of which £125,000 was forthcoming almost at once and a total of £141,200 by July 1648. This amount compares quite favourably with the sums subscribed for earlier voyages in the 1620's and 1630's. Some of the leading Parliamentary merchant financiers subscribed. As we shall see, this latter sum of £141,200 exceeds the total recorded expenditure on the Ordnance Office land stores between 1643 and 1648. Despite the fact that the Company's monopoly had not been confirmed, would be subscribers were encouraged by the prospect of an end to the Civil War and by Parliament's approval of the venture.²

In the final analysis, the question of arrears must be seen in the context of Parliamentary indebtedness as a whole. The burden of debt created by the Civil Wars was such that no government either then or afterwards was able to come to terms with it. Sufficient sums could never be made available for the purpose of repaying in full the

¹ See Chapter ten

² Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 pp. xv, 278
Chaudhuri, K.N. The English East India Company p. 209

debts due to military personnel and to civilians.¹

In order to get a proper perspective of expenditure on munitions, the above mentioned sums laid out on supplies for the Ordnance Office land stores may be compared with other major items of military spending, the chief of which were soldiers' pay and victuals. Expenditure on munitions, clothing and equipment had to compete for a share of the sums raised for the maintenance of the New Model Army with the demands created by pay, victuals, horses, and the remuneration of recruiting agents and collectors of the assessments. Actual expenditure on the pay of the Army in England between 1645 and 1651 amounts to £1.4m., whilst the arrears incurred under this heading dwarfed those arising out of the procurement of munitions. The arrears of all Parliamentary land forces have been estimated at £1.2m. for the period spring 1645 to early 1647, of which £600,000 relates to the New Model Army. The arrears of all Parliamentary forces incurred between 1642 and 1647 amount to at least £2.8m.²

Turning briefly to the Parliamentary navy, the overall cost of that service during the years 1643 to 1647 has been put at some £1.3m., whilst the total receipts of the Navy Treasurer in the period 1642 to 1649 amounts to £1.4m., mostly from the customs. The projected cost of the summer fleet of 1648 was £142,371, and that estimate was about one third below the figure for the previous year. Furthermore, estimates of this sort were invariably too low. Like the forces on land, the Navy was burdened with debt, although this did not assume astronomical proportions until the Commonwealth era.³

The expenditure on supplies for the Ordnance Office land stores during the Civil Wars is summarised in Table six.⁴ For our purposes it has been assumed that all records of payments to debenture holders and other suppliers have been traced. It is possible that some

1 Habakkuk, H.J. Econ. Hist. Rev. 2nd ser. vol. 15 1962-63 p. 83

2 Gentles, I. B.I.H.R. vol. 48 no. 117 May 1975 pp. 54-55, 63

3 Hammond, W.N. The administration of the English navy pp. 86, 87, 412 note

4 See p. 207

have still not come to light and that the scale of the arrears at the end of the Civil Wars is therefore less than it appears to be. It is not possible to form an estimate of the total cost of the Ordnance Office within the scope of the present work. In order to do so it would be necessary to take into account expenditure on provision for the Navy and to calculate the arrears of salaries and allowances, including those in existence at the beginning of the War. There is, however, some evidence of the scale of the Ordnance Office's debts after the Civil Wars. Compared with the arrears of around £30,000 owing to suppliers for land service alone at the end of 1648, the total debt of the Office, including arrears of fees and allowances as well as sums due to contractors, stood at £143,862 in February 1651. By May 1656 the debt had declined to £46,213, yet by 1658 it had risen again to £58,674.¹

Comparisons can be made between the recorded expenditure and commitments amounting to £162,000 in respect of the Ordnance Office land stores during the period 1643 to 1648, and estimates of expenditure at other times before and after the Civil Wars. In the last years of the sixteenth century annual expenditure incurred by the Ordnance Office ranged between £15,000 and £20,000, most of it in connection with the maintenance of the Navy. These figures were far exceeded by expenditure on pay and victuals. Exchequer payments to the Ordnance Office naturally fluctuated with the level of military activity. During the 1620's such payments, which included spending on the Army, ranged between £19,000 in 1626 and £49,000 in the period April to September 1627, the year of the Ile de Rhe expedition.²

These latter figures are thought to include payments for powder, armoury expenses and direct payments to contractors abroad, rather than representing just the sum total of the ordinary and extraordinary expenditure of the Ordnance Office. Then over the

1 Hammond, W.N. The administration of the English navy p. 283

2 Dietz, F.C. English public finance 1558-1641 pp. 81, 112, 216-217, 240
Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 41

Table Six

Expenditure on the Ordnance Office Land Stores 1643-48

	£	s	Od
Paid by the Army Treasurer and paid out of moneys advanced by him 1642-3	2,503	5	00
Paid out of the £1,504 a month allocated to the purchase of munitions for land service July-Sept. 1644	3,945	19	10
Paid out of moneys advanced by the Excise Commissioners 1644-8	25,595	12	2½
Paid out of moneys advanced out of the proceeds of fines and sequestrations	1,851	2	0 ¹
Paid by Sir W. Erle out of the moneys advanced by the Army treasurers Apr.-June 1645	2,338	2	2
Paid by the Army treasurers 1645-8	93,542	11	5½
Paid out of miscellaneous allocations	1,835	3	9¼
	<u>131,611</u>	<u>16</u>	<u>5¼</u>
Owing to debenture holders and to other suppliers on 31st Dec. 1648	29,467	6	0¼
	<u>161,079</u>	<u>2</u>	<u>5½</u>

1 This is a tentative figure because records of the amounts actually received at the Ordnance Office are incomplete. The actual total may have been less.

period 1635 to 1639 Ordnance Office expenditure on the ordinary and the extraordinary averaged £13,000 to £14,000 a year, excluding spending on gunpowder which from 1637 to 1639 ranged from £15,000 to £18,000 a year.¹ All these figures relate to expenditure on both land and sea service.

In the later seventeenth century Ordnance Office expenditure took on new dimensions with the expansion of English forces on land and sea. An early indication of this growth came with the notable development of the Navy during the Commonwealth and Protectorate. Between 1655 and 1657 the Navy Treasurer paid from £34,000 to £42,000 a year to the Ordnance Office, sums which represented only a fraction of total spending on the Navy.² During the later Dutch Wars Ordnance Office expenditure on the land and sea services was in excess of £100,000 a year, amounting to £243,000 between August 1664 and September 1666, £121,000 in 1671 and £175,000 in 1672. Estimates of Ordnance Office spending on the land service which were prepared for Parliament amount to £158,000 for 1690, £320,000 for 1693 and £172,000 for 1706. With the addition of expenditure on the sea service, but excluding payments of the ordinary allowance, the overall estimates for these same years are £418,000, £720,000 and £304,000 respectively, thereby equalling or surpassing the total expenditure likely to have been incurred by the Parliamentary Ordnance Office during the Civil War years.³

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 pp. 39, 47

2 Hammond, W.N. The administration of the English navy p. 493 note

3 Tomlinson, H.C. The organisation and activities of the English Ordnance Office vol. 2 pp. 538, 542-543, appendix B

Chapter Ten

The Procurement of Munitions Outside the Ordnance Office

An account of the role of the Parliamentary Ordnance Office during the Civil Wars would not be complete without some reference to the various channels of supply other than through the Office itself. As might be expected, the requirements of lesser forces and garrisons in particular were met in these ways, yet during the first two years of the War large amounts of munitions, clothing and equipment were obtained for the main Parliamentary armies also. The scale of these transactions greatly exceeded those involving the Ordnance Office land stores at this time.

Since merchants had traditionally been relied upon to supply much of the military stores that were required when an expedition was being prepared, it was only natural that Parliament should turn to the commercial and financial resources of London when the conflict began in 1642. The Privy Council had in the past dealt directly with merchants and manufacturers on occasions.¹ Moreover, the City treasury, known as the Chamber of London, did not confine its expenditure to the purely municipal sphere but also supplemented the inadequate measures taken by governments towards the financing of military ventures. During 1642 a total of £6,785 was disbursed by the Chamber on powder and match purchased by order of the House of Commons.²

The report of the Commission on the Ordnance in 1620 had opposed the retention in the Tower of those commodities which were readily available in the open market, although it is not clear how far this recommendation was observed in practice.³ With regard to procurement for the Parliamentary land forces, we may detect as the Civil Wars continued a movement away from the process of direct

1 Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 15

2 Pearl, V. London and the outbreak of the Puritan rev. pp. 336-337 C.L.R.O. Ms. 86.3

3 Add. Mss. 36,777 ff. 5-6

contacts with merchants and artisans by a variety of committees and individuals and towards the consolidation of the business of procurement in the hands of specialist committees who themselves authorised and negotiated contracts for munitions, clothing and equipment, much of which was delivered to the Ordnance Office. Although it can be argued that it was quicker and cheaper to deal directly with suppliers and to by-pass the machinery of the Ordnance Office, this claim is not wholly borne out by the experience of the period during which the Army Committee and the Committee for Powder, Match and Shot were responsible for making contracts and the Ordnance Office was responsible for proving, storage and issue.

Of the City merchants who played a prominent part in the supply of the Parliamentary land forces in the First Civil War, some have already been referred to in connection with the supply of the Ordnance Office stores.¹ Those who played a most significant part were Owen Rowe, John Bradley and Stephen Estwicke. From the summer of 1642 Rowe and Bradley were accumulating arms and ammunition for the Parliament. They acted as purchasing agents for the Committee of Safety and the store of munitions in their keeping was referred to as the "magazine for the Safety of the Kingdom". The munitions were delivered chiefly to the Earl of Essex's army, although some deliveries were made to other forces including the incipient second Parliamentary army of 1642 under the command of the Earl of Warwick which failed to materialize.

The munitions acquired by Rowe and Bradley were stored in various places, including a house in Tower Street owned by Alderman John Fowke, premises belonging to the Plumbers' Company and a storehouse owned by another merchant, Henry Bonner. There is a reference in December 1642 to "Col. Rowe at the Tower magazine" which presumably refers to the house mentioned above.²

1 See Chapter six

2 S.P. 28/263 f. 195; 28/264 ff. 216, 369, 370

Cal. Proc. Comm. for Advance of Money vol. 1 p. 7

Rowe and Bradley bought munitions from both English and foreign merchants. Warrants for the payment of the suppliers were normally issued by the Committee of Safety to the Army treasurer, Sir Gilbert Gerard. The repair of weapons was also arranged, for which purpose Rowe received a total of £1,000 from the Treasurer in August 1642.¹ The bulk of the munitions sold to Rowe and Bradley came from City merchants, although some of them were imported. Quantities of the more important munitions that were purchased are recorded in Appendix eight. It will be seen that the numbers of matchlock muskets, pistols and swords purchased were greater or almost as great as those acquired for the Ordnance Office stores in any twelve month period of the Civil Wars.²

Rowe and Bradley also had charge of munitions purchased by the City Militia Committee towards the end of 1642, including 16,127 swords and 8 tons 18 cwt of lead shot.³ Excluding these, the total value of the munitions sold to Rowe and Bradley amounts to £34,001 16s 10d. Although significant, this figure represents only a portion of the total amount spent on munitions for the Parliamentary land forces between 1642 and 1644. We must add to this sum the amounts paid to other merchants and tradesmen who supplied the armies, together with the money advanced to members of the Earl of Essex's army by the Treasurer to enable them to buy equipment. Apart from the direct payments by the Treasurer to suppliers who had sold munitions to Owen Rowe and John Bradley, sums of money were paid to Rowe himself for the purchase of arms, ammunition and equipment. Between March and June 1643 the Committee of Safety ordered the payment of a total of £12,300 to him for this purpose, of which some £9,100 was actually advanced.⁴

Rowe's position as a purchasing agent was formalised by an ordinance of 6th September 1643, whereby he was authorised to contract

1 S.P. 28/1A f. 219

2 See Appendix three

3 S.P. 28/261 f. 428

4 S.P. 28/263 - 28/264 passim

for arms to the value of £5,000, not a very great amount, and to issue them upon warrant from the Committee of Safety or the Earl of Essex. The money was to be raised out of taxation and assessments in arrears and due to be collected in Essex, Kent, Norfolk and Sussex.¹ Records of purchases by Owen Rowe after September 1643 are limited, however.

There does not seem to be any detailed record of deliveries made out of Rowe's magazine, although it is clear that these were not wholly confined to the Earl of Essex's army. Rowe delivered a small quantity of munitions to the Ordnance Office stores.² His magazine continued in existence until the reorganisation of the Parliamentary armies, whereupon its contents were made use of by various forces, including the New Model Army and the army in Ireland. Rowe himself continued to supply the Parliament after the disbandment of Essex's army, although not on the scale of earlier years. In April and May 1645 he provided 1,000 backs, breasts and pots and 1,000 pikes for the New Model.³

Another merchant who played a prominent part in the supply of stores to the Parliamentary forces, both through the Ordnance Office and otherwise, was Stephen Estwicke. In particular he was responsible for the provision of clothing and footwear. Between August and October 1642 Estwicke received a total of £3,000 from the Army treasurer for the provision of coats, shirts, shoes and knapsacks for the Earl of Essex. These were subsequently issued by Estwicke upon warrants.⁴ Then on 4th October 1642 the Treasurer was ordered to pay £600 a week to Estwicke for a period of 12 weeks in order to defray the cost of providing clothing, footwear and knapsacks. Over the next three months £3,600 was paid to him, with a further £2,260 advanced between April 1643 and June 1644.⁵

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 272-273

2 W.O. 55/1660 f. 13

3 S.P. 28/352 unfol.

W.O. 55/1662 p. 41b

4 S.P. 26/1A; 28/2A; 28/261; 28/262, passim

5 S.P. 28/261 ff. 430-431, 433

By a subsequent order of 7th November 1642 Estwicke was to receive £400 a week for the provision of 6,000 sets of clothing, footwear and knapsacks. Payment was to continue until the entire cost had been met, but recorded receipts amount to only £1,200.¹ A year later, on 5th October 1643, Estwicke along with two other merchants, Francis Peck and Captain Player, was asked to provide 10,000 sets of clothing, footwear and equipment at 16s a set for the armies of the Earl of Essex and Sir William Waller. These were to be paid for out of the proceeds of the weekly assessment collected in Essex.² Estwicke was also concerned with the purchase of munitions as a member of the City Militia Committee, whilst in September 1642 he was made responsible along with Thomas Andrewes for organising the large scale purchase of arms in France and Holland.³

A number of other merchants and tradesmen dealt directly with the Committee of Safety and the Parliamentarian armies as well as indirectly through the hands of Rowe, Bradley and Estwicke. They included City merchants, merchant strangers and foreign merchants. The large scale purchase of arms ordered by the Committee of Safety in September 1642 was organised by Andrewes and Estwicke, but the actual purchases were made by their agents in France and Holland. The order included 12,000 muskets, 6,000 pikes and 1,500 pairs of pistols as well as other weapons and armour. By the beginning of October a considerable quantity had been delivered and the Army treasurer was authorised to pay such bills as were submitted. By 4th October Andrewes and Estwicke had spent £1,308 on the purchase of arms abroad.⁴ At the same time an agreement was recorded between the House of Commons and Thomas Cunningham for the delivery at Leith of 6,000 muskets, 4,000 pikes and 10,000 swords. These arms were purchased in the Netherlands and were originally intended for the Scottish army in Ireland.⁵

1 S.P. 28/262 f. 317

2 S.P. 28/9 f. 319

3 S.P. 28/2B f. 670; 28/261 f. 284

4 *ibid.*

5 C.J. 1640-3 p. 793

Certain merchant strangers and foreign merchants had dealings with the Parliament in connection with munitions supply. On 9th January 1646 the Commons ordered the Committee for Powder, Match and Shot to pay £994 12s to David Hempson and John Simpkinson, merchant strangers, for gunpowder provided by them.¹ Jasper de Rudder of "Bridges" (?Bruges) in Flanders authorised a London merchant, Peter Heeren, to receive in April 1643 on his behalf the sum of £194 8s owing to him for arms delivered to the Parliament.² John Muller of Hamburg, who also supplied arms, is referred to in an ordinance introduced in November 1645 for the purpose of raising money to settle the debts due to artificers and others who had brought in munitions.³

Lastly, merchants played a major part in making provision for the Scottish and English forces in Ireland. By order of Parliament in October 1642 a contract was made with several London drapers for the provision of 7,500 suits of clothes for the soldiers in Ulster at a cost of £15,937 10s.⁴ During the winter of 1646-7 renewed attention was paid to Ireland and sizeable contracts were arranged by the Committee for Irish Affairs for the delivery of arms, ammunition and equipment there. The contractor undertook to arrange for the shipment of the provisions to Ireland, although they were to be taken to the Tower for inspection in the first instance. On 17th November 1646 the Commons approved a contract made with John Davies for the supply of weapons, clothing, ammunition and implements. A similar agreement made with John Chesten, Dennis Gawden and Thomas Rodberd and partners of London was ratified on 8th April 1647.⁵

Apart from purchases made on behalf of the Parliamentary forces by merchants like Rowe and Estwicke, transactions took place between merchants and artificers and members of the principal armies.

1 C.J. 1644-6 p. 400

2 S.P. 28/5 f. 378

3 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 807-809

4 S.P. 28/2B f. 555

5 C.J. 1644-6 p. 698; 1646-8 p. 136

Large sums were disbursed during the first year of the War by the Army treasurer, Sir Gilbert Gerard, to commanders of foot regiments and of troops of horse to enable them to equip their officers, servants and men; to merchants who provided munitions and clothing and to artificers who delivered supplies to the Earl of Essex's army. In some cases there were set allowances, such as the "mounting money" which was paid to each captain who undertook to raise a troop of horse in the first Parliamentary army. Other allowances included one to provide waggons and carriages for each regiment.¹

There were also many special payments for all manner of requisites for the foot and the train of artillery. Thus payments were made by the Treasurer to the officers of the train of artillery to enable them to purchase essential stores, in spite of the fact that this was an area where the Ordnance Office normally made a significant contribution. During September 1642 a total of £3,000 was received by the Lieutenant General of the Artillery, Philibert Emmanuel de Boys, for the purchase of waggons, boats and carriages for Essex's train.²

Various payments were made to the Waggon Master and to the Purveyor General of the train of artillery between 1642 and 1644 to allow them to buy such necessaries as ammunition, waggons, iron, timber, horseshoes and implements. The Purveyor, Captain Peter Cannon, received several hundred pounds from the Army treasurer during 1643. On 1st May 1644 the Committee for Advance of Money was ordered to pay £1,000 to Sir Walter Erle who was then to hand the money over to Cannon for the purpose of buying essential stores for the train of artillery.³ Following the reorganisation of the Parliamentary armies, Cannon was instructed to deliver up the arms and ammunition in his care "for the service of the state". His apparent delay in doing so was most likely inspired by his desire to obtain the settlement of

1 Firth, C.H. Cromwell's army p. 18
S.P. 28/1 - 28/16 passim

2 S.P. 28/2A f. 36

3 S.P. 28/4 f. 247; 28/6 f. 127; 28/264 ff. 107, 337
Cal. Proc. Comm. for Advance of Money vol. 1 p. 34

outstanding debts.¹

Local traders were utilised to meet the immediate requirements of an army in the field where it was possible to do so. When Cromwell's army was upon its march to the North from South Wales in September 1648 shoemakers in Northampton were called upon to supply footwear.²

Mention should also be made here of the £31,000 worth of munitions contracted for by the Committee of the Army between 1645 and 1648 which apparently did not pass through the Ordnance Office. Swords and suits of armour (backs, breasts and pots) supplied by cutlers and armourers in London were prominent in this category.³

Apart from the Committee of Safety and the Committee of Both Kingdoms, a number of other committees were involved in the procurement of munitions on a smaller scale. A large consignment of swords, belts and bandoliers was purchased by the City Militia Committee for the Parliamentarian forces and delivered into the custody of Owen Rowe and John Bradley between September and December 1642. The total value of these deliveries amounts to £7,316 3s 4d. They were to be paid for by the Army treasurer, Sir Gilbert Gerard.⁴ The City militia's own magazine was furnished in part by the Ordnance Office, whilst the Committee also purchased munitions for the defence of London on its own account. Part of an East India Company warehouse in Leadenhall was rented as a magazine, for the use of which the Committee was asked to pay £10 a year in 1644.⁵ Between 1644 and 1646 some £2,000 was paid to contractors for gunpowder, pistols and ordnance for the defence of London. Some of these supplies were eventually paid for with money raised under the Ordinances of March 1643 and December 1644 for providing funds for the fortifications about London, and others were paid for by the

1 C.J. 1644-6 p. 101

W.O. 47/1 p. 221

2 S.P. 28/55 f. 267; 28/57 f. 300

3 See Appendix four

4 S.P. 28/261 ff. 426, 428

5 Sainsbury, E.B. Cal. court minutes of the East India Co. 1644-49 p. 39

Treasurers for Money and Plate.¹

The committees handling the revenues raised under the various financial ordinances were sometimes involved in the purchase of munitions, usually when they alone had funds available for the procurement of urgently needed munitions. The Committee at Haberdashers' Hall was directed by the House of Commons on 6th May 1644 to contract for and pay for 12 tons of shot for the Earl of Essex's army, some of which was delivered shortly afterwards to the train of artillery by John Browne. The Committee was required to provide the funds for the purchase of 5 tons of match for the army at the same time.²

A committee comprised of members of the House of Commons and of the City merchant community was set up at Goldsmiths' Hall for the purpose of raising money for the maintenance of the Scottish Army of the Solemn League and Covenant. Consequently the Committee became involved in the procurement of munitions for the Scots. There was also a sub-committee, sitting at Turners' Hall, and referred to as the Committee for Scottish Affairs, which was concerned with the distribution of the money. In 1645 the Committee at Goldsmiths' Hall was given the power to deal with compositions on a regular basis.

Financial support for the Scottish army in England was supposed to be provided out of the proceeds of sequestered estates. As usual, the sums actually raised fell short of expectations and as an additional measure an assessment of £31,000 a month was laid on certain Northern towns and counties.³ The duration of the Scots' stay in England was marked by repeated haggling over the amounts of money and provisions which were to be made available for their army and by claims that the undertakings made by Parliament were not being honoured.

The Goldsmiths' Hall Committee was directed early in 1645 to

1 S.P. 28/36 f. 18; 28/42 ff. 430-431

2 C.J. 1643-4 p. 431

S.P. 28/15 f. 28; 28/37 f. 94

See p. 161

3 Meikle, H.W. Correspondence of the Scots commissioners p. xvi

take steps to provide clothing and arms requested by the Scottish Commissioners. On 4th February 1645 the Committee directed that the Earl of Leven's army should be provided with 11,000 yards of cloth, 1,000 backs, breasts and pots and 1,000 pairs of pistols. This was followed by an order for the supply of 7,000 muskets and 300 barrels of powder with match and shot. The munitions were made available in the following month.¹

A number of committees and other bodies in London actually had stores of arms in their possession. Thus the Committee of Citizens Adventurers at Grocers Hall had charge of a magazine intended for the supply of the forces in Ireland, although some of its contents were put to other uses. On 13th April 1644 the Committee was ordered by the Committee of Both Kingdoms to certify what munitions they had in their possession for the service of Ireland. The latter committee further directed on 25th May 1644 that the arms and saddles borrowed from Grocers' Hall for the troops at Watford should either be returned or paid for.² Some livery companies also had collections of munitions in their possession.

Finally, certain members of Parliament, other than Sir Walter Erle, became involved in the business of obtaining munitions. This they did either by using their influence to obtain warrants for delivery out of the Ordnance Office stores or by themselves arranging for purchases to be made. They were usually acting on behalf of forces in their own localities or for friends and relatives. Furthermore, some members like Sir Samuel Luke and Henry Marten served for a time as governors of towns held for the Parliament prior to the passing of the Self Denying Ordinance.

Sir Oliver Luke's efforts on behalf of his son at Newport Pagnell are referred to elsewhere.³ Thomas Toll, member for King's Lynn in Norfolk, shipped £700 worth of gunpowder and pistols to that

1 Meikle, H.W. Correspondence of the Scots commissioners p. 61
Cal. Proc. Comm. for Compounding vol. 1 p. 16

2 C.S.P.D. 1644 pp. 115, 170

3 See below p. 222

place in April 1644.¹ James Nelthorpe, who was returned in 1645 as the member for Beverley in Yorkshire, provided gunpowder and match to the garrison at Hull during 1646. He received a debenture worth £374 5s from the officers of the Ordnance which was charged upon the receipts from the excise which had been allocated to the Ordnance Office. Nelthorpe had both family and business interests in Hull.²

Although technically a regional force, the army of the Eastern Association had, by virtue of its size and its involvement during 1644 in activities of more than purely local significance, a requirement for munitions, clothing and equipment that was of a different order to that of essentially local forces. At first the provision of munitions for the Earl of Manchester's army was the responsibility of constituent committees of the Eastern Association who lacked the resources for buying in large quantities. Purchases were made from local craftsmen and agents acquired stores in London. The Norfolk county committee obtained much of its requirements from a London merchant, William Cory, who had contacts with the Netherlands. The value of the assessment levied in the Eastern counties for the support of Manchester's army was greatly increased by an ordinance of 20th January 1644 and during the ensuing year considerable quantities of munitions were acquired in London.³

Early in 1644 Bartholomew Wormell of King's Lynn provided £8,000 worth of munitions from the Netherlands. On 4th January he was paid £743 11s by order of the Association treasurers.⁴ More often the significant purchases were made in London, where the merchant Edward Barker supplied between January and October 1644 about £7,000 worth of munitions, including 3,080 muskets, 5,400 swords, 480 cases of pistols, gunpowder and shot. Barker supplied other Parliamentary armies and the Ordnance Office too. Total expenditure on arms for the

1 Holmes, C. The Eastern Association in the English Civil War p. 276 note

2 W.O. 49/82 f. 84

Add. Mss. 35,332 f. 38

S.P. 28/40 f. 198

Undergown, D. Pride's Purge pp. 320, 381, appendix

3 Holmes op. cit. pp. 100, 107, 151, 263 note

Eastern Association forces during 1644 was £39,000, greater than that enjoyed by any other Parliamentary force during the same period. Clothing and footwear for the Earl of Manchester's army were obtained from manufacturers in Cambridge, Suffolk and London.¹

Although less easy to identify and quantify than the transactions involving the main Parliamentary armies, the multifarious dealings whereby local forces and garrisons sought to satisfy their requirements in London and elsewhere during the First Civil War have a cumulative significance. We have already seen that with the exception of clothing and footwear notable quantities of munitions and equipment could be obtained only in London or from merchants in the larger towns and ports who could secure supplies from abroad. Generally speaking, only minor purchases and repairs to arms and ammunition could be made in the immediate neighbourhood.

