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A B S T R A C T

Supply Services of English Armed Forces 1509-50.

This thesis attempts to trace the effect of the increased size and complexity of armies and navies in the early XVIth Century on the English supply services, and also to analyse selected campaigns as a test of governmental efficiency.

The provision of ships, guns, gunpowder, and hand-weapons is first discussed, in relation to national self-sufficiency. Ship timber was occasionally imported, but England could, if necessary, have done without foreign supplies; the timber problem was not a pressing one at this period. Naval stores (pitch, cordage etc.) on the other hand, were almost always imported, and the Baltic had thus already acquired something of its later strategic importance. Equally important were the Netherlands. In 1509 all but the smallest artillery was obtained there. This was remedied by the beginning of large-scale bronze and cast-iron gun-manufacture in England; but England still depended on the Netherlands in 1550 for saltpetre (for gunpowder) and copper (for bronze).

Werner Sombart's contention that military requirements stimulated the growth of large-scale industry is discussed; shipbuilding and cannon-founding support his argument, provided that the small-scale of industry in general at this period is borne in mind.

The administration of the Navy, the Ordnance, and the armoury is then described. In general a gradual evolution

towards a more "bureaucratic" constitution took place for the Navy and the Ordnance. This began simply as a multiplication of the number of offices to deal with the expanded services. Nevertheless, the similarity between the development of the Navy Board and of the Board of Ordnance is noticeable, and by analogy with the Office of Works, the existence in the 1530s of a definite blueprint for the constitution of these spending departments is suggested. The backgrounds of the officials are investigated, and the very high official fees paid to the naval officials of the 1540s and after are noted; attempts are made, as far as the limited evidence will allow, to discuss the question of perquisites and other attractions of office.

In victualling, by contrast, there was no permanent organisation, except for naval victualling, and that only after 1550. The improvisation of a victualling service in time of war is discussed, the backgrounds of the victuallers themselves is described, and some cases of dishonesty brought to light. Transport difficulties are shown to have concentrated the burden of supplying armies and navies on coastal areas and areas served by rivers flowing into the North Sea, especially East Anglia. Military requirements may have contributed to short-term high prices, but not on a sufficiently large-scale to stimulate significant agricultural investment in the areas concerned. Purveyance is shown to have been at this period a device to prevent war-time profiteering, rather than an attempt by the Crown to buy at unfairly cheap rates.

Finally the campaigns of 1512-3, 1522-3, and 1542-50 are analysed. During Wolsey's period of office the supply machinery was of a rather "amateur" nature. It was possible to mount a successful campaign, provided that the initial planning was thorough, and the aims realisticelly limited, as they were in 1513. But more often campaigns ended in disaster for which Wolsey himself must bear a good deal of the blame, for faulty planning and rank negligence. The 1540s provide notable contrast. There was a noticeably more "professional" air about supply administration in general, in the still ad hoc victualling service, as well as in the now bureaucratically organised navy and ordnance. Sensible planning by members of the Privy Council, especially William Pawlett (Lord St. John) and Bishop Gardiner played an important part. Administrative reform plainly was not an infellible prescription for military success. Nevertheless, England at this period had made an impressive attempt to meet the challenge of changed conditions, both in administration and in the supply of matériel.

SUPPLY SERVICES OF ENGLISH ARMED FORCES, 1509-50

A thesis submitted for the degree of
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by

Clifford Stephen Lloyd Davies

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NOTE

Brigadier O.F.G.Hogg's English Artillery 1326-1716 (1963) was published after the completion of this thesis. It contains nothing which would cause me to modify either the general theme or the details of the thesis, but does include (pp.80-102) a rather fuller account of the ordnance administration in the

XIVth and XVth Centuries than was available in Brigadier Hogg's previous work (see below p.119).

ABBREVIATIONS

Add.	Addendum, addenda, additional.
A.P.C.	Acts of the Privy Council.
B.I.H.R.	Bulletin of the Institute of Historical Research
B.M.	British Museum
	Add.Ch. Additional Charters
	Calig. Caligula
	Harl. Harleian.
Cant.C.C.	Consistory Court of Canterbury
C.P.R.	Calendar of Patent Rolls
C.Sc.P.	Calendar of Scottish Papers
C.S.P.(Dom)	Calendar of State Papers, (Domestic)
C.S.P.(Sp)	Calendar of State Papers (Spanish)
C.S.P.(Sp)Spl	Calendar of State Papers (Spanish)-Supplementary
C.S.P.(Ven)	Calendar of State Papers (Venetian)
D.N.B.	Dictionary of National Biography
E.H.R.	English Historical Review
Econ.H.R.	Economic History Review
G.E.C.	V.Gibbs, H.A.Doubleday and others: The Complete Peerage
Gruffydd	Chronicle of Ellis Gruffydd (q.v. in bibliography, p.ix; volume numbers refer to Volumes of the Bulletin of the . . . Fouad I University)
H.M.C.	Historical Manuscripts Commission
H.P	Hamilton Papers
Inq.P.M.	Inquisition(s) Post Mortem

J.S.A.H.R.	Journal of the Society of Army Historical Research
L.P.	Letters and Papers. . . of Henry VIII
M.M.	Mariner's Mirror
N.R.S.	Navy Records Society
N.S.	New Series
O.E.D.	Oxford English Dictionary
P.R.O.	Public Record Office
Sc.	Scotland, Scottish
St.P.	State Papers. . . Henry VIII
T.E.D.	Tudor Economic Documents (ed. Tawney and Power)
T.R.H.S.	Transactions of the Royal Historical Society
V.C.H.	Victoria County History

NOTES

Dates are given "old style", but the year is taken as beginning on January 1st.

Manuscripts cited are in the Public Record Office, unless otherwise indicated. Public Record Office manuscripts are referred to by their call numbers (see bibliography for key).

Acts of Parliament are cited from the 1810-28 edition of Statutes of the Realm.

Books are cited in full on first mention, and then usually by the author's surname and shortened title.

GLOSSARY

Almain-rivet : a light armour composed of overlapping plates sliding on rivets.

Base: ✱

Bill : a long-handled weapon with a cutting edge and a pike-head,but with a shorter shaft than a pike.

Bombard : ✱

Culverin : ✱

Curtow : ✱

Demi-hake : a small arquebus.

Demi-lance : a lance with a short shaft; a light horseman so armed.

Falcon : ✱

Falconet : ✱

Fowler : ✱

Hacbutt : arquebus.

Harness : body-armour.

Holy-water sprinkler : a spiked mace.

Last : a variable measurement (for gunpowder,2400 lbs. or 24 barrels)

Lymoner : a heavy draught-horse.

Morris-pike : a form of pike, believed, by contemporaries, to be derived from Moorish practice.

Perrier : ✱

Port-piece : ✱

Saker : ✱

Wey : a measure of cheese of variable quantity (256 lbs. in Suffolk)

✱ Names of types of guns:see Appendix B,p.299.

INTRODUCTION

The first half of the XVIth Century was a period of decisive change in European military history.[1] The series of victories of the Swiss infantry against Charles the Bold in 1476-7 had made obvious the superiority of a drilled, disciplined, phalanx of pikemen against the heavy cavalry which, with some exceptions, had dominated the battle-field since the VIIIth Century. From 1477 to 1522 Swiss mercenaries or the corps of German Landsknechte, formed in imitation of the Swiss, provided the essential core of West European armies. The essence of the new tactics was a combination of mass and impetus; and such conditions obviously laid a great premium on numbers, and fostered growth in the size of armies. At the same time the widespread (if unjustified[2]) belief in the usefulness of heavy guns in battle encumbered armies with enormous ordnance trains.[3] The painfully slow movement of these great guns (James V's travelled south at less than 8 miles a day in 1513 [4]) would have been enough in itself to make

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1. For what follows see Michael Roberts Gustavus Adolphus, II pp 169-89, and The Military Revolution; J.R. Hale Armies, Navies, and the Art of War, (New Cambridge Modern History, II pp 481-509); F. Braudel La Méditerranée, Chapters IV (pp 509-51) & VII (pp 661-722).

2. Machiavelli L'Arte della Guerra, (ed E. Barbarich, Florence, 1929) pp 72-6; G. Dickinson, introduction to Fourquevaux Instructions sur le Faict de la Guerre, p xliv.

3. Henry VIII in 1523 thought that "the wetenes of the cuntre... shall not suffre his army to march with artillery, either groce inough for batery, or sufficient for the feld." (St P, I p 137).

4. W.M. Mackenzie The Secret of Flodden, p 51.

impossible the wide-ranging chevauchées of some mediaeval campaigns, on which troops had lived off the country. Henceforth armies depended on their lines of supply. Administrative machinery was still too primitive to mount a large-scale invasion which could penetrate deep into the enemy's homeland. Campaigns were generally confined to the devastation of border country, and the occasional capture of a town or fortress; exceptionally they resulted in the winning of a battle which brought little but prestige and, very rarely, (as at Pavia) important prisoners.[1]

The static nature of war increased after 1520. Improvements in handguns meant that the solid phalanx could no longer be used offensively without being shot to pieces. Handguns themselves were too unwieldy for offensive use. None of the attempts at a combination of guns and pikes restored the absolute superiority which the Swiss had once enjoyed. Yet the traditional offensive arm, the cavalry, was even less likely to make any impression on infantry now that pikemen were reinforced by gunmen, provided that the foot-soldiers'

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1. Not, of course, that mediaeval warfare was absolutely different. If the defenders could avoid battle and not surrender their fortresses, the coming of winter or a shortage of money would compel the invader to retreat (R.C. Small Crusading Warfare pp 62-3). But XVIth Century armies were tied more firmly to their base than mediaeval ones; chevauchées such as those of the Black Prince and John of Gaunt were no longer practical.

morale and training was sufficient to stand the shock of a cavalry charge. Meanwhile considerable advances in the art of fortification meant that sieges became even more tedious than usual. War had resolved itself into one of its habitual periods of deadlock, from which it was not to be freed until Gustavus Adolphus's intervention in Germany.

At the same time there had been a revolution in naval warfare. Here, the outstanding fact is again the advance of artillery. Ships ceased to be merely platforms for soldiers and became platforms for guns. The old dualism by which the warship was only a hastily-adapted merchantman came to an end. Specially designed warships had to be built, incapable of making any profit except by privateering, and provided with an expensive armament. The Mercers Company declined the opportunity of hiring a royal ship in 1521, on the grounds that a warship would be too large for the Zealand trade; they instanced the narrow escape from shipwreck of the King's Peter Pomegranate while serving as a merchantman.[1] The possession of a permanent fleet was henceforth an unavoidable drain on the resources of western maritime states. Moreover, the cost of these fleets in wartime was considerable, for the transition to the man-of-war was by no means complete (the first large-scale naval artillery battle in Western

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1. Acts of the Mercers Company 1453-1527 pp 522-3

European waters was the Armada campaign [1]), and ships still carried sufficient soldiers for an old-fashioned grapple-and-board battle. As during the Armada campaign, royal warships were accompanied by a mass of impressed merchant shipping, all heavily laden with soldiers. Braudel's description of the Mediterranean galley-fleets applies equally well to the sailing ships of Western Europe; "de véritables villes voyageuses, qui dévorent crédits et ravitaillements."[2]

War had thus become much more expensive; numbers, guns, new fortifications, the general lack of decisive battles, the provision of warships, all had their price. Even more than in the past war depended on the economic resources of the belligerents, and on their power to mobilise these resources. But the ability to raise money was not all. Equally important was the sheer administrative task of organising transport, of seeing to the provision of adequate food and munitions, of cajoling or threatening untrained soldiers so that they would not desert at the first setback. To quote Braudel once more, war was "la grande épreuve des états." [3]

England was less affected by these developments than the other European states. She could obviously keep out of European wars except when her rulers chose to intervene; and

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1. M. [A] Lewis Armada Guns p 10.
2. Méditerranée p 665.
3. Méditerranée p 539.

while the land frontier with Scotland was a constant irritation, the border was too far from any important English towns, the country in which it was situated too wild to provide an adequate supply base, for the Scots to be a serious aggressive menace. Hence England had no professiona army; while, as far as their personal armament was concerned, and especially the provision of pikes and handguns, English troops were distinctly old-fashioned. Nevertheless, when England did intervene on the continent, she had to field an army which would be a match in size, at least, for those it would meet; and it had to be (and was) provided with the most modern artillery. Moreover, England was a pioneer in the naval revolution, Henry VII building the heavily-armed Sovereign and Regent and Henry VIII setting about the provision of a large fleet immediately after his accession. Their motive can only be guessed. Partly doubtless it was prestige. The Henry Grace à Dieu, for instance, may have been a reply to the similar Scottish white elephant, the Great St. Michael (begun in 1506, launched in 1511).[1] Partly too, although the French royal navy dates only from the reign of Francis I [2],

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1. W. Stanford Reid Skipper from Leith pp 81,99.

2. C de la Roncière Histoire de la Marine Francaise II p 454. The building of le Havre began only in 1517, 22 years after Henry VII's foundation of Portsmouth Dockyard (ibid III pp 174-5; M. Oppenheim Accounts and Inventories of Henry VII p xxxvii).

the consolidation of French control over Brittany was a danger to English security.[1] Even with Henry VIII's fleet, however, England gained no undisputed mastery of the Narrow Seas. To the expense of the navy, therefore, must be added that of the range of new castles erected along the South Coast from 1539 onwards. Even in England, war provided a new challenge to the strength and adaptability of the state.

A complete study of this situation would involve the whole problem of royal income; it would also involve a review of the European diplomatic scene, discussion of the wisdom of the policies of peace or war, questions for instance, such as whether Boulogne, even if captured, was likely to bring advantage to the King or his subjects. Such a study would obviously be too large for the confines of a ~~dossertion~~ dissertation; it would, indeed, be the task of a lifetime.

Our purpose is more modest. The question which we are asking is not "were the war-aims desirable?" but "given these aims, how well were they fulfilled?". This restricted questior serves two important purposes. First, it provides a study of the degree of adaptability of governments to new circumstances. On the one hand we shall trace the growth of new departments of state to provide for the requirements of the newly-built fleet and the greatly enlarged royal artillery, thus providing a

---

1. Before Francis' I reign the French had a ~~monarchy~~ hierarchy of royal naval officials; an indication of the war potential still possessed by the merchant marine. (R. Doucet Institutions de la France II p 653).

study of some spending departments to set beside recent work on the revenue courts.[1] On the other hand, the victualling service provides an insight into that ad hoc improvised machinery which was at least as typical of Tudor government as the more publicised institutional bodies, and which was subjected to great strain by the increased size of armies and fleets. Secondly, our theme provides a reasonably objective test of governmental efficiency, a question which has been neglected (for obvious reasons) in most administrative studies; the test, that is, of whether war-aims as conceived by those responsible for their execution were attainable from a logistic viewpoint, and, if so, whether the administration functioned well enough so as at least not to cripple fatally an army in its pursuit of these aims. This is especially valuable since it provides a point of comparison between the essentially personal administration of Wolsey on the one hand, and that of the much maligned Privy Council of the 1540s on the other.[2] It is essentially a study of government in action.

Obviously if we are to judge the administrators we must understand their problem. We must start, therefore, with a brief sketch of an army and of a fleet, to see what had to be

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1. G.R. Elton Tudor Revolution in Government; W.C. Richardson Tudor Chamber Administration, and Court of Augmentation; H.E. Bell Court of Wards.

2. Thomas Cromwell's abilities as a war-minister, unfortunately from our point of view, were never tested on a large scale.

provided in the way of supplies; and follow it by a more extended consideration of the matériel itself; where it came from, whether it was in any way "mass produced", and the problems implicit in communications.

C H A P T E R O N E

THE PROBLEM

The army sent to France in 1544 was the largest foreign expedition mounted by the English in our period; and probably indeed, the largest at any time before the War of the Spanish Succession.

Some 48,000 men, it was made up as follows:-

	Horse	Foot	Ordnance	Officers
Flemings	2,000	2,000		100
Germans	1,500	6,000		
English	4,000	27,000	c.4,500	800
	7,500	35,000	c.4,500	900
			Total	47,900 [1]

Of these, the Flemings were raised at the Emperor's expense, the German mercenaries paid for by the English King.[2] The English horse and foot had been recruited on what has been called the "quasi-feudal" system; that is, through writs sent mainly to nobles and gentlemen to prepare a stated number of

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1. Appendix A.
2. Ibid.

men (taken from their own tenants and those "within their offices") for the King's service.[1]

The Flemings were presumably armed from their own resources; while the Germans presented themselves fully equipped for battle.[2] With the English troops the case was different. The writs stipulated that they should be "fencibly arrayed"; that is, provided with complete defensive armour, with such hand-weapons as the Crown specified, and, where appropriate, with horses.[3] But those providing men could usually only send them armed with bows-and-arrows, and with bills. In a survey of the military potential of the country taken just before the 1544 expedition, handguns and morispikes (pikes) could only be supplied by Lord Mountjoy (10 arquebuses and 60 pikes), Lord Wriothesley (40 pikes, 20 "demi-hakes" or small arquebuses) and the Earl of Oxford (100 pikes, 50 demi-hakes) among the peers and members of the Council;[4] and by a very few country gentlemen (e.g. Anthony Aucher, 6 demi-hakes, and Sir Michael Lyster, 20 pikes[5]). Yet the turn-out of pikemen and handguns was much better in practice than these

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1. J.J. Goring, Military Obligation under Henry VIII (London Ph.D. thesis, 1955), passim.

2. L.P. I.i. 1745.

3. Goring, Military Obligation p 213. H.M.C. 7th R p 605 (letters of 18th June 1547 and 6th May 1548).

4. S.P. I/184 ff 85-221 (L.P. XIX i 273), esp. ff 86v, 88r, 92v.

5. Ibid. ff 152r, 192r.

~~these~~ figures would suggest. For instance, the troops supplied by members of the Privy Chamber in 1544 can be broken down as follows:-1

Pikemen	Archers	Billmen	Men with "Sprinklers"[2]	Handgunners
380	807	1,073	50	181

The proportion of pikemen and handgunners is still small, but it is higher than the members of the Privy Chamber could have supplied from their own resources.3 The main remedy for the shortage of modern weapons was the use of mercenaries, but efforts were also made by the crown to supply these weapons for the temporary, English soldier. Whether in fact pikes and handguns were at all effective when handled by the untrained is, of course, a different matter.

We find, therefore, ample evidence of the stockpiling of handguns and pikes on the part of the crown. Indeed in 1547 the Tower contained no fewer than 6,500 handguns and 20,100 morispikes.[4] Nor, whatever the theory, was the crown in practice absolved from providing other weapons and body armour. On one occasion no less than 13,719 sets of harness (body armour) were issued.5 Varying numbers of bows and arrows

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1. L.P. XIX i 275 (4) (S.P. I/185 ff 46-8 adds nothing).
2. A kind of mace - see under "Holy-Water Sprinkler" in Glossary.
3. E.g. Sir Thomas Seymour is listed as providing 40 pikes in L.P. XIX i 275 (4); he is shown with none in S.P. I/184 f 102v.
4. H.A. Dillon Arms and Armour at Westminster, the Tower and Greenwich, 1547 (Archaeologia Vol. 51, pt i., pp 219-80) pp 263-4.
5. E 101/61/1 (L.P. I ii 2053 (9)); the document is torn and gives no indication to whom the harness was issued.

were kept amongst the ordnance stores, and occasionally issued to troops before campaigns;[1] more often, presumably, they were issued to replace arrows used or bows broken during operations.[2] Often too, the government acted as a commercial middleman; for instance, sales of harness were made to the Duke of Suffolk in Edward VI's reign and to a number of ~~countries~~ Counties at the beginning of Elizabeth's.[3] Whatever the obligation on the soldier to arm himself, therefore, we shall have to concern ourselves to a certain extent with the acquisition of handweapons and body-armour by the government.

Attempts were made to ensure some sort of uniformity of clothing, but this was the responsibility of those providing the troops, and does not concern us.[4]

Heavy artillery, at least on campaign, was entirely a government affair, on the other hand. Some figures from the 1544 expedition will give some idea of the order of magnitude here. The following table can be constructed to

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1. There were 11,000 bows in the Tower in 1523, 3060 in 1547; 20,000 sheaf of arrows in 1523, 13,050 in 1547 (L.P. III ii 3351; Dillon op cit p 264); 8000 bows were issued in 1512 (L.P. I i 1422).

2. 18,220 bows, 29,000 sheaf of arrows, 13,648 bills and 9,500 morispikes were reckoned as "spent" in 1544 (L.P. XIX ii 27 (3).

3. B.M. Hart MS 7457 ff 4v, 9r.

4. See, for instance, H.M.C. Wells II p 257; R.R. Sharpe London and the Kingdom I pp 346-7, 394.

give the number of guns supposed to be in use on the expedition, broken down for the three "battles" into which the army was divided:- [1]

	Vanguard	Rearguard	Main Battle	Total
Cannons	2	2	8	12
Demi-Cannons	4	4	9	17
Culverins	2	2	7	11
Demi-Culverins	4	4	6	14
Sakers	10	10	9	29
Falcons	8	8	-	16
	30	30	39	99

From this can be calculated the amount of powder and shot which the guns were reckoned to need, for 18 days only.[2]

	Number	Powder[3]	Shot[4]
Cannons	13	59 lasts	4680
Demi-Cannons	17	51 "	6120
Culverins	10	24 "	3600
Demi-Culverins	14	19 "	5040
Sakers	29	6 "	2900
Falcons	16	2 "	1000
	99	161 lasts	23,340

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1. From L.P. XIX i 272 (13); S.P. I/190 ff 254-61 (L.P. XIX i 1034 (1)) is inaccurate; L.P. XIX i 1034 (3). The table assumes that the "foreward" and "rearward" were armed identically (c.p. L.P. XIX i 272 (6)). It excludes mortars (left blank in L.P. XIX i 272 (13)) and "privy wagons", which may be the mysterious "Ingens and habylamentes of warre" constructed in 1544 by the Office of Works and involving the services of shipwrights, bricklayers and glaziers in their construction, as well as carpenters, wheelwrights etc. (E351/3199); they were probably some form of covered cart on which small guns were mounted.
2. L.P. XIX i 272 (13) compared with the ratios given in L.P. XIX i 1034 (3).
3. One last of gunpowder = 2400 lbs. (O.E.D.). This figure has worked correctly in a comparison of L.P. XIX i 272 (13) and 1034 (3), with two exceptions, apparently arithmetical errors. Calculations have been made to the nearest last.
4. All apparently iron shot (c.p. L.P. XIX ii 62) Some experimental shells had also been made for the campaign (Stow Annales (1605 ed) p 903).

These figures help us to appreciate the size of our army's "tail". From them can be calculated the number of horses needed for the ordnance department alone, as follows:- [1]

Guns	Total	Lymoners [2]	Carts for powder	Carts for shot	Ttl. Car[3] horses
Cannons	13	455	78	137	1505
Demi-Cannons	17	425	68	90	1106
Culverins	10	250	30	30	420
Demi-Culverins	14	224	21	25	322
Sakers	29	290	8	6	98
Falcons	16	96	2	2	28
	99	1740	207	290	3479

The clumsiness of the big gun, and especially the cannon with its 35 horses, is vividly illustrated, but no less striking is the total of 16 7-horse carts needed to carry its supplies. This, however, is not all. The Foreward's 15 "privy waggons" required 80 lymoners.[4] In addition the Foreward had 30 spare lymoners, and 121 carts (847) horses) to carry hand weapons, pioneers tools, blacksmith's necessaties,

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1. L.P. XIX i 272 (13) For types of guns see Appdx. B.
2. Heavy draught horses.
3. At 7 horses a cart. This is the figure assumed in the planning of the expedition; in fact the Flemings provided smaller 4-horse carts (see below p.272)
4. Above p 13 n' for privy waggons.

spare parts for the guns, and office furniture. [1] If the other wards were similarly provided (say, the same for the Rearward as for the Foreward, and 50 spare lymoners and 200 miscellaneous carts for the Main Battle) we reach a total of 1930 lymoners, and 941 carts, drawn by 6587 horses, for the ordnance as a whole.

If we add to this 538 waggons for the transport of victuals, 143 for the bakery and brewery companies, 97 to carry the 121 boats required for bridge-building purposes, and some 400 for the captains at the rate of one per company of 100 men, and, presumably, several score more for the tents and impedimenta of the royal household, we can see that our army was not the most mobile of bodies, and that its success depended very much on the acquisition of sufficient horses and carts.[2] As we shall see, most of these were supplied from the Netherlands, and were a constant cause of dispute between the ministers of the King and the Emperor.[3]

The Netherlands, too, supplied most of the transport to ship this massive army across the Channel.[4] The whole operation, however, illustrates how necessary was command of

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1. L.P. XIX i 272 (13).

2. L.P. XIX i 272 (4) pt. 1 for the victualling carts; XIX i 272 (7) for the boats. XIX i 27 (1) for the allocation of carts to captains.

3. Below pp 271-3.

4. Below pp 270-1.

the sea to any continental exploits; and to any effective operation against Scotland.[1] There was, of course, no royal navy in the sense of a permanent body of seamen in royal service. Crews were taken on (and often impressed) for each single voyage;[2] and galleys were manned, at times at least, by convicts.[3] On the other hand there was a royal fleet comprising 24 ships in 1544 ranging from the 1000-1500 ton Henry Grace à' Dieu to pinnaces of less than 100 tons, reinforced by 23 more in 1545-6.[4] These have been excellently described and classified by Sir Julian Corbett.[5] From our point of view they are interesting as assemblages of timber, tar, cordage, iron and sail-cloth; and also as calling into existence a naval bureaucracy and the dockyards at Portsmouth and the Thames Estuary. Their heavy armament, too, posed yet another challenge to the ordnance authorities.[6]

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1. Below pp 248-63.

2. M. Oppenheim Administration of the Royal Navy, 1509-1660 pp 74-5.

3. APC 1547-50 pp 112, 556. E351/2588 records payments in 1546-7 to men "that made serche for the Gallyslaves when they were runneawaye".

4. Calculated from R.C. Anderson List of English Men-of-War, 1509-1649 pp 1-10. The total does not include the small "rowbarges" of 1546. For a lively discussion of whether the Grace à' Dieu was as large as Nelson's Victory see M.M. Vols. 17, 18 and 20 (1931-4), (several articles and notes).