The most important factor limiting purchases by local forces was that of finance. The deficiencies of financial administration at the centre reflected and were in part caused by shortcomings at local level. The sums of money designated for the upkeep of individual garrisons and regional forces bore little relation to the amounts actually collected and made available. As a result there was difficulty in raising funds for the purchase of munitions and little prospect of obtaining credit from suppliers. When in January 1645 arms were needed by the forces in Montgomeryshire, the House of Commons ordered that 300 pairs of pistols and 700 swords be provided upon the credit of Haberdashers' Hall, the money to be repaid in three months.² As in the case of the main Parliamentary armies, the arms, clothing and equipment needed by the horse and foot of local forces during the First Civil were procured largely outside the Ordnance Office.

It would seem that arms could generally be obtained in the

1 Holmes, C. The Eastern Association in the English Civil War pp. 151, 276 note

S.P. 28/20 f. 166; 28/22 f. 210; 28/25 f. 323; 26/27 f. 264

W.O. 55/1663 ff. 31, 59

2 C.J. 1644-6 p. 19

London market throughout the Civil War period, provided that the would be buyer could pay at least part cash or could provide an acceptable security for payment. The small buyer, however, might have to accept higher prices and inferior quality. The quartermaster to the garrison at Newport Pagnell wrote to the governor, Sir Samuel Luke, in April 1645: "The pistols had not been sent without holsters... but the dearness of them made me not fit the holsters till I knew your pleasure".¹ Certain commodities, such as gunpowder and match, were of course nearly always in short supply.

In the early stages of the War quantities of munitions were acquired by Lord Brooke for the Parliamentarian forces in Staffordshire and adjoining areas. The suppliers included a number of gunsmiths who also supplied the Ordnance Office. According to statements taken from contractors by the Accounts Committee in 1646, muskets, pistols, carbines and saddles worth a total of £2,311 were delivered in February 1643 to Brooke House "as fast as they could be proved and loaded". From there the arms were sent to Coventry, Stafford and Northampton. Most of the deliveries were not paid for until 1648.²

Sizeable quantities of munitions for the forces in North Wales commanded by Sir Thomas Myddleton were purchased from various London merchants between April and June 1643. Arms and ammunition including 1,600 muskets, 70 pairs of pistols and 2,000 swords worth £2,943 in all were delivered and paid for.³ Between January 1644 and June 1645 the Kent county committee spent £13,880 on arms and ammunition for Kentish forces including those serving under Sir William Waller. The munitions were purchased in London, Maidstone and Sevenoaks.⁴

Some of the small transactions which took place at the local level have been brought to light by the investigations of the

1 Tibbutt, H.G. The letter books of Sir Samuel Luke p. 500

2 S.P. 28/5 f. 362; 28/41 f. 48; 28/43 ff. 163, 228

Cal. Proc. Comm. for Compounding vol. 1 p. 84

3 S.P. 28/263 f. 290; 28/264 ff. 70, 313, 364

4 Everitt, A.M. The community of Kent and the Great Rebellion pp. 162-163

3 Committee for Taking the Accounts of the Kingdom which in 1644 began the task of establishing the extent of the liabilities which had been incurred on behalf of the Parliament up and down the country. The account of the provost marshal of the Surrey county committee in July 1645 states that munitions received by him included 100 new muskets and bandoliers and 100 new swords from a London armourer.¹ Another statement supplied to the Accounts Committee at this time by the City Militia Committee records the delivery of 628 muskets, 83 barrels of powder and 1½ tons of musket shot to the garrison at Windsor between October 1642 and April 1643.²

Sir Samuel Luke was not given to understating his problems, yet the well documented difficulties of the Newport Pagnell garrison afford a good illustration of the obstacles encountered by smaller garrisons in their efforts to obtain the supplies they needed. Such places did not normally rank very high in the priorities of the Parliament with regard to the provision of munitions and equipment, except perhaps when they were in imminent danger of attack.

Luke was informed by his father Sir Oliver Luke on 28th October 1644: "I fear our credits will get little ammunition here, for the merchants will part with little but on very good security". On 30th November Sir Oliver wrote again: "I do what I can to provide powder and other ammunition, but unless you can send some present money I doubt little will come, for my credit can help little and nothing is to be got from the state".³

This insistence by contractors upon satisfactory financial arrangement was fostered by their experience during the earlier stages of the Civil War. Although the majority of those who supplied goods between 1642 and 1644 and whose bills were payable by the treasurer of the Army did in fact receive settlement within a reasonable period of time, some long standing debts had been incurred. Of the £7,300

1 S.P. 28/31 f. 640

2 S.P. 28/34 f. 171

3 Tibbutt, H.C. The letter books of Sir Samuel Luke pp. 368, 386

worth of arms and equipment delivered to the City Militia Committee between September and December 1642 by numerous contractors, only some £2,670 appears to have been paid by the Army treasurer before the end of 1644.¹ One constituent consignment of 630 swords and belts worth £47 10s was delivered in December 1642 but was not finally paid for until 28th February 1644. Another debt incurred by the Militia Committee was that of £1,459 owed to John Freeman for pistols and carbines supplied to the City militia. In February and March 1644 the Treasurers for Money and Plate and a Committee Appointed by the Common Council for bringing in arrears were ordered to settle this debt and the money was paid in instalments between February 1644 and April 1646.²

The debts incurred by Owen Rowe and John Bradley on behalf of the Committee of Safety included one in January 1643 in respect of 6,000 swords worth £2,100 which had not been paid in full by June of the following year.³ On 1st July 1643 Sir Gilbert Gerard was ordered to pay £530 to three armourers for the delivery of 265 harquebusier arms, but by the following February only £100 had been paid.⁴ Like other leading merchants who provided money and materials for the Parliament, Rowe was himself owed considerable sums. A petition of his submitted in 1646 was followed by an order of the Committee at Goldsmiths' Hall to pay him £1,000 out of the proceeds of compositions, with a further £1,000 allowed upon the public faith by order of the House of Commons.⁵

Generally speaking, those suppliers who dealt with the Committee of Safety and the City Militia Committee together with the representatives of local forces and private buyers in the early stages of the Civil War without securing full payment of the amounts owing to them were in a worse position than those who subsequently contracted

1 S.P. 28/261 - 28/264 passim; 28/28 f. 375

2 S.P. 28/42 ff. 430-431

3 S.P. 28/27 f. 406; 28/263 f. 43

4 S.P. 28/264 ff. 25, 26

5 Cal. Proc. Comm. for Compounding vol. 1 p. 43

with the Ordnance Office and the Parliamentary committees concerned with procurement. The debts of the latter were at least charged upon some specific allocation of money, however great the shortfall in the amount raised.

The plight of the unpaid contractors, with the small tradesmen and artificers particularly affected, is reflected in a series of measures introduced by Parliament with a view to raising money to pay the sums owing to them. On 8th January 1644 the House of Commons appointed a committee which apart from considering the ordinance for recruiting the Earl of Essex's army was to look into ways of meeting the claims of girdlers, bandolier makers and drum makers who had supplied equipment. This was followed by the formation of another committee on 7th February for the purpose of considering a duty on tobacco pipes or some other hitherto untaxed commodity to raise money for the payment of the above mentioned artificers and others, including gunsmiths, cutlers, saddlers and some foreign merchants.¹

An ordinance was promulgated on 8th June 1644 whereby a duty was imposed on alum, copperas, hats, silks and other goods for the purpose of raising money to meet "such pressing debts as are due unto Severall Handicrafts men strangers, and other persons, for the Arms and Ammunition bought and taken up of them for the service of the state".² Articles of mass consumption were already taxed under the general excise, so that the opportunity for raising large sums through the introduction of new duties was limited. The persistence of the problem was illustrated by the introduction of another ordinance on 24th November 1645 which imposed additional duties on lead, gold, silver, glass, oil and other materials in order to raise money to settle debts due to artificers and craftsmen. In the event of any money remaining thereafter "...then John Muller, a Merchant Stranger of Hamborough (Hamburg) shall first be satisfied the

1 C.J. 1643-4 pp. 361, 391

2 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 p. 466

remainder of his debt for arms".¹

Delay in settling debts could have unfortunate consequences for contractors who had procured munitions on behalf of the Parliament or had obtained materials for which they were themselves unable to pay. The House of Commons authorised payment on 30th November 1644 of £200 out of the proceeds of delinquents' fines or compositions in order to settle the debt of Richard Jones who had been imprisoned as a result of his inability to pay for arms which he had obtained for the Parliament. Jones may have been the gunsmith of the same name who subsequently provided muskets for the New Model Army and who was appointed a proofmaster of the Gunmakers' Company in August 1645.²

The petitions of creditors continued to be presented to Parliament for the duration of the Civil Wars. A Hull merchant, William Sykes, petitioned in December 1647 for the payment of £3,963 18s 5d which he claimed in respect of arms and ammunition supplied to the Parliamentary forces. He asked that the money be paid out of receipts from the already overburdened excise which had not already been appropriated.³ In December 1645 the House of Commons directed that undischarged warrants for payment remaining in the hands of the former Army treasurer, Sir Gilbert Gerard, should be handed over to the Accounts Committee, which assumed responsibility for determining the amounts owing to suppliers.⁴

One petition referred to the Accounts Committee by the Commons was that presented by gunmakers, saddlers and other artificers in October 1646. The petitioners included those who had supplied Lord Brooke at the beginning of the War. The amount owed appears to have been between £2,000 and £3,000. The creditors were then examined

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 806-809

2 C.J. 1643-4 pp. 709, 720

W.O. 47/1 p. 208

W.O. 55/1663 ff. 6, 8, 16

G.L. Ms. 5220 vol. 2 unfol.

3 C.J. 1646-8 p. 411

4 S.P. 28/264 f. 433

by the Committee and on 10th March 1648 the Committee at Goldsmiths' Hall was ordered to settle with those who had supplied arms to Lord Brooke.¹

A certain amount of manufacturing of munitions took place outside London and the South Eastern counties. The difficulty of communication between Parliamentary garrisons and London meant that some commodities, especially gunpowder and match, had to be produced locally. In some instances existing manufacturing facilities were utilised, and in others new works were established.

However, the quantities produced in this way were rarely if ever enough to make local armies and garrisons self-sufficient and in the case of the principal armies they could do no more than help to meet their immediate needs. It was sometimes necessary to rely on London for quite rudimentary pieces of equipment. The Earl of Warwick asked the Committee of Both Kingdoms in July 1644 to provide carriages for the 4 guns that he was supplying to the Earl of Essex, since he was unable to obtain them at Weymouth through lack of materials and labour.²

It was impossible to build up stocks adequate for sustained military activity from purely local resources. Shortages of raw materials and uncertain communications made it very difficult for provincial manufacturing centres to meet the requirements of wide areas.

There were facilities for casting iron ordnance and shot in the Forest of Dean and in Carmarthenshire, of which Parliamentary forces made casual use when they were in the area. Mortar shells were obtained from local ironworks during the Parliamentary siege of Goodrich Castle near Ross-on-Wye in the summer of 1646.³ When Cromwell was besieging Pembroke Castle in June 1648, he asked the

1 C.J. 1644-6 p. 681
Cal. Proc. Comm. for Compounding vol. 1 p. 84
 S.P. 28/43 f. 163

2 C.S.P.D. 1644 p. 301

3 Nicholls, H.C. The Forest of Dean p. 36

Carmarthenshire committee to provide round shot and mortar shells from the ironworks in that county. These were probably the works at Whitland.¹

More regular use may have been made of the ironworks in Denbighshire and Staffordshire which remained under Parliamentary control for much of the Civil War period. The furnace at Ruabon, in which Sir Thomas Myddleton was a partner, appears to have been in operation during the Civil Wars.² Sir Thomas was also a partner in other ironworks in North West Shropshire together with Thomas Mytton and Thomas Kynaston, members of the Shropshire gentry who were prominent Parliamentary supporters. The furnaces and forges at Fernhill and Maesbury near Oswestry were put out of action by the Royalists in 1642 and were not restored to use before 1646. The cost of repairing them was put at £500. Other ironworks in South and East Shropshire were worked for the Royalists.³ On the other hand, certain Staffordshire ironworks which were owned by Royalists continued to function and supplied part of their output to the Parliament.⁴ In neighbouring Cheshire, there is a record of a delivery of shot and mortar shells from Hough furnace to the garrison at Nantwich in March 1644.⁵ In none of these instances, however, was production of more than local significance.

The manufacture of gunpowder was more widely dispersed than that of ordnance and shot. The universal need for powder, the difficulty of storing it for any length of time without risk of deterioration and the uncertainty of contacts with London encouraged efforts to manufacture it locally. Furthermore, the raw materials, and saltpetre in particular, were more widely available, and gunpowder could be manufactured with a smaller accumulation of resources than in the case of ironfounding.

1 Abbott, W.C. The writings and speeches of Cromwell vol. 1 p. 611

Phillips, J.R. Memoirs of the Civil War in Wales vol. 2 p. 387

2 Edwards, I. Trans. Denbighshire Hist. Soc. vol. 9 1960 p. 35

3 Edwards Trans. Shropshire Arch. Soc. vol 56 1957-60 pp. 187, 189, 190, 198, 202

4 Pennington, D.H. and Roots, I. The Committee at Stafford p. xlv

5 S.P. 28/36 f. 405

Some of the larger Parliamentary strongholds such as Gloucester, Manchester, Stafford and Warwick possessed powder mills. At Stafford George Bembrig was allowed 10s a week for his sustenance whilst engaged in making powder and match with the promise of more if his work justified it.¹ The manufacture of gunpowder was established in Dorset before the Civil Wars. At Dorchester there was a mill known as Parke's powder mill, which the Parliamentary garrison there no doubt made use of. There was a saltpetre works at Sherborne in 1635 which probably supplied a powder mill at Evershot, between Yeovil and Dorchester, which was in operation during the Civil War period. The village of Stockwood near Sherborne was also associated with the manufacture of gunpowder. George Boreman, (or Bowerman), who was an Ordnance Office contractor and who may have supplied local forces in the West, is described as being of that place.² Yet the amounts produced in these various places were small and inadequate.

Match, another essential commodity, was likewise widely manufactured but not in quantities sufficient to prevent chronic shortages amongst local forces and the principal armies. It was in an attempt to reduce the consumption of match that flintlock muskets were issued to the garrison at Stafford in December 1644.³ It is likely that, as in London, the provision of munitions in the localities was adversely affected by the difficulty of making satisfactory arrangements for the payment of contractors. A Plymouth match maker, Thomas Boyes, petitioned the Committee of Both Kingdoms in August 1644 for the payment of £200 owing to him for match supplied to the garrison there.⁴

Local forces and garrisons were able to secure the services of artificers for the repair and manufacture of arms, ammunition and equipment on a small scale. However, the availability of skilled

1 Pennington, D.H. and Roots, I. The Committee at Stafford p. 206

2 Mayo, C.H. The minute books of the Dorset standing committee p. 453
 Ferris, J.P. Proc. Dorset Nat. Hist. and Arch. Soc. vol. 85 1963 p. 159
C.S.P.D. 1635 p. 2

S.P. 28/44 f. 320

3 Pennington and Roots op. cit. p. 230

4 C.S.P.D. 1644 p. 393

labour was a limiting factor. There are said to have been few armourers and gunsmiths outside London during the first part of the seventeenth century. During the 1630's men were sent to the North from London to carry on these trades, whilst London gunmakers travelled about the country collecting and repairing firearms for the use of the state, a practice which was continued during the Commonwealth period. Bristol was probably the next most important centre of munitions manufacture and importing after London. In 1644 Bristol was capable of producing up to 200 muskets a week. The city played an important role in this respect during its occupation by the Royalists between 1643 and 1645.¹ The metalworking district of Birmingham was sympathetic towards the Parliament and the manufacture of weapons was carried on there. Arms were obtained from this source by the Parliament in 1643.²

The accounts of the garrisons of Great Chalfield and Malmesbury in Wiltshire contain records of payments to a gunsmith, to a hurdle maker for making baskets for cannon and musket shot, to plumbers for casting bullets and to a joiner for stocking muskets.³ During December 1646 and January 1647 the Dorset committee ordered payments to be made to gunsmiths for repairing muskets and to other persons for the provision of powder, match and bullets.⁴ The Staffordshire committee directed in April 1644 that ash poles be felled for making spades and shovels and that smiths be engaged to make iron shoes for these and other implements.⁵

The quantities of arms and ammunition which were purchased from local sources were correspondingly small in most cases. Often weapons were obtained second hand. At the garrison of Great Chalfield in Wiltshire a gunsmith was paid in January 1645 for repairing 25

1 Roy, I. The Royalist ordnance papers pt. 1 pp. 37-39

2 Stern, W.M. J. Arms and Armour Soc. vol. 1 no. 5 Mar. 1954 pp. 55-56

3 Pafford, J.H.P. Accounts of the Parl. garrisons of Gt. Chalfield and Malmesbury pp. 69, 70, 97

4 Mayo, C.H. The minute books of the Dorset standing committee pp. 83-84. 118, 123, 128-129

5 Pennington, D.H. and Roots, I. The Committee at Stafford p. 104

muskets which had been "bought of country men".¹

1 Pafford, J.H.P. Accounts of the Parl. garrisons of Gt. Chalfield and Malmesbury p. 66

Chapter Eleven

Ordnance Office Deliveries to Armies and Garrisons 1 : 1642 to 1644

Before studying the pattern of deliveries out of the Ordnance Office land stores during the early years of the Civil Wars we shall look first of all at the procedure for the issue of stores and at the condition of the magazine at the Tower in the years preceding the outbreak of the conflict.

Warrants for the delivery of munitions, clothing and equipment out of the Ordnance Office stores may be divided into two categories, those which originated outside the Tower and those for which the officers of the Ordnance were themselves responsible. The first of these categories is by far the larger and most important. This class of warrants includes orders issued directly by the House of Commons to the officers of the Ordnance, but usually they were made out in the name of one or other of the Parliamentary committees which were responsible for the conduct of the war. This procedure represented in effect a continuation of the practice followed before the Civil Wars whereby warrants were issued in the name of the Crown and of the Privy Council.

Between them, the Committee of Safety, the Committee of Both Kingdoms and the Army Committee were responsible for the majority of the warrants for deliveries for land service which were issued during the Civil Wars. The committees could act upon requests for munitions made to them by the commanders of armies and garrisons or they might form their own estimates, for example, of the requirements of armies which were preparing for the field. Sometimes committees were instructed by the Commons to provide munitions for a particular purpose and to make out warrants accordingly.

Besides those warrants which were issued in the name of the House of Commons or of one of its committees with executive powers, some warrants were made out on the authority of commanders in chief such as the Earl of Essex, the Earl of Warwick, and Sir Thomas Fairfax.

Another category of warrants is comprised of those issued by the officers of the Ordnance. However, except when they were made out upon instructions from a higher authority, the latter warrants were restricted to the requisitioning of stores needed for the internal use of the Ordnance Office.

If the requisite items were not available in the stores, then either the matter could be referred to another committee or the officers of the Ordnance could be instructed to procure them. But unless the order came within the scope of an existing authorisation for the procurement of munitions, for which a sum of money had been allocated, the approval of Parliament would normally have to be obtained before a contract could be made.

In addition to the activities of the Parliamentary committees, the Commons as a whole was quite extensively involved in the detailed aspects of maintaining the armed forces. Requests for munitions were received from commanders along with recommendations from committees that provision be made for a particular army or garrison or for the Ordnance Office stores themselves. The Commons could then give an order for the issue of a warrant or they might direct that the business of providing the munitions and paying for them be referred to the relevant committee.

One of the main tasks which faced Parliament and the committees concerned with administering the war effort was that of relating the stream of requests for munitions and equipment to the quantities that were available in the Ordnance Office stores for land service and to the amount of money which could be found for the procurement of munitions both through the Ordnance Office and by direct purchases from suppliers.

These demands were frequent and pressing. Ferdinando Lord Fairfax wrote to the Committee of Both Kingdoms from the siege of York on 18th June 1644: "I must solicit you for a speedy supply of gunpowder, match, and bullett for my own and the Scotch armies in

very great proportions...For my own particular I must intreat a supply of muskets, pistols and carbines, concerning which I have often written". Some deliveries of ammunition out of the Ordnance Office stores were subsequently made to the armies in the North.¹

Major General Browne, sent out in June 1644 with a force of trained bands to guard against the King's threatened advance towards the Eastern Associated counties, made repeated requests for munitions. He wrote to the Committee of Both Kingdoms from St. Albans on 28th June "I require a supply of gunpowder, match and bullet, my provision being very small..." Two months later he was at Abingdon: "our need of a supply of ammunition also is very great..." Again on 22nd September 1644 he wrote to the Committee: "I must remind you again of our great want of match, without a supply of which there is no hope of our subsistence". Consignments of munitions were sent to him from the Tower at intervals during this period.²

Oliver Cromwell wrote twice to the Derby House Committee from Knottingly in Yorkshire in November 1648 requesting ordnance and ammunition which were essential to the prosecution of the sieges of Pontefract and Scarborough castles. These munitions were duly sent.³

On the other hand many of the requests for munitions could not be satisfied out of the stores, or could not be met in full, so a rough and ready order of priorities asserted itself. There was a whittling down process at each stage in the procedure from the original framing of a request for arms and ammunition to an actual delivery from the Ordnance Office stores. By no means all demands for munitions led to the issue of a warrant for delivery out of the stores. Neither were all warrants discharged in full, whilst some were not executed at all. There are in the Calendar of state papers, domestic series and in the Commons Journals numerous orders and

1 C.S.P.D. 1644 p. 246

Add. Mss. 34,315 f. 57

2 C.S.P.D. 1644 pp. 287, 455, 528

Add. Mss. 34,315 ff. 56, 58, 59

3 Add. Mss. 35,332 ff. 113, 115

resolutions for the issue of warrants for delivery out of the "public stores" for which no corresponding warrant can be found in the Ordnance Office records.

No doubt some of these apparently unsatisfied demands were met in other ways, whilst others were rendered superfluous or less urgent by the course of events. Yet many were not acted upon simply because the Ordnance Office stores were unable to supply the necessary commodities and because money was not available for the purchase of them. The abortive resolutions for the issue of warrants were especially common during the years 1644 and 1645, and it was the lesser forces and garrisons whose needs most frequently went unanswered.

The formal process for communicating the need for munitions and then acting upon it, which has been outlined here, relates most clearly to the supply of the main armies, the larger garrisons and the more significant provincial armies. This process was however complemented by a less formal and less well documented process whereby access to the Ordnance Office stores was sought through attempts to secure the support of influential members of Parliament, committee men and army commanders, with the object of obtaining a warrant. A similar situation existed on the Royalist side.¹ The whole nexus of political and family ties was utilised. Minor forces and garrisons, which did not normally rank high in the priorities of the Parliament or of its committees with regard to the allocation of resources, resorted to these means. Nevertheless, as the War continued access to the Ordnance Office stores by any means whatsoever became increasingly difficult.

The correspondence of Sir Samuel Luke during his term as governor of Newport Pagnell illustrates the problems of the smaller garrison in this respect. Soliciting the aid of members of Parliament was an uncertain business. Luke was informed by one of his officers

1 Roy, I. The Royalist ordnance papers pt. 1 p. 50

in London on 1st November 1644: "...Lord Saye did seem very forward in helping me to arms... but afterwards my Lord began to prove very cold in the business and thought it not feasible. Then I spoke to my uncle Temple to move my Lord therein and he seemed to promise arms, but said the House must be moved for saddles..." Doubts about the attitude of Lord Say and Sele were confirmed soon afterwards by Luke's father, Sir Oliver Luke, who wrote: "...there is little hope of Lord Saye for he is getting arms for his son and answered that he must provide first for his own, and has got a warrant".¹

Sir Walter Erle himself was approached but was no more forthcoming. "I have been mindful of great guns" continued Sir Oliver, "but Sir Walter Earle does nothing but promise. If need be I will press his Excellency (Essex) in it".² In a further letter of 30th November 1644 Sir Oliver wrote: "Sir Walter Earle promises fair but performs nothing, although I put him in mind hourly".³

Nor even did the receipt of a warrant for delivery out of the Ordnance Office stores afford a guarantee that the munitions would be forthcoming. On 8th October 1644 another of Sir Samuel Luke's officers told him: "I went to the Tower concerning the powder and bullett according to your directions. The warrant which Capt. Oxford had from the Committee (of Safety) I cannot by it procure the match and ball, but I am now going to the Committee and I hope you shall gain another warrant by which I shall speedily obtain it".⁴

Not only were the requests and orders for munitions reduced in number as they passed through the administrative machinery, but also the quantities stipulated in them sometimes had to be scaled down in order to equate them with the amounts which could be made available. This particularly applied to deliveries of gunpowder, match, and musket shot.

An order of the House of Commons on 20th August 1645 for 100

1 Tibbutt, H.G. The letter books of Sir Samuel Luke pp. 375, 385
 2 op. cit. p. 386
 3 op. cit. p. 405
 4 op. cit. pp. 347-348

barrels of powder with match and shot for the forces in Yorkshire which could not be provided out of the land stores was instead met in part by the loan of 50 barrels from the Navy magazine.¹ Another order from the Commons on 13th April 1646 for 100 barrels of powder for the forces in North Wales was reduced by the Committee for Powder, Match and Shot in their subsequent warrant to 40 barrels of powder and 2 tons of match.²

The length of time which elapsed between the issue of a warrant and the delivery from the stores could vary considerably. This was influenced by the availability or otherwise of the munitions in question and the length of time before a warrant was presented by the holder to the officers of the Ordnance. Moreover the process of securing the issue of a warrant could be a time consuming one.

One possible cause of delay was the preoccupation of Parliament with political matters which held up consideration of the needs of its forces. Another was the failure of the relevant committee to sit regularly. Sir Samuel Luke was informed by a correspondent on 4th February 1645: "The present problems of the House are so great and the Committee of Safety sits so seldom, that we can do little or nothing..."³ This was at the time of the debate on the remodelling of the Parliamentarian armies, whilst the Committee of Safety was nearing the end of its existence.