5. J.S. Corbett Drake and the Tudor Navy I pp 31-8.

6. L.G. Carr Laughton Early Tudor Ships-Guns (M.M. Vol. 46, 1960, pp 242-285).

In times of crisis, of course, armed merchantmen were sent to join the royal ships. Both types were vilely overcrowded when on war-service; the 100 ton Newcastle merchantman Elizabeth which normally carried a crew of 12, had at least 100 men on board when in use as a warship, while, to take a random example, the 600 ton royal ship Mary Rose carried 402 men in 1513.[1] By these means a fleet of over 90 ships carrying about 12,000 men could be raised to counter the threat of French invasion in 1545.[2] Not surprisingly, in such conditions the men were prone to epidemic diseases, and in 1545 it was only the chance that the "plague" afflicted the French fleet first that prevented England being left defenceless because of disease in the fleet.[3]

Little could be done about disease, however. More to our purpose is the problem of victualling such fleets and armies. Our army of 48,000 in 1544 was, after all, about two thirds

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1. G.V. Scammell War at Sea under the Early Tudors; Some Newcastle-on-Tyne evidence (Archaeologica Aeliana 4th Ser. Vol. 38 (1960) pp 73-97 and Vol. 39 (1961) pp 179-205) Vol. 39 pp 194-5; A. Spont The French War of 1512-3," p 87.
2. L.P. XX ii 27 (2).
3. See below pp 279-81. See Scammell op cit Vol. 39 p 195, and c.p. M. du Bellay Mémoires (ed Michaud et Poujoulat, 1838) p 559.

the size of London and three times as large as any other town in England.[1] Nor was the food itself skimped, at least in theory. The naval rations of the period were similar to those of 1565 when the naval victualler contracted to supply each sailor with 7 lbs. of biscuit, 7 gallons of beer, 8 lbs. of salt-beef, ¼ lb. of stockfish, ⅛ lb. of butter and ¼ lb. of cheese a week.[2] Soldiers probably did less well; garrison troops got about half the naval rations; troops in the field got, where possible, the same amount of beer and biscuit as sailors, and some-timer considerably more meat.[3] Soldiers, of course, could supplement their diets by living off the country: while a large part of their requirements was met by private victuallers, both Englishmen and Flemings.[4] Nevertheless, in times of crisis such as 1544 and 1545 government victuallers were active purveying food in all the East and South Coast countries and in such inland areas as the Thames Valley which had easy communications with the sea;[5] a considerable challenge, as we shall see, to the government's power of improvisation; and yet another indication of the overwhelming importance of the means of communication in strategy.

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1. C.p. W.G. Hoskins English Provincial Towns in the Early Sixteenth Century (T.R.H.S. 5th Ser. Vol. 6, 1956 pp 1-19) pp 5-6.

2. See my note on "Les rations alimentaires de l'armée et de la Marine anglaises au XVIe siècle" in Annales (Economies, Societés, Civilisations), 18e année, 1963 pp 139-41 (For 1547 c.p. E 101/63/13 85/9 f 17r).
3. Davies, ibid for garrison troops; for troops in the field c.p. L.P. III ii 2744.
4. See below pp 167-8.
5. See below, p Appdx M.

We have given a brief sketch of an army and a navy, with a picture of their requirements and of their order of magnitude, sufficient at least to indicate how great a strain the organisation of a large military force was for the administrative resources of Early Tudor England. This impression will be reinforced by an examination of the problems involved in collecting together the supplies, and of the nature of the administrative machinery available. We will deal with the provision of guns, ships and so on separately from that of food; the problems themselves are obviously different, while on the victualling side there was nothing to compare with the permanent organisation which evolved for the navy and the ordnance.

C H A P T E R T W O

SHIPS AND WEAPONS

Our main purpose here will be to consider from where came the matériel; that is, the ships and guns themselves, or, if they were made in England, their raw materials; on which countries England was most dependent for military supplies; what steps were taken to reduce this dependence, and whether this can in any sense be considered a conscious policy of military self-sufficiency; and how ~~far~~ large the problem of military supplies bulked in the formulation of foreign policy, and especially Baltic foreign policy. We shall deal in the next chapter with the question of whether the establishment of military industries in England can in any way be considered an important factor in a supposed "XVIth Century Industrial Revolution". Some of our answers to these questions will be tentative, but to answer them at all we must look closely at each of the main industries involved. These are ship-building, cannon-founding, and gun-powder making; but we shall find some surprising features even in the old-established English craft of producing long-bows.

(a) Ship-building

Many of Henry VIII's ships were bought second hand, and some of the largest of them, (such as the Gabriel Royal and the Katherine Fortileza, both at least 700 ton), built at Genoa, or (like the 900 ton Great Elizabeth from Lubeck, or the 450 ton Struse of Danzig) or in the Hanse towns.[1] This is not to say, however, that England was either backward in shipbuilding, or normally dependent on foreign-built ships, for most of these purchases were made between 1509 and 1524, and in 1544-6, both years of extreme pressure on the royal shipyards.[2] Most of the King's ships were built in England, on the King's own account, including the huge Henry Grace à' Dieu, the largest ship in the fleet, and probably the largest in English ownership at the time. And although the average English merchant ship was probably no larger than 100 tons, there seems no reason to doubt that ships of about 400 tons were sometimes built for private owners in English shipyards.[3]

Henry VII had founded a permanent royal dockyard, with a dry dock, at Portsmouth in 1496;[4] and additions were made to

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1. For this paragraph in general, see R.C. Anderson List of English Men-of-War, 1509-1649.

2. Ibid. 23 Ships were built and 4 rebuilt between 1509 and 1524; 17 were built in 1544-6, as well as 13 small "row-barges". (C.p. Oppenheim Administration, p 51).

3. Anderson List ; G.V. Scammell English Merchant Shipping at the end of the Middle Ages : Some East Coast Evidence (Econ H.R. (NS) 13, 1960-1, pp 327-41). There seems no reason to believe that the 400 ton John Baptist and Great Nicholas or the 300 ton Christ of Lynn were other than English built. (Anderson nos. 15-7). The specification for the Mary Gonson (R.C. Anderson MM 46, 1960 pp 199-204) imply that it is to be English built.

4. M. Oppenheim Accounts and Inventories of Henry VII, pp xxxiv - xxxix.

it in 1512, 1523 and 1527.[1] Henry VIII, however, concentrated ship-building on the Thames Estuary; the Henry Grace à' Dieu was built at Woolwich; storehouses were erected at Deptford (1513) and Erith (1514); a dry-dock was built at Deptford in 1517, and more storehouses at various dates; while from 1547 permanent establishments began to appear in the mouth of the Medway.[2] Little is known about private shipbuilding. M.A.S Hickmore found very little information about shipbuilding in the XVth Century;[3] and no work has yet been done on private ship-building in the Tudor period.[4] The range ~~from~~ of towns from which shipwrights came to work on the Henry Grace à' Dieu shows, however, that it was carried on, on a small scale, in almost every seaside town on the south and east coasts.[5] Foreign ship-wrights were recruited only to help with unusual designs; Henry is said to have sent for 3 shipwrights experienced in galley-construction from Italy in 1541, and the Italian , l'Artigo, a renegade from French service, also advised about galleys.[6]

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1. G.C. Laughton in V.C.H. Hants V p 372
2. M. Oppenheim in V.C.H. Kent II pp 337-40.
3. The Ship-building Industry in the XVth Century (London M.A. thesis, 1937).
4. W.E.C. Harrison's two chapters (IV & V) entitled "Ship-building" in his London M.A. thesis (1931) "Maritime Activity under Henry VII" are in fact about other matters. (bounty policy and navigation acts).
5. Appdx. D.
6. C.S.P. Sp , VI i p 342
   L.P. XVIII ii App 15.

At the beginning of the period timber was readily available near the shipyards. Portsmouth was supplied from the New Forest and the Isle of Wight; during the period 1522 to 1524, for instance, timber had sometimes to be carried up to 12 miles over-land, but the more usual distance was only up to about 8 miles.[1] When the Henry Grace à' Dieu was being built at Woolwich, ordinary timbers were available from Kent and Essex, and from Hertfordshire via the River Lea.[2] A good deal of this was from royal forest, but a considerable amount of timber for shipbuilding came from private parks and woods.[3]

Information of this sort is not available for the later years, for which detailed account-books do not survive. There was certainly official anxiety about a possible timber shortage. An act for the conservation of young trees, because of the likelihood of a scarcity of timber for building ships and fuel, was passed in 1543-4.[4] In 1548 a commission was established to investigate how much the iron-works of the Weald were damaging the timber of Kent and Sussex;[5] but in spite of alarmist complaints nothing was done to restrict the iron industry until 1559, and the Weald was specifically

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1. E36/6 passim esp. pp 42-3, 86-7.
2. E36/5 passim especially ff 26r, 27r, 30r, 31v, 100 ff. References to more distant places (e.g. Ipswich f 94r) are probably for special timbers (see below p 25).
3. Ibid f 100 ff. L.P. III i 558; Add I 140, 152.
4. 35 HVIII c 17.
5. T.E.D. I pp 231-8.

exempted, in spite of its proximity to the chief centres of royal shipbuilding.[1] In 1550 the Privy Council wrote to Sir John Yorke to stay the felling of trees in his wood near Deptford, because the King had no other wood within 20 miles for building and for the navy.[2] Such fears were exaggerated. The crown built about 11,000 tons of shipping in the period 1509-51, and rebuilt some 5000 tons more; at the outside, 16,000 tons in all, or less than 400 tons a year.[3] This sort of proportion as Dr. Hammersley has pointed out, is relatively minute compared to the country's timber potential (compare the 36,000 tons constructed during the Commonwealth and Protectorate).[4] There is no indication of any import of ordinary timber. There was not even any attempt to exploit the timber potential of the North of England or the Forest of Dean.[5] Thomas Holcroft complained once to Protector Somerset that, within 7 miles of Newcastle, on the banks of the Tyne

> "I save many ffayre tymber trees growng and a great Nombre nuly fallen wich weare a greate deale better than C li... [had they] ...ben for the kynges service;-

he found that the woods had been let to farm for 5

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1. I El I c 15
2. A.P.C. 1550-2 p 49
3. Anderson List. It will be remembered that tonnage figures are bound to be approximate.
4. G. Hammersley The Crown Woods and their Exploitation in the Sixteenth and Seventeenth Centuries (B.I.H.R. Vol. 30 1957, pp 136-61) esp. pp 153-4.
5. Ibid. pp 151-2.

marks a year.[1]

The timber shortage was not a general one.[2] Such shortage as there was results from the fact that special kinds of timber were required for certain parts of the ship; especially "curved" or "compass" timber for parts of the keel, and timbers for masts.[3] It was presumably the difficulty of finding these rather special timbers that caused shipwrights to be sent touring the countryside searching for timber for the Henry Grace à' Dieu.[4] Certainly compass timbers were rare enough to figure especially in the account, which records, for instance, the expense of "going to Totnam for a pece of tymber called a harpyn pese".[5] Masts, too figure individually in the accounts; for instance the "ij grete trees that serve for the mayne maste to the harry grace dieu being inall by estimacion xiiij tonne".[6] Indeed, masts were rare enough to

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1. B.M. MS Calig. BVII f 480v.
2. C.p. the situation in France; the same official anxiety, on the whole unfounded except in years when the royal requirements were exceptional and when they far exceeded any English construction. (M. Deveze La Vie de la Forêt Française au XVIe Siècle I pp 50-4).
3. R.G. Albion Forests and Sea Power Chapter I.
4. E36/5 f 118r (William Cuttyll's expenses in riding for 14 days in search of timber); f 121r (William Hopted searching for timber for 24 days in Essex; John Haller riding to Sandwich, Smallhythe and Winchelsea for timber).
5. Ibid f 125r (cp. f 24r, payments for labouring for the keel and stern-post in the Abbot of Stratford's grounds).
6. Ibid f 100v (Cp. f 29r, payments for "being at the loding of the grete oke at Seynt osyes" (Colchester); f 113r, for a great mast "to be the spyndell of the mayne mast", from Dartmouth, and for another mast "that is in the mayne yard").

be hired out to merchants from the royal store.[1] It is therefore hardly surprising to find that masts were imported. 100 were received from Danzig in 1544.[2] Thomas Spert and William Gonson were sent to bargain with a merchant who had 26 Baltic masts for sale.[3] There were offers of masts from Switzerland, to be sent down the Rhine to Dordrecht.[4] None of this indicates an absolute dependence on foreign supplies. There is no record of any systematic attempt to track down appropriate trees in England, except in the immediate vicinity of the shipyards. Albion makes a good deal in this connection of the establishment of a Master of the Woods as one of the leading officials of the Court of Augmentations, but there is no evidence that this was directly connected with naval requirements.[5] Masts were available in England, as witness the payment on one occasion for "makynge a Raffe [raft] of xiiij grett mastes" and conveying them from "derkmowth" [Dartmouth] to the "storhows of hereth" [Erith].[6] The scale of royal shipbuilding, minute by later standards, was unprecedented in England at that period, very large in

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1. L.P. I i 16
2. L.P. XIX ii 550
3. L.P. XV., 313, 325.
4. L.P. XXIi 1224.
5. R.G. Albion Forests and Sea Power p 110.
6. E36/11 f 10r.

comparison with the rudimentary administrative resources available, and concentrated heavily in the years 1519-24 and 1544-6.[1] Masts were therefore snapped up when and where they were available, in the same spirit which led Holland in 1638 to declare that, because masts are so scarce, the officers of the navy should always be on the look-out for them, so that the King will not have to pay excessive prices in an emergency.[2] Imported masts, too, often had the advantage of size; some Swiss masts offered in 1546 were over 50 inches in diameter "twice as large as the later Baltic maximum".[3] Size, however, was becoming less important with the introduction of "composite masts" made out of two or more separate trees.[4] In these circumstances the fact that masts were imported is no evidence that England could not have been self-supporting if the necessity had arisen. Still less can it be argued that a shortage of masts meant a general shortage of timber for naval purposes; as Holland wrote a century later "of all provisions in the navy his Majesty is seldom or ever necessitated of any but masts, and those of twenty-two hands and upwards".[5]

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1. See above p 11.
2. L.P. Add I.i.12, in which the Clerk of the Ships is urged to ride personally to Bristol to see about masts that were for sale there; Holland Discourses pp 73-4.
3. Albion Forests and Sea-power p 154.
4. Above p 25 for the two trees for the main mast of the Grace Dieu; and for the payment for a great mast "to be the spyndell of the mayne mast".
5. Discourses p 59 (quoted by R.W.K. Hinton The Eastland Trade and the Common Weal p 99).