The procedure for issuing a warrant could vary from a single instruction to a lengthy bureaucratic process involving the intervention of a number of bodies, particularly when the provisions required were wholly or partially unavailable in the magazine out of which they had been requisitioned. The necessity of making arrangements for the transporting of the munitions from the Tower could also cause delays, especially when they were sent by sea or overland to distant locations. The provision of transport was normally

1 W.O. 55/1646 pp. 219, 220

2 Add. Mss. 35,332 f. 40

3 Tibbutt, H.G. The letter books of Sir Samuel Luke p. 431

the responsibility of the recipient of the munitions. The Scottish commissioners in London stated in July 1645 that 100 barrels of powder with match and shot had been ordered for their army then besieging Hereford, "...but we find difficulty to get waggons to transport it".¹

An order of the House of Commons of 17th January 1645 for the supply of a quantity of ammunition to the forces in Pembrokeshire was followed by the issue of a warrant by the Committee of Both Kingdoms on 20th January for the delivery of the munitions out of the Ordnance Office stores and by a further warrant of the Earl of Warwick on 15th March for the delivery of them on board a ship. The delivery from the stores was eventually made on 20th March.²

On 30th October 1646 the Commons ordered that 100 barrels of powder with match and shot be sent to Plymouth, directing the Committee for Powder, Match and Shot to execute the order. On the following day the Committee for the Safety of Plymouth, Poole and Lyme appointed a person to receive the munitions from the Tower. On 2nd November a warrant was made out. However, there proved to be insufficient powder in the land stores with which to meet the order, so the Committee for the West approached the Navy Committee. This committee in turn issued a warrant for the delivery of 100 barrels of powder out of the Navy stores. The powder, match and shot were issued on 16th November 1646.³

In view of the time taken up in procuring a warrant and transporting the provisions from the stores, it can be assumed that, apart from any urgency on military grounds, the recipient of a warrant or his agent would normally have presented it to the officers of the Ordnance as quickly as possible. This is borne out by the fact that when the requisite supplies, or a part of them, were available

1 Meikle, H.W. Correspondence of the Scots commissioners p. 101

2 C.J. 1644-6 p. 23

C.S.P.D. 1644-5 p. 264

W.O. 47/1 p. 61

W.O. 55/1646 p. 33

3 C.J. 1644-6 p. 710

Add. Mss. 35,332 ff. 42-43

in the stores, then they were in the great majority of cases delivered within a matter of days of the issue of the warrant.

Occasionally the officers of the Ordnance recorded the date on which the warrant was brought to them, perhaps because it was considered that an unusual delay had occurred and because this affected the position of the warrant in the ledger. The entries in the books of warrants and deliveries are in a roughly chronological order. A warrant dated 14th September 1644 is slightly out of sequence and there is a note to the effect that it was brought to the Ordnance Office stores on 26th September.¹ Perhaps the officers wished to protect themselves against any suggestion of improper record keeping.

When there were difficulties in supplying what was needed, delays of up to six months sometimes occurred before a warrant was executed. Local forces and garrisons were most frequently at a disadvantage in this respect. The Parliamentarian forces in Devon were allowed 8 pieces of ordnance out of the Ordnance Office stores by a warrant dated 19th June 1643. Yet they received nothing until 14th November, when 6 guns were issued to them.² A warrant of the Committee of Both Kingdoms for the delivery of 40 barrels of powder, 2 tons of match and one ton of musket shot for the garrison at Southampton was issued on 26th September 1644. However, nothing was issued out of the stores until 21st January 1645, and then only match was supplied.³

Sometimes the requisite supplies could only be made available after a contract had been made for their procurement. This in turn depended upon money being made available for the payment of the contractor. The approval of the House of Commons was normally required before a contract could be made in this way.

On 7th May 1646 the Committee for Powder, Match and Shot was ordered by the Commons to arrange for the provision of a large

1 W.O. 47/1 p. 110

2 Add. Mss. 34,315 f. 34

3 W.O. 55/1646 p. 18

quantity of munitions for the garrison at Hull. By the following September not all of these had been supplied and the Commons directed the officers of the Ordnance to contract for as much round shot of various sizes as could be obtained for £23 and to issue debentures to the supplier. Two days later 725 shot were issued out of the stores.¹

During the Civil War period from August 1642 until December 1648 a total of 878 warrants were executed for the delivery of munitions, clothing and equipment for land service, excluding those which although for land service were in fact met out of the Navy stores. The originators of these warrants are listed in Table seven.² When more than one warrant was issued prior to a particular delivery, only that which was most immediately effective has been counted. During 1648 the Army Committee issued warrants for the supply of both the Army and some garrisons as well, following an order of the Commons on 6th January 1648.³ In addition to these 878 warrants, a further 45 were delivered wholly or partially out of the Navy magazine for land service, because the supplies were not available in the land stores.

It will be worthwhile considering briefly the condition of the Ordnance Office stores in the years before 1642, since the role of the Office as a supplier of the Parliamentary land forces during the first two years of the Civil Wars was determined largely by the nature and quantities of munitions which had been acquired before the conflict began.

The most comprehensive investigation into the stores undertaken during the earlier seventeenth century was that of the Commission on the Ordnance which made its report in 1620. This survey revealed that the stores were then in a more satisfactory state than at any other time during the 1620's and 1630's, largely as a result of the relatively low level of military activity in the reign of James I. The Commission enumerated the quantities of munitions in the stores

1 Add. Mss. 35,332 f. 39

2 See p. 240

3 C.J. 1646-8 pp. 420-421

Table Seven

Originators of warrants executed for land service, Aug. 1642 - Dec.
1648, excluding those met out of the Navy stores.

Committee of the Army	468
Committee of Safety	157
Committee of Both Kingdoms	86
Committee for Powder, Match and Shot	35
House of Commons	33
Officers of the Ordnance	33
Earl of Essex	26
Committee of the Navy	15
Lieutenant of the Tower	8
Earl of Warwick	4
Committee of the Admiralty and Cinque Ports	3
Committee of the Eastern Association	3
Committee of the Associated Western Counties	2
Committee at Derby House	2
Committee of the Tower	1
Miles Corbet ¹	1
Sir Thomas Fairfax	1
	<hr/>
	878

¹ Member of Parliament for Great Yarmouth

and recommended the procurement of additional quantities where this was considered appropriate in order to enable the stores to meet the demands of any foreseeable service. It was assumed that the primary concern of the Ordnance Office would normally be with the requirements of the Navy. The quantities of the principal kinds of munitions and the recommended additional amounts are recorded in Table 8A.¹

The total cost of supplying the provisions needed, chiefly muskets, pistols and saltpetre, together with the expense of repairing defective stores, was put at £13,640 14s 2d. The Commission was recommending an increase in the quantity of munitions over that held in the past. Estimates of the quantities needed were based on previous practice and on the recommendations of military handbooks. After making allowance for the Navy, a total of 335 pieces of ordnance were left for the defence of the Tower and for field service. This was considered sufficient.

The amount of powder in store was thought to be the most that could be stored in good condition. It represented an increase of some 890 barrels over the amount considered adequate during Elizabeth's reign. The quantity of match in store was said to be almost three times as great as that held in the past, whilst the store of round shot was more than ample. The Commission also recommended the removal from the stores of a large quantity of unserviceable stores and of commodities which readily be purchased when needed.²

Subsequent reviews of the Ordnance Office stores are less optimistic. It should be borne in mind, however, that reports upon the stores submitted by the officers of the Ordnance would have been unlikely to understate any deficiencies that could not readily be attributed to their own shortcomings since they hoped thereby to secure better financial provision for the Office together with the reduction of their arrears. Such deficiencies as there were during

1 See p. 243

2 Add. Mss. 36,777 ff. 4-5

Charles I's reign must be attributed not only to mismanagement and to lack of funds but also to a greater amount of military activity than during the years before 1620. This activity resulted in a drain upon the stores that was not wholly made good before the outbreak of the Civil Wars.

This was made apparent in a report on the Ordnance Office stores which was presented to the King in June 1636. The officers asked for the replacement of munitions which had been issued from the stores and for regular payment of the ordinary allowance of £6,000 a year which was then greatly in arrears.¹ The quantities of munitions which were in the stores at that time are listed in Table 8B.²

When these figures are compared with those contained in the report of 1620, the comparison is not altogether an unfavourable one, despite the effects of the military and naval ventures of the later 1620's. The latter were not, however, supported solely out of the resources of the Ordnance Office. Yet it is clear from other sources that there were deficiencies in the stores during this period. In 1633 it was stated that the munitions unaccounted for since 1620 included 295 muskets and 37,000 round shot. Moreover, the value of the stores in hand was reported to have declined by £9,095 between 1620 and 1632.³ The Lieutenant of the Ordnance, Sir John Heydon, had earlier stated in August 1628 that the stores were in poor condition and could not provide many of the items that would be needed for an army of 16,000 foot.⁴

The ordnance which were no longer at the Tower in 1636 were presumably in most cases mounted either on board ships or in fortified places on land and were consequently still available for use. The quantities of muskets, pikes and round shot had either changed little or had increased since 1620. But the quantities of muskets and pikes

1 Add. Mss. 30,070 f. 4

2 See p. 243

3 Aylmer, G.E. E.H.R. vol. 72 1957 p. 244

Aylmer Studies in the institutions and personnel of English central administration vol. 1 p. 65

4 Tomlinson, E.M. History of the Minorities p. 141

Table 8A

Munitions in the Ordnance Office stores in 1620.¹ The additional amounts recommended by the Commission are given in parenthesis.

Muskets	3,779 (6,221)	Pikes	8,563
Ordnance	1,292 ²	Gunpowder	3,876 barrels approx. ⁰
Match	137 tons	Lead shot	5t. 11c. (4t. 9c.)
Round shot	145,197		

1 Add. Mss. 36,777 ff. 1-3

2 Includes ordnance on board ships

Table 8B

Munitions in the Ordnance Office stores in 1636¹

Muskets	5,852	Pikes	8,162
Ordnance	186 ²	Gunpowder	1,173 barrels ³
Match	54t. 11c.	Lead shot	7 cwt.
Round shot	188,687		

1 Add. Mss. 30,070 ff. 4-7

2 Excludes ordnance on board ships.

3 Plus 243 barrels in the hands of the powder contractor.

were sufficient only for an army of moderate size. The number of muskets in store in August 1635 totalled 7,255.¹ The significant decreases since 1620 had occurred in respect of gunpowder, match and lead shot. These were the commodities which were most rapidly consumed when fighting broke out and the Parliament encountered serious difficulties in supplying them during the Civil Wars.

The situation with regard to the provision of ammunition in particular continued to deteriorate during the Bishops' Wars. The officers of the Ordnance petitioned on 30th August 1641 for the replenishment of the stores and regular payment of the allowance.² This was followed by a memorandum of 10th February 1642 which stated that no gunpowder had been received since the revocation of the patent thirteen months previously. When outstanding orders had been met the supply of powder would be virtually exhausted. There were 40 tons of match in store, whilst ships of the Navy and other vessels were said to be in need of 900 pieces of ordnance. However, the number of brass and iron guns in store at that time was 241, an increase of 50 over the total for 1636. It is not clear whether or not this figure includes ordnance for the use of the Navy.³

The officers of the Ordnance were justified in drawing attention to the consequences of not making provision for the regular replenishment of the stores, especially in the case of powder, match and shot. This was confirmed by the shortages which arose during the Civil Wars. It was clear that failure to provide the financial basis for a regular and adequate supply of ammunition had serious implications for a widescale and prolonged military conflict. The relative strengths and weaknesses of the Ordnance Office stores were reflected in the pattern of deliveries during the early stages of the Civil Wars when the demand for munitions was most satisfactorily met

1 Harl. Mss. 429 f. 146

2 C.S.P.D. 1641-3 pp. 109-110

3 op. cit. pp. 280-281

Aylmer, G.E. Studies in the institutions and personnel of English central administration vol. 1 p. 26

by the Office in respect of such commodities as ordnance and round shot.

There is the problem of defining the stores of munitions which were maintained within the Ordnance Office during the Civil Wars. In theory at least, a clear distinction was observed between the magazine for land service and that for sea service. Such a distinction had been observed in the past and the interchanging of stores between the two had been regarded as a malpractice. In 1627 an attempt was made to enforce the distinction by requiring weapons to be given identification marks to denote whether they belonged to the land or Navy stores.¹

The land stores, referred to as the "public stores", were intended in normal circumstances to meet the demands of garrisons and fortified places for which the Ordnance Office was responsible, and to provide some of the requirements of any army that might be raised. This magazine proved unequal to the demands of armies and garrisons during the prolonged period of fighting which began in 1642 and it was supplemented not only by direct dealing with contractors but also by the resources of other stores both within and outside the Ordnance Office. When the New Model Army was formed and supplies were procured for it, the provisions were delivered to a separate magazine at the Tower known as the Army stores. However, in the closing stages of the Civil Wars some deliveries were made from this magazine for other purposes too.

The Parliamentary navy increased in size during the Civil War period, but its consumption of ammunition was not so great compared with that of the land forces. Consequently, the Navy magazine was used to offset deficiencies in the land stores. This practice was formalised in January 1648 when the Navy Committee was directed to comply with any warrants issued by the Army Committee for the supply of garrisons which might be referred to it.²

1 Hogg, O.F.G. The Royal Arsenal vol. 1 p. 61

2 C.J. 1646-8 pp. 420-421

Borrowings from the Navy stores consisted in most cases of powder, match and shot, of which there were persistent shortages. The use of Navy munitions for land service was however opposed by the Earl of Warwick as Lord High Admiral.¹ It was usually stated that munitions taken from the Navy stores in this way were to be replaced out of the next consignment received into the stores for land service, although it is not clear to what extent this was done. In any case, if this stipulation was fully observed, then the accumulation of a 'debt' to the Navy stores would simply have aggravated the difficulties of the land stores.

In fact it may have been difficult to maintain an absolute distinction with regard to content and function between the various magazines at the Tower during the Civil Wars. The wording of some warrants implies that the munitions were to be provided out of whichever store could best supply them. In the case of such commodities as gunpowder, supplies were often pre-empted before they reached the stores and so were immediately issued out. In these circumstances the maintenance of a distinction between Navy and land stores was something of an academic exercise.

The officers of the Ordnance were sometimes uncertain as to which magazine was entitled to what. In June 1644 they wrote to Giles Greene, chairman of the Navy Committee, saying that they had repaid 620 barrels of powder owed to the Navy magazine by the Committee of Safety upon warrants for land service. They asked whether the powder subsequently received from the contractors was to be divided between the land and sea stores, otherwise they could not tell which store was entitled to what nor could they make provision for various ships which were in need of powder.² For this reason it cannot be stated with certainty that some munitions recorded as having been issued out of the land stores did not in fact originate in the Navy stores.

1 W.O. 47/1 p. 11

2 op. cit. p. 51

It does not appear that during the century or so before the outbreak of the Civil Wars very much work was done on the actual buildings of the Ordnance Office. During the 1540's nearly £3,000 was spent on a new storehouse for the ordnance and other munitions and between 1603 and 1605 a powder store was constructed or repaired in the White Tower. An inspection of the Tower as a whole by a group of Privy Councillors in 1620 revealed that the buildings were in a neglected state. In 1636 it was decided to carry out extensive repairs and over the next four years a total of £4,000 was spent. The Ordnance Office structures were apparently not included in this work, although the reconstruction of a new wharf at the Tower in the 1630's no doubt facilitated the handling of guns and materials for the Office.¹ One or two references to the condition of the storehouses in the Ordnance Office records of the Civil War period confirm the existence of deficiencies.

Some unspecified work had been done on the storehouses by a bricklayer towards the end of 1643.² But in the following July the officers of the Ordnance prepared an estimate of the cost of making essential repairs to the storehouses at the Tower and at Woolwich in order to make them "Wind and Water tite". The sum needed was £166 10s. Nothing was done, and a year later, on 27th June 1645, the officers reported that since their original estimate "...there hath fallen from y^e Topp of one of the Stoarehouses a maine Beame about 20 foot in length and a great Shedd ov^r Th'ordnanc^e house doore flatt to the Ground...And all y^e Stoarehouses are exceedingly out of repaire, & raines in exceedingly wee can hardly keepe any thing dry, And the repaires will cost now neare 500:^{li}3^s;

Occasionally minor maintenance work was undertaken and paid for out of the estimates for the Fleet, such as the sweeping of chimneys and the control of vermin in the storehouses.⁴ Nevertheless,

1 The History of the King's Works vol. 3 pt. 1 pp. 270, 272, 275, 276, 277

2 E. 351/2664

3 W.O. 47/1 pp. 65, 279

4 S.P. 28/49 f. 456; 28/52 f. 470

it is an indication of the financial plight of the Ordnance Office that it lacked the resources to make any necessary repairs.

The nature and size of the deliveries from the Ordnance Office stores for land service during the Civil Wars will now be considered within a broad chronological framework. Details of the quantities of the more significant kinds of munitions which were issued are give in appendices. Such a study affords an indication of the extent to which the Ordnance Office was able to meet the demands made upon it, as well as of the importance of the stores there as a source of supply for the Parliamentary land forces compared with other sources outside the Tower. Since the deliveries which were made to the various armies should be seen in the context of the size of those forces and the activities in which they were engaged, basic information will be provided where appropriate about these aspects.

There are, however, certain problems of classification which arise out of an attempt to categorize the deliveries from the Ordnance Office stores. In the first place, armies did not always act as single entities but could be split up with detachments or individual regiments being designated for particular tasks. We therefore have to determine whether a delivery of munitions was made to a particular army or to what was in effect a force acting independently and which was only nominally part of the main body.

This situation arose particularly in the case of the reformed Parliamentary army during the years 1646 to 1648, when some hitherto independent forces were incorporated in the Army, whilst certain regiments of the New Model were despatched to perform specific duties. Thus some regiments which were technically under the command of Sir Thomas Fairfax were at various times scattered about the country assisting local forces, besieging Royalist garrisons and performing guard duties. The Army as a whole was in a continual state of flux on account of recruitment, disbandment and absorption of local forces.

Furthermore, deliveries were sometimes made to newly recruited troops before they joined the main body of the army. For the purposes of classifying deliveries of munitions, detachments and individual regiments have been treated as part of an army except when they were in a garrison, as in the case of Sir Arthur Hesilrige's regiment of foot which although nominally belonging to the Army in fact formed part of the garrison at Newcastle from 1648 to 1650.¹ Another difficulty is caused by the fact that some deliveries from the Ordnance Office stores were made collectively to more than one army, as in the case of the English and Scottish armies besieging York in June 1644. Such cases have been indicated whenever possible.

The various sets of data relating to the deliveries to armies and garrisons which are given in the appendices are mutually exclusive in the sense that any given record of delivery has been allocated to one category of recipient only. The only exceptions to this rule are the deliveries made collectively to two or more forces which have been referred to. There is, however a possibility of some overlapping of the different categories of deliveries to the Scottish army which are given in Appendix sixteen.

During the early months of the First Civil War deliveries from the Ordnance Office stores were directed mainly towards putting the various towns and fortified places held for the Parliament into a posture of defence and towards providing stores for the army commanded by the Earl of Essex. The more important munitions which were issued to the first Parliamentarian army during these early days, which saw Essex's march to Worcester and the battle of Edgehill, are recorded in Appendix nine.

The most important single delivery made to the army during this period was that of a large consignment of munitions and equipment which was issued to the train of artillery on 2nd September 1642,

¹ Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army vol. 2 p. 459

whilst the army was about Northampton.¹ Indeed, the main contributions of the Ordnance Office stores to the initial equipping of the Parliamentary army were those of ammunition and equipment for the train of artillery. A survey of the warrants which were not delivered in full during this period nevertheless suggests that there was a shortage of case shot in the stores.²

The provision of arms, equipment and clothing for Essex's horse and foot was made largely outside the Ordnance Office.³ Much of the clothing and footwear for the army was provided out of a store for which the merchant Stephen Estwicke was responsible. During these first four months 17,000 to 18,000 sets of clothing each comprising coat, breeches, shoes and knapsack were issued out. In all but a few cases warrants for deliveries out of this store were met in full.⁴ The size of the Parliamentary army at Edgehill has been estimated at 11,000 foot and 2,000 horse, although the entire force was not present at the battle. The army as a whole numbered about 20,000 at this time.⁵

It is apparent from the wording of some warrants during this early period that it was expected that the Ordnance Office stores, the City militia magazine and the stores of munitions collected by Owen Rowe and John Bradley would between them meet that portion of the demand which was not being supplied by direct deliveries from merchants and artificers to the Parliamentary forces.

There are warrants for the supply of the Earl of Essex's army addressed to "the Committee of the Militia of London and the officers of the Ordnance at the Tower" and "to Captain John Bradley and Captain Owen Rowe...and every other person whom it may concern, but especially the officers of the great Ordnance and Armoury".⁶ In the majority of

1 W.O. 55/1754 ff. 5, 11; 55/1937 ff. 10-11

2 W.O. 55/387 p. 30; 55/1754 f. 11

3 See above chapter ten

4 S.P. 28/1A - 28/4 passim; 28/261; 28/262 passim

5 Davies, G. E.H.R. vol. 49 1934 p. 36

Firth, C.H. Cromwell's army p. 22

6 W.O. 55/387 pp. 30, 47, 48

cases the munitions were in fact issued from the Ordnance Office stores, for the resources of the City militia magazine were apparently not very great. A warrant of 5th December 1642 for the delivery of match and covers of hair and canvas for Essex's army states that an order had previously been directed to the City Militia Committee but they could not be supplied from that quarter.¹

There is evidence that to begin with Parliament did not exercise full control over the business of issuing munitions, and that some individuals with arms in their possession that may have belonged to the state handed them over without authority. The extent of these unofficial deliveries along with other private transactions can of course hardly be estimated. On 30th December 1642 the fletcher at the Ordnance Office, David Powell, was summoned to Haberdashers' Hall and told to bring all the musket arrows in his possession. Powell stated that he had only 120 dozen such arrows completed and that he had delivered some himself. He was ordered to take all the arrows and arrow heads that he had to the Tower and he was prohibited from making any more except upon warrant from the Earl of Essex.²

Deliveries from the Ordnance Office stores to garrisons and local forces between August and December 1642 may conveniently be divided into munitions issued for the defence of London and those for use in the provinces. The more important of these deliveries are summarised in Appendices ten and eleven. Again the most significant items delivered were ordnance and ammunition. Except for the ordnance, the quantities issued for these purposes were much smaller than those issued to the Earl of Essex's army during the same period.

The City militia magazine was utilised on occasions for the supply of forces outside London. The Committee made available 4 guns for the use of the Earl of Lincoln, for which the officers of the Ordnance were required to provide powder, match and shot by a warrant

1 W.O. 55/457 f. 22

2 Cal. Proc. Comm. for Advance of Money vol. 1 p. 7

A musket arrow was a small arrow discharged from a musket.

of 14th December 1642.¹

The most substantial deliveries out of the Ordnance Office stores for the defence of London did not take place until 1643, when the construction of extensive fortifications was undertaken following a decision of the Common Council in February.² However, a number of warrants issued during the early months of the War for the supply of munitions to the City were subsequently rescinded. They include a warrant of 8th September 1642 for 50 pieces of ordnance and another of 13th October for ordnance, ammunition and implements. Yet another similar warrant was not complied with in full.³ These warrants were cancelled either because the munitions were not available or more probably because it was considered imprudent to issue them for this purpose when they might be needed elsewhere. In November 1642 the Army treasurer, Sir Gilbert Gerard, advanced money to the officers of the Ordnance to defray the cost of bringing up ordnance from Chatham, Woolwich and Deptford.⁴ It is possible that these guns were used for the defence of London.

As far as deliveries to local forces and garrisons outside London are concerned, the chief beneficiaries during the first four months of the War were target towns and places of strategic importance such as Gloucester and Yarmouth. In certain cases, however, it was stated that the arms were on loan only and were to be returned to the stores if required.

During 1643 the principal activity of the Earl of Essex's army was its employment in an attempt to counter the Royalist advance in the West represented by the defeat of Sir William Waller's army at Roundway Down (13th July 1643), the surrender of Bristol (24th July) and the siege of Gloucester. The expedition ended with Essex's return to London after the first battle of Newbury (20th September 1643).

The size of Essex's army had greatly decreased since the

1 W.O. 55/387 p. 53

2 Brett-James, N.G. The growth of Stuart London, pp. 271-272

3 W.O. 55/387 pp. 20, 32, 37; 55/1754 ff. 10, 17; 55/1937 f. 19

4 S.P. 28/3A f. 132

previous year, partly as a result of the formation of additional armies under Sir William Waller and the Earl of Manchester. By the spring of 1643 Essex had only about one third of his original strength. On 28th 1643 he told the House of Lords that he could muster no more than 3,000 foot and 2,500 horse. For the expedition to Gloucester, his army was therefore reinforced by five regiments of the London trained bands, a body whose total strength in 1643 amounted to about 18,000 men.¹

The principal deliveries of munitions to Essex's army during 1643 are recorded in Appendix nine. It will be seen that once again the greater part of the stores issued comprised ammunition and other requirements for the train of artillery. There is no evidence at this stage of a persistent inability to supply particular kinds of munitions out of the Ordnance Office stores, although this was probably due to the fact that Essex's army was not engaged in any significant activity during the first half of 1643. The likelihood of difficulties arising in the event of intensified military action was indicated by the borrowing of 100 barrels of powder for Essex's army out of the Navy magazine immediately after the first battle of Newbury.² There is one further recorded delivery from Estwicke's clothing store in April 1643.³ The store was then presumably exhausted and was not replenished.

A special source of supply for Essex's army was afforded by the store in the custody of Owen Rowe. He had been providing arms from an early stage on behalf of the Committee of Safety. An ordinance of 6th September 1644 authorised him to procure munitions and issue them upon warrant.⁴ There is a warrant issued in July 1644 for the delivery of pistols to a troop of Essex's horse which is addressed

1 Firth, C.H. Cromwell's army pp. 17, 22

Adair, J. Roundhead general p. 101

Davies, G. E.H.R. vol. 49 1934 pp. 38, 41

2 W.O. 55/460 f. 32

3 S.P. 28/5 f. 284

4 See above pp. 211-212

to "Lieutenant Col. Rowe and to the officers of the Ordnance".¹

Unfortunately it is not possible to specify except in a few instances the nature and quantities of the deliveries made by Owen Rowe either to the Earl of Essex's army or to other forces. About £25,000 worth of arms and ammunition were sold to Rowe and Bradley during the summer of 1643. The bulk of the deliveries that were made probably went to Essex's army and the additional forces which were sent to the relief of Gloucester.

The regional armies formed under the commands of the Earl of Manchester and Sir William Waller received limited support from the Ordnance Office during 1643. The deliveries are summarized in Appendices twelve and thirteen. Manchester was appointed commander of the forces of the Eastern Association in August 1643. A series of ordinances in July and August authorised the Eastern associated counties to impress up to 20,000 men but made no adequate financial provision for the army. The supply of equipment was at this time the responsibility of individual local committees. The army was ill-equipped and unpaid in the autumn of 1643.² The contribution of the Ordnance Office stores to this force was confined to a train of artillery in September 1643.

Similar deliveries were made during the last two months of the year to Sir William Waller who on 4th November 1643 was appointed commander of the forces of a reformed South Eastern Association of counties. During that time he was campaigning in Hampshire against the Royalist forces commanded by Sir Ralph Hopton. The House of Commons had earlier given order on 23rd October that Waller be permitted to take from the stores at the Tower and elsewhere such arms and ammunition as he would need for his campaign.³ This was a privilege which the stringencies of later years did not permit of.

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 272-273 W.O. 55/460 f. 27

2 Holmes, C. The Eastern Association in the English Civil War pp. 93-95, 97-99, 100, 106

See above p. 219


3 C.J. 1643-4 pp. 287-288

The major deliveries from the Ordnance Office stores for land service during 1643 were for the use of local forces and garrisons and for the defence of London. The nature and scale of those deliveries can be judged from Appendices ten and eleven. The pattern of deliveries reflects the state of the public stores at the Tower. There were large deliveries of ordnance and round shot, with which the stores had been relatively well stocked, whilst issues of powder, match and musket shot, which were relatively less plentiful at the Tower, were proportionately smaller.

The number of ordnance allocated to the defence works about London and to "the train of artillery and forts and garrisons in and about London" caused a heavy drain upon the stores and the Ordnance Office was unable to provide all the guns that were needed. The East India Company had a considerable number of ordnance at its disposal at the beginning of the Civil Wars both on board ship and at the Company's yard at Blackwall. At a court meeting on 9th November 1642 the Company decided to allot a total of 42 guns to two of its ships. Although the Company had earlier, in May 1642, 'lent' ordnance to the King and to the gunfounder John Browne, its attitude towards the Parliament was on the whole one of non-cooperation tempered only by the desire to secure the passage of an ordinance confirming its trading privileges in the East.

At the beginning of November 1642 it was reported that the Committee of Safety had asked the Company to bring up ordnance from Blackwall and deliver them to the City Militia Committee. But a series of demands to the Company in March and April 1643 for the loan of guns for the defence of the City were consistently refused, whilst at the same time the Company was preparing to sell between twenty and thirty guns to the purchaser of one of its vessels and was using unserviceable ordnance as ballast in its other ships.¹

¹ Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-3 pp. xxiv-xxv; 254, 281, 284, 295, 310, 311-312, 317, 319
C.J. 1643-4 p. 30

Yet the Company was obliged to give way, for some 33 guns  belonging to it were installed on the defence works about London. Apparently the Company was as a result left without any available guns for its ships and there followed protracted negotiations between the Company and the City Militia Committee in which the former tried to either secure the return of the guns or to obtain payment for them. Having demanded the return of its ordnance in December 1643, the East India Company was asked by the Committee of Fortification to allow them to remain on the defence works. The Company insisted that they should either be handed back or paid for, but rejected an offer of 10s a hundredweight payable at twelve months. Three years later, in February 1646, the Company petitioned the City for the return of the ordnance. They were eventually given back in January 1647.¹

Munitions for the use of the City were also purchased directly from contractors, some of whom supplied the Ordnance Office as well.² Arms and equipment besides ordnance were obtained 'on loan' for the use of the Parliament in the earlier stages of the War. Arms valued at over £1,000 were collected by Alderman James Bunce from various companies and individuals in the City by order of the Committee of Safety in November 1643.³

William Lithgow's survey of the works about London, conducted in 1643, records 24 principal forts and 212 pieces of ordnance, mostly of large calibre.⁴ The bulk of the deliveries in this category out of the Ordnance Office stores during 1643 comprised two large issues, one in February and the other in November. As we have seen, the stores could not supply all that was required and additional guns were obtained through the City Militia Committee.

Ordnance and ammunition were likewise the most significant kinds of munitions delivered to provincial forces and garrisons during

1 Sainsbury, E.B. Cal. court minutes of the East India Co. 1640-43 pp. 370, 373; 1644-49 pp. 7, 131, 183

2 See above Chapter six

3 S.P. 28/11 f. 40

4 Brett-James, N.G. The growth of Stuart London p. 282

1643.

In the early days of the War, local forces were on occasions allowed by the House of Commons to purchase munitions for themselves out of the public stores at the Tower. This was a practice which could not continue in the face of the shortages which arose in subsequent years.¹

Despite the relative abundance of round shot in the stores, it is apparent from the records of warrants which were not discharged in full that supplies of the smaller sizes of shot, which were commonly used with the lighter ordnance employed as field guns, were becoming exhausted. Thus it was stated on 9th December 1643 that there was no saker shot in store.² There were, however, at the Tower in September 1643 various pieces of ordnance and large amounts of round shot which were unfit for use. The officers of the Ordnance were instructed by the Committee of Safety to sell these, presumably for recasting. The proceeds of the sale amounted to £702 4s 4d.³

The first signs of a shortage of gunpowder appeared in 1643. Some warrants for the delivery of powder to garrisons were not discharged and recourse was had to the Navy magazine for this commodity, although not on the scale of 1645 and 1646. A summary of the types and quantities of munitions borrowed from the Navy stores is given in Appendix fifteen.

In addition to these loans from the Navy magazine, a number of warrants for the supply of local forces and garrisons were met during May and June 1643 out of a consignment of 270 barrels of powder intended for Portsmouth.⁴ However, for the purpose of defending coastal towns and forts and places connected with the Navy it was sometimes considered justifiable to make deliveries out of the Navy stores. A supply of powder was delivered to the garrison at Chatham

1 C.J. 1640-43 p. 829; 1643-4 p. 99

2 W.O. 55/460 f. 41

3 Op. cit. f. 39
E. 351/2664

4 W.O. 55/460 ff. 13, 14, 16, 17, 21
Add. Mss. 34, 315 ff. 4, 5, 9, 11, 12, 14

in September 1643 and 20 pieces of ordnance with their accessories were provided for the defence of Hull in April 1643, in each case out of the Navy stores. Another contribution made by this magazine was that of 20 barrels of powder "of y^e worser sort" issued to James Wemyss the Master Gunner at the Ordnance Office on 25th March 1643 for the purpose of marking "the solemnization of His Royal Highness (?Charles Louis of the Palatinate) coronation".¹

An additional source of munitions for local forces was represented by the stores in the charge of Owen Rowe. There are a few warrants addressed to him in the Commons Journals and the Commonwealth Exchequer Papers. The Earl of Denbigh received from Rowe a quantity of arms including 800 muskets and 183 pairs of pistols during 1643 whilst his army was at Coventry.² Rowe was also entrusted with a large amount of arms seized from a Danish ship in the Thames which had been bound for Newcastle. These munitions were issued upon warrants during August 1643.³

Deliveries for land service during the first sixteen months of the First Civil War represented by and large a distribution of munitions and equipment which had been accumulated before that time. The size of some of these deliveries shows that in spite of the advertised deficiencies of the Ordnance Office stores they in fact possessed considerable amounts of some kinds of munitions at the outset. Yet since August 1642 there had been no replenishment of the land stores on anything like the scale needed to make good those losses. We have seen that such procurement for the Ordnance Office stores as took place during the early stages of the Civil War consisted largely of provisions for the Navy purchased with money advanced by the Navy treasurer. These supplies were needed for the ships of the Summer Fleet and the Winter Guard and so would not have available for transfer to land service.⁴

1 W.O. 55/1937 f. 74

2 S.P. 28/34 f. 291

3 C.J. 1643-4 pp. 199, 204, 211, 224

4 E. 351/2664

After making allowance for any deficiencies which may exist in the records of receipts, the paucity of such records during the first year or two of the Civil Wars would in itself appear to confirm that little of the £83,000 worth of munitions, which according to the officers of the Ordnance were issued for land service during 1643, was replaced at this time.¹ There was certainly nothing to compare with the scale of purchases for the Parliamentary forces which were channelled outside the Ordnance Office during 1642 and 1643. £34,000 worth of arms and ammunition were sold to Owen Rowe and John Bradley alone between September 1642 and November 1643.²

Indirect evidence concerning the condition of the Ordnance Office stores is provided by the warrants issued by the officers themselves, which are chiefly of interest as a rough indication of the amount of proving of new weapons that was being carried out. Powder and shot were delivered to the proofmaster for this purpose. There are no records of such deliveries before 1644.

By the end of 1643, therefore, the value of the Ordnance Office stores as a repository of munitions for the Parliamentary land forces had been seriously diminished. Moreover, the stores had been least satisfactorily provided at the outset with those very munitions, gunpowder and match, which were now in greatest demand. Although there were deliveries of powder, match and musket shot to the Tower during 1643 and 1644, there was no general and large scale replenishment of the stores with munitions of all kinds before the spring of 1645 when the Army Committee contracted for supplies for the New Model Army.

This is illustrated by statements made during 1644 regarding the shortcomings of the magazines and by the fact that warrants for issue of various sorts of munitions and equipment could often not be executed until contracts had been made for procurement and delivery

1 W.O. 47/1 p. 172

2 See above p. 211

of the requisite items into the stores. During 1644 the demand for munitions increased further. There were now three principal Parliamentary armies, whilst Parliament had also undertaken to provide the Scottish army which entered England in January of that year with arms and ammunition.

In the spring of 1644 Parliament turned its attention to the state of the Earl of Essex's army. An ordinance of 1st February declared that the army should consist of 7,500 foot and 3,000 horse, excluding officers, not very different from its strength in the summer of 1643 and smaller than the army of the Earl of Manchester. There was also to be a "suitable train of artillery". A subsequent ordinance of 26th March 1644 provided for the payment of £30,504 a month out of the receipts from the excise for the recruitment and maintenance of Essex's army and for the purchase of munitions.¹ These payments were soon substantially in arrears. This ordinance illustrates the fact that the scale of provision made for the Parliamentary armies was influenced by political factors as well as by military considerations. Relationships between the armies and Parliament and between the various forces themselves were inevitably affected by the political divisions at Westminster. The original ordinance for Essex's army of 22nd November 1643 had called for a strength of 10,000 foot and 4,000 horse. Measures for the support of this army were delayed and attenuated as a result of the actions of a faction in Parliament which was more favourably disposed towards the Earl of Manchester's army than to the forces of Essex and Waller.²

In May 1644 Essex was advancing against the King at Oxford with a force of about 10,000 horse and foot.³ When the King's army withdrew from Oxford Essex moved to the West where his army was eventually isolated by the Royalists in Cornwall and surrendered there on 2nd September. The army was subsequently reformed and took

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 375-376, 398-399

2 Holmes, C. The Eastern Association and the English Civil War pp. 109-115

3 Walker, Sir E. Historical collections pp. 9-10

part in the second battle of Newbury (27th October 1644), but by the end of the year its strength was less than 5,000.¹

Deliveries made to Essex's army during 1644 are recorded in Appendix nine. As in previous years, ammunition and supplies for the train of artillery are the most significant items. Following the loss of his artillery in Cornwall, Essex was provided with a new train which was procured largely through the Ordnance Office, although deliveries were not completed until shortly before the disbandment of his army. In addition to procuring new ordnance, the Committee of Both Kingdoms attempted to borrow 4 guns for Essex from the City militia.²

Some deliveries of munitions were made directly to Essex's army by contractors. A quantity of round shot was received in this way from John Browne in May 1644. This was the result of a directive from the House of Commons to the Committee for Advance of Money at Haberdashers' Hall requiring it to provide ammunition for Essex's train of artillery, then urgently needed in view of the expected clash with the King's forces. In all, the Committee was to pay £1,000 by an order of 1st May to Sir Walter Erle who was to forward the money to the purveyor general of the train, Captain Cannon, so that he might purchase the stores that would enable it to take the field. Furthermore, the General of the Artillery in Essex's army was to be asked to explain to the Commons why the Ordnance Office had not been requested to provide these munitions.³

During the recruitment of Essex's army in the spring and early summer of 1643, arms and equipment for the horse and foot, especially saddles, were purchased by members of the army and by Owen Rowe with money supplied by the Treasurer of the Army.⁴ These purchases were nevertheless on a smaller scale than those of 1642 and

1 Firth, C.H. Cromwell's army p. 23

2 C.S.P.D. 1644-5 p. 6

3 C.J. 1643-4 p. 487

S.P. 28/15 f. 28

Cal. Proc. Comm. for Advance of Money vol. 1 p. 34

See above pp. 161, 215

4 S.P. 28/14 ff. 373, 379; 28/15 ff. 100, 137, 202

1643. There are no recorded borrowings from the Navy stores for Essex's army, or indeed for any of the main Parliamentary armies, during 1644. By this time there were in effect no reserves of gunpowder and it was a matter of awaiting the next consignment from the contractors.¹

The army of the Earl of Manchester again received little individual support from the Ordnance Office stores during 1644. This force was said to number 14,000 horse and foot in the spring of that year. As in the case of Essex's army, the requirements of Manchester's horse and foot during 1644 were met for the most part outside the Ordnance Office. Considerable quantities of munitions were obtained in London and from the Netherlands in the first half of the year. It has been estimated that £39,000 worth of munitions were purchased for Manchester's army during 1644, again considerably more than was spent on the Ordnance Office land stores in the same period.²

In March 1644 the House of Commons asked Manchester what munitions he required. Then an ordinance of 13th May, which provided for the maintenance of his army, stated that it was to provide itself with arms, ammunition and a train of artillery. The ordinance declared that the Associated counties had "bought many arms and ammunition, and must buy more..." The proceeds of a weekly assessment were allocated to the maintenance of the army.³ In addition, Manchester's army must have received a share of the munitions which were delivered from the Ordnance Office stores firstly to the English and Scottish armies in the North during June and July 1644 and secondly to the armies which confronted the King's army upon its advance from the West in the autumn of that year.⁴

Despite its earlier deficiencies in this respect, Manchester's army appears to have been reasonably well supplied with munitions during its campaigns in the summer of 1644. The army was able to

1 For receipts of gunpowder see Appendix one

2 See above pp. 219-220

3 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 p. 432

4 See Appendices nine and fourteen

give assistance in the form of munitions to the other English and Scottish armies at the siege of York in June 1644. On the other hand, Manchester lacked heavier ordnance suitable for use at a siege and he was obliged to borrow some guns from the Scots. Then at the ensuing battle of Marston Moor a considerable quantity of arms and ammunition, including 4,500 muskets, 800 pikes, 40 barrels of powder, ordnance and shot, were taken from the Royalists.¹

The army of Sir William Waller was likewise a regional force, yet it too assumed wider responsibilities and in fact fared better in the way of supplies from the Tower. The deliveries are summarized in Appendix thirteen. As before, they consisted almost exclusively of munitions for the train of artillery, although the Ordnance Office was still unable to provide all that was required.

At the beginning of 1644 Waller's army was engaged in a campaign in Hampshire against a reformed Royalist Western army commanded by Lord Hopton which culminated in the battle of Cheriton (29th March 1644). On 4th March the Committee of Both Kingdoms had resolved that Waller should take the field with 8,000 horse and foot.² A store of munitions was prepared for his use at Farnham Castle. Order was given on 7th March that 40 barrels of powder should be sent there from the mills at Chilworth and the City militia was requested to provide 6 field guns and a quantity of shot for Waller's train of artillery, not doubt because they were not available in the Ordnance Office stores or could not be spared.³ However, some of the munitions in the possession of the City militia had originally been issued out of the Tower magazines.

Subsequently, Waller's army advanced on Oxford in conjunction with that of the Earl of Essex, and then followed the King's army after the latter withdrew from the city. Following the battle of Cropredy Bridge (29th June 1644), Waller's army was reduced to a

1 Holmes, C. The Eastern Association in the English Civil War pp. 148, 152, 173

2 C.S.P.D. 1644 pp. 33-34, 49

3 C.J. 1643-4 p. 420

parlous state. From a total of about 10,000 horse and foot at the time of the battle, it had been reduced to half that number by the end of July and to less than 3,000 horse and foot by early September.¹ In order to make good the losses suffered by the train of artillery at Cropredy Bridge, the Committee of Both Kingdoms again asked the City militia to lend three small field pieces, promising that in the event of their themselves taking the field they would be provided with better guns.²

Under the terms of the treaty between Parliament and the Scots, the former was to provide £100,000 for the raising of a Scottish army and £30,000 a month for its maintenance thereafter. This was a commitment which Parliament could scarcely have been expected to fulfil in view of the difficulties experienced in maintaining its own forces. The Scottish army which had been sent to Ireland in 1641 was nominally in the pay of England, but in February 1644 it was said that this force had received no money or supplies for more than eighteen months. An ordinance for the raising of money for the army had in fact been introduced in July 1643. Some of the provisions intended for Ireland probably went to the Parliamentary forces in England, whilst others had been taken for the King. Efforts were being made in Holland early in 1644 towards raising money and provisions for Ireland.³

The Scottish army which entered England in January 1644 was a large force of more than 20,000 horse and foot. By April this number had been reduced by about 4,000, although in the following June an additional levy of between seven and ten thousand men under the Earl of Callendar was sent to England. This force too gave rise to difficulties between the Scots and Parliament over the nature of

1 Adair, J. Roundhead general pp. 159, 165, 167

2 C.S.P.D. 1644 p. 451

3 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 188-189
Meikle, H.W. Correspondence of the Scots commissioners pp. xii, xiv, 12, 15
C.S.P.D. 1641-3 p. 374

the arrangements for its upkeep.¹

The committee with the Scottish army wrote to the Scottish commissioners in London during May 1644 asking them to procure 2,000 muskets and a considerable quantity of gunpowder, match and lead. Shortly afterwards, the Scots received quite a large consignment of powder and match at the "English charge", although this did not come from the Tower.²

In fact, the Ordnance Office records show only 200 barrels of powder as having been delivered out of the stores there for the use of the Scots during 1644, although this excludes the munitions delivered to the English and Scottish armies during June and July 1644. Deliveries to the Scottish army in England from the Ordnance Office stores and from other sources are summarized in Appendices fourteen and sixteen. The large quantities of gunpowder and match delivered to the Scots from various sources during the years 1644 to 1646 exacerbated the shortages of these commodities. A quantity of powder and round shot was sent from London on the orders of the House of Commons when the Scots were besieging Newcastle in September 1644. The Committee at Goldsmiths' Hall was instructed to make arrangements for payment.³

For clothing and footwear, £6,000 worth of Yorkshire broadcloth and kersey was purchased in July 1644, together with 10,500 pairs of shoes in the following month. An agreement was made between the Scots and the Yorkshire Parliamentarians whereby the county was to pay in kind, presumably cloth, one half of the assessment laid upon it for the maintenance of the Scottish army. Cloth was also supplied to individual regiments by tailors in England and Scotland.⁴

1 Wenham, L.P. The great and close siege of York p. 1

Terry, C.S. Papers relating to the Army of the Solemn League and Covenant vol. 1 pp. xxiii, lvii

2 Wenham op. cit. pp. 22-24

Terry op. cit. vol. 1 p. 198

Meikle, H.W. Correspondence of the Scots commissioners pp. 29, 30

3 C.S.P.D. 1644 p. 501

Cal. Proc. Comm. for Compounding vol. 1 p. 10

Meikle op. cit. p. 37

4 Terry op. cit. vol. 1 pp. xciii, xciv, 265

Meikle op. cit. p. xviii

The amounts raised from the assessment proved insufficient to maintain the Scottish army. The money that came in was rapidly spent on munitions, clothing and victuals. On 7th August 1644 the Scottish commissioners in London were asked to inform the Committee of Both Kingdoms that it was essential to establish stores of munitions for the Scottish army in convenient places and that these were not to be paid for out of the monthly assessment of £31,000. Shortly afterwards, however, the commissioners conceded that the only money available for the purchase of munitions was in fact the proceeds of the assessment.¹

As in the previous year, the most significant contribution of the Ordnance Office stores during 1644 lay not in the supply of the principal armies but in the provision for local forces and garrisons. These latter deliveries are recorded in Appendices ten and eleven. The kinds of munitions supplied were essentially the same as in 1643, consisting primarily of ordnance and ammunition. With the exception of gunpowder, the amounts issued were smaller than those of the previous year. This decline is in contrast to the increased scale of the Parliament's commitments on land during 1644.

The number of ordnance delivered from the Tower greatly declined in 1644, whilst the amount of match supplied to local forces and garrisons was less even than the small quantity issued in 1643. If the figure of 241 ordnance in store in February 1642 is correct, then all those guns and more had been delivered out during the first sixteen months of the War.² What is probable is that guns belonging to the Navy stores were made available for land service. The amount of musket shot issued in 1644 likewise remained small.

In view of the great demand for match and musket shot and the inadequacy of the supply, priority was no doubt given to the main Parliamentary armies. On the other hand, the amount of gunpowder issued out of the Ordnance Office stores was much greater than in the

1 Meikle, H.W. Correspondence of the Scots commissioners pp. xvi, 35, 41
 2 Aylmer, G.E. Studies in institutions and personnel of English central administration vol. 1 p. 26

previous year, suggesting that whilst the quantities received into the stores were still insufficient, they represented an improvement over the situation in 1643, for which there are no records of regular deliveries for land service by the powder manufacturers.

One factor which aggravated the shortage of ammunition was the number of siege actions which took place between 1644 and the end of the First Civil War. These tended to consume large quantities of powder and shot. For a siege of Banbury Castle, which was not a major stronghold, 80 barrels of powder, 60 mortar shells and 10 barrels of musket shot were issued out of the Ordnance Office stores during September 1644.¹

Signs of deficiencies in the stores at the Tower were by now manifest. It may be significant that resolutions for the issuing of warrants by the Commons itself and by committees which have no counterpart in the Ordnance Office records are most numerous from 1644 onwards. This must have been due at least in part to the munitions in question not being available. Similarly, there are a number of warrants in the ledger books without any corresponding record of delivery. These were presumably not discharged.

Another possible sign of shortages was the delivery of large quantities of musket arrows and longbow arrows, together with bowstrings, quivers and bow cases, to the City militia in January and April 1644. This suggests that more modern weapons and their ammunition were in short supply and that the recommendation of the Commission of 1619 that several thousand bows be removed from the stores had been somewhat premature. Musket arrows were however being made by the Ordnance Office fletcher at the beginning of the War.²

There is direct evidence of shortages in the form of statements by the officers of the Ordnance and in the inability to execute warrants for the issue of certain commodities. When in June

1 W.O. 47/1 pp. 101, 111

2 Add. Mss. 34,315 ff. 37, 47, 48; 36,777 f. 6

Cal. Proc. Comm. for Advance of Money vol. 1 p. 7

1644 the officers were asked to supply the accessories needed to equip four large pieces of ordnance, they replied that all the necessary items were lacking except for shot "unlesse you take the Ordn^ace w^{ch} stand mounted in the Stoare House w^{ch} have only Carriages to them..." At the same time the Committee of Both Kingdoms asked Sir Walter Erle to obtain a statement of the amount of munitions available at the Tower for land service.¹

A warrant issued by the House of Commons in August 1644 for the delivery of five pieces of ordnance and round shot for the defence of Aylesbury could not be discharged as the munitions were unavailable. The Committee of Both Kingdoms thereupon ordered the officers of the Ordnance to purchase them "out of y^e Gunfounde^{rs} private Stoares" with money provided out of receipts from the Excise.²

A number of warrants for the issue of musket shot and match to local forces and garrisons were likewise left undischarged, thereby limiting the capacity for action of the forces concerned, and perhaps endangering their security. Shortages of these commodities appear to have been particularly acute during the latter part of 1644, when a whole series of warrants for the delivery of match were not complied with. The evidence of the Ordnance Office records suggests that the amounts of musket shot and match contracted for and received into the stores in 1644 were not very great in relation to the overall demand and that the needs of the principal armies would have left little for the use of lesser forces.³

It is unlikely that the shortfall was made up to any great extent from other sources. Finance was an inhibiting factor, through whatever channels munitions might be procured, A quantity of match, together with some weapons, were requisitioned from Owen Rowe's store for the use of the forces in Gloucester and in Shropshire early in

1 W.O. 47/1 pp. 47, 48

2 op. cit. p. 87

3 See Appendices one, three, nine, eleven, thirteen, fourteen

1644, but the total amount was not large.¹ Opportunities for borrowing from the Navy magazine were likewise limited. The officers of the Ordnance reported on 10th May 1644 that there were in store 297 barrels of powder for the use of the Navy and 153 barrels for land service.²

With such small reserves, the ability to meet demand depended almost entirely upon the size and frequency of receipts from the gunpowder contractors. In a statement on 30th July 1644, the officers certified that from Samuel Cordwell alone they had received 1,300 barrels of powder for land and sea service since March of that year.³ A study of the warrants discharged during the same period shows that almost exactly the same quantity of powder was issued from the public stores for land service, of which about 1,000 barrels went to the main Parliamentary armies and to the Scots.

Borrowings from the Navy stores during 1644 for the benefit of local forces and garrisons were quite small.⁴ However, use of the Navy magazine in this way should also include the issue of munitions from ships' stores for the relief of coastal garrisons. This was done on a number of occasions when supplies were urgently required. During the Royalists' siege of Lyme in May and June 1644 the garrison was supplied with ammunition from ships lying offshore. Other garrisons in the West such as Plymouth also benefited in this way.⁵

The appropriation of naval stores and indeed the employment of the Navy in support of actions on land was deprecated by the Earl of Warwick who considered it to be a drain on the resources of the Fleet and detrimental to its efficiency. On 1st April 1644 he authorised the officers of the Ordnance to provide a large gun for shipment to Lancashire for the use of the forces there, "provided it does not belong to the Navy stores".⁶ Shortly afterwards he wrote to

1 C.S.P.D. 1644 p. 25

C.J. 1643-4 p. 412

2 W.O. 47/1 p. 28

3 op. cit. p. 75

4 See Appendix fifteen

5 W.O. 47/1 pp. 56, 74

6 W.O. 55/460 f. 46

the officers requesting them to ensure that powder for the use of the Navy in the magazine at Portsmouth was not employed for any other purpose.¹

The consumption of munitions in the Ordnance Office stores during 1644, as calculated from the books of warrants and deliveries, may be compared with the officers' own estimates of deliveries for land service over the same 12 months period which they drew up in February 1645. These are recorded below with the totals calculated from the relevant appendices given in parenthesis:²

<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>
79 (49)	3,425 barrls. (2,868)	62 tons (43½)
	<u>Round shot</u>	
	17,150 (11,880)	

It will be seen that the Ordnance officers' figures are higher than our own, although it is not clear whether or not the former include deliveries for land service which were made out of the Navy magazine. A small number of deliveries out of the public stores for various purposes have been excluded from the totals given in the appendices. It is possible that some supplies were issued without a formal warrant or were sent directly to the recipient by the contractors. The surviving records of warrants and deliveries may themselves be incomplete.