In other respects ship-building remained dependent on foreign raw-materials, in spite of spasmodic attempts at home production. Canvas for sails, for instance, was imported; from Spain;[1] from Brittany;[2] from the Netherlands.[3] An attempt made in 1547 to bring over Bretons to teach the art of making "poldavies" (canvas) was apparently unsuccessful;[4] at any rate, in the early years of Elizabeth flax, linen and canvas formed the largest single group of imports, some 17% of the whole, and Burghley was faced with the same problem as had faced Edward VI's Privy Council.[5]

Much the same was true of the cordage industry. Bridport, its centre, was in a decline which successive Acts of Parliamen failed to avert;[6] though ropes were sometimes acquired from Bridport in our period, and also from Lynn.[7] In 1548 £100 was lent by the naval treasurer to establish a cordage industry in Lincolnshire.[8] Nothing seems to have been heard subsequently of Thomas Trollop and William Browne, the recipients, except for Trollop's being bound over for good behaviour in 1550, hardly an encouraging sign.[9] The cordage problem certainly

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1. G. Connell-Smith Forerunners of Drake p 211
2. J.A. Williamson Maritime Enterprise 1485-1558 p 208
3. E351/9.
4. APC 1547-50 p 109. E351/2588 includes a payment for "Roomes for weving of polldavyes".
5. L. Stone Elizabethan Overseas Trade (Econ H.R. ~~2nd Ser~~ (NS) Vol. II 1949-50 pp 30-58) p 38 W. Cunningham The Growth of English Industry and Commerce (4th ed.1907) II p 82n[4]. Burghley seems to have been more successful (Stone p 46).
6. M.M. Crick in V.C.H. Dorset II pp 344-53.
7. E36/5 f 55r, E36/10 ff 1-5, EIOI/57/22.
8. E351/2194
9. APC 1550-2 p 45.

was to occupy Burghley's attention, apparently unsuccessfully.[1] In general, cordage was imported in great quantities throughout our period, generally but not exclusively from the Baltic;[2] and the Baltic and Russia were to be the principal sources of supply for the next two centuries.[3]

Finally, pitch and tar ~~was~~ were bought from merchants, who probably got it from the Baltic, although this is generally not specified;[4] pitch was certainly one of the naval stores normally acquired from the Baltic which the Duke of Saxony agree to supply in 1547 in return for a loan;[5] and Baltic supplies were to be pre-eminent in the later part of the century, and indeed, to remain vital until the widespread use of American (and, curiously, English) tar in the XVIIIth Century.[6]

Thus as far as timber was concerned, England was still largely self-sufficient, although foreign supplies saved a good deal of trouble hunting out masts and special timbers in England. For other naval stores, however, imports were essential, even at this date; and most of these imports were from the Baltic.

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1. Cunningham English Industry II p 65n[6] Stone Elizabethan Trade p 47, shows that cordage imports rose considerably in Elizabeth's reign.
2. SP I/222 f 99 (L.P. XXI i 1334); B.M. Add 5752 pp 30-1 L.P. XIV.i.143, XIX ii 550 (from Danzig) Ropes were also obtained from Italy (L.P. I ii 1986) and from the Netherlands (L.P. I i 1598; E351/9).
3. Hinton Eastland Trade p 97; W. Beveridge Prices and Wages in England I p 635; T.S. William Early History of the Russia Company pp 40, 55-6, 184, 253-5)
4. E36/6 p 44, E36/12 p 20. Some was imported from Spain (Connell-Smith, Forerunners of Drake p 211).
5. APC 1547-50 pp 60-1.
6. Hinton Eastland Trade p 97; Beveridge Prices and Wages I pp 662, 666; E.F. Heckscher An Economic History of Sweden 1954, English translation) pp 100-101.

(b) Guns

The "great ordnance" of the period (in modern terms, the artillery[1]) varied enormously; in size, from some 60 cwt. to less than 1 cwt; some firing iron-shot weighing 50 lb. others small stones or "dice of iron" of some 1½ inches in length.[2] For our present purpose they are best divided according to the metal from which they were made; that is, wrought-iron, cast iron and bronze.

Wrought-iron was produced by the "bloomery" or "direct" method, familiar in mediaeval England. The iron-ore was heated in an ordinary furnace until it was reduced into a "bloom", or mass of malleable iron; the bloom was then re-heated and battered into bars. These were then made into gun-barrels by lashing iron bars:-

> "closely round the circumference [of a mandrel], and over these a series of rings were passed, at a white heat, which, when cold, shrank on the rods and compressed them firmly together"[3]

Cast iron and bronze, on the other hand involved the use of a blast-furnace, in which the metal was heated to such a degree that it became molten, and was then run into a clay mould to produce whatever form was required.[4] Bronze, generally called "brass" by contemporaries, was an alloy formed predominantly

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1. This term in XVIth Century usage covered all missile weapons including bows-and-arrows (O.E.D.).
2. L.G.C. Laughton Early Tudor Ship-Guns (MM 46,1960 pp 242-85) esp. pp 259, 268, 280. For types of guns see Appdx.B.
3. C.J. ffoulkes The Gunfounders of England p 8.
4. Oxford History of Technology III pp 364-6; H.R. Schubert History of the British Iron and Steel Industry pp 157-8; E. Straker Wealden Iron p 58.

of copper, with which was mixed tin and latten (itself a mixtur of copper and zinc).[1]

Wrought-iron had ceased to be used for the larger guns before our period. The iron itself was of excellent quality;[2] but the additional weight which resulted from the rings of iron around the barrel was probably the principal disadvantage compared with cast-iron.

Cast-iron was much cheaper than bronze. The cost of "workmanship" on bronze guns in the 1530s was 10/- a cwt., while the metal itself, provided by the Crown, cost 20/- a cwt.[3] Complete cast-iron guns, metal and "workmanship" included, cost only £10 a ton in 1549, ~~on the other hand.~~[4] On the other hand, bronze was presumably of better quality, and somewhat lighter for any given size; certainly it was preferred for the larger guns in ships and garrisons.

Thus the Ordnance Office accounts for 1553-8 show the following purchases;[5]

	Cast-Iron	Bronze
Cannons	-	2
Demi-Cannons	-	5
Culverins	-	1
Demi-Culverins	6	26
Sakers	8	69
Falcons	3	77
Falconets	-	15
Bases	-	2
Total cost	£164. 4. 8	£1543. 2. 8

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1. M. [A] Lewis Armada Guns p 18. 2. ffoulkes Gunfounders p 10
3. SP1/68 f 223.
4. M.S. Giuseppi The Accounts of the Iron Works at Sheffield and Worth in Sussex, 1546-9 (Archaeological Journal, Vol. 69, 1912, pp 276-311) p 285.
5. E351/2614.

The more important garrisons had an overwhelming preponderance of bronze over cast-iron as far as large guns were concerned; thus in 1547 Deal, Walmer and Dover castles had no large iron ordnance;[1] Berwick had very few;[2] so had Calais.[3] The smaller garrisons had rather more; Gravesend Bulwark, for instance, 2 iron demi-culverins, 3 sakers, and a falcon;[4] Poole could set 1 brass culverin against an iron demi-culverin and 3 sakers.[5] A similar pattern is discernible in the navy, the larger ships having bronze big guns, the smaller ones cast iron.[6] The Henry Grace à' Dieu had the following large bronze pieces in 1547:-

4	Cannons	3	Culverins	4	Sakers
2	Demi-cannons	4	Demi-culverins	2	Cannons-perrier

It had only one saker of cast-iron, and the usual multitude of small iron guns, probably of wrought iron[7]. The little Tiger (c 120-200 tons[8]) had only two bronze culverins and two bronze

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1. Soc. of Antiquaries MS 129 B ff 265-8
2. Ibid ff 347-57 (f 357v shows "At the shore on the sandes - Culveryns of Caste yrone vnmounted - ij ").
3. Ibid ff 291-306
4. f 258r ; also an iron bombard, presumably wrought-iron.
5. Ibid f 285r.
6. Ibid ff 383-414
7. Ibid f 383
8. Anderson List no. 94.

demi-culverins, but four iron demi-culverins and an iron saker. All in all, ~~this~~ cast-iron was considered second-best; good enough for medium sized guns like demi-culverins for the lesser garrisons and smaller ships during the rearmament crisis of the 1540s, but in more normal times reserved for smaller guns, falcons, minions and sakers of less than 15 cwt.[2]

This is not to say that the importance of cast-iron in the history of English artillery is a negligible one. The crown, after all, was not the only purchaser. The civic authorities of Eastbourne, for instance, bought guns from Levett.[3] The well-armed merchant ships of the period provided another market.[4] So, too, did the private arsenals of the nobility.[5] In addition blast-furnaces could be used to produce wrought-iron for guns constructed on the old, ~~wrought-iron~~ principle; and for these there was still a very large market indeed. The Ordnance Office in 1553-8 spent £3707 5s 6d on "fforged pieces" compared with a mere £164 4s 8d on cast-iron guns.[6]

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1. Soc. of Antiquaries MS 129 B f 408r.
2. Schubert Iron and Steel Industry pp 249-50. Schubert is wrong in his opinion (p250) that "From the time at which double furnaces were built, the first in 1547..., larger guns were cast". The examples we have been quoting from Soc. of Antiquaries MS 129B shows a large number of larger cast-iron guns already in place in ships and castles in 1547.
3. Sussex Notes and Queries Vol. 2, 1928-9 pp 146-7.
4. Scammell in Archaeologica Aeliana 4th Ser. Vol 39, 1961 pp 186-9
5. See, for instance, the number of guns in the possession of the Earl of Leicester in 1583 (H.M.C. De l'Isle and Dudley I p 296.)
6. E351/2614.

With this description of the uses of guns produced from various metals, we may now take up the threads of our examination of national self-sufficiency. This naturally falls into two parts, the availability of the metals in England, and of the skills required to produce the guns themselves.

Iron, of course, was a native product, though Spain occasionally supplied iron of superior quality.[1] Tin, too, was normally exported from England, and English tin was specially supplied to the Malines gunfounder Poppenruyter when he made bronze pieces for England.[2] There were difficulties, however, with the supply of copper. In 1528-9 the German Joachim Hochstetter made an unsuccessful attempt to discover English gold, silver, copper and lead deposits.[3] There followed acts to prohibit the export of copper and copper alloys, on the ground that insufficient for the King's needs was produced in England, and that the price of foreign copper was a good deal enhanced;[4] the first act presumably followed a petition of the Founders' Company, which claimed that insufficient copper remained in London "for the meltyng or castynge of one pece of Ordynance"[5]. Certainly in the 1530s and 1540s copper was

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1. G. Connell-Smith Forerunners of Drake p 22; c.p. Stone Elizabethan Overseas Trade p 38 for the extensive iron-imports at the beginning of Elizabeth's reign.

2. G. Schanz Englische Handelspolitik II Appdx VII pp 118-127 G.R. Lewis The Stanneries Appdx J; L.P. I i 325
3. L.P. Add I 583 (3) Hamilton Brass and Copper pp 4-5
4. 21 HVIII c 10; 28 HVIII c 6; 33 HVIII c 7; 2 3 Ed VI c 37.

5. Sta Cha /2/33/47.

imported in great quantities from English agents in the Netherlands;[1] and it was also supplied by the Fugger as part of their complicated financial dealings with Henry VIII.[2] A copper supply in England was not discovered until the Elizabethan period.[3] Calamine, too, an essential element of zinc, used for making bronze, was not discovered in England until 1566.[4] Throughout our period, then, England was self-sufficient in the raw-materials for iron guns, but depended on European sources of supply to make bronze. In this it was not alone; the Kings of France and Portugal were reported to be buying copper in Antwerp in 1541.[5]

Wrought-iron guns were made in quantity in England at the beginning of our period. Cornelius Johnson, the King's smith, supplied 78 at a time in February 1513, in spite of having supplied other guns the previous August and September, and having been kept busy in the meanwhile providing "stocks" (that is gun carriages[6]) for the King's new bronze guns, and carrying out numerous repairs.[7] They needed, apparently, no very high standard of workmanship; smiths produced them at 2d. a lb.,

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1. L.P. XVI 822 (John Osborn buying 100,000 lbs. of copper in Antwerp, and authorised to buy 200,000) ; L.P. XVIII ii p 129 (£4800 for Osborn and Sir John Gresham to buy copper and other provisions).
2. Hamilton Brass and Copper, p 4.
3. M.B. Donald Elizabethan Copper, pp 11-4
4. Hamilton Brass and Copper, p 15.
5. L.P. XVI 822.
6. OED
7. Appdx. C.

which seems to have been the standard charge for iron-work.[1] Occasionally iron (probably wrought-iron) guns were imported;[2] but their production in England clearly presented no great problem.

The case is different with cast guns, both bronze and iron. Howes inserted into the 1631 edition of Stow's Annales the statement that the first Englishmen to cast "brass" guns were the brothers John and Robert Owen in 1535.[3] Stow himself states that the cast-iron guns were first produced in England in 1547.[4] Strictly speaking both of these statements are wrong. But, as we shall see, both forms of casting only established themselves in England on a large scale in the 1530s and 1540s.

H.R. Schubert has shown that in fact a cast-iron gun was produced in 1509 near Newbridge, in Ashdown Forest by one of the French founders who had been established there some time in Henry VII's reign, at the latest.[5] As far as the other allegation, about the Owens being the first Englishmen to cast bronze guns, they were doing so before 1535, the date given by Stow; they were paid in 1529, for instance, for brass

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1. E36/12 p 7: B.M. Stowe 146 ff 12r, 43r: Laughton Ship-Guns, pp 257-8. Anchors, for instance, also cost 2d a lb. (E36/5 f 42v).
2. EIOI/58/4 passim
3. P.572 (c.p. C.L. Kingsford's notes to Stow Survey of London, II p 288.)
4. Annales (1605 ed) p 983.
5. H.R. Schubert The First Cast-Iron Cannon Made in England (Journal of the Iron and Steel Institute cxlvi, 1942, pp 131-40); see also Schubert Iron and Steel Industry pp 163-4.

falconets.[1] More significent, however, is the fact that Humphrey Walker, Richard Shokledge, and Harbard de la Pole were making brass falcons in 1513.[2] There seems no reason to suspect that Walker, at least, was an alien. On this basis ffoulkes credits Walker with having been the first Englishman to cast bronze guns.[3] This ignores, however, the massive evidence assembled by Tout to prove that Englishmen in the XIVth Century manufactured guns of "cuprum", that is, probably, of copper or brass, and sometimes of latten (copper and zinc) by the foundry process.[4] No work has been done on the XVth Century which would show whether the casting of guns of copper-alloy continued.[5] Certainly large numbers of bronze guns existed in the reigns of Edward IV and of Henry VII.[6] While these may have been imported, the appointment of a Master founder in the Ordnance Office in 1484 indicates that some, at least, were probably made in England.[7] Moreover, the frequency with which bronze guns were

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1. L.P. V p 308
2. L.P. I ii 2032v (67),(78), (105), vi (138).
3. ffoulkes Gunfounders p 47
4. T.F. Tout Firearms in the XIVth Century (Collected Papers II pp 233-75) p 251.
5. R.C. Clephan The Ordnance of the Fourteenth and Fifteenth Centuries (Archaeological Journal Vol 68, 1911, pp 49-138) almost ignores XVth Century England.
6. EIOI/55/II, a partial list of guns taken on the 1475 expedition, includes large numbers of guns "de Ere" (i.e. Aereo) (f xviij r), one of them "vocato le gros Brasyn gon' " (f xvij r); Oppenheim Accounts and Inventories p 104.
7. C66/554 m 25 (CPR 1476-85 p 405) - Patrick de la Mote, presumably an alien.

cast in Europe makes it a priori unlikely that the process was unknown in England.[1] But even leaving these earlier possibilities aside, the activity of Humphrey Walker casting bronze guns as early as 1513, and the casting of iron guns in 1508, makes it impossible to credit Henry VIII with the initiative for introducing gun-casting into England.

Stow was right about the general trend, however, if wrong in his detail. Schubert acknowledges that the iron guns cast in 1509 differed from those of the 1540s in being breech-loaders, with separate chambers of wrought-iron, whereas the latter were muzzle-loaders cast in one piece; that production seems to have stopped in 1513, not to start again until 1543; and that it is to the reintroduced gun-casting of the 1540s that the Wealden iron-industry owes its expansion into one of the most important industries in the country.[2] Similarly, Stow's point about bronze gun-founding reflects a real change of emphasis discernible over the period as a whole; at the beginning, bronze guns were normally imported; at the end, they were imported only exceptionally.

This may be seen more vividly in the supply by Hans Poppenruyter of Malines of 12 great bombards known as the "Twelve Apostles" in 1513.[3] Poppenruyter had supplied Louis

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1. Clephan op cit passim; although (quoting Stow as his authority), Clephan himself holds "that guns were being cast in Scotland earlier than any recorded in England" (p 135).

2. First Cast-Iron Cannon; and Iron and Steel Industry, p 173.

3. L.P. I ii 3613 (178).

XII with artillery, in spite of French pre-eminence in this field, and obviously enjoyed an international reputation.1 But reliance on foreign sources went further than the acquisitio of one set of exceptionally high quality guns for prestige purposes. Poppenruyter himself supplied other guns for England; in January 1510, for instance, he contracted to supply 12 curtow 12 other curtows (probably demi-curtows), and 24 serpentines.2 The accounts of the period are full of references to "copper-guns" bought abroad.3 By the end of the period there had been a decisive change. On occasion guns were still bought. William Damsell procured 8 "brass" pieces in Antwerp in 1544-7.4 Sir Thomas Seymour in 1543 negotiated with a Malines gunfounder for small pieces of ordnance; but, and this marks the difference from earlier days, they were to be a copy of those of Bawde, the French gunfounder who worked in England for the crown.5 Moreover, although the pressure of preparation for the war of 1544 caused the King to negotiate for inferior iron-guns from the Netherlands at this period,6 there was nothing like the large-scale purchase abroad of costly guns which had marked the earlier period. No more than 4 serpentines and 4 demi-serpentines were recorded as exported to England from 1545 to 1550.7

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1. P. Henrard Histoire de l'Artillerie en Belgique p 68
2. B.M. MS Galba B III ff 3-4 (L.P. I i 324).
3. L.P. I i 1463 vi ; ii 3613 (73) (446).
4. ~~E35 149~~. E351/9
5. L.P. XVIII i 564.
6. Ibid.
7. O de Smedt De Engelse Natie te Antwerpen II pp 394-5. De Smedt has calculated these figures from the export licenses issued, which may, of course, be incomplete.

The shift, then, from the occasional manufacture of possibly inferior cast guns, both iron and bronze, to the normal manufacture of both in England is a significant one, and was the result of two inter-connected developments, which may reasonably be ascribed to the initiative of the King, or at least of his ministers. The first is the attraction to England of a number of foreign craftsmen who established foundries for the manufacture of bronze cannon which overcame any deficiencies which may have existed in those of Walker; [1] or at least, so we may conclude from the fact that foreign products were no longer preferred. The second was the application of the same techniques to the manufacture of cast-iron guns.

That the attraction of foreign craftsmen to the armament industry was deliberate government policy can only be inferred; but the numbers engaged in foundries, armouries, and gunpowder mills make the inference a sound one.[2] The policy was not new; we have seen that a number of French founders were settled in the Weald in Henry VII's reign.[3] But the most spectacular results were achieved in Henry VIII's reign, so much so that William Bourne could write in 1587

> "...for the knowledg in it [gunnery], other nations have tasted better therof, as the Italians,

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1. The impression given by ffoulkes, Gunfounders p 27, that Poppenruyter could make guns cheaper than they could be made in England. The evidence he quotes only shows that it would be cheaper for Poppenruyter to manufacture guns in his own workshop than to come to England to do so. (B.M. MS Galba BIII f 4)
2. T.G. Wyatt, unpublished M.A. thesis London 1952 "The Part Played by Aliens in the Social and Economic Life of England in the reign of Henry VIII" passim, esp. Appdx. A.
3. See p 36

> French and Spaniards, for that English men have had but little instructions but that they have learned of the Doutchmen or Flemings in the time of King Henry the eight" [1]

A modern writer goes further, holding that "the alien gunners and armourers were so numerous as to arouse doubt whether Englishmen pursued those callings at all"[2]; an exaggeration which a perusal of C.J. ffoulkes Gunfounders of England should have remedied.

There is little need to trace the story of the establishment of the new bronze foundries in detail. This has been done adequately by ffoulkes;[3] additional details and certain corrections have been supplied by T.G. Wyatt.[4] By 1529 the Arcanus family of Italian gunfounders and Peter Bawde, a Frenchman were manufacturing "brass" ordnance[5]; so too, were the Englishmen John and Robert Owen.[6] By 1531 the Arcani were installed in Salisbury Place (probably Salisbury Court, near Fleet Street), and Bawde had joined the Owens at Houndsditch.[7] Soon after, the Owens departed for Calais where, presumably having profited from their association with Bawde, they cast 12

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1. The Arte of shooting in great Ordnaunce (London, 1587), Aiii, si (Preface to the Reader).
2. Wyatt, thesis cited p 126. Another demonstrably incorrect superlative appears on p 136, "No record has been found during the reign of Henry VIII of any purchase of ordnance from an Englishman".
3. Gunfounders pp 25-35
4. Thesis cited.
5. ffoulkes Gunfounders pp 44-5; Wyatt, thesis pp 135-6; L.P. V. pp 306, 308.
6. L.P. V. p 308
7. ffoulkes Gunfounders pp 44-5: Wyatt, thesis pp 135-6: Stow Survey of London I p 128 (and Vol II p 288). Bawde certainly produced some guns jointly with the Owens (SP I/68 f 223) but Straker's statement (Wealden Iron p 146) that the Owens paid

(contd. over)

new pieces, and a double cannon.[1] Bawde and the Arcani continued casting bronze pieces in England into the 1540s, some of them still surviving in the Tower.[2]

Bawde, too, was a key-figure in the foundation of a cast-iron gun industry. Here again, we need not re-tell a story which has been treated adequately before.[3] In 1543 Bawde was sent to help William Levett and his assistant Ralph Hogge to cast iron guns, presumably of a new, muzzle-loading type. Levett, a clergyman, and Rector of Buxted, had been casting shot for some time, but guns seem to have been a new venture for him.[4] Bawde seems to have stayed only briefly (though he produced some iron guns of his own[5]), and Hogge and Levett were soon turning out guns for themselves.[6] Their example was followed by other founders, most spectacularly at Worth, on the Duke of Norfolk's lands, where a new "double-furnace" was introduced under Levett's direction, capable of producing just over 56 tons of ordnance

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1. ffoulkes Gunfounders pp 45-9
2. Ibid pp 44-5; ffoulkes The Armouries of the Tower of London II pp 451-2 (nos. 17-8)
3. Schubert Iron and Steel Industry pp 165-72; and First Cast-Iron Cannon ; Straker Wealden Iron pp 49, 145-6
4. Straker pp 146-7; Schubert Iron and Steel Industry p 171
5. Soc. of Antiquaries MS 129B f 277v, a "Demy Culveryne of Yrone of petir boudes makinge" at Portsmouth in 1547.
6. L.P. XX i 1275 ii 140, 520, 912.

(Contd. from page 41)

7. 1/3 of their receipts to Bawde, presumably as a fee, seems to be based on a mistaken reading of SP 1/68 ff 222-7, in which it is clear that the division of the payment between Bawde and the Owens is merely the result of their working jointly on the 36 guns (f 223v).

in just over two years, as well as more than 52 tons of shot and 156 tons of iron.[1]

In some ways, then, the situation at the end of our period was more satisfactory than at the beginning. In 1509 only crude, small wrought-iron guns were produced in quantity in England, bronze and cast-iron guns being produced at best occasionally; for large artillery the country was normally dependent on imported bronze guns. By 1550 the casting of bronze and iron were both established. The country still depended on Germany for supplies of copper, the main raw material for bronze ordnance, and this danger was not to be overcome until the Elizabethan period, with the activities of the Company of Mines Royal. While this dependence was dangerous however, the possibility of England being left without artillery resources at all had been removed; cast-iron made a serviceable, though inferior, alternative.

The position with regard to handguns was even less satisfactory. Records do exist of their being made in England; Cornelius Johnson once supplied 100 for service in Ireland,[2] and one Alex Bawdson was appointed King's handgun maker in 1545.[3] But, both at the beginning and at the end of the period the records are full of "hacbutts" (arquebuses) bought abroad. In the early years they were bought from various merchants, generally Italian, such as Peter Corse of Florence,[4]

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1. Schubert First Cast-Iron Cannon p 137; Giuseppi Iron-Works at Sheffield and Worth p 285
2. L.P. V p 321
3. L.P. XX.i.g 282 (8)
4. L.P. I ii 2308.