In addition to the above quantities of munitions recorded by the officers, valued by them at £26,572 10s, unspecified amounts of arms, tools, implements and equipment to the value of £10,000 were also issued. The officers stated that there was not now any significant quantity of the items enumerated remaining in the stores.³ Another possible reason for the discrepancy between the two sets of figures cited above is that the officers either inflated the amounts and values of stores issued out or else did not record them accurately.

1 W.O. 47/1 p. 11

2 op. cit. pp. 171-172

3 ibid.

The trend of the previous year had therefore continued. The stores had been run down without adequate replenishment whilst fresh supplies were being consumed by current requirements. Although the situation was exacerbated by shortages of raw materials, the crux of the matter was how to provide the administrative machinery and the financial resources needed to establish a satisfactory relationship with contractors that would bring in munitions on something like the scale required. This predicament was inherent in pre Civil War conditions at the Ordnance Office, when stores which were gradually accumulated during years of comparative inactivity on land and sea were then dissipated upon the outbreak of war without adequate measures being taken for their replacement.

By the end of 1644 it was apparent that without replenishment of the stores on a considerable scale and an improvement in the system of procurement, the role of the Ordnance Office as a contributor to the Parliamentary war effort would steadily shrink. Concern about the state of the magazines is reflected in a decision of the House of Commons on 24th August 1644 to take stock of all the munitions at the Tower and in all castles, forts, storehouses, ships and magazines belonging to the armies. The Committee of the Ordnance Office was ordered to arrange for the survey to be made, and responsibility for conducting it was placed in the hands of outsiders, with whom the officers of the Ordnance were directed to co-operate.¹

Another indication of the need to come to terms with the financial problems of the Civil War was the establishment in February 1644 of the Committee for Taking the Accounts of the Kingdom. It was to this body that the officers of the Ordnance were required on 27th August 1644 to account for all sums of money received by them and for all the arms and ammunition which they had delivered out of the stores.²

A comparison with the pattern of deliveries from the Ordnance

1 W.O. 47/1 pp. 96-97

C.J. 1643-4 p. 606

2 W.O. 47/1 p. 94

Office at Oxford during the period from 1642 to 1644 is complicated by the existence on the Royalist side of a number of significant stores of munitions besides the magazine of the Office itself. These were located at Oxford, at Bristol and at Reading until the town was lost to the Royalists. The principal function of the Ordnance Office at Oxford, like its progenitor at the Tower, was to supply the train of artillery. A survey of the stores taken in May 1643 reveals that they were quite well endowed with ordnance and their accessories and with round shot, but supplies of powder, match and musket shot were limited. Some of the most significant deliveries out of the stores at Oxford occurred between July and September 1643 whilst the King's army was campaigning in the West. At that time some 350 barrels of powder and 18 tons of round shot and lead shot were sent to the army, for the most part from Oxford.¹

There is a similarity in the pattern of deliveries from the Royalist and Parliamentarian Ordnance Offices in the earlier years of the Civil Wars in that supplies for the artillery figured prominently in each case. However, the similarity should not be overemphasised. There was a sizeable store of ordnance and ammunition at the Tower at the beginning of the War. Little of it was left by 1644, but in that year the inflow of fresh supplies began. The scale of the deliveries for land service from the Tower during these first two years could not be matched on the Royalist side where an Ordnance Office was created from scratch without any existing store of importance upon which to base a magazine and without access to the traditional sources of supply of munitions. As it was, sufficient stores were collected to supply most of the needs of the trains of artillery sent out with the principal army and with subsidiary forces, but there was little to spare. If a sizeable train did take the field it meant that not very much was left behind at Oxford.

1 Roy, I. The Royalist ordnance papers pt. 1 pp. 226-228; pt. 2 pp. 241-243, 477-478 notes, 479 note, 490 note

The Royalist Ordnance Office performed creditably in view of the constraints under which it operated, yet the inherent advantage lay with its Parliamentary counterpart in spite of the fact that little was done to replenish the stores at the Tower and to give the Ordnance Office there a comprehensive role in the supply of munitions until the Civil War had continued for two or three years. The scale of production of powder, match and shot in Royalist held areas was much inferior to that on the Parliamentary side. The Royalist forces were therefore particularly dependent upon imported supplies to augment their resources. The only mitigating factor was that the extent of the commitments faced by the Royalist Ordnance Office was less than that of the Parliamentary Office. In the case of small arms the role of the Ordnance Office at Oxford consisted largely of redistributing supplies sent in from outside the city, chiefly from Bristol and Weymouth.¹

In general terms, the great crisis of munitions supply on the Parliamentary side concerned ammunition even though deficiencies were by no means confined to powder, match and shot only. It should also be remembered that a considerable part of the Parliamentary forces received little or nothing from the Ordnance Office stores during the First Civil War. On the other hand, shortages on the Royalist side appear to have been of a universal nature. Even in April 1644 appeals were being made for the donation of arms to the magazines.² The Royalist Ordnance Office operated on a less ambitious scale than that of the Parliament and within a more decentralised pattern of munitions procurement and distribution.

The early signs of an attempt by Parliament to come to terms with the financial, administrative and manufacturing problems created by a prolonged war, which became apparent in 1644, have no real counterpart on the Royalist side apart from the efforts of Richard

1 Roy, I. The Royalist ordnance papers pt. 2 p. 502 note
2 op. cit. pt. 1 p. 34

Marsh to develop the production of munitions at Bristol, and even there activity was on a comparatively small scale and was finally interrupted by the loss of the city and the overall decline in the Royalists' military position. At a time when Parliament was slowly beginning to reorganise its military forces along with the business of munitions supply and so make more effective use of the considerable manufacturing and commercial resources at its disposal, the changing military fortunes of the War dictated that on the Royalist side the predominant concern was becoming one of sheer survival.

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Chapter Twelve

Ordnance Office Deliveries to Armies and Garrisons 2 : 1645 to 1648

The year 1645 saw a new departure in the role of the Ordnance Office during the Civil Wars. Consequent on the reorganisation of the Parliamentary armies, a new magazine was established, henceforth known as the Army magazine, for the supplying of the New Model Army. For the first time during the Civil Wars the Ordnance Office delivered a wide range of munitions and equipment to the Army instead of being confined largely to ammunition and supplies for the train of artillery. There was also an attempt to reform the procedures for making and settling contracts, with the formation of the Committee of the Army and the Committee for Powder, Match and Shot. Although it could not have appeared so at the time, one consequence of the reorganisation of the Parliamentary armies in 1645 was to prepare the way for the expansion of the Ordnance Office in order to meet the increased demands of England's armed forces in the later seventeenth century.

The ordinance which established the New Model Army prescribed for it a strength of 14,400 foot, 6,600 horse and 1,000 dragoons. These numbers were to be raised from amongst members of the former Parliamentary armies and by fresh levies.¹ Although it proved possible to recruit the horse without recourse to compulsion, impressment was necessary for raising the foot. The process of recruitment continued after the New Model had taken the field. On 26th July 1645 the House of Commons approved a recommendation that an additional body of 400 horse be raised and the recruiting of the regiments of horse and dragoons continued until the end of the year.²

In order to bring the foot up to its required strength, 7,000 recruits would be needed.³ Men were impressed in London and in the surrounding counties and conducted to the Army during the summer and

1 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 614-626
2 C.J. 1644-6 p. 187

3 Firth and Davies, G. The regimental hist. of Cromwell's army vol. 1
p. xviii

autumn of 1645. On 1st August 1645 1,445 recruits were mustered by Colonel Rainsborough and taken to the Army.¹ This process of recruitment was naturally reflected in the deliveries of munitions to the Army. However, at the close of the year it proved necessary to introduce further measures to bring the Army up to strength. The Commons instructed the Committee of the Army on 29th December to take steps to this end besides procuring a large quantity of munitions requested by Sir Thomas Fairfax.² A further period of intensive ordering by the Committee took place during December 1645 and the early months of 1646.

It should be remembered that in 1645 the New Model Army was greatly exceeded in number by the various other forces in the service of the Parliament, the chief of which were the army in the West formed in May 1645 under the command of Edward Massey and the army of the associated northern counties commanded by Sydenham Poyntz. The forces under Fairfax's command continued to be in the minority until 1648.³

The importance of the Ordnance Office as the supplier of the New Model Army was offset by the fact that the numerically greater forces outside Fairfax's command received comparatively little assistance from the stores. Deliveries from the Tower to the forces of Massey and Poyntz during 1645 were not very significant. This corresponds to the situation before 1645 when the Earl of Essex's army, although not a very large body after 1642, was the only one of the more important Parliamentary armies to receive substantial support from the Ordnance Office stores.

The New Model took the field on 30th April 1645 and first of all marched to the West to relieve Taunton. Oxford was then besieged, but the action was broken off in order to counter the King's army after the Royalists had captured Leicester. Following the battle of Naseby

1 S.P. 28/34 f. 365

2 C.J. 1644-6 p. 388

3 Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army vol. 1 p. xix

Firth Cromwell's army p. 34

(14th June 1645), Fairfax proceeded against the Royalist forces in the West, defeating Lord Goring's army at Langport (15th July), and for the remainder of the year the New Model was engaged in reducing Royalist garrisons in the Western counties. In September a detachment was sent under the command of Oliver Cromwell to assist the forces in Hampshire in the task of subduing the Royalist strongholds there, and Basing House in particular.

A summary of the principal munitions delivered to the New Model Army during 1645 is given in Appendix seventeen. This shows that the equipping of the regiments of horse and dragoons with saddles, pistols and snaphance muskets was an important function of the Army magazine. Issues of these items were at their highest level during the late spring and summer months of 1645. They included deliveries to recruits and continued until the end of the year, although on a smaller scale.

A considerable proportion of the muskets and pikes issued during the year were for the use of the regiments of foot assigned to guard the train of artillery.¹ The new levies of foot provided by the City Militia Committee were supposed to be adequately clothed, but in practice large quantities of clothing and footwear were required from Ordnance Office stores. A letter from Sir Samuel Luke at Newport Pagnell to the Committee of Both Kingdoms on 1st May 1645 reveals another aspect of providing recruits for the Army. Referring to a request from the Committee for 300 men from Newport Pagnell to join the Army before Oxford, Luke declared: "Of the last 300 that went out with Sir W. Waller...most of there arms (were) either lost or spoiled, so that if you will think of some way of making a supply of Arms from the State, that the burden may not fall on the Associated Counties, it will be a great encouragement to them to pay their monthly taxes..."²

Unlike the former Parliamentary armies, much of the clothing

1 W.O. 55/1646 pp. 55, 85

2 Tibbutt, H.C. The letter books of Sir Samuel Luke p. 262

for the New Model Army was provided through the Ordnance Office, although in some cases the contractors concerned were those who had supplied the original Parliamentary army. When the Army moved to the West after the battle of Naseby, bodies of recruits were taken to Reading and from there they were conducted to the Army. Stores for the Army were held at Reading in a magazine for which Commissary William Botterill was responsible. He had previously performed similar duties as clerk of the Eastern Association's store of munitions at King's Lynn.¹ Large amounts of arms, clothing and equipment were sent to Reading, especially during July and September 1645. One of the bodies of recruits taken there was for Major General Skippon's regiment. The men were sent in September 1645 from Reading to Bristol where the regiment had taken part in the attack on the city.²

The provision of a train of artillery for the New Model Army posed some difficulties at the outset, although money was made available to the Ordnance Office by the treasurers of the Army for this purpose. Ammunition and equipment were delivered to the commissary of the train during April 1645, but he reported that he was still in need of various items. Much of the £4,000 made over to Sir Walter Erle by the Army treasurers between April and June was expended on the train of artillery.³

A survey of the Ordnance Office stores made at the time when the New Model was preparing for the field disclosed that there were only 9 ordnance, some of them mounted on ships' carriages, and a small quantity of powder and shot available for land service. Ten guns formerly used by the Navy were taken from the Tower wharf and assigned to the train of artillery, whilst new carriages were made and

1 Holmes, C. The Eastern Association and the English Civil War pp. 150-151

2 W.O. 47/1 p. 301

W.O. 55/1646 pp. 209, 210

S.P. 28/36 f. 461; 28/38 f. 443

Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army vol. 2 p. 431

3 W.O. 47/1 p. 230

S.P. 28/34 ff. 61-63; 28/140 ff. 4-8

additional labour secured by impressment.¹ In addition, arms, ammunition and equipment which had belonged to the Earl of Manchester's train were brought from Cambridge and made over to the Army at the beginning of May.²

The Army magazine was not the only source of munitions, clothing and equipment for the New Model Army, although it was the most important. As in the case of the Earl of Essex's army, payments were made by the Army treasurers to regimental officers to enable them to buy such items as drums and colours.³ The treasurers also made payments to contractors, upon warrants from the Army Committee for a variety of munitions and stores which are not recorded in the Ordnance Office receipts books. Assuming that the records themselves are not defective, we must accept that these deliveries were made directly to the Army. Swords and suits of armour (backs, breasts and pots) in particular were prominent in this category, perhaps because they were not proved at the Tower. Sizeable amounts of clothing and footwear were also included in these deliveries.⁴ However, it is fair to say that during 1645 the New Model was furnished largely out of the magazine at the Tower.

Although there are not very many recorded instances when warrants for the supply of the New Model were not discharged or not met in full during 1645, this should not disguise the fact that the provision of ammunition in particular remained a source of difficulty and sometimes deliveries could not be made when they were required. Furthermore, the needs of the New Model Army were met at the expense of other Parliamentarian forces. Reasonable quantities of powder were issued to the New Model, yet the amount of match delivered in 1645 was not very much greater than that supplied to the army of 1642; and deliveries of musket shot were even smaller. Supplies of both these

1 W.O. 47/1 pp. 228, 231-232

W.O. 55/1646 f. 84

2 W.O. 47/1 pp. 228, 229, 230

3 S.P. 28/29 ff. 170, 176

4 See Appendix four

S.P. 28/352 unfol.

commodities were therefore limited. There is only one recorded borrowing for the New Model from the Navy stores during 1645.

Following the defeat of the Royalist armies at Naseby and Langport, the New Model Army was engaged in a number of siege actions which accentuated the demand for mortar shells and round shot for large ordnance. These too were not always available in sufficient quantity. The Committee of Both Kingdoms asked the officers of the Ordnance on 10th December 1645 to state the number of mortar pieces and shells remaining in store.¹ When on an earlier occasion in May 1645 the Committee had called for a statement of the equipment available for a siege of Oxford, the officers submitted a list comprising a motley assortment of tools, wheelbarrows and scaling ladders. Shortly afterwards the Committee itself compiled a list of the munitions and equipment needed for the siege which totalled around £6,000.²

In January 1645 Sir William Waller was given the command of a projected force of 6,000 horse and dragoons for service in the West. However, when his army set out on 8th March it amounted to only half that number. In the following month the expedition broke up.³ The deliveries which were made to this force from the Ordnance Office stores before it took the field are enumerated in Appendix thirteen.

The Scottish army was persuaded to move southwards in 1645 and in July it laid siege to Hereford. By way of encouragement the assessment for the maintenance of the army was extended to counties in the Midlands.⁴ The small deliveries that were made to the Scottish army out of the public and Navy stores during the siege of Hereford are recorded in Appendices fifteen and sixteen.

Thereafter the Scots marched towards the Royalist stronghold of Newark. The Commissioners in London were asked to provide "all

1 C.S.P.D. 1645-7 p. 257

2 op. cit. 1644-5 pp. 497, 515
W.O. 47/1 p. 247

3 Adair, J. Roundhead general pp. 177, 186

4 Meikle, H.W. Correspondence of the Scots commissioners p. xxi

sorts of necessaries for our army in this winter season, specially cloths, shirts, shoes and stockings". Although the House of Commons ordered a month's pay with clothing and other requisites for the Scottish army, it was only after considerable difficulty that their commissioners were able to report that they had obtained warrants for the provision of 6,000 coats, 6,000 pairs of breeches, 3,000 pairs of boots and 1,000 pairs of pistols, presumably by merchants.¹

The most graphic illustration of the difficulties facing the Ordnance Office stores is provided by the attempts made to supply munitions to local forces and garrisons during 1645. The quantities delivered and the borrowings from the Navy stores are recorded in Appendices eleven and fifteen. Issues of gunpowder, match and musket shot in this category were nevertheless higher than in the previous year. This was due to greater quantities being received from contractors, since the amounts of these commodities already in the public stores were negligible. Yet the quantities of match and musket shot issued were still relatively small. Much of the shot supplied was accounted for by one delivery of 7 tons to garrisons in the West in July 1645.²

The fact that the demand for ammunition continued to exceed the supply is indicated by the amounts borrowed from the Navy magazine during the latter half of the year. On 1st July, the day after the establishment of the Committee for Powder, Match and Shot, the Navy Committee at the request of the Committee of Both Kingdoms directed the officers of the Ordnance to make available for land service one half of the gunpowder received from Samuel Cordwell for the Navy stores.³

The supply situation was aggravated by the fact that an increasing number of towns and fortified places occupied by the Royalists, were now falling into the hands of the Parliament. The

1 Meikle, H.W. Correspondence of the Scots commissioners pp. 135, 140, 145
C.J. 1644-6 pp. 52, 376

2 W.O. 55/1646 p. 153

3 W.O. 47/1 p. 283

more important of these, such as Abingdon, Evesham and Shrewsbury, then had to be provided with means of defence. The Committee of Both Kingdoms asked Sir Walter Erle on 29th March 1645 to state whether 4 ordnance and a quantity of powder and match could be provided for Shrewsbury. All the Ordnance Office could supply was 30 barrels of powder for the Shropshire garrisons a few weeks later.¹

On a number of occasions the officers of the Ordnance were obliged to state that they could not meet the demands made upon the stores by local forces and garrisons. On 13th June 1645 they wrote: "whereas wee receive daily warr:^{ts} from the Hono:^{ble} Comm:^{ttee} of both Kingdoms for the issueing forth of Powder, Match, Bullett, Musketts, etc. for divers Guarrisons under the Comand of Parl:^{mt} wee the Offic:^{rs} of the Ordnance doe humbly Certifie that wee have none of the above pticul:^{rs} in Stoare except about 50 barr:^{lls} of powder..."²

It may be asked why the Committee of Both Kingdoms continued to issue these warrants when it must have been aware of the general condition of the stores. Perhaps an accumulation of unsatisfied warrants was regarded as a means of exerting pressure upon Parliament to grant the necessary means to procure the supplies. In fact, the Committee had a few days before the officers' statement sent a report to the Commons stating that there was nothing in the stores for several important places which had requested arms and ammunition.³ A month later the officers again informed the Committee that they could not supply match and shot urgently needed for guarrisons in Pembrokeshire and asked that permission be granted for the delivery to be made out of the Navy stores.⁴

At the beginning of August 1645 the Hampshire county committee sent to the Committee of Both Kingdoms a list of munitions which they wanted, including 10 pieces of ordnance. The list was forwarded to

1 C.S.P.D. 1644-5 p. 375

W.O. 55/1646 p. 59

2 W.O. 47/1 p. 266

3 C.S.P.D. 1644-5 p. 584

4 W.O. 47/1 p. 310

the officers of the Ordnance, who stated that all they had available were 600 shovels and spades, 60 barrels of powder and 300 axes.¹

Two months later, the officers submitted to the Committee of Both Kingdoms a list of the ordnance and shot that were needed for the public stores. This was referred to the Committee for Powder, Match and Shot.² Shortly after its formation, this committee had undertaken to relieve the most pressing needs by ordering the officers of the Ordnance on 16th July to contract for 15 tons of match and 9 tons of musket shot which would be paid for out of the allocation of £12,000 from the receipts of the Excise for the purchase of ammunition, as provided for in the ordinance of 30th June 1645.³

At this time, match and musket shot, more than gunpowder, represented the greatest problem. Beginning with the contracts placed in the previous year, regular deliveries of powder were being received from the contractors, although they still fell short of the quantities required. Here the supply of saltpetre was probably a limiting factor, for there was considerable dependence upon imported supplies. An ordinance of 7th December 1644 had provided for the supply of domestic and foreign saltpetre to Samuel Cordwell and John Berisford. A total of £6,000 was allocated out of the proceeds of the excise duties on flesh, victuals and salt for the purchase of ammunition. Numerous warrants for the issue of match and musket shot during 1645 were not discharged. It was not until after the establishment of the Committee for Powder, Match and Shot that deliveries of match to local forces and garrisons acquired a regular pattern.⁴

Receipts of match and musket shot into the stores during 1645, excluding those provided for the New Model, amounted to 61 tons and 18½ tons respectively. These amounts appear to be considerably in excess of recorded issues to local forces and garrisons during the

1 W.O. 47/1 p. 327

2 C.J. 1644-5 p. 584

3 W.O. 47/1 p. 303

4 W.O. 49/82 ff. 69-77

Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 578-579

same period, but it is not known to what extent fresh consignments received for land service were used to repay borrowings from the Navy stores.¹ Another factor which may have contributed to shortages of match and musket shot for the public stores at this time is that suppliers were required to produce large amounts for the New Model Army.² The number of contractors supplying these commodities was small in relation to the number of suppliers of other munitions such as muskets. Much of the match provided during the latter part of 1645 was Flemish match trimmed English fashion by the contractors.³

Yet when the total deliveries of match and musket shot to all English and Scottish land forces out of the Ordnance Office stores during 1645 are compared with total receipts, there is on paper at least a surplus of receipts over issues. This apparent contradiction between shortages in the field and an ostensible surplus in the Ordnance Office stores is one of the unresolved discrepancies concerning quantities of munitions and money which occur now and again in calculations based on figures derived from Ordnance Office records. They are perhaps to be explained by deficient record keeping, the loss of relevant records or by the receipt and issue of some munitions in a manner that is not apparent from a study of the records.

As in the past, munitions were obtained from other stores besides the public and Navy magazines in an attempt to meet the needs of local forces and garrisons in 1645. At first the Army magazine at the Tower was employed almost exclusively for the supply of that force. However, when munitions were required for the garrison at Evesham, after the town had been taken for the Parliament, the House of Commons directed the Army Committee on 1st August 1645 to lend 500 muskets out of the Army magazine.⁴

Owen Rowe's magazine, which had originally been intended for the use of the Earl of Essex's army, appears to have had as much if

1 See Appendices three, eleven, seventeen

2 *ibid.*

3 W.O. 49/82 ff. 66-77

4 W.O. 47/1 p. 343

not more of certain kinds of munitions in 1645 than the public stores of the Ordnance Office. In March Rowe was asked to provide 200 apiece of swords, pikes and muskets for the garrison at Aylesbury.¹ There were further requests made to Rowe in the following June for saddles and pistols for the horse in Hampshire and for 2 tons of match with musket shot for the garrisons of Tenby and Pembroke.²

Application was again made to the City Militia Committee for the loan of munitions. The Committee of Both Kingdoms asked on 1st April 1645 whether any guns could be spared for the defence of Abingdon, whilst on 3rd September this same committee issued a warrant for the delivery of scaling ladders out of the City militia magazine for use at the siege of Basing House.³

Another factor which influenced the supply of local forces and garrisons was that of communications. The problems caused by difficult roads and the danger to the security of ammunition trains were added to the delays arising out of the bureaucratic procedures whereby requests for munitions were dealt with. Until 1645 at least the Parliament experienced frequent difficulty in supplying ammunition to armies and garrisons in the North and West. Sea and river transport were employed whenever possible. Attempts were made to overcome these problems of communication by establishing magazines in the more important garrisons which would act as regional distribution centres. But the resources of these magazines were never great enough and they were partially dependent on the Ordnance Office stores for replenishment.

Local stores of this kind included the magazine at Farnham Castle, used as a base by Sir William Waller's army during 1643 and 1644.⁴ One of the more significant local arsenals was that at Stafford, which may have been supplied in part with powder and shot manufactured

1 C.S.P.D. 1644-5 p. 348

2 op. cit. p. 605

Q.J. 1644-6 p. 168

3 C.S.P.D. 1644-5 p. 379; 1645-7 p. 110

4 A military memoir of Colonel John Birch p. 65

locally. A magazine belonging to the Earl of Denbigh was located there. A statement of the receipts and issues relating to the magazine in the summer of 1644 shows that it acquired moderate quantities of muskets, powder and shot, but insufficient for the needs of a large force. Deliveries were made to the Earl of Denbigh's army, the garrisons at Stafford and elsewhere and to forces engaged in minor sieges in the North Midlands. Nevertheless, in June 1645 it was necessary to issue a warrant for the delivery of 30 barrels of powder with match to the Stafford garrison out of the Ordnance Office stores.¹

At a higher level, the attempt by Parliament in 1645 to improve the organisation and financing of the procurement and issue of munitions was reflected in the activities of the two new committees created during the year for this purpose. Such a reform was an essential concomitant of the remodelling of the Parliamentary armies. The Army Committee dealt with contractors and upon delivery of the munitions it promptly issued warrants for payment by the Army treasurers. In the past such payments had been made chiefly in respect of munitions which had not been obtained through the Ordnance Office.

The Committee Appointed to Contract for Powder, Match and Shot continued this development although it did not in practice become exclusively responsible for the procurement of ammunition. The role of the Committee was made all the more necessary because munitions requested were frequently unavailable and a contract therefore had to be placed before the warrant could be discharged. In such cases the matter could now be dealt with by one specialist committee instead of being referred from one body to another. The warrants of the Committee for Powder, Match and Shot sometimes specify the funds out of which payment to the contractors was to be made. Otherwise they instruct the officers of the Ordnance to issue debentures "and this Committee will ensure they will be quickly paid".²

1 Pennington, D.H. and Roots, I. The Committee at Stafford pp. 230, 257
S.P. 28/15 ff. 42, 45

W.O. 47/1 p. 260

2 W.O. 55/1646 pp. 220, 246, 252.

Ultimately the success of the Committee depended upon the amount of money that could be made available to it. The chief source of revenue for the Committee was the Excise, which had already proved to be an inadequate and irregular means of providing funds.¹

Unlike the local forces and garrisons, the New Model Army may have received something like the quantities of munitions which it needed in the course of 1645. Yet no progress was made towards the accumulation of a reserve of the more important kinds of munitions in the Ordnance Office stores which would enable warrants to be readily discharged without having to either contract for the requisite munitions in the first instance or to pre-empt the next delivery from the contractors.

It appears from a statement by the officers of the Ordnance on 26th April 1645 that the quantities of gunpowder and match then in the public stores were negligible. Six weeks later, on 13th June, there were said to be 50 barrels of powder in the store but no match or musket shot.² Upon the formation of the Committee for Powder, Match and Shot, the officers were required to submit to the Committee regular statements of the receipts and issues of ammunition.