Leonardo Frescobaldi,[1] Alexander della Fava, and so on.[2] In the 1540s royal agents were sent abroad to buy them; in 1545, for instance, the King evidently bought 5000 in Italy; with the connivance of the Emperor he had them smuggled through Antwerp packed in sugar barrels in order to respect the neutrality of the Netherlands.[3] The guns themselves seem usually to have come from Italy, though their occasional import by German merchants may indicate that this was not always true.[4] There is certainly little trace of their manufacture on any large scale in England

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1. L.P. I ii 2668 (9)
2. L.P. I ii 3613 (68)
3. L.P. XX i 606, ii 90
4. Sigesmund Foyte was paid £99 for 280 handguns (at 6/- each), 9 great arquebuses (at 23/4d) and 6 smaller arquebuses (at 15/-) in 1513. B.M. Stowe MS/f 35).

(c) Gunpowder

Here the situation was much less satisfactory. Large amounts of gunpowder were imported, some of it by Italians or Spaniards,[1] but more often from the Netherlands[2] (where the amount stored in the English house at Antwerp in 1524 caused the city authorities some understandable anxiety).[3] Much of this latter may have come from the Mediterranean area, but some, certainly, reached Antwerp from Germany.[4]

Ordnance officials, however, preferred to import the ingredients of gunpowder and have it made up in England.[5] Gunpowder is composed of varying proportions of salt-petre, sulphur, and charcoal, of which salt-petre, the largest ingredient quantitively, was the most difficult to acquire in England.[6] Salt-petre is found in the soil, especially in India and Persia, but also to a lesser extent in Spain and Italy.[7] Its production can also be stimulated artificially, by treating soil containing a large amount of animal excrement with water,

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1. L.P. I i 1463 (v) (Francis de Errona, Spaniard) ; ii 2668 (Cavalcanti).
2. E351/9; William Damsell, King's agent in the Netherlands, 1544-7, spent £48,290 16s 11d (Flemish) on gunpowder, out of a total expenditure on munitions of £85,684 13s 7d.
3. HMC Bath II pp 1-2
4. L.P. XXI i 514.
5. Ibid.
6. The proportion of ingredients varied, but in the XVIth Century salt-petre was always by far the largest. (J.R. Partington History of Greek Fire and Gunpowder p 316). C.p. Lewis Armada Guns pp 173-4
7. Encyclopedia Britannica (11th ed 1910-1) "Saltpetre" : (1960 ed) "Nitre".

adding wood-ash to the solution, and letting the liquid crystallize;[1] the mixture was made the more nauseating by the belief of the period that stale urine was better for the purpos than ordinary water.[2]

The artificial process had been practised in Germany and France in the XVth Century.[3] In England, however, it was still unknown in our period, and there was thus absolute dependence on foreign supplies. The Ordnance accounts are full of payments for salt-petre; to Spaniards;[4] to Italians, for imports, sometimes at least, from Naples;[5] to Hanse merchants;[6] to English merchants such as the Greshams trading in the Netherlands.[7] Sigismund Foyte, a Hanse merchant, maintained in Chancery that on one occasion, the King hearing that he had saltpetre in his possession, gave immediate orders for its acquisition.[8] Sulphur too (generally referred to as "brimstone") had to be imported by merchants of various nationalities.[9]

There are, however, occasional references to salt-petre being made in England. John Stanget of Ipswich, for instance,

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1. Partington op cit pp 314-5: VCH Surrey II p 307: Oxford History of Technology II p 380 (figures 336-7 show the artificial method).
2. Oxford History of Technology II p 381
3. Partington Greek Fire pp 314-6
4. E.g. L.P. I.i. 1420, 1463 (v)
5. L.P. I.i.1423, ii 2668 (4), 3608vi (in which a number of merchants, mainly Italians, promise to pay in salt-petre at 6d a lb. for alum allowed then by the King. APC 1547-50 pp 123, 176, 323 (Bartholomew Fortune).
6. L.P. I ii 3613 I (13); 2668 (20)(30)
7. APC 1554-6 p 4
8. CI/308 f 71
9. L.P. I i 1423, ii 2832 (v), 3613 (45)(72); APC 1547-50 p 176.

was paid £20 "for making of Saltpeter" in 1511.[1] The mayor of Poole on one occasion commandeered a furnace "for makyng of Salt peter in the Towne of wynborne mynster".[2] One Oliver Russell was described on one occasion as "saltpetermaker".[3] None of these references, however, provide evidence that the artificial method was understood in England; they are probably connected with the process of "ffynyng Salt Pietyr in meell".[4]

This interpretation is borne out by the fact that various attempts were made to provide a native deposit of salt-petre. Hans van Colen (alias Hans Wulf) was given a commission in 1514-5 to find a native deposit.[5] He had already received a prest in January 1513 to be used for "the making of salt petre within the Reylme of England."[6] He was evidently unsuccessful for in 1531 a similar commission was issued to Thomas a' Lee.[7] Lee had provided some salt-petre before his appointment, but this presumably was foreign salt-petre that he had refined;[8] there is no record of his selling or providing salt-petre to

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1. E 36/1 p 31.
2. C 1/1193 ff 73-5
3. APC 1542-7 p 37.
4. Sta Cha/2/XV/ f 24r C.p. the payment of Richard Falconer "for fynyng of Saltpetre"; and to Stanget himself "for fynyng of Salt peter ~~in prest~~" (SPI/3 ff 22r, 23v : Saltpetre was frequently imported "in roche" and this is presumably the process of extraction (L.P. I i 1463(v), A.P.C. 1554-6 p 4.
5. L.P. II i 362 (SPI/10 f 154 adds nothing of substance).
6. E101/56/9 No. 29 (L.P. I ii 3613 (29) wrongly implies that the payment was to William Browne, who only received the money for Wulf's use).
7. L.P. V 325
8. L.P. V p 319; C1/653/39 shows him selling 7½ cwt. to Richard Raymond which Raymond had been unable to sell by February 1530.

the King after 1531. An Italian, Antonio de Napoli acquired yet another commission of the same sort;[1] one of his deputies so offended the citizens of Shrewsbury by digging in the ground of St. Mary's Abbey that they set ambushes for him on the roads and made his work impossible.[2] But again, there is no evidence that Napoli had any more success than his predecessors. Not until a German, Gerrard Honrick, had taught Englishmen the artificial method of making salt-petre in 1561 did England cease to depend entirely on foreign supplies.[3] Even then, England was unable to match the Spaniards, drawing on the relatively abundant supplies of the Mediterranean.[4] England's inferiority in our period is strikingly demonstrated by comparison with France, where in 1543 Francis I was able to commission no less than 300 "salpêtriers ordinaires" to dig in cellars.[5]

Professor Nef observed that

"It is generally assumed, though we do not know whether the assumption is justifiable, that no gun-powder had been manufactured in England before the establishment of a mill in Surrey in 1554 or 1555."[6]

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1. C1/1120/52 (quoted by T.G. Wyatt, thesis cited p 138) Napoli had come to England as a gunner between 1522 and 1527 (Archaeologica Vol. 47 pt ii, 1883, p 332).
2. C1/1120/52
3. V.C.H. Surrey II p 307
4. Lewis Armada Guns pp 176-7. There was a general shortage of saltpetre in Northern Europe to judge from a project of 1579 or 1580 to develop "a veyne of saltpeter" to furnish "the hole state of the protestants of al Europe." (T.S. Willan Early History of the Russia Company p 148)
5. Napoléon III & Favé Études sur l'Artillérie III p 232
6. J.U. Nef The Rise of the British Coal Industry I p 185

In fact gunpowder was ground in XIVth Century England.[1] There is evidence, again, of its being made in 1487-90.[2] There seems no reason to suppose that the practise died out in the meanwhile. Even so, however, foreigners were prominent as gunpowder makers in our period. This is apparent in the succession of King's gunpowder-makers. Robert Fisher, who succeeded to the position in 1521, may have been an alien.[3] His successors were Luke de la Arche and Geoffrey Hughes, the former obviously not of English origin.[4] De la Arche lost his office in 1534 after committing murder, and was succeeded by Antonio de Napoli and William Parker.[5] Thereafter foreign domination was at an end. In 1543 a consortium, apparently of Englishmen, took over;[6] and these, in turn, were succeeded in 1545 by the two John Bowyers, apparently father and son.[7] Even here, however, we find that the Bowyers employed at least five foreign workmen.[8]

The powder situation illustrates clearly, then, the technological backwardness of the English in military matters.

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1. Tout Firearms pp 239, 242, 250.
2. J.R. Hooker Notes on the Organisation and Supply of the Tudor Military under Henry VII (Huntingdon Library Quarterly Vol. 23, 1959-60, pp 19-31) pp 27-8; Hooker confuses the making of gunpowder out of its ingredients with the manufacture of salt-petre.
3. L.P. III i g 1262 (26) He signs himself "Robert festscher"; he does not appear in the list of aliens taken from the 1523-5 subsidy rolls, but these are far from being complete. (Huguenot Society Publications Vol. X pt 1 (1900), ed R.E.G. & E.F. Kirk pix).
4. L.P. IV i 1676
5. L.P. VII.g.587 (4) 589 (16)
6. L.P. XVIII ii g 107 (41). None of them figure in the Huguenot Society's compilation of the subsidy rolls (Publications Vol. X) or of denizations (Ibid Vol VIII).
7. L.P. XX ii g 707 (18).
8. Huguenot Society Publications Vol. VIII pxlix.

Foreigners took a prominent part in the actual manufacture of powder from its basic ingredients, even though the art had been practised in England for nearly two centuries. Much more important, England remained dependent on foreign supplies of the main ingredient, saltpetre.[1] Attempts to remedy the deficiency were half-hearted and unsuccessful.

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1. The boast of the English herald (T.E.D. III p 10) that sufficient salt-petre was made in England to equip her for the war is a bare-faced lie; that the boast was worth making illustrates the urgency of the matter.

(d) Other armaments

These (bows, arrows, armour, and missiles for guns) can be dealt with more briefly. They are all fairly simple to produce; had been made for centuries; and were generally (except for gun-missiles) provided in small numbers on a local level to individual soldiers or their commanders.[1] Even here, however, we find a surprisingly large number of imports; especially when the government required supplies in mass rather than leaving private individuals to equip themselves.

The most surprising feature is the import of bow-staves. The long-bow, after all, had been the distinctive feature of English armies in the Hundred Years War and had become surrounded in the Tudor period with a certain sentimental mystique.[2] Yet the import of yew bows from Western Russia and the Carpathians by way of Danzig was well established before 1500, and by the same date large quantities were also brought from South Germany.[3] A statute of 1511-2 rehearsed various statutes of preceding reigns and especially of Henry VII's, which required all merchants bringing wine to England from the Mediterranean to bring with them a "grete numbre of Bowstaves of Ewe... from those parties where these growe".[4] This, it was made plain in 1514-5, was intended to apply only to foreign merchants, and that the fact

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1. C.p. the provision of 25 pair of new harness for the Irish Ordnance Office by a "coler maker" in 1537-9 working at no more than the soldier's wage of 6d per day. (Irish Ordnance Accounts, printed in Irish Sword Vol. I 1949-53 p 327)
2. Roger Ascham Toxophilus (ed E. Arber 1868) pp 86-8
3. O de Smedt De Engelse Natie te Antwerpen II p 394 n4.
4. 3 HVIII c3, c13.

that the King's subjects "have been inquieted vexid and troubled in the Kinges Eschequier for bringing of Malmeseys into this Realme withoute bowstaves" was a mistake.[1] The Act's success was very limited, to judge from the import of no less than 20,000 bowstaves from Antwerp in the years 1545-50.[2] Indeed, the alleged monopoly of Steelyard merchants in the supply of bow-staves was a subject for complaint in the 1540s.[3] The problem was still unsolved in 1579-80, when it was proposed to seek supplies in Persia;[4] though by this date the need was becoming less urgent with the conversion of all but a few enthusiasts to the belief that the bow was now an anachronism.

Attempts were made to stimulate English production. The local product was generally of "Elme Wiche or other Wode of mean price" and bowyers were to produce at least two cheap bows to one of yew.[5] The proportions were changed to four cheap to one yew in 1541, in an attempt (along with the closing of gaming-houses) to combat unemployment amongst bowyers.[6]

Armour presents a similar picture. Costly pieces designed for tournaments or merely for spectacle were acceptable presents between monarchs, but their workmanship had become so much a matter of aesthetics rather than utility that masterpieces were

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1. 6 HV III c 11.
2. O de Smedt De Engelse Natie te Antwerpen II p 394.
3. L.P. XX i 936, 960. H.P. II 440
4. Willan Russia Company p 148
5. 3 HV III c 3
6. 33 HV III c 9.

sought out throughout Europe.[1] Large numbers of ordinary harness were also imported, however; at the beginning of the period through the usual Italian merchants;[2] at the end mainly through the crown's agents in the Netherlands, though some were bought in Italy.[3] The Greshams were especially prominent here. Thomas Gresham provided large quantities of harness for the government between 1547 and 1561, and also sold a good many to individuals.[4] Indeed in 1547 the commissioners for musters were told to

> "declare to all and every suche as be not alredy furnisshed with the said demy launce harnys that we for ther more easy furniture...have taken order that as many of them as shall want demylaunce harnes may be furnisshed at...xls...by our trusty and loving subiect & servant Sir Rychard Gresham knight...".[5]

There were, of course, English armourers.[6] But even here, alien workmen were prominent.[7] The most famous example of all were the so-called "Almain Armourers"; established in the royal armouries at Greenwich in 1515.[8] Their fame, however, was out of all proportion to their practical value; since, in E.K. Chambers words, they were established;-

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1. C.J. ffoulkes The Armouries of the Tower of London I pp 37-8 prints some interesting extracts about the making of gilt armour for Henry VIII at Innsbrück. The accounts of the Greenwich armouries include payments of £8 to £12 for single suits (B.M. Royal MS 7F XIV f 70r).
2. L.P. I i 1717; ii 1920, 1935.
3. E351/9; L.P. XI, 1296; XVI 622; XX i 375
4. B.M. Harl MS 7457 ff 2v, 3v; Mercers' Coy. MSS Gresham Daybook passim (e.g. entries 1578,6556,6557
5. SP10/1 f 117
6. C.J. ffoulkes Some Account of the Worshipful Company of Armourers and The Armourers Company or London and the

(contd. over)

"for the special purpose of acclimatizing the foreign art of chasing and inlaying decorative armour to be used in the knightly exercise of the tilt".[1]

There is in fact no evidence that Almain armourers were ever set to manufacture ordinary equipment on a large scale, though they were sometimes employed cleaning the armour that was alread in store.[2] One of them, indeed, Erasmus Kyrkener, provided candlesticks, trimmed the King's gown, and garnished the royal books, an indication of the essentially artistic nature of the armourers' work.[3] The bringing over of the Almain armourers is, therefore, no indication that any serious steps were taken by the government to counter the country's dependence on foreign supplies of armour.

When to this we add that pikes were frequently imported, at both ends of our period;[4] that aliens were employed in their manufacture in England;[5] that iron-gunstones, although produced in England were sometimes obtained abroad;[6] the picture is one

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1. Sir Henry Lee p 108
2. L.P. III i 1009 p 371
3. L.P. V pp 748, 757, 758
4. L.P. I ii p 1514, XVIII i 260; E351/9
5. Wyatt, thesis cited p 147.
6. Schubert, First Cast-Iron Gun pp 134-5; L.P. I.ii pp 1508-9.

(Contd. from page 53)

6. Greenwich School of Armourers (Archaeologica Vol 76, 1927 pp 41-58) S.H. Pitt Some Notes on the History of the Worshipful Company of Armourers.
7. Wyatt, thesis cited pp 144-7.
8. ffoulkes The Armourer and his Craft pp 14-6. In February 1515 the City authorities at Brussels were trying to prevent their departure (CSP Sp. Spl II p 3).

of a peculiar lack of craftsmanship in England, even when we consider only these arts which had been practised for centuries, and in which the XVIth Century saw no very complicated technical advance.[1]

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1. Morrispikes were of course an innovation (H.A. Dillon in Archaeologica Vol 51 pt I, 1888, pp 235-6) but hardly demanded any startling new technique for their manufacture.

(e) The merchants involved

We must deal briefly here with the merchants through whom military equipment from abroad was supplied. At the beginning of Henry VIII's reign, foreigners, and especially Italians, were very prominent; Giovanni Cavalcanti, for instance, who as well as importing luxury goods and alum, supplied guns and salt-petre[1]; Antonio Cavalcanti, who was very prominent in the supply of saltpetre;[2] Ludovico and Alessandro de la Fava, of Bologna, who imported harness and a good deal of naval equipment.[3] These have been dealt with at length by T.G. Wyatt, and it is unnecessary to go over the same ground here.[4] It will be enough to take one example, probably the most important of the Italian merchants, Leonardo Frescobaldi.

Frescobaldi was a member of a family of Italian merchants whose interests extended throughout Western Europe.[5] Leonardo himself, with other Italians, was heavily in debt to the English Crown in 1517, for customs, for loans made to them, and as sureties for the Duke of Suffolk for a loan made to him by the Crown.[6] He seems to have been, to a certain extent, a general financial agent to the Crown, foreshadowing to some degree the role which Thomas Gresham was later to play. He was, for instance, the channel through which subsidies were paid to

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1. Wyatt, thesis cited pp 183-4.
2. Ibid p 202
3. Ibid p 225
4. Ibid pp 178-229
5. Ibid p 186
6. L.P. II ii 2953

Henry's ~~aliens~~ allies;[1] the payment for the "Twelve Apostles" was also transmitted to Poppenruyter through Frescobaldi.[2] But he seems also to have provided military equipment for the Crown on his own account; in 1514, for instance, he imported no less than 46,218 lbs of saltpetre;[3] while handguns, artillery and ships' cables also bulked large in his affairs.[4] In return, he was a gentleman usher of the Chamber and was appointed, with his compatriot Antonio Cavalari, purveyor of gold and silver cloth for the King.[5] His position at court and importance in exchange transactions and military supply, presumably played their part in securing certain customs' concessions that he enjoyed.[6]

Italians were not the only foreign merchants supplying military equipment, however, A Bavarian, Sigismund Foyte, was active supplying guns and saltpetre in 1512.[7] Indeed, a good deal of English gunpowder requirements was supplied by German merchants.[8]

By the end of our period, there had been a considerable change. While occasional supplies were still obtained from foreigners if they happened to be available,[9] English merchants

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1. L.P. II i 1889, 1966, 2007.
2. L.P. I ii 2510
3. L.P. I ii 2839
4. L.P. I ii 1986, 2011, 2668
5. L.P. I ig 1602 (30), II i 2736 p 875
6. A.A. Ruddock Italian Merchants and Shipping at Southampton p 195. L.P. I i g 1266 (25)
7. Wyatt, thesis p 241
8. Ibid p 244
9. E.g. pikes from Martin de Bolingo in 1545 (L.P. XXI i 643 p 313)

figure much more prominently in the records. An example, here, is the Gresham family. Richard and Thomas Gresham, as we have seen, were dealing largely in armour in the late 1540s.[1] Thomas Gresham's account-book does in fact provide the only opportunity to see the supply of military equipment from the merchant's side? Even so, it reveals little, beyond the fact that the "mark-up" on armour was normally about 33%,[3] and that, although Gresham's dealings with arms were increasing throughout the period, they never bulked as large as did his cloth and exchange transactions.[4] The same is probably true of other merchants who dealt in Military supplies; it is unlikely that ~~they~~ supplies were ever the staple of their businesses.

More important than the shift from foreign to English merchants, however, is the beginning of bulk-buying on the part of the Crown. Dealings through its own agents largely replaced hap-hazard purchases from merchants. The office of King's Merchant at Danzig, for instance, seems to have been established in 1539.[5] William Watson, the first holder of the office, supplied the great bulk of naval stores in the 1540s, as well as a certain amount of artillery and, in 1546, of grain.[6]

Military supplies, too, began to bulk large in the business of the King's Agent in the Netherlands, an office which dates

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1. Above p 53.
2. Mercers' Coy. MS, Gresham Day-Book
3. E.g. entries 1211, 1577, 1578.
4. Passim
5. See below p 117.
6. B.M. Add MS 5752 pp 28-32; SPI/222 ff 97-105; L.P. XXI i 126. See below pp 177-8.

from Stephen Vaughan's appointment in 1538.[1] William Damsell, for instance, handled a total of £210,014 Flemish (reckoning 22/- Flemish to £1 Sterling) between January 1544 and September 1547 as royal agent in Flanders. Of this £109,167 was for the repayments of loans to foreigners, and £85,685 for munitions of War, divided as follows:-

£48,291	-	Gunpowder
73		"Lyntes to geve fire with"
437		Saltpetre
516		Bronze ordnance
1854		Handguns
2184		Harness of various kinds
164		Swords
2556		Lances, spears etc.
54		Maces for horsemen
45		Halberds
933		Saddles
584		Wagons and wagon wheels
26,613		Copper
654		Canvas
734		Anchors
£ 85,692 [2]		

In this company £21 6s for "Olyfantes Tethes Ffoure" provides welcome light relief. In addition, Watson paid £1050 to a representative of the Treasurer of the Navy to buy cables, £267 to Peter van Colen for small artillery guns, and £1333 for the provision of mares in Flanders.[3] The scale of military requirements had contributed to a more regular, less hap-hazard attitude to military affairs, a feature which will be more strikingly apparent in our study of military administration.

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1. W.C. Richardson Stephen Vaughan (Louisiana State University Studies, Social Science Series No. 3 1953)
2. Discrepancy because all figures to nearest £1.
3. E351/9.

(f) Positive attempts at National self-sufficiency

Richard Morison, dedicating his translation or Frontinus' The Strategemes, Sleyghtes, and policies of warre to Henry VIII in 1539, remarked

> "that your grace neyther spareth, to vysite with your owne eyes, the ruinous places of the see quostes... neyther yet letteth, to worke with your own handes, continually manegynge tooles, continually inventyng new sortes of weapons, new kindes of shyppes, or gunnes, of armure."

and wished that all Englishmen could

> "se, howe your grace spendeth all the hole day" in such pursuits "I have seene it, and nowe nothyng wonder..."[1]

The flattery of dedication is not/historical evidence. But in this case it is borne out, in less extravagant terms, by other sources. The King's interest in ships and ship-building is well known;[2] in 1541 he was reported to be having ships built to his own design.[3] He occasionally drew up his own plans for new fortifications.[4] He corrected standing-orders for garrisons.[5] The Guild of St. George, licensed by Henry to encourage archery and the shooting of handguns, fell into decay on his death.[6]

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1. P.a iij (B.M. 543 d 3)
2. A.F. Pollard Henry VIII (1905ed) pp 126-8
3. CSP Sp VI i pp 342-3
4. L.P. XIV i 398, 899 B.H.St. J. O'Neil Castles and Cannon p 61.
5. L.P. XV 325 St.P X p 161.
6. L.P. XII ii g 617 (10); BM Galba MS BXII f 16r.

The Owen brothers' new guns were displayed for his inspection when their quality was impugned by the Surveyor of the Ordnance For Henry military technology, along with hunting and perhaps amateur theology, was of considerable personal interest; it was certainly greater than his interest in the details of day-to-day administration.[2]

Whether his personal interest resulted in any definite attempt to make his country strategically independent is more dubious, however. A survey of the legislation of the period hardly suggests that military self-sufficiency was a conscious aim of the government. Acts to encourage the navy,[3] to prevent the export of bronze and bell-metal.[4] and to stop the sale of horses to aliens, especially Scotsmen,[5] all mention the obvious consideration of defence; but commercial considerations are given equal prominence. An act to promote the growth of native flax and hemp is purely concerned with the unemployment and unfavourable balance of trade caused by importing linen.[6] Even the act to conserve wood is as much concerned with its use in building as in ships, and gives no particular prominence to warships as opposed to merchant ships.[7] Likewise there is no conclusive argument to royal policy from the number of aliens

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1. L.P. XI 39; XII ii Appdx. 7
2. G.R. Elton Tudor Revolution in Government pp 66-70
3. 23 HVIII c 7, 32 HVIII c 14
4. 21 HVIII c 10, 33 HVIII c 7, 2&3 Ed VI c 37
5. 22 HVIII c 7, 23 HVIII c 16, 27 HVIII c 6, 32 HVIII c 13
   1 Ed VI c 5
6. 24 HVIII c 4
7. 35 HVIII c 17

employed in military craftsmanship; they were at work in England well before 1509;[1] and during our period aliens also were engaged in many other trades.[2] Nevertheless a party of Italian gunmen, including Francesco Arcanus and his son, and Antonio de Napoli, were specially retained for the King's service in 1522 or 1523, which implies that they may have been deliberately sought out by royal agents.[3] Indeed the very number engaged in cannon-founding, the production of gunpowder, armour and so on hints at the probability of definite royal attempts to attract alien craftsmen. The very definite attempts to discover copper, to promote a canvas industry, above all to discover saltpetre, indicate that Henry VIII, as much as Burghley, pursued a definite policy of military self-sufficiency.[4]

Nevertheless by the end of our period England was still dependent on foreign sources for a long list of supplies. As we saw from Damsell's and Watson's imports, gunpowder (because of the English failure to manufacture saltpetre), copper (for bronze ordnance) and cordage, for the navy, were the most important requirements; but large quantities of handguns, armour, swords, lances and so on were also imported.[5] Military success still depended on the efficient acquisition of supplies from abroad.

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1. Schubert Iron and Steel Industry p 165
2. Wyatt, thesis cited, Appdx. A
3. Archaeologica Vol 47 pt ii (1883) p 332. Arcanus was master of the mines in Suffolk's expedition to France in 1523 (L.P. III ii 3288 p 1370)
4. C.p. W. Cunningham The Growth of English Industry and Commerce Vol II (4th ed 1907) pp 53-84 on "The Policy of Burghley". Burghley, for instance, is given credit for the growth of the cast-iron industry (p 57)

(contd. over)

(g) Supply considerations and foreign policy

In these circumstances it is reasonable to ask how far such considerations influenced foreign policy. But the question is less easy to answer, due to the lack of material revealing the long-term aims behind Hencian foreign policy. As we have seen a major source of supply was the Netherlands. Yet, if we ignore Poppenruyter's guns, the Netherlands figured here in their normal rôle as an entrepôt rather than as a producer; the gunpowder, the guns, the pikes came largely from Italy, the copper from the Fugger and so on. It would be too much to argue that strategic dependence on the Netherlands was absolute. France after all maintained itself quite adequately against Charles V, and presumably if, as in the abortive war of 1528, England had allied itself with France against the Emperor, the same sources of supply would have been open to Henry VIII as to Francis I. The real danger, of course, was that which threatened in 1539, a combination of Francis and the Emperor. Any prolonged war against the two great continental powers in alliance might well have starved England of military supplies, especially if the French navy had combined with those of Charles V to cut off English communications with Italy and with the Baltic. An examination of English relations with France and the Netherlands is obviously out of the question here; obviously, too, much the same considerations applied to England's trading interests in

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(contd. from page 62)

5. Above p59 c.p. the Discourse of the Common Weal (ed. E.M. Lamond) p 34, and the list of imports from Antwerp 1540-50 given by O de Smedt De Engelse Natie te Antwerpen II pp 394-5.

general as to military supply questions in particular. Yet it seems reasonable to claim that one of the many considerations which made a Franco-Habsburg entente so dangerous was England's lack of military self-sufficiency.