The first of these, for the period 2nd July to 4th August, shows that gunpowder receipts exceeded issues to the extent of 793 barrels to 669. During the same period 169 barrels were issued for sea service. However, out of the surplus 100 barrels were allocated to the Scottish army. Receipts of match and musket shot, at 19½ tons and 14½ tons respectively, were wholly accounted for by issues, so that the net amount left in the stores remained nil. The next statement, for the period 4th - 11th August, shows receipts of 100 barrels of powder, 5 tons of match and 5 tons of musket shot, with the same amounts issued out. In addition, 116 barrels were delivered for sea service.³ Unfortunately, no further detailed statements of receipts

1 See above p. 192

2 W.O. 47/1 pp. 231-232, 266

3 op. cit. pp. 329-331, 340

and issues of ammunition are available, for the minute book terminates in August 1645.

Although the gradual petering out of military activity during 1646 eventually reduced the pressure of demand upon the Ordnance Office stores, considerable quantities of munitions were disbursed over the first half of the year at least. The deliveries are summarised in Appendices eleven, fifteen and seventeen. Until August of that year, when deliveries ceased, large amounts of munitions and clothing were issued to both the main body of the Army, which had spent the winter in the West, and to the new recruits.

Besides those delivered out of the Army magazine at the Tower, there were as in the previous year supplies which were paid for by the Army treasurers but which are not recorded in the Ordnance Office receipts books. They include a large quantity of swords and armour obtained from various London cutlers and armourers, together with clothing, footwear and gunpowder.¹ The assumption that these provisions did not pass through the Ordnance Office is strengthened by the fact that an order made to the officers of the Ordnance on 16th January 1646 for the issue of 2,200 swords for the use of the Army was not complied with.² A few payments were again made by the treasurers to Army officers for the purpose of buying accoutrements.³

During the early months of 1646 the Army continued in action against Royalist strongholds and local forces in the West. In January the detachment commanded by Cromwell which had taken Basing House rejoined the main body. After defeating a Royalist army at Torrington (18th February 1646), Fairfax eliminated the remaining opposition in the West. The final actions of the Army that year were against Oxford, which surrendered on 24th June, and Raglan Castle, which held out until August.

Deliveries of pistols and saddles to the regiments of horse,

1 See Appendix four

S.P. 28/352 unfol.

2 W.O. 55/1646 p. 319

3 S.P. 28/36 f. 658

both serving troopers and recruits, were again an important function of the Army magazine. These items were issued almost continuously during the first months of 1646. During the early months of the year arms and clothing from the Tower were shipped to the West for the use of the foot with the army there.

The process of recruiting the foot by raising new levies in the Eastern and South Eastern counties continued. In February and March 1646 over 6,000 suits of clothing, each comprising a coat, breeches, shirt, stockings and shoes, together with nearly 5,000 muskets were issued to recruits to Colonel Rainborough's regiment of foot and to other recruits assembled at Northampton, Newport Pagnell and Reading. The Lincolnshire county committee alone sent 1,500 men to Northampton.¹

Assuming that available records of receipts and deliveries are complete, a comparison of the quantities of munitions, clothing and equipment received into the Army magazine between March 1645 and December 1646 with the amounts issued from that store to the Army in the same period suggests that with the exception of matchlock muskets, shirts and knapsacks, there was a reasonable surplus of receipts over deliveries. Further substantial amounts of clothing and footwear procured during this period are not recorded in the Ordnance Office receipts books. In the case of ammunition, the records suggest that the Army had several hundred barrels of powder, about 30 tons of match and 20 tons of musket shot left in the magazine at the Tower by the end of the First Civil War, together with whatever unexpended portions remained in the Army's own hands.²

The improvement in the supply of match was signified by a contract made by the Army Committee with Daniel Judd in December 1645 whereby he was to provide 50 tons during the first seven months of

¹ W.O. 55/1646 pp. 347, 364, 372, 406, 411

S.P. 28/37 f. 376

² W.O. 55/1662 - 55/1664 passim

S.P. 28/140 ff. 102-109

1646 and at least 10 tons a month from March 1646 onwards.¹ However, with the virtual cessation of fighting in August of that year, there were hardly any deliveries of ammunition to the Army magazine during the second half of 1646.

Finally, the quantities of round shot and mortar shells issued to the Army during 1646 were very small in view of its involvement in a number of siege actions. This doubtless reflects not merely a shortage of these items but also the physical problems of transport and distribution from the Tower to the places where they were needed. When the Army was besieging Goodrich Castle in June and July 1646, mortar shells were obtained from local ironworks in the Forest of Dean.²

There were no separate issues of munitions to the Scottish army out of the Ordnance Office stores in 1646, although the Scots may have had a share of the delivery from the Army magazine which was made in March to the forces besieging Newark.³ In January the Goldsmiths' Hall Committee had directed the sub-committee for Scottish affairs at Turners' Hall to send 29,000 suits of clothes, 300 pairs of boots, 3,000 pairs of stockings, 4,000 pairs of shirts and 1,000 pairs of pistols to the Scots at Newark. But another instruction from the House of Commons to Goldsmiths' Hall on 15th April for the despatch of 100 barrels of powder, match, shot and hand grenades to the Scottish army does not seem to have been acted upon.⁴ On 22nd April the Scottish commissioners in London complained that of the £15,000 a month which had been allowed to the army before Newark "we cannot get a 1,000^{li} payed in money and provisions".⁵

By now political factors were discouraging further material assistance to the Scots. There were growing uncertainties about the relationship between Parliament and its Scottish allies. The latter

1 L.M. 46-78/709 f. 28

2 Nicholls, H.G. The Forest of Dean p. 36

3 W.O. 55/1646 p. 415

4 C.J. 1644-6 p. 509

Cal. Proc. Comm. for Compounding vol. 1 pp. 31, 36

5 Meikle, H.W. Correspondence of the Scots commissioners p. 175

were becoming concerned at the weakness of their forces in England compared to those of the Parliament. Their own reserves of ammunition in Scotland and in the garrisons in Northern England were low, and when an approach to Parliament in May 1646 for a supply of ammunition met with no response, the Scots turned to their Dutch agent, Thomas Cunningham of Campvere. He was asked to deliver 200 barrels of powder with match and shot to Newcastle. During 1644 Cunningham supplied £30,000 worth of munitions to the Scottish army.¹ He supplied the Scots during the Bishops' Wars and in October 1642 he contracted for £10,000 worth of arms for their army in Ireland.¹

Reckoning the cost of the assistance rendered to the Scottish army during its stay in England, the Commons claimed on 27th August 1646 that the value of the arms, ammunition and stores supplied between 1644 and 1646 amounted to £40,000.² Needless to say, this figure was disputed by the Scots. The Commons' estimate excludes the cost of munitions supplied for use at particular sieges. The estimated value of the munitions listed in Appendix sixteen as having been supplies at the English charge is about £10,000.

Turning to the supply of local forces and garrisons, difficulties persisted in 1646 in spite of the diminishing extent of the Parliament's commitments in this sphere. The significant role of local forces and garrisons in the Civil Wars was almost over by the end of 1645. On the question of how far their effectiveness and their security was undermined by shortages of munitions and by delays in meeting requests for arms and ammunition, it is clear that even when the safety of Parliamentary forces was not actually threatened, their capacity for action could be severely circumscribed by a lack of ammunition in particular. The prosecution of sieges was not infrequently hampered by a shortage of ordnance, powder and shot. The only mitigating factor

¹ Meikle, H.W. Correspondence of the Scots Commissioners pp. 180, 185
Terry, C.S. Papers relating to the Army of the Solemn League and Covenant vol. 2 p. 541

C.J. 1640-3 p. 793

Courthope, E.J. The journal of Thomas Cunningham pp. 64-65, 95-96

² C.J. 1644-6 p. 634

was that similar constraints were operating on the Royalist side.

The supply to local forces of gunpowder in particular was a problem. On several occasions the public stores were unable to supply even quite small quantities. It was stated on 7th July 1646 that there was no powder in the public stores.¹ So far as can be judged from the records, the amount of powder delivered to the Ordnance Office stores during 1646 was considerably less than in the previous year.² A comparison of receipts and deliveries of powder, match and musket shot, excluding those for the New Model Army, shows that on paper at least there was once again an excess of receipts over deliveries during the years 1645 and 1646. Yet since such surpluses clearly did not exist in 1646, at least as far as gunpowder was concerned, it is apparent that either the records are incomplete or there were substantial 'repayments' of borrowed munitions to the Navy magazine. Such borrowings of powder during these two years amount to 1,100 barrels. If this figure is added to the quantity of powder delivered for land service out of the public stores in 1645 and 1646, the total matches almost exactly the quantity of powder received from the manufacturers during that time.³

The shortage of gunpowder for land service is indeed reflected in the borrowings from the Navy stores during 1646, for the principal commodity thus procured was 500 barrels of powder.⁴ Even so, not all the warrants for powder which were directed to the Navy Committee could be met in full out of their magazine.⁵ On 17th January 1646 the Committee of Both Kingdoms asked the Committee of the Eastern Association to supply ammunition to Scarborough since none was available in the public stores.⁶

Deliveries of match and musket shot to local forces and

1 Add. Mss. 35,332 f. 19

2 See Appendix one

3 W.O. 49/82 passim

See Appendices one, eleven and fifteen

4 See Appendix fifteen

5 Add. Mss. 35,332 ff. 19, 28, 41, 42

6 C.S.P.D. 1645-7 p. 444

garrisons during 1646 showed a considerable increase over the previous year, reflecting the greater availability of these commodities. The total amounts delivered, 79 tons of match and 18 tons of musket shot, do however include a single delivery of 20 tons and 10 tons respectively on 28th December to the garrison at Newcastle.¹ Yet there were still some warrants for the issue of match and musket shot which were not complied with.

In order to ensure a satisfactory supply of ammunition, three preconditions had to be met. These were adequate finance, the adequate organisation of procurement and an adequate supply of raw materials. During 1645 and 1646 the organisation element had improved, but those of finance and raw materials were still wanting. Native supplies of saltpetre, gunpowder and match had to be supplemented from foreign sources, whilst receipts from the excise, which had been intended as the primary source of money for the purchase of ammunition, were at a low level by the end of 1646.²

The establishment of the Committee for Powder, Match and Shot had resulted in a measure of improvement in the supply of ammunition to the Parliamentary forces during the first year of the Committee's existence. But the ability of the Committee to fulfil its purpose was determined by its financial resources. Those funds were derived largely from a share of the uncertain return yielded by the excise. The Committee had also been awarded by an ordinance of 24th July 1645 the arrears of the £9,000 which was to have been raised in and about London for the provision of a new train of artillery for Essex's army in October 1644. After paying contractors for the stores which had been brought in, the Committee was to use the remainder to buy ammunition for the public stores.³ However, it is unlikely that any great sum of money was received in this way.

The Army Committee, on the other hand, paid for its munitions

1 Add. Mss. 35,332 f. 47

See Appendix eleven

2 Morrill, J.S. Past and Present no. 56 Aug. 1972 p. 49

3 Firth, C.H. and Rait, R.S. Acts and ordinances vol. 1 pp. 736-738

out of the loans and assessments raised for the maintenance of Sir Thomas Fairfax's army, even though this money was of course required for various other purposes too. The measures introduced for the upkeep of the Army failed to provide a regular and sufficient flow of funds, but on the whole they afforded the Army Committee a more satisfactory source of revenue than that enjoyed by the Committee for Powder, Match and Shot.¹ To this extent the Army Committee was better able than its counterpart to discharge the function for which it had been set up.

Deliveries from the Ordnance Office stores during 1647 were in most cases not directly related to any particular military action. But they were influenced in part by the events of that year involving the Army which were of political as much as of military significance. These stemmed from the intervention of the Army in the political arena through its dispute with Parliament, wherein a Presbyterian faction was then in the ascendancy, over the settlement of the Army's own grievances and over the nature of any proposed constitutional settlement with the King.

The composition of the Army was modified during 1647 by the incorporation of a number of regiments from the army of the Northern Association and other local forces. Another regiment was raised in September 1647 for the defence of the Tower, although it subsequently performed other duties as well.² The only noteworthy delivery to the Army out of its magazine at the Tower during 1647 was made in August, shortly after the Army had entered London. On this occasion a large consignment of arms, ammunition and requisites for the train of artillery was provided.³ The deliveries are summarised in Appendix seventeen. They do not include issues to the Tower regiment.

Following the Army's entry into London on 6th August 1647, its attention was drawn towards the security of the Tower, for had

1 Gentles, I. B.I.H.R. vol. 48 no. 117 May 1975 pp. 52-60

2 Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army vol. 1 p. xx

3 Add. Mss. 35,332 ff. 53-54

there been a conflict with forces raised by the Presbyterian forces in Parliament and in the City, then the Army would have been deprived of access to its magazine, the resources of which would have been available to its opponents. On 14th August the House of Commons ordered that munitions formerly in the custody of William Mollins, controller of the City militia magazine, be taken to the Tower "and then restored to the places where they belong". By another order of the Commons, the Army Committee was required to discover what munitions had been removed from the Tower and then to restore them to the Ordnance Office stores.¹

On 9th August Fairfax, having been appointed Constable of the Tower, went there in person and inspected the stores. He had appointed Colonel Tichborne as his Lieutenant at the Tower. Tichborne had also received a commission to command the newly formed regiment which relieved the detachment of the Army that had initially supplanted the old guard at the Tower. By a decision of the Commons on 4th October 1647 this regiment was incorporated in the Army.²

In consequence a number of warrants for the issue of arms, ammunition and accessories for ordnance were discharged during the latter months of 1647. A quantity of weapons was also issued for the arming of the Tower regiment.³ But the Ordnance Office stores were unable to provide or would only supply in part many of the implements and materials required for the ordnance. These warrants were issued by Colonel Tichborne. A sum of money was however made available to Sir Walter Erle for the provision of stores for the security of the Tower. Some equipment for the ordnance and ironwork was provided out of this allocation at the end of 1647, although the debentures which were issued to the suppliers do not appear in the Ordnance Office book of debentures for land service.⁴

1 C.J. 1646-8 pp. 271, 274

2 Firth, C.H. and Davies, G. The regimental history of Cromwell's army vol. 1 pp. 571-572

3 Add. Mss. 35,332 ff. 55-64

4 S.P. 28/50 ff. 392, 394

The delivery of munitions to local forces and garrisons during 1647 was largely a matter of furnishing the magazines of the more important towns and fortified places in the West and North, such as Plymouth, Weymouth and Newcastle. The quantities supplied are recorded in Appendix eleven. Deliveries of musket shot were at a very low level. It was stated at the beginning of the year, on 11th January, that there was no musket shot in the public stores, and only one ton is recorded as having been delivered to that magazine during the year.¹

The interruption of the fighting in England during 1647 was accompanied by renewed attention to the situation in Ireland. Although the decisive intervention by Parliament in that country did not come until after the Civil Wars had ended, some deliveries were made from the Ordnance Office stores during 1647 both to the forces in Ireland and to English regiments, such as that commanded by Colonel Birch, which had been designated for service there. These issues are recorded in Appendix eighteen. In addition, 200 barrels of powder were obtained from the Navy magazine.²

Some of the munitions thus provided were to be repaid out of the stores in the hands of the Committee for Irish Affairs. The Ordnance Office was not in a position to provide large quantities of munitions for use in Ireland. The House of Commons asked the Army Committee on 11th January 1647 to discover what ordnance, arms, ammunition and equipment could be obtained from garrisons in England for this purpose. Shortly afterwards, on 28th January, it was decided that such ordnance as could be spared by the Navy Committee should be employed in Ireland.³ A month later the Army Committee was requested to provide such arms and ammunition as it could spare from its own magazine. Two deliveries of arms and clothing were accordingly made in March and June 1647.⁴

1 Add. Mss. 35,332 f. 49

W.O. 49/82 f. 90

2 Add. Mss. 35,332 f. 60

3 C.J. 1646-8 pp. 48, 68

4 op. cit. p. 100

Add. Mss. 35,332 ff. 50, 51

Contracts were placed in November 1646 and January 1647 by the Committee for Irish Affairs for the supply of munitions, clothing and equipment. These were to be delivered to ports in Ireland after inspection by the officers of the Ordnance.¹ The store in the charge of Owen Rowe was still in existence, for he too was asked about any arms that he might have which could be sent to Ireland.²

When the Second Civil War broke out in March 1648, the procedure for the issue of warrants for deliveries out of the Ordnance Office stores had been changed somewhat, along with the way in which the stores were utilised. By an ordinance of 6th January 1648 the Army Committee was empowered to issue warrants for the supply of garrisons in addition to the main body of the Army.³ This step reflected the consolidation of the Parliamentary forces and the reduction of local forces after the First Civil War. The Committee was also authorised to borrow whatever munitions were needed for the garrisons out of the Navy stores when necessary, although this was not in fact done very much, probably because the requisite items were not available there in any great quantity. Given this new responsibility, the Army Committee contracted for the supply of munitions to certain garrisons. The munitions were supplied by Ordnance Office artificers and regular contractors; and in most cases they were brought to the Tower first of all.⁴

As a result, the Army Committee was responsible for the issue of most of the warrants for land service during 1648, with the exception of a few issued by the Commons themselves and by the Committee for Powder, Match and Shot. Unlike its predecessors, the Derby House Committee issued only one or two warrants. The predominance of the Army Committee was facilitated by the fact that there was now only one principal army, whilst the number of local forces was much

1 C.J. 1644-6 p. 698; 1646-8 p. 136

See above p. 214

2 C.J. 1646-8 p. 100

3 *op. cit.* pp. 420-421

4 S.P. 28/50 ff. 18, 20, 22; 28/51 f. 535; 28/52 ff. 15, 62, 178, 180; 28/140 ff. 137-142

smaller than during the First Civil War.

Another departure from previous practice which reflected these developments was that the distinction between the Army magazine and the public stores was no longer observed so strictly. The Army stores ceased to be used almost exclusively for the requirements of that body. There are a number of warrants issued during 1648 for the supply of both the Army and garrisons, which state that the supplies may be delivered from either the Army or the public stores, or both together.¹

It is possible that the two magazines were actually amalgamated at this stage, although the wording of some warrants which state "deliver out of the public or Army stores" suggests that this was not so.²

The Parliamentarian Army, of which the New Model of 1645 formed the basis, continued to grow in size. A proposal put forward by Fairfax and other officers recommending that the Army should comprise 16,000 foot and 6,270 horse, including 30 companies for garrison service, was accepted by the House of Commons on 9th February 1648. Recruitment and the incorporation of local forces during 1647 and 1648 almost doubled the strength of the Army.³

At this late stage in the conflict there was a marked improvement in the quantities of ammunition made available to the Army, particularly in respect of match and musket shot. The respective amounts are given in Appendix seventeen. The force which accompanied Fairfax during the summer of 1648, first against the Royalists in Kent and then in Essex, was very well endowed with munitions. On 10th May and 13th June a total of 750 barrels of powder, 80 tons of match, 17 tons of musket shot and a quantity of arms were delivered out of the public and Army stores. Further deliveries, including large ordnance, were made during the Army's siege of Colchester in July and

1 Add. Mss. 35,332 ff. 83, 93
W.O. 55/461 ff. 8, 13

2 Add. Mss. 35,332 f. 92

3 Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army
vol. 1 pp. xx, xxi

August.

A regiment of horse commanded by Colonel Rich, which accompanied Fairfax into Kent at the end of May 1648, remained there after the battle of Maidstone (2nd June) as part of a body of horse and foot under Rich which proceeded against Royalist garrisons and other forces in the county. During that time a number of deliveries of arms and ammunition were made to this body from the Ordnance Office stores.¹

Another series of deliveries from the stores in the spring of 1648 was made to the foot regiment commanded by Colonel Barkstead, which was one of those sent into London during January 1648 and which constituted the guard at Whitehall. In this capacity the regiment received consignments of arms, ammunition and clothing from the Ordnance Office between January and April. On 12th April, two days after an outbreak of rioting in London, the regiment was provided with a train of artillery comprising 6 pieces of ordnance. Subsequently Barkstead took the field against the Royalists in Kent and Essex.²

That part of the Army which went with Cromwell to South Wales in April 1648 does not appear to have received anything from the Ordnance Office stores at that time, although Cromwell did in fact request munitions from the Derby House Committee. There would naturally have been difficulties in supplying munitions at such a distance and some use was made of local resources.³ On its march to South Wales the Army was provided with a small quantity of powder, match and shot from the stores at Gloucester which was subsequently replaced out of the Ordnance Office stores.⁴ Some ordnance belonging to the train of artillery, left at Oxford after the siege of 1646, were sent by land and sea and eventually reached Cromwell at Pembroke at the beginning

1 Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army vol. 1 pp. 146-147

W.O. 55/461 ff. 1, 11, 14

2 Firth and Davies op. cit. vol. 1 p. 339

Add. Mss. 35,332 ff. 67, 71, 77, 81

3 Abbott, W.C. The writings and speeches of Cromwell vol. 1 pp. 608, 611, 613

4 Add. Mss. 35,332 f. 79

of July 1648.¹

Upon Cromwell's return to England on his way to the North a small amount of munitions was supplied from the Ordnance Office stores whilst his army was at Gloucester.² On 26th October 1648 a large quantity of powder, match and musket shot was shipped to the North for the use of the Parliamentarian forces there.³ Some of it was no doubt used by Cromwell, who was then before Pontefract Castle. During the following two months he was supplied with large ordnance and a great quantity of ammunition for the sieges of both Pontefract and Scarborough castles.⁴ Earlier, as it made its way through the East Midlands on its way to the North, the Army was provided with shoes and stockings by tradesmen in Northampton.⁵

A comparison of receipts into and deliveries from the Army magazine at the Tower has suggested that there were reasonable quantities of powder, match and musket shot either in store or in the field magazine when fighting ceased in 1646.⁶ The public stores, however, were then in a parlous state. As a result of receipts and deliveries during 1647 there was a further small gain to the Army magazine in respect of powder and musket shot, whilst the public stores benefited considerably with regard to powder and match.

The resources of these two magazines may henceforth be considered together, since in the final year of the Civil Wars they were jointly serving the Army and the principal garrisons. When the net gain to the two magazines during 1647 is added to the quantities of munitions believed to be still available to the Army at the end of the First Civil War, there should have been ready for use at the beginning of 1648 a minimum of about 2,000 barrels of powder, 70 tons

1 Abbott, W.C. The writings and speeches of Cromwell vol. 1 p. 613
Phillips, J.R. Memoirs of the Civil War in Wales vol. 1 pp. 412, 414
Rushworth, J. Historical collections vol. 7 pp. 1,159, 1,175

2 W.O. 55/461 f. 9

3 Add. Mss. 35,332 ff. 108

4 op. cit. ff. 113, 115, 116

5 S.P. 28/55 f. 267; 28/56 f. 166; 28/57 f. 300

6 See above p. 289

of match and 30 tons of musket shot.¹ To these amounts there should be added whatever match and musket shot was left in the public stores in 1646.

Further support for the view that a surplus existed at the commencement of the Second Civil War is provided by the pattern of receipts and deliveries of ammunition during 1648. Despite the large amount of match delivered to the stores in that year, deliveries to the Army and to garrisons considerably exceeded receipts, after taking into account deliveries which are not recorded in the receipts books. Since there is no evidence of any borrowing from the Navy magazine, there must have been a sizeable quantity of match in hand.²

Yet difficulties were experienced with the supply of some commodities during 1648, in spite of the relative abundance of powder, match and shot. Round shot in particular was in short supply for both Army and garrison use. Deliveries of iron shot to the Ordnance Office land stores in 1648 were exceeded by issues, whilst the largest single delivery from John Browne was not made until August. It was necessary to supplement the resources of the land stores by borrowing several thousand shot from the Navy magazine.³ When shot was needed for the ordnance with Fairfax's army, 2,500 were obtained from the Navy stores on 10th June 1648, even though the magazine was then left with only a small quantity in store. In the following month two large ordnance were procured from the same source for use at the siege of Colchester.⁴

A considerable sum was spent on the repair of weapons belonging to the Army in February 1648. £650 was made over to Commissary Phipps by the treasurers of the Army to pay for the fitting of new locks and stocks to a large number of muskets.⁵ These were

1 See Appendices one, three, eleven seventeen

See above p. 289

2 See Appendices one, three, four, eleven, fifteen, seventeen

3 See Appendices two, eleven, fifteen, seventeen

S.P. 28/140 f. 147

4 Add. Mss. 35,332 ff. 86, 87, 97

5 S.P. 28/51 ff. 263, 265, 267

probably weapons belonging to the foot guarding the train of artillery.

In the case of clothing, deliveries to the Ordnance Office for the use of the Army were on a smaller scale than those of 1645 and 1646. The officers of the Ordnance reported to the Army Committee on 13th October 1648 that there were only 470 coats and 350 pairs of breeches in the stores that were fit to wear, whilst a further 24 and 1,262 respectively could be repaired. Additional quantities were then procured by the Army Committee and in the following month 5,000 coats and 5,000 pairs of breeches were issued from the stores. When on 12th December the officers were instructed to deliver all the coats and breeches in their possession, these amounted to 316 coats and 1,456 pairs of breeches.¹ Apart from some shoes and stockings, the large deliveries of clothing and footwear procured for the Army apparently outside the Ordnance Office in 1645 and 1646 were not repeated in 1648.²

Further deliveries for the defence of the Tower, consisting mostly of ammunition and necessaries for ordnance, were made during the early months of 1648. Also at this time 200 bedsteads with flock beds and bedclothes were provided for the comfort of the regiment.³ However, the issuing of warrants by Colonel Tichborne as Lieutenant of the Tower by the authority bestowed on him by Fairfax, was called in question. On 17th January 1648 the House of Commons decided that all warrants issued by Tichborne since his appointment should be confirmed but directed that their order of 20th November 1647, whereby the Army Committee was to issue warrants for munitions for use at the Tower, should be upheld.⁴ No more warrants were made out by Tichborne.

Deliveries to garrisons during 1648 comprised firstly issues to the garrison at Newcastle occasioned by the rift with the Scots and by Royalist activity in the North; and secondly deliveries to the principal towns, castles, and forts, especially those on the south and

1 Add. Mss. 35,332 ff. 105, 109, 117
W.O. 55/461 f. 19

See Appendices three and four

2 See Appendix four

3 S.P. 28/54 ff. 250-254

4 Add. Mss. 35,332 ff. 63, 64, 65, 78, 80

south west coasts which were most exposed to sea borne attacks by the Royalists. The quantities delivered are summarized in Appendix eleven.

Provision for Newcastle was now a *prima* consideration. A number of individuals, including members of Parliament, lent money at the behest of Governor Hesilrige and the Army Committee to the Mayor of Newcastle for the use of the forces there. Amongst those who made payments were George Payler, the Surveyor of the Ordnance, and the merchant Stephen Estwicke, who each provided £1,000. These sums were repaid by the Army treasurers during 1648.¹

The largest deliveries to garrisons out of the Ordnance Office stores were therefore those made to Newcastle. In February and March 1648 over 1,000 barrels of powder, 67 tons of match, 30 tons of musket shot and 6,000 round shot, together with ordnance, arms and equipment were sent there.² Further deliveries of arms, ammunition and clothing were made between July and September. These supplies were clearly not intended for the defence of Newcastle alone. Colonel Hesilrige's regiment of foot formed part of the garrison there.³ On 21st June 1648 the Commons directed that arms, including 6,000 muskets, 1,500 saddles and 4,000 pikes be provided for the counties of the Northern Association.⁴ But if these were in fact supplied they did not come from the Ordnance Office stores.

Apart from these deliveries, the principal coastal forts from Cornwall to Kent each received a stock of ammunition. One unusual delivery was that of 100 flock beds with coverings to Dover Castle in November 1648. Perhaps these were some of the beds originally issued to the regiment at the Tower.⁵ As in the case of the Army, it was

1 S.P. 28/52 ff. 25, 88, 270
Howell, R. Newcastle and the Puritan Revolution p. 197

2 Add. Mss. 35,332 ff. 72-75, 78-79
S.P. 28/140 ff. 138-142

3 Add. Mss. 35,332 ff. 94, 95
W.O. 55/461 ff. 3, 11, 14

Firth, C.H. and Davies, G. The regimental hist. of Cromwell's army
vol. 2 p. 459

4 C.J. 1646-8 p. 609

5 W.O. 55/461 f. 20

possible to issue much greater quantities of powder, match and shot to garrisons out of the Ordnance Office stores than had been feasible in previous years. Yet it was still not possible to provide for all their requirements without resort to borrowing from the Navy stores, chiefly for round shot.¹ Such commodities as accessories for ordnance and other implements could not be supplied without first placing contracts for the procurement of them. Sir Walter Erle was directed by the House of Commons in November 1648 to make provision for the Landguard Fort near Harwich, the supplies to be paid for out of the receipts from the Excise.²

1 See Appendix fifteen

2 W.O. 49/82 ff. 105-107

W.O. 55/461 ff. 19-20

Add. Mss. 35,332 ff. 111-112

Conclusion

The problems which faced the Ordnance Office on the outbreak of the Civil Wars were of a long standing and deep-seated nature. They concerned the way in which the Office was run and above all the manner in which it was financed. The effectiveness of the Office in any conflict was compromised by administrative shortcomings and financial weaknesses which meant that it could not take any significant action of its own volition. The extent of its role in providing munitions was determined largely by outside agencies.

Seen in the light of these fundamental questions, the events surrounding the start of the conflict between King and Parliament in 1642 do not appear to have had any great influence upon the fortunes of the Ordnance Office. The departure of a number of senior Ordnance officers, their replacement by the nominees of Parliament, and the absence of a Lieutenant of the Ordnance until early in 1644 may have had a detrimental effect upon the working of the Office, yet there is no real evidence of this.

In the first place, at least some of the new officers appointed by Parliament were businessmen who should have possessed knowledge and experience that would have been useful to the Ordnance Office. Then the loss of the senior officers was an occurrence of much less consequence than the retention by Parliament of the services of the great majority of artificers, tradesmen, merchants and entrepreneurs, both within and without the Tower, who were the mainstay of munitions supply to the Parliamentary forces during the Civil Wars. Access to the London market for arms, clothing and equipment together with the overseas connections and the commercial and industrial resources of London and South Eastern England were preserved largely intact for the use of the Parliament. Those resources would almost certainly have ensured that sufficient provision was made for the Parliamentary land forces to enable them to carry on the war even

if the Ordnance Office had not functioned during the Civil Wars.

The factors which limited Parliament's exploitation of the resources available to it were chiefly shortages of money and of essential raw materials such as saltpetre and metal for casting. Finally, the effect of the changes in personnel which occurred in 1642 were offset by the extent to which the activities of the Ordnance Office were supervised and some of its customary functions arrogated by Parliament and its committees during the Civil Wars.

The basic problems of the Ordnance Office, its questionable administrative practices and inadequate financial resources, had been apparent since the sixteenth century. It was likewise clear to observers that the Office lacked the wherewithal to make effective provision for the country's land and sea forces in the event of war. There was an awareness of the need for reform on the part of governments and of some senior members of the Office itself. Sporadic attempts were made to bring about improvements during the hundred years before the outbreak of the Civil Wars, encouraged by a desire to ensure some degree of efficiency in a department which was associated with national security and by the need to reduce the cost of central administration, objectives which were not altogether compatible with one another. Efforts to reform the Ordnance Office were undermined by the inherent weaknesses of Elizabethan and early Stuart administration and by chronic financial difficulties facing the Crown, both of which contributed to the defective condition of the stores and encouraged abuses within the Office itself.

As in earlier conflicts, the shortcomings of the Ordnance Office were thrown into relief by the Civil Wars. In the past provision for land forces other than the occasional expeditionary force had been almost a residual function of the Office, with the bulk of the arms and ammunition procured going to the Navy. But now the Ordnance Office was faced with the demands created by widespread

and prolonged fighting on land in addition to the requirements of the Fleets. The extent to which it could satisfy those needs was determined first of all by the nature and quantities of stores which were at its disposal when the conflict began and then by the extent to which Parliament was willing and able to place the necessary financial resources at its disposal.

In the circumstances, therefore, it is not surprising that the role of the Ordnance Office in the early stages of the Civil Wars was largely the traditional one of supplying mostly ordnance and ammunition, whilst much of the arms, clothing and equipment for the horse and foot were procured through the London market from both English and Continental manufacturers. A lengthy war was not anticipated in August 1642 and there was no reason to suppose that traditional methods would not suffice. Accordingly, the business of equipping the Parliamentarian army was conducted along much the same lines as that of previous armies. It was the prolongation of the War which led eventually to the modification of the procedures for munitions procurement and to the reorganisation of the Parliamentarian forces.

At the outset the Ordnance Office was powerless to expand its role without the necessary money, whilst as in the past those who controlled access to the funds were inclined to enter into the business of procurement on their own account. When provision for what was expected to be a single campaign rather than procurement on a long term basis was under consideration, it might seem quite logical to deal directly with suppliers and perhaps save time and money in preference to using the machinery of the Ordnance Office.


The underdeveloped character of the Ordnance Office organisation, financial stringency and the sporadic nature of military activity in the earlier seventeenth century had combined to discourage the assumption by the Office of a comprehensive role in the

procurement of munitions when the need arose. Some attempt was made to provide for the regular supply of the stores with such items as muskets and swords by granting exclusive contracts to groups of craftsmen just as a monopoly of the provision of gunpowder and ordnance to the Tower had been bestowed upon individuals.

However, this traditional device for encouraging a ready supply of munitions was not well received and the schemes were unsuccessful. They failed not simply because of the opposition from manufacturers excluded from the arrangements, or because of the hostility of the country at large towards any suggestion of a monopoly. The administrative machinery and a necessary degree of financial stability at the Ordnance Office were also lacking, and consequently it was impossible to offer manufacturers an assured outlet for their products. Only in the case of gunpowder was there an enduring arrangement for delivery on a regular basis and even this did not work altogether satisfactorily. Otherwise, the demand for munitions continued to fluctuate widely in accordance with the level of military activity. Acting as a contractor to the state could and did involve manufacturers like John Browne in financial loss before the Civil Wars.

Therefore we can say that the political and financial conditions prevailing in the earlier seventeenth century were not favourable to the development of the Ordnance Office into an independent and self-sufficient organisation capable of procuring large quantities of munitions on its own account. Despite the expansion of the Ordnance Office in the Tudor period, it remained subject to interference from officials and agencies of government whose primary concern was with civil rather than military administration, but who from time to time intervened in the running of the Office and took over some of the functions associated with it such as that of dealing with contractors.

The subordination of the Ordnance Office in this respect was



confirmed and strengthened during the Civil Wars with the formation of standing bodies whose responsibilities included the supervision of the Office and the placing of contracts on its behalf. The Ordnance Office was subject to more thoroughgoing regulation during these years than at any time in its history. The very uncertainties generated by a civil war reinforced the need for close control over the membership and working of the Ordnance Office and over the other administrative departments.

For political, military and financial reasons therefore, Parliament found it necessary to exercise close control over the functioning of the Office and to involve itself both collectively and through its committees in the business of arranging and settling contracts for the supply of munitions. There were a number of committees which functioned at various times during the Civil War period within the broad field of military administration and finance. They overlapped to a considerable degree in respect of function and personnel. With the trend towards the systematisation and specialisation in committee management, exemplified by the formation of the Army Committee and the Committee for Powder, Match and Shot, an attempt was made to determine the requirements of the Ordnance Office stores and to provide the stores that were most needed. As a result the Ordnance Office was able to assume a more comprehensive role in procurement and distribution than had been possible hitherto. Yet these organisational changes did not of themselves ensure a more effective role for the Ordnance Office. As always, this was dependent upon the provision of adequate financial resources for the procurement of munitions. It is clear that deficiencies in the Ordnance Office stores persisted even in the later years of the Civil Wars, in spite of the improvements that had occurred.

The year 1645 was a most significant one for the Ordnance Office, which in turn reflects the wide ranging political and military

importance of the events of that year. It was in 1645 that Parliament took steps to deal with the political, military and administrative problems created by the continuation of the War, or, conversely, the failure to reach a settlement with the King. In the political sphere this was marked by the decline of old interest groups within Parliament and the emergence of new ones. In the military sphere there was a reorganisation of the principal Parliamentary forces; and in the administrative field there were changes in the procedures for munitions procurement and distribution. All these developments were interrelated. If the formation of the New Model Army was to be a success in military terms, then clearly steps would have to be taken to ensure that it could be adequately armed and equipped. The Ordnance Office profited by these innovations in that it was chosen as the instrument whereby the New Model was to be supplied with the greater part of the munitions that it required.

In a civil war the dividing line between the political and the military spheres is inevitably indistinct. The Ordnance Office was affected by the political divisions of opinion and the conflicts that developed on the Parliamentary side, as was shown by the events of 1647. Appointments to posts in the Ordnance Office and decisions about the allocation of funds for the purchase of munitions had political overtones as did decisions about the size and composition of armies. As such they were bound up with the divisions of opinion on the Parliamentary side.

The principal objectives of the Parliament in overseeing the Ordnance Office were to ensure the reliability of its employees, to prevent the misappropriation of supplies, to attempt to establish priorities for the issue of stores and to keep a check upon the condition of the magazines. As it became apparent that Parliament was faced with a war of indefinite duration and the problem of munitions supply became more acute, the state of the Ordnance Office and of its

its role in the provision of munitions and equipment generally. In the event, the Office was brought into the mainstream of munitions procurement in the following year as a result of the formation of the New Model Army and the establishment of the Army Committee. Yet the position of the Ordnance Office remained a subordinate one, since its function was confined to the checking, proving, storage and issue of munitions, clothing and equipment. Responsibility for placing contracts for the supply of both the Army and the public stores and for authorising payments to contractors was vested in the Army Committee and the Committee for Powder, Match and Shot. The greater part of the money expended on provisions for the land stores between 1645 and 1648 did not pass through the hands of the officers of the Ordnance.

In view of the importance of providing an adequate supply of munitions for Fairfax's army and the large sums of money involved, Parliament naturally wished to retain control of the process itself. It should also be remembered that the Ordnance Office was carrying on its traditional role of making provision for the Fleets during these years, a task which absorbed a great deal of its resources and occupied much of its employees' time.

The external supervision of the Ordnance Office continued after the Civil Wars, although different bodies were involved. In 1649 a commission was appointed to consider the position of the officers of the Navy and Customs. As a result recommendations were made for the reform of the Ordnance Office which were partially implemented. At this point it may be worth considering the relationship between the organisation of the Ordnance Office and that of the Navy administration during the Civil War period, for there was historically a close association between the Offices of the Ordnance and of the Navy.

As with the Ordnance Office, Parliament exercised close control over the running of the Navy through committees endowed with

stores became matters of increasing concern. ,

It is apparent that by the beginning of 1644 the ability of the Ordnance Office to continue even its role of supplying just ordnance and ammunition to the land forces depended wholly on the provision of sufficient resources to permit of replenishment of the stores on a significant scale. During the first eighteen months of the War the Office had been existing largely upon its reserves so far as the land stores were concerned. These were by now almost exhausted. Nearly all the money received by the officers of the Ordnance during this time came from the Navy treasurer, as it had done since the mid 1630's, whilst most of the funds raised for the purchase of munitions for the land forces were being channelled outside the Ordnance Office. Fortunately, by 1644 sums of money raised under the fiscal ordinances of the previous year were coming in, and it was possible to make some provision for the land stores.

The prolongation of the War meant that the supply of ammunition, powder, match and shot, became of crucial importance whether or not it was procured through the Ordnance Office. Steps were taken in 1644 and 1645 to provide the necessary administrative machinery, but the provision of ammunition continued to be hampered by a lack of funds and shortages of materials. A satisfactory means of financing the supply of domestic saltpetre had still not been found by 1648. Although sizeable quantities of ammunition of both English and foreign origin were procured through the Ordnance Office for land service from 1644 onwards, a large section of the Parliamentarian forces received only occasional or token supplies from the Tower and were obliged to look elsewhere for what they needed.

Although deliveries to the Ordnance Office land stores, mostly of ordnance and ammunition, were made during 1644, it was not apparent at that time that the Ordnance Office was going to enlarge

executive powers. The Navy Committee was responsible for finance and procurement of stores; and the Admiralty Committee exercised some of the powers of the Lord High Admiral between 1645 and 1648. As was the case with the various committees concerned with the Ordnance Office stores, the functions of the Navy and Admiralty Committees were not absolutely clear cut. A number of members of Parliament, including Sir Walter Erle, who were involved in the work of the Ordnance Office, were also associated with naval administration. The Ordnance Office therefore should not be regarded in isolation, but as part of the wider machinery of military administration in which a number of committees and individuals shared a common interest.

The traditional preoccupation of the Ordnance Office with the provision of munitions and equipment for the Navy was obscured somewhat during the Civil Wars and the Commonwealth by the need to make provision for the large scale conflict on land, sometimes to the detriment of the Navy stores, and by the emergence of the New Model Army which was supplied largely through the Ordnance Office. Committees were established expressly for the purpose of maintaining the land stores. However, by the mid 1650's the Ordnance Office was once again closely associated with the supply of the Navy, following the rejection of a proposal for making provision for the Navy the responsibility of a separate office. In 1655 the Office was formally placed under the control of the Admiralty Commissioners.

It is difficult to say whether or not the Ordnance Office was rendered more efficient by the supervision to which it was subjected during the Civil Wars. Certainly there must have been less scope for the grosser abuses such as the misappropriation of funds that had occurred in the past. Furthermore, the role of the Parliamentary committees in procurement reduced the opportunity for doubtful dealings between Ordnance Office personnel and outside contractors since the terms of the contract were in most cases settled outside

the Tower. One possible advantage that may be claimed for the reformed system of munitions procurement introduced in 1645 is that it may have helped to secure provisions for the Parliamentary forces, and the New Model in particular, at prices which were in some cases lower than those at which they had been provided in earlier years.

The absence of a Lieutenant of the Ordnance for about half of the Civil War period was rendered less significant by the external regulation of the Office and by the fact that Sir Walter Erle continued to exercise some of the functions of his office whilst it was in abeyance between 1645 and 1648.

However, the evidence which suggests a more efficient Ordnance Office during the Civil Wars is circumstantial at best and the most that can be said is that the climate prevailing during the Civil Wars was less conducive to maladministration than had been the case before 1642. Incidentally, one argument in favour of the concentration of munitions procurement in the hands of specialist committees in 1645 and the canalisation of procurement for the principal army through the Ordnance Office was that as a result of the first few years of fighting Parliament was faced through its Accounts Committee with the task of unravelling and reckoning the cost of a multitude of financial transactions conducted on behalf of its forces up and down the country. Munitions did not constitute the most important element in these outstanding claims against the Parliament, but they were nevertheless a significant one.

It would be unrealistic to expect any fundamental developments affecting Ordnance Office organisation under civil war conditions, when improvised administrative and financial arrangements prevailed. Resources for the expansion of the permanent establishment were lacking and the likelihood of new departures in administrative methods arousing political disagreement was also an obstacle to change. The senior officers of the Ordnance appointed by Parliament were not

confirmed in their posts until 1648. The organisational response of the Ordnance Office to the increased demand for munitions took the form of expanding the labour force outside the permanent sector of the establishment and increasing the number of outside contractors who dealt with the Office. The emphasis was upon maintenance of established procedures in the face of political and military uncertainty, rather than indulgence in innovation.

Yet in spite of this the Civil War years were in a sense the harbinger of change. When the pattern of English military activity changed from one of occasional expeditions against the Scots and Irish or to the Continent, towards the formation of a permanent army, there were bound to be repercussions upon the ways in which the procurement of munitions was organised. The likely trend would be in the direction of centralisation, and such a development would be potentially favourable to the Ordnance Office.

There is an inkling of such a change during the years 1645 to 1648, and some further progress along these lines later in the century, although many of the old difficulties facing the Ordnance Office remained. The expansion and professionalisation of the Ordnance Office would be necessary before it could effectively undertake a wider role in the supply of the country's forces on land and sea. Such a development could only come about within the context of an improvement in the administrative efficiency and financial resources of central government as a whole.

The role of the Ordnance Office as a supplier of the Parliamentary land forces was conditioned firstly by the nature and quantities of munitions that were in store at the outset, and secondly by the measures which Parliament took to replenish and augment those stores thereafter. From August 1642 until the spring of 1644 the Ordnance Office fulfilled much the same role as it had done in the past by supplying out of its existing stocks ordnance and ammunition

to the armies, local forces and garrisons and the City of London, whilst the procurement of other kinds of munitions was undertaken largely by other means. Of the principal Parliamentary armies of these earlier years, only that of the Earl of Essex received munitions from the Ordnance Office stores in any great quantity. By the end of the first eighteen months the land stores at the Tower were virtually exhausted. Even though the contribution of the Ordnance Office in terms of ordnance and ammunition delivered during this period was not insignificant, as may be seen from the appendices, the Office could do no more than to supply a part of the Parliamentary land forces with some of the munitions that they required.

On the other hand, it can be argued that the quantities of munitions delivered by the Ordnance Office between 1642 and 1644 for land service, which for 1643 alone were valued at £83,000 by the officers, represented a valuable resource which for want of sufficient time and money could not have been provided on a comparable scale from elsewhere.

An influx of fresh supplies into the Ordnance Office land stores began in 1644, although the amounts provided were sufficient only to go part of the way towards meeting the needs of the Parliamentary forces, chiefly in respect of gunpowder, match and shot. Then in 1645 the situation was transformed by the designation of the Ordnance Office as the repository of the stores contracted for by the Army Committee, whereas munitions procured by committees and their agents for the previous armies had been stores mainly outside the Tower. The greater part of the munitions, clothing and equipment ordered for Sir Thomas Fairfax's army passed through the Ordnance Office.

Although shortages still occurred during 1645, 1646 and 1648, especially where ammunition was concerned, it would appear from the records that some unexpended munitions had accumulated in the stores

of the New Model Army at the close of the First Civil War. This factor, together with the procurement of greater quantities of match and shot in the later years of the Civil Wars, led to an improvement in the supply situation. The Ordnance Office therefore made its most comprehensive contribution to the supply of the Parliamentary land forces during the years 1645 to 1648.

There is also a suggestion in the records that the munitions, clothing and equipment procured at this time were no more expensive and possibly cheaper in some instances than those which were not obtained through the Ordnance Office. This shows that procurement through the Office need not necessarily compare unfavourably in terms of speed of delivery and cost with purchase through other channels. Yet even in these later years, the Ordnance Office was making a significant contribution to no more than a minority of the Parliamentary forces throughout the country as a whole. It must be conceded that had the scale of fighting on land during the last three years of the Civil Wars equalled that of the first three years, then it is likely that the problem of munitions supply would have been more acute than it actually was. It was during the years 1644 to 1646, when the demand for munitions was at a peak, that the scale of provision both through the Ordnance Office and outside it most demonstrably failed to match the level required.

The difficulties encountered by the Ordnance Office during the Civil Wars could have been predicted with a knowledge of the situation at the Tower before 1642, so that in some ways the Office was facing the problems and displaying the shortcomings that had been apparent in earlier wars, with the additional complication of a civil war which restricted the capacity of the government to remedy the deficiencies.

A calculation of the total expenditure of the Ordnance Office during the Civil Wars embracing spending on both land and sea service is outside the scope of this work. However, we might suggest on the

strength of our estimates of expenditure on the land stores that the total amount spent by and on behalf of the Ordnance Office between 1642 and 1644 may have worked out at an average of around £70,000 a year. The probability is that expenditure was below the average in the earlier years and correspondingly higher in the later stages. If this supposition is correct, then it compares favourably with estimates of Ordnance Office expenditure at the time of the military adventures of the 1620's. It should also be remembered that considerable sums were in both cases expended on munitions procured outside the Office. On the other hand, an annual expenditure of £70,000 is not unduly large when compared with estimates of actual and projected expenditure during the post Restoration era. The events of the Civil War years provided a foretaste of the scale of resources in terms of money and organisation that would be required in order to maintain large land and sea forces on a regular rather than an occasional basis.

Finally, we can make some comparison between the organisation and functions of the respective Ordnance Offices of the King and Parliament. Both were particularly concerned with the provision of ordnance and their accessories, although the close association of the Oxford Ordnance Office with the train of artillery was not reproduced on the Parliamentary side. Guns and equipment were supplied to the trains of artillery of various armies from the Tower, but the organisation and even to some extent the equipping of the train remained wholly separate from the Office itself. There is only one recorded instance of a member of the Parliamentary Ordnance Office serving in the field.

Although nominally responsible for the provision of munitions to their respective forces as a whole, both Ordnance Offices were in practice associated most closely with one principal army in particular. On the one side this was the King's own army, and on the other the

army of the Earl of Essex and subsequently that of Sir Thomas Fairfax. Where the two organisations differed was in the supply of local forces and garrisons. The role of the Royalist Ordnance Office, which was not based upon any existing institution at Oxford, was inevitably conditioned by the circumstances in which it was set up. It was necessary to give priority to the most urgent task, namely, the provision of a train for the King's army and for detachments of that force. The nascent Ordnance Office did not have the resources to do more than this. The Parliamentary Ordnance Office, on the other hand, was able to make deliveries on a considerable scale out of its existing resources to local forces and garrisons, even though the land stores were (almost) exhausted in the process. The provision of fresh supplies to the land stores at the Tower did not assume significant proportions before 1644.

On both sides the working of the Ordnance Office was hampered by inadequate financial provision and in each case deals were made with contractors without reference to the Ordnance Office by individuals and bodies with access to the necessary funds. However, the Royalists were overtaken by the consequences of their growing military weakness before they could contemplate anything like the reform of munitions procurement along lines which Parliament had come to recognize as necessary by the end of 1644 and which it endeavoured to implement in the following year.

On the Parliamentary side, munitions procurement outside the Ordnance Office was of greater consequence in the early years of the War. There followed a movement towards the concentration of the business of procurement in the hands of specialist committees with the Ordnance Office acting as a central repository. But on the Royalist side there was something of a trend in the opposite direction as the War continued. Inspired by political motives and the fact that corporate as distinct from individual authority was less prominent

on the King's side than on his opponents', the preeminence of the Ordnance Office at Oxford was diminished in 1644 as a result of the formation of new magazines outside its jurisdiction and the removal of some of the responsibility for munitions administration from its hands.

The ultimate superiority of the Parliament in terms of men, money and materials was confirmed in the field of ordnance administration as it was in other spheres. Those superior resources did not make victory inevitable, but they weighed the scales increasingly in Parliament's favour as the conflict continued. It was essential for the King to secure a decisive victory or a settlement before Parliament acquired the will and the means to put its potentially greater resources to more effective use. As it gradually evolved, the Parliamentary machinery for administering and financing the War remained deficient in many respects but it was still better than anything the King was able to create. The Ordnance Office records on both sides testify to that fact.

Appendix one

Deliveries of gunpowder to the Ordnance Office stores for land service1643 - 1648¹

<u>1643</u>		<u>1644</u>	
Samuel Cordwell	220	Samuel Cordwell	1634
John Freeman	30	John Berisford	662
Various merchants	99	John Freeman	100
	<u>349</u> barrls.	Richard Hill	<u>52</u>
			2448 barrls.
<u>1645</u>		<u>1646</u>	
Samuel Cordwell	1948	Samuel Cordwell	250
John Berisford	2763	John Berisford	1870
Christopher Webb	100	Thomas Folsan	70
John Samin	14	Thomas Steventon	50
	<u>4825</u> barrls.	John Freeman	<u>50</u>
			2290 barrls.
<u>1647</u>		<u>1648</u>	
Samuel Cordwell	400	Robert Cordwell	410
John Berisford	1732	John Berisford	1390
John Samin	100	Thomas Andrewes	1000
Daniel Judd	67	John Samin	350
John Slade	15	Daniel Judd	200
	<u>2314</u> barrls.	George Boreman	70
		Thomas Folsan	<u>40</u>
Total 1643-1648 - 16686 barrls.		3460 barrls.	

1 W.O. 47/1 passim

W.O. 49/82 passim

W.O. 55/1660; 55/1662-55/1664 passim

S.P. 28/140 passim

Add. Mss. 25,585 ff. 5A, 55-56, 57; 35,332 ff. 17, 95

Another 600 barrels in addition to the above were ordered and paid for but not recorded in the receipts books.

Appendix two

Munitions supplied to the Ordnance Office stores for land service byJohn Browne 1644 - 1648¹

	<u>Ordnance</u>	<u>Round shot</u>	<u>Mortar shells</u>	<u>Hand grenades</u>
1644	17	2560		100
1645	2	6420	2335	
1646		3825	500	
1647		2100		
1648		14500		802
	<u>19</u>	<u>29405</u>	<u>2835</u>	<u>902</u>

¹ W.O. 49/82 passim

W.O. 55/1660 fr. 13-14, 22; 55/1662 pp. 28b-29b; 55/1663 ff. 5, 70, 80

Add. Mss. 25,585 f. 4

S.P. 28/140 fr. 144, 147

In 1643 a further 1,328 round shot and 105 hand grenades were delivered by Colonel Owen Rowe.

Appendix three

Munitions, clothing and equipment received into the Ordnance Office
stores for land service 1643 - 1648¹

	<u>Matchlock muskets</u>	<u>Snaphance muskets</u>	<u>Pistols</u>
1643	500		50 prs.
1644	500	200	200
1645	9491	1347	5345
1646	6850	1200	4010
1647	2600		1400
1648	<u>2443</u>	<u>2200</u>	<u>1500</u>
	22384	4947	12505 prs.

	<u>Swords</u>	<u>Pikes</u>	<u>Troop saddles</u>
1644		200	
1645		4560	4525
1646	300	5900	3360
1648	<u> </u>	<u>2040</u>	<u> </u>
	300	12790	7885

	<u>Match</u>		<u>Musket shot</u>	
	tons	cwt	tons	cwt
1644	70	8	29	14
1645	143	14	70	10
1646	164		37	
1647	70	9	16	
1648	<u>187</u>	<u>7</u>	<u>79</u>	<u>2</u>
	635	18	231	6

	<u>Coats</u>	<u>Breeches</u>	<u>Shirts</u>	<u>Shoes</u>
1645	6700	6200 prs.	9000	17600 prs.
1646	12000	12000	9000	16000
1648	<u>6000</u>	<u>6000</u>	<u>3000</u>	<u>3750</u>
	24700	24200 prs.	21000	37350 prs.

	<u>Stockings</u>	<u>Knapsacks</u>
1645	(11500) prs.	(9200)
1646	(12000)	(8400)
1648	3700	
	<hr/> 27200 prs.	<hr/> 17600

1 W.O. 49/82 passim

W.O. 55/1660 f. 8; 55/1662-55/1664 passim

Add. Mss. 25,585 ff. 46, 65

Returns to the stores of previously issued munitions and clothing have been omitted.

Appendix four

Munitions, clothing and equipment procured by the Army Committee and paid for, 1646 - 1648, but not recorded in the Ordnance Office receipts books¹

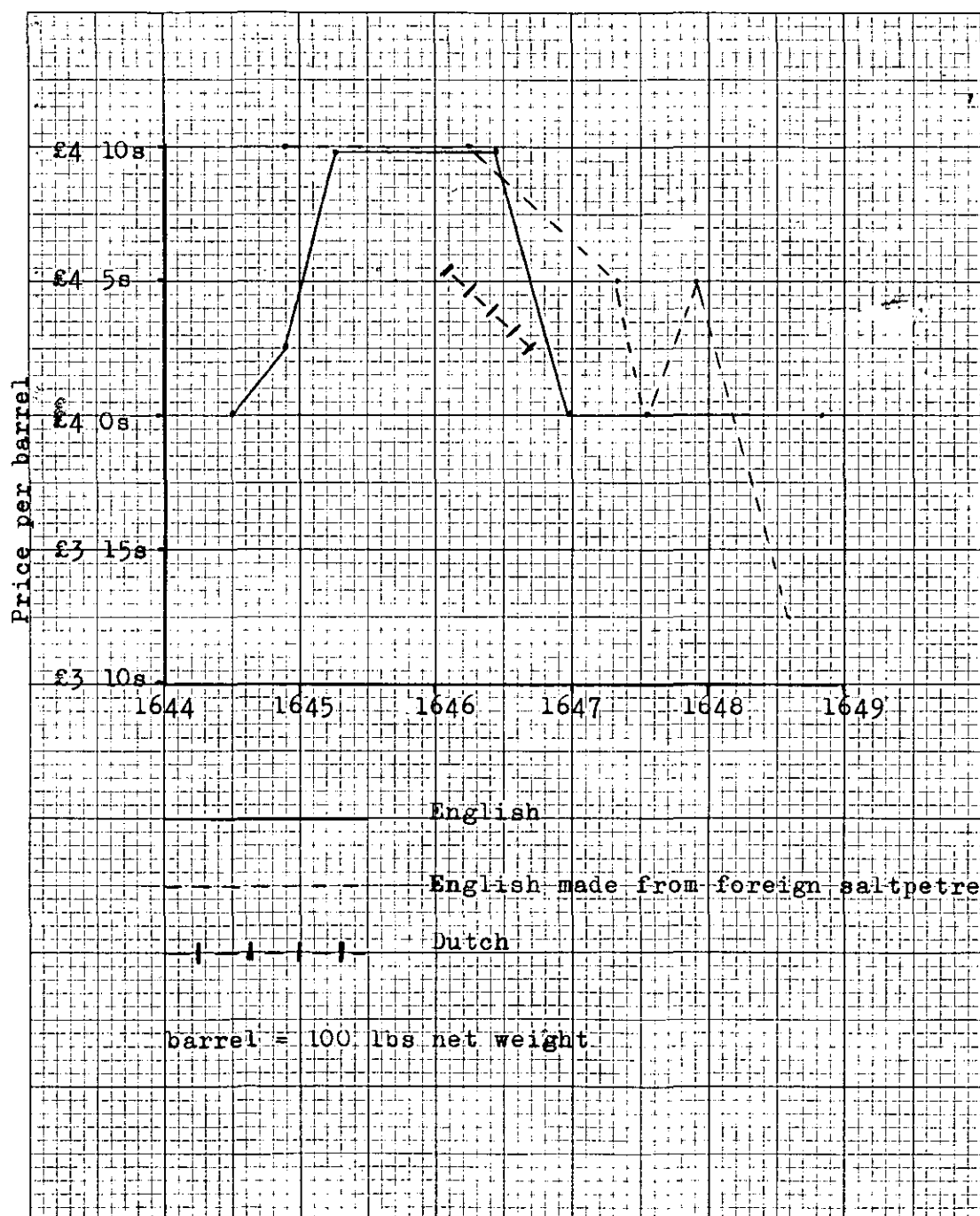
	<u>Matchlock muskets</u>	<u>Pistols</u>	<u>Swords</u>
1645	421	270 prs.	20400
1646	459	130	11400
1647	400	145	
1648			3500
	<u>1280</u>	<u>545 prs.</u>	<u>35300</u>
	<u>Pikes</u>	<u>Match</u>	<u>Musket shot</u>
1645	750		
1646	625		
1648		8 tons	1 ton
	<u>1375</u>		
	<u>Troop saddles</u>	<u>Coats</u>	<u>Breeches</u>
1645	100	10500	12500 prs.
1646	<u>650</u>	<u>2000</u>	<u>2000</u>
	750	12500	14500 prs.
	<u>Shirts</u>	<u>Shoes</u>	<u>Stockings</u>
1645		2000 prs.	2000 prs.
1646	6000	1000	
1648		<u>3600</u>	<u>2590</u>
		6600 prs.	4590 prs.

¹ S.P. 28/29 - 28/57 passim

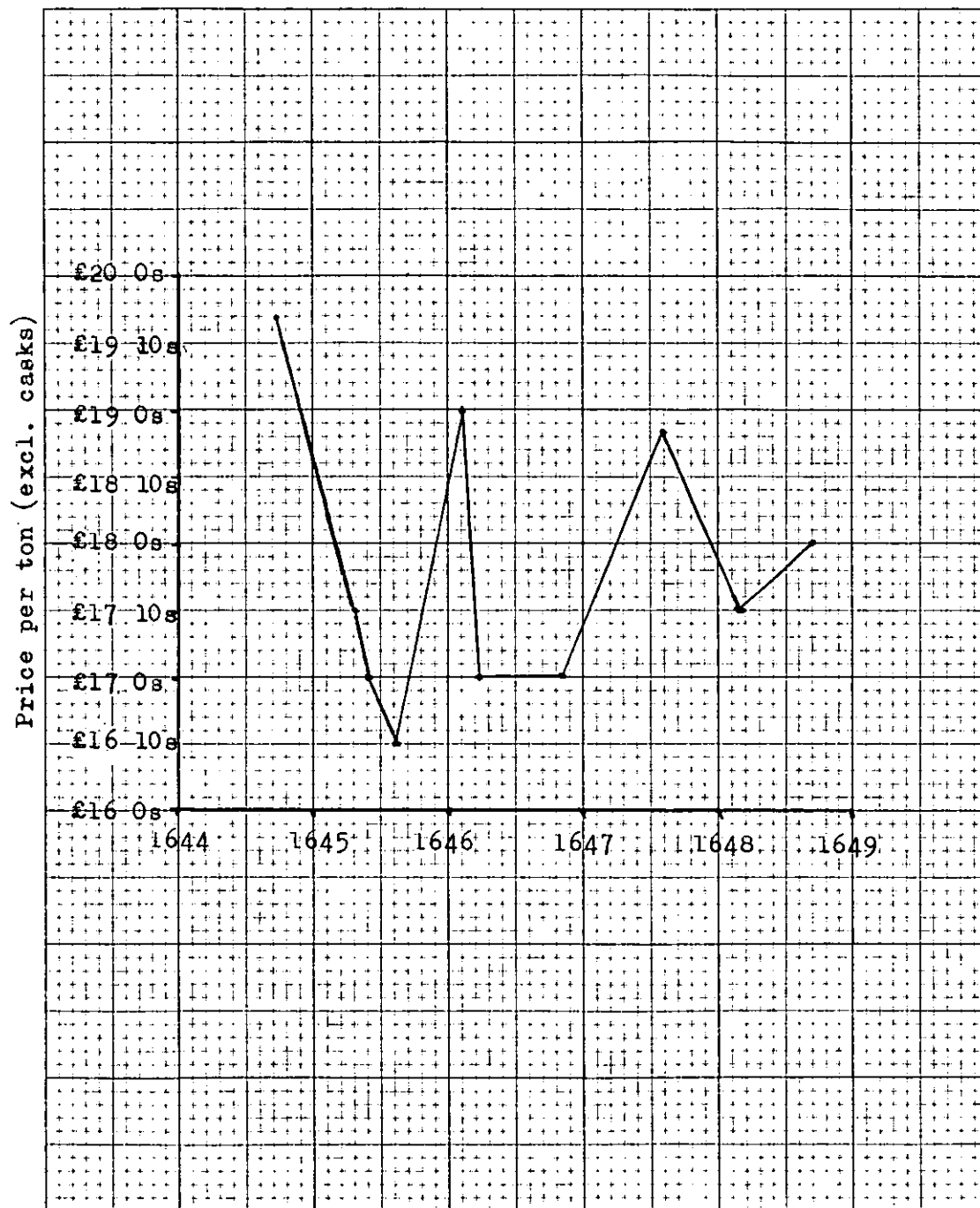
For deliveries of gunpowder in this category see footnote to Appendix one.

Appendix five

Prices of gunpowder, match and shot delivered to the Ordnance Office
stores for land service 1644 - 1648¹

(i) Gunpowder

¹ W.O. 47/1 passim
W.O. 49/82 passim
W.O. 55/1662, 1663 passim
S.P. 28/37 - 28/57 passim
L.M. 46-78/709 passim

(iii) Musket shot

Some prices of munitions, clothing and equipment delivered to theOrdnance Office stores for land service 1644 - 1648¹Matchlock muskets

Apr. 1645 - 11s 6d each
 Feb. 1646 - 10s 0d
 Oct. 1648 - 11s 6d.

Snaphance muskets

Apr. 1645 - 15s 6d each
 Nov. 1645 - 14s 0d
 Dec. 1645 - 14s 4d
 Jan. 1646 - 12s 4d
 Mar. 1646 - 13s 4d

Pistols with holsters

Oct. 1644 - £1 15s 6d pair
 Apr. 1645 - £1 7s 0d
 May 1645 - £1 6s 0d
 Nov. 1645 - £1 3s 0d
 Dec. 1645 - £1 0s 4d
 Mar. 1646 - £1 0s 4d

Iron ordnance

Sept. 1644 - £16 13s 4d per ton

Brass ordnance

Oct. 1644 - £20 per ton

Round shot

Jan. 1646 - £12 per ton

Swords with belts

Apr. 1645 - 5s 0d set
 Sept. 1645 - 4s 6d
 July 1645 - 5s 0d

Pikes

Oct. 1644 - 5s 0d each
 Apr. 1645 - 4s 2d
 Dec. 1645 - 3s 10d
 Oct. 1648 - 3s 10d

Troop saddles

Apr. 1645 - 17s each
 Nov. 1645 - 15s

Coats and breeches

Apr. 1645 - 16s set

Shirts

Apr. 1645 - 2s 10d each
 Sept. 1645 - 2s 6d

Stockings

Apr. 1645 - 1s 0d pair

Shoes

Apr. 1645 - 2s 3d pair

Knapsacks

Apr. 1645 - 9d each
 Dec. 1645 - 8d

¹ W.O. 47/1 passim
 W.O. 55/1660, 1662, 1663 passim
 S.P. 28/37 - 28/57 passim
 L.M. 46-78/709 passim

Appendix seven

Some prices paid for munitions and equipment procured for purposes
other than for the Ordnance Office stores 1642 - 1648¹

Matchlock muskets

Dec. 1642 - 15s each
Feb. 1643 - 13s
May 1643 - 10s
Aug. 1643 - 15s
May 1645 - 13s

Snaphance muskets

Feb. 1643 - £1 4s each
May 1645 - 17s

Pistols²

Aug. 1642 - £1 11s 0d pair
- £2 2s 0d
Nov. 1642 - £2 2s 6d
- £2 10s 0d
Feb. 1643 - £1 10s 0d
Mar. 1643 - £2 10s 0d
July 1643 - £2 0s 0d
May 1644 - £1 14s 0d

Swords

Oct. 1642 - 6s 8d each
- 7s 0d
Jan. 1643 - 7s 0d
Jun. 1643 - 7s 0d
Oct. 1644 - 2s 6d
Mar. 1646 - 3s 7d

Pikes

May 1645 - 4s 2d each

Gunpowder

Oct. 1642 - £4 10s 0d barrl.
Jan. 1643 - £4 6s 0d (imported)
Mar. 1643 - £4 6s 0d
Apr. 1643 - £4 10s 0d
- £4 4s 0d (imported)
May 1643 - £5 0s 0d (Boston)
July 1643 - 1s 6d lb ~~—~~ £8 barrl. (Pemb.)³
Aug. 1643 - £4 2s 0d
? 1644 - £5 0s 0d (Bedford)

Musket shot

Oct. 1642 - £14 10s per ton

Match

July 1643 - £20 per ton
Aug. 1643 - £32

Troop saddles

Oct. 1642 - £1 5s each

Dec. 1642 → £2 10s

Feb. 1643 - £2 8s

May 1643 - £1 14s

Apr. 1644 - £1 0s

- 1 Except where indicated, the examples are drawn from the Commonwealth Exchequer Papers (S.P. 28). The munitions were purchased in London unless otherwise indicated.
- 2 The more expensive pistols costing £3 per pair or more may well have been more elaborate weapons of superior workmanship which were not issued to the ordinary trooper.
- 3 Charles, B. Cal. of the records of the borough of Haverfordwest p. 74

Appendix eight

Munitions purchased by Owen Rowe and John Bradley on behalf of the
Committee of Safety Sept. 1642 - Sept. 1643¹

<u>Matchlock muskets</u>	<u>Snaphance muskets</u>	<u>Pistols</u>
8173	25	4315½ prs.
<u>Swords</u>	<u>Pikes</u>	<u>Troop saddles</u>
3000	2428	160
<u>Gunpowder</u>	<u>Match</u>	
362 barrls.	40 tons 12 cwts	

- ¹ S.P. 28/2A - 28/27; 28/261 - 28/264 passim
In addition; 16,127 swords and 8 tons 18 cwts of lead shot purchased
by the City Militia Company in Oct. and Dec. 1642 were delivered into
the care of Rowe and Bradley.

Appendix nine

Deliveries to the armies commanded by the Earl of Essex from the
Ordnance Office land stores 1642 - 1644¹

	<u>Muskets</u>	<u>Pistols</u>	<u>Swords</u>
1642 (Aug.-Dec)	2870	140 prs.	2439
1643	400		
1644		40	
	<hr/> 3270	<hr/> 180 prs.	
	<u>Pikes</u>	<u>Ordnance</u>	<u>Gunpowder</u>
1642 (Aug.-Dec.)	770	23	416 barrls.
1643		10	66
1644		11	704
		<hr/> 44	<hr/> 1186 barrls.
	<u>Match</u>	<u>Musket shot</u>	<u>Round shot</u>
	tons cwt	tons cwt	
1642 (Aug.-Dec.)	35 2	61 9	5712
1643	33 18	2	4730
1644	26 0	18 0	1460
	<hr/> 95 0 ²	<hr/> 79 11	<hr/> 11902
	<u>Mortar shells</u>	<u>Hand grenades</u>	<u>Troop saddles</u>
1642 (Aug.-Dec.)	498		
1643		200	204

1 W.O. 55/387; 55/457; 55/460; 55/1754; 55/1937 passim

W.O. 47/1 passim

Add. Mss. 34,315 passim

Additional unspecified quantities of swords and musket shot were also delivered. Some of the munitions delivered in 1644 were intended for the joint use of the armies of Essex, Waller and Manchester before the second battle of Newbury.

2 Some quantities of match are expressed in fats in the records. A fat contained on average 10 cwts of match.

Appendix ten

Deliveries for the defence of London from the Ordnance Office landstores 1642 - 1644¹

	<u>Muskets</u>	<u>Swords</u>	<u>Pikes</u>	
1642 (Aug.-Dec.)		6		
1643	100		300	
	<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>	
			tons	cwt
1642 (Aug.-Dec.)	10	29 barrls.	12	
1643	125	56	2	4
1644	4			
	<hr/>	<hr/>	<hr/>	<hr/>
	139	85 barrls.	2	16
	<u>Musket shot</u>	<u>Round shot</u>	<u>Mortar shells</u>	
	tons			
	cwt			
1642 (Aug.-Dec.)	8	400		
1643	15	9287		40
	<hr/>	<hr/>		
	1	9687		
	<u>Hand grenades</u>	<u>Petards</u>		
1643	800	11		

1 W.O. 55/387; 55/1754; 55/1937 passim

Add. Mss. 34,315 ff. 1, 12, 33, 37

Appendix eleven

Deliveries to local forces and garrisons from the Ordnance Office land
stores 1642 - 1648¹

	<u>Matchlock muskets</u>	<u>Snaphance muskets</u>	<u>Pistols</u>
1642 (Aug.-Dec.)	40		
1643	1100		
1644			50 prs.
1645	1200		250
1646	1000	100	80
1648	2750	810	700
	<hr/> 6090	<hr/> 910	<hr/> 1080 prs.
	<u>Swords</u>	<u>Pikes</u>	<u>Ordnance</u>
1642 (Aug.-Dec.)	30		39
1643		1851	179
1644		20	27
1645		200	3
1646			1
1647	300		
1648		1540	14
	<hr/> 330	<hr/> 3611	<hr/> 263
	<u>Gunpowder</u>	<u>Match</u>	<u>Musket shot</u>
		tons cwt	tons cwt
1642 (Aug.-Dec.)	111 barrls.	8 1	1 14
1643	349	20 17	1 8
1644	1344	12 10	40 barrls.
1645	1948	39 4	9 12
1646	790	79 0	18 19
1647	190	12 19	2 0
1648	2021	115 11	49 10
	<hr/> 6753 barrls.	<hr/> 288 12	<hr/> 83 3 + 40 barrls.

	<u>Round shot</u>	<u>Mortar shells</u>	<u>Hand grenades</u>
1642 (Aug.-Dec.)	2520	6	
1643	15574	452	1085
1644	10060	820	300
1645	3120	600	40
1646	725		
1647	5900		
1648	9794		1450
	<hr/> 47693	<hr/> 1878	<hr/> 2875

	<u>Petards</u>	<u>Troop saddles</u>	<u>Coats</u>
1644	3		
1645	2	50	
1646		100	
1648		300	100
	<hr/> 5	<hr/> 450	
	<u>Breeches</u>	<u>Shoes</u>	<u>Stockings</u>
1648	100 prs.	2480 prs.	3055 prs.

1 W.O. 55/387; 55/460; 55/461; 55/1646; 55/1754; 55/1937 passim
W.O. 47/1 passim
Add. Mss. 34,315; 35,332 passim

Appendix twelve

Deliveries to the army commanded by the Earl of Manchester from the
Ordnance Office land stores 1643 - 1644¹

	<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>	
			tons	cwt
1643	9	33 barrls.	1	2
1644	2	100		
	—	—		
	11	133 barrls.		
	<u>Round shot</u>	<u>Mortar shells</u>	<u>Hand grenades</u>	
1643	60	40		60
	<u>Petards</u>			
1643	6			

¹ Add. Mss. 34,315 ff. 24, 25, 48, 69
See also Appendix fourteen

Appendix thirteen

Deliveries to the armies commanded by Sir William Waller from the
Ordnance Office land stores 1643 - 1645¹

	<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>
1643		50 barrls.	4 tons
1644	3	150	5
1645	6	60	2
	—	—	—
	9	260 barrls.	11 tons
	<u>Musket shot</u>	<u>Round shot</u>	<u>Mortar shells</u>
	tons cwt		
1643		800	30
1644	2 5	360	
1645	2 0	470	
	—	—	
	4 5	1630	
	<u>Hand grenades</u>		
1643	190		
1644	100		
1645	100		
	—		
	390		

¹ Add. Mss. 34,315 passim
W.O. 55/1646 pp. 4, 20, 21

Appendix fourteen

Deliveries to the English and Scottish armies in the North from the
Ordnance Office land stores June - July 1644¹

<u>Gunpowder</u>	<u>Match</u>	<u>Musket shot</u>	<u>Round shot</u>
500 barrls.	15 tons	4 tons	3700

¹ Add. Mss. 34,315 ff. 53, 57, 64, 71
These amounts are in addition to deliveries made to the English and Scottish armies individually and which are recorded in the other appendices.

Appendix fifteen

Munitions borrowed from the Navy magazine for land service 1643 - 1648¹

	<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>	
			tons	cwt
1643		260 barrls		
1644	2	270		
1645	6	620	5	0
1646		484	3	10
1647		200		
1648	2	2		
	<hr/>	<hr/>	<hr/>	<hr/>
	10	1836 barrls.	8	10
	<u>Musket shot</u>	<u>Round shot</u>		
	tons			
	cwt			
1645	4	10		1200
1646	1	0		1800
1648				7774
	<hr/>	<hr/>		<hr/>
	5	10		10774

¹ Add. Mss. 34,315; 35,332 passim

W.O. 47/1 passim

W.O. 55/460 ff. 13, 20, 32; 55/1646 passim

Deliveries out of ships' stores for land service are not included.

Appendix sixteen

(A) Deliveries to the Scottish army in England from the Ordnance Office
land stores 1644 - 1645¹

	<u>Gunpowder</u>	<u>Match</u>	<u>Musket shot</u>
1644	200 barrls.		
1645		5 tons	5 tons

(B) Deliveries to the Scottish train of artillery from all sources
1644 - 1646²(i) Delivered at the Scottish charge

<u>Swords</u>	<u>Ordnance</u>	<u>Gunpowder</u>	<u>Match</u>
			tons cwt
359	15	964 barrls.	48. 3
<u>Musket shot</u>	<u>Round shot</u>	<u>Mortar shells</u>	<u>Hand grenades</u>
tons cwt			
44 7	1609	3	219

Petards

2

(ii) Delivered at the English charge

<u>Gunpowder</u>	<u>Match</u>	<u>Musket shot</u>	<u>Round shot</u>
	tons cwt	tons cwt	
1215 barrls.	109 8	64 1	1519
<u>Mortar shells</u>	<u>Hand grenades</u>		
26	160		

(C) Deliveries to the Scottish regiments of horse and foot from all
sources 1644 - 1646³

<u>Matchlock muskets</u>	<u>Snaphance muskets</u>	<u>Pistols</u>	<u>Swords</u>
7717	124	993 prs.	1888
<u>Pikes</u>	<u>Gunpowder</u>	<u>Match</u>	
		tons cwt	
4679	1106 barrls.	80 18	

1 Add. Mss. 34,315 ff. 46, 64
W.O. 55/1646 p. 170

2 Terry, C.S. Papers relating to the Army of the Solemn League and Covenant vol. 1 pp. 15-17, 23, 25-26, 27, 28

3 op. cit. vol. 1 pp. 39-139

Appendix seventeen

Deliveries to the Army commanded by Sir Thomas Fairfax from the
Ordnance Office land stores 1645 - 1648¹

	<u>Matchlock muskets</u>	<u>Snaphance muskets</u>	<u>Pistols</u>
1645 (Mar.-Dec.)	10010	894	3944 prs.
1646	6470	199	2177
1647	740	500	1900
1648	2000	1550	695
	<hr/>	<hr/>	<hr/>
	19220	3143	8716 prs.
	<u>Swords</u>	<u>Pikes</u>	<u>Ordnance</u>
1645 (Mar.-Dec.)		3450	20
1646		3018	
1647	2000	1060	
1648		1100	10
		<hr/>	<hr/>
		8628	30
	<u>Gunpowder</u>	<u>Match</u>	<u>Musket shot</u>
		tons cwt	tons cwt
1645 (Mar.-Dec.)	919 barrls.	49 10	16 6 +153 barrls.
1646	1093	41 16	22 0 + 31 barrls.
1647	500	20 0	100 barrls.
1648	1510	131 0	28 6
	<hr/>	<hr/>	<hr/>
	4022 barrls.	242 6	66 15 +284 barrls.
	<u>Round shot</u>	<u>Mortar shells</u>	<u>Hand grenades</u>
1645 (Mar.-Dec.)	6161	270	1000
1646	200	150	
1648	5490	186	100
	<hr/>	<hr/>	<hr/>
	11581	606	1100

	<u>Petards</u>	<u>Troop saddles</u>	<u>Dragoon saddles</u>
1645 (Mar.-Dec.)	4	4659	738
1646		1671	299
1648	2	2565	
	—	—	—
	6	8895	1037
	<u>Coats</u>	<u>Breeches</u>	<u>Shirts</u>
1645 (Mar.-Dec.)	6700	6700 prs.	9000
1646	10110	10539	9278
1648	6316	7456	
	—	—	—
	23126	24695 prs.	18278
	<u>Shoes</u>	<u>Stockings</u>	<u>Knapsacks</u>
1645 (Mar.-Dec.)	16500 prs.	9000 prs.	9700
1646	12104	9788	8545
1648	1060	1060	
	—	—	—
	29664 prs.	19848 prs.	18245

1 W.O. 47/1 passim
W.O. 55/461; 55/1646 passim
Add. Mss. 35,332 passim

Appendix eighteen

Deliveries to the forces serving or appointed to serve in Ireland from
the Ordnance Office land stores during 1647¹

<u>Muskets</u>	<u>Pikes</u>	<u>Gunpowder</u>	<u>Coats</u>
1366	634	100 barrls.	1050
<u>Shirts</u>	<u>Shoes</u>	<u>Stockings</u>	<u>Knapsacks</u>
408	1000 prs.	1000 prs.	1050

1 Add. Mss. 35,332 ff. 49, 50-51

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