It is relations with the Baltic powers which would provide the best test-case for the influence of military supply problems on the formulation of policy. Even here, however, there is very little direct evidence for our purpose; but the history of English relations with Denmark and with the Hanse provides some circumstantial evidence.

Except for one series of incidents in 1534-5 Henry VIII maintained good relations with the Kings of Denmark throughout his reign. When in 1544 Charles V proposed an attack on the Duke of Holstein (that is, on Christian III of Denmark, whose title the Emperor did not recognise) Henry refused,

> "consydering that the moost parte of thinges for the-quipage of ships cummith either out of his cuntrey or must passe by his cuntrey"

and that if Danish enmity were incurred

> "they [Henry and Charles] shall want wherewith to furnishe themselfes to the see, and be enforced to leave the same open to their ennemyes" 1

Chapuys considered that Henry was exaggerating the effects of Danish nostility; while Henry himself was only asking for a

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1. St. P IX p 614 (L.P. XIX i 168); c.p. CSP Sp VII 43 (pp 63-4) (L.P. XIX i 149 p 89).

respite before declaring war, so that naval stores could be safely stockpiled first.[1]

More interesting, but not very revealing, is the extraordinary series of proceedings in 1534-5 when Henry intervened in the Danish succession dispute and seriously considered the advantages of becoming King of Denmark himself, or even King of Sweden, allying himself for the purpose with the revolutionary Lübeckers under George Wullenwever.[2] Henry's protégé Marcus Meyer (who had been captured as a pirate in 1533, had won the King's favour at court and had been knighted) escaped from the castle of Warburg, where he had been imprisoned captured it, and held it in Henry's name.[4] The castle was situated in Scania , on the Great Belt;[5] and Meyer wrote that from this base, if Henry would only supply 16 or 20 ships, Denmark itself (in the throes of a succession war) could be won for the King.[6] Richard Cavendish and Edmund Bonner were sent in July 1535 to see how the ground lay, and a small expedition was fitted out under Christopher Morres, Master of

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1. Ibid.
2. The most recent account of the events is the 1960 London Ph.D. thesis by G.M.V. Alexander on "The Life and Career of Edmund Bonner... to 1549..", Chapter V pp 114-68.
3. L.P. VIII pp xii-xiv
4. L.P. IX pp x-xi
5. Ibid
6. B.M. Add MS 48036 f 39r.

the Ordnance, to help Meyer.[1] This was cancelled with news of the defeat of the Lübeckers, the overthrow of Wullenwever and his party in Lübeck itself and the (false) report that the Warburg had fallen[2] Henry's German agent, "Dr. Adams" (alias Adam Paceus, or Otto Pack)[3] then advocated a yet more fantastic scheme by which Henry was to acquire Sweden, either reigning himself or governing through a puppet.[4] His instrument was to be one Bernard de Melas, who, it was claimed, would be welcomed as a liberator by the Swedes, groaning under the tyranny of Gustavus Vasa.[5] Henry drew back from going to such lengths, and nothing came of the scheme. But quite evidently Henry had been actively interested in his prospects in Denmark, even if caution kept his interest in check.

It seems reasonable to suppose that it was the Sound itself rather than either Denmark or Sweden which interested him. When Meyer asked for 16 ships to conquer Denmark, Henry was willing to send only two or three, enough to keep the Warburg itself, described as "the very kaye betwixte Suedone and Denemarke."[6]; again Bonner and Cavendish reported unfavourably on Meyer's scheme in general, but concluded that the Warburg itself "may be Made invincible withe small charge."[7] Clearly the Morres

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1. Alexander, thesis Chapter V: L.P. IX pp xi-xii
2. Alexander, pp 133-4 : L.P. IX pp xii-xiii
3. Alexander, pp 128-9.
4. Ibid pp 139-43
5. Ibid

6. BM Add MS 48036 f 39v
7. Ibid F 39v.

expedition was intended to control the Belt rather than to further Henry's claims to the Danish crown itself. Again, it was the Belt primarily, with which Adams was concerned; "youre grace shall never abteyne your purpose in the belte" except through de Melas, he wrote;[1] and on another occasion, with reference to an alleged attempt by Francis I, that the Germans would not suffer "ony greate kyng to have the rule in the belte."[2] The sea-passage to the Baltic, indeed, was in the forefront of all the participants' minds. Lübeck had been first stirred to an active interest by the commercial treaty between the Regent of the Netherlands and the Duke of Holstein as claimant to the Danish throne.[3] And, advocating a different policy for the same end, Henry's representative in Hamburg in July 1534 had written advising him to ally with the Duke of Holstein and harm the Habsburg interest by preventing the Dutch carrying corn, pitch and tar through the Sound.[4] Henry was quite capable of taking the strategic point about the Sound, while rejecting the conclusion that friendship with the Duke was the best means to that end.

Cavendish, one of the ambassadors, was incidentally employed in the acquisition of pitch and cables while on his mission.[5] Yet there is no definite evidence that naval stores were considered a major factor in Henry's Sound policy. An

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1. Ibid f 42v
2. Ibid f 42r
3. Alexander, thesis, p 114
4. L.P. VII 970
5. L.P. X 353

elaborate memorandum (probably by Adams)[1] on the advantages which the occupation of Sweden would bring, mentions Swedish metallurgy, the potential supply of soldiers, the use of its fleet, as well as the fact that the King of Sweden would be "tocius maris baltici dominus"; but there is not a word about securing a supply of stores for the English navy.[2] Unfortunately no record of the discussions between the King and his immediate advisers survives. Yet it seems unlikely that the question of provisions for his carefully fostered navy should have been absent from the mind of the King, or from that of the prudent Cromwell.

As elusive is the evidence for the determining factors in Anglo Hanseatic relations. The maintenance of its privileges by the Hanseatic League throughout our period, in spite of the jealousy of English merchants, may well be due to the government's realisation that the supply of naval stores by the Steel yard merchants was vital.[3] Two major attacks were launched on Hanseatic privileges, in 1517-20, and in 1540-3, both periods of peace.[4] The second was called off when war threatened, and in 1546 the Steelyard merchants were thanked for having "at all tymes when they were called upon shewed them selves very willing and redy to execute what soever his Highnes required

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1. Alexander thesis p 142 (note 113)
2. BM Add MS 48036 ff 163-9, esp 164v
3. For a summary of Anglo-Hanseatic relations see J.A. Williamson Maritime Enterprise 1485-1558 pp 152-82
4. Ibid pp 154-5 158-60

of them."[1] This service was partly, doubtless, the sale of five ships to Henry in 1544-5,[2] and partly the provision of grain and mercenary troops.[3] But naval stores had bulked very large in those years. In 1543-4 William Watson, the King's agent at Danzig, sent some £604 worth of cables which were lost at sea.[4] In November 1544 162 cables, 431 hawsers, 469 boat-oars (presumably for the new rowbarges) and 100 masts of various sorts arrived at Deptford from Watson.[5] More cable followed two months later, and cable-yarn, masts and yards again in 1545.[6] In 1546 the civic authorities at Danzig promised to give him every facility to export naval stores;[7] whereas by contrast in 1542, at the time of the Anglo-Hanseatic dispute, they had cast Watson "into a Vyle stynkyng prison emongst a sorte of vyle persones vacabondes & whores."[8] In these changed circumstances, the attack on the Hanse could hardly be pressed home.

Against this thesis may be cited the attack on Hanseatic privileges by Northumberland and Mary, and by Elizabeth.[9] But the expansion of the Merchant Adventurers into the Baltic from the 1540s began to lessen English dependence on Steelyard merchants, while the activities of the Russia Company provided

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1. APC 1542-7 pp 458-9
2. Anderson List Nos. 67-9, 75, 78
3. Schanz Englische Handels-politik I pp 225-7
4. BM Add MS 5752 ff 28-9
5. Ibid f 31
6. Ibid f 30; SP I/222 f 99
7. L.P. XXI i 218
8. Sta Cha/2/XXX/2 C.p. Williamson Maritime Enterprise p 158
9. Williamson Maritime Enterprise pp 167-81; G. Unwin Studies in Economic History pp 204-20

a source of supply as an alternative to the Baltic.[1] Even so, Elizabeth took pains not to alienate Denmark and risk the closing of the Sound.[2] Henry VIII had much less room to manoeuvre and it seems reasonable to assume that his relations with the Hanse, even if not those with Denmark, were seriously affected by the needs of the Royal Navy. England was to remain dangerously dependent on the Baltic until American sources of supply were developed in the late XVIIIth Century; the Napoleonic Wars showed that the dependence had not disappeared, even in the early XIX th.[3] How much more difficult was the situation in our period, when not only access to the Baltic, but the carrying trade itself was in the hands of foreigners.

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1. E. Lipson Economic History of England (5th ed. 1948) II p 199; Willan Russia Company pp 71, 101
2. V. Kirchner England and Denmark 1558-88 (Journal of Modern History Vol. 17, 1945, pp 1-15.
3. R.G. Albion Forests and Sea-power Chapter X.

C H A P T E R T H R E E

Military Technology and Industrial Concentration

The debate between Werner Sombart and J.U. Nef on the inter-relation of war and the growth of capitalism has been, in some respects an unreal one; both sides seem to have aimed slightly off target. Sombart may leave a general impression that war was a necessary condition for economic advance, but that was not his intention. He did not claim that war was without its destructive side; rather he insisted on

> "Das doppelte Gesicht des Krieges: hier zerstört er, und dort baut er auf".[1]

But he took the first as obvious, and concentrated on the second as being less well-known, trying to show

> "...wie durch die militärischen Interessen, die einen beherrschenden Einfluss nur bis zum Beginn der hochkapitalischen Zeit ausüben: aber das ist ja gerade das Entscheidende, weil eben in dieser Zeit der Character des modernen Kapitalismus sein Grundprägung erfährt." [2]

Nef's aim on the other hand is much more ambitious; he comments on Sombart's method:

> "To discuss the economic consequence of the

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1. Krieg und Kapitalismus p 14
2. Ibid p 15.

production of the instruments of war as if this could be separate from the economic consequences of their use is of little service to truth."[1] Nef's purpose, therefore, is to draw up a vast balance-sheet, covering the whole of modern European history. We shall not attempt to follow him in these speculations; if only because, in our period, the instruments of war which were manufactured in England were generally used in the Scottish Lowlands, in Northern France, or at sea; and that therefore, a profit and loss account considered purely from an English point of view would, on Nef's principles, be a false one. Indeed, a continental analogy suggests that the most favourable condition for industrial development was for a country to be itself at peace while its warring neighbours provided a market for military goods;[2] England, its battles fought comfortably abroad, approximated nearly to this ideal situation.

But Professor Nef did not confine himself to setting out at length the debit side of war which Sombart had passed over so lightly. He sought also to reduce some of Sombart's claims for the positive achievement of war; to argue that military technology was often conducted on a small-scale basis, that

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1. War and Human Progress p 66
2. J. Lejeune La Formation du Capitalisme Moderne dans la Principauté de Liége au XVI^e siècle.

developments like shipbuilding owed more to commerce than to war, and that large-scale industries like coal-mining and sugar-refining existed quite independent of military needs.[1] This last is obviously true. Our business is the more modest one, of examining the first part; to see whether military requirements contributed at all to any noteworthy development in industrial organisation in our period, or to any important technological advance.

The issue is further complicated by a challenge to the whole concept of a"XVIth Century Industrial Revolution". It has been argued that the number of workmen employed on particular projects was often exaggerated by the employers themselves; that descriptions and pictures of industrial techniques were deliberately designed to stress their complexity and that the untypically large impressed itself most vividly on contemporaries, and through their witness, on modern historians.[2] Professor Nef himself has admitted that

> "there has been a disposition to make more of the changes which the statistics sometimes reveal than they will bear, and to attribute to them a deceptive novelty.. Rates of increase...are bound to give an impression of phenomenal rapidity when we start from almost nothing.."[3]

This more modest concept of XVIth Century industrial develop-

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1. War and Human Progress Chapter 4 passim
2. D.C. Coleman Technology and Economic History 1500-1750 (Econ HR, (NS) Vol. 11, 1958-9, pp 506-14
3. Cultural Foundations of Industrial Civilisation pp 36-7.

ment is in fact a help to our argument. If shipyards and gun-foundries seem in the course of our exposition to be small-scale industries, we may remind ourselves that the same is true of most, if not all, industries of the period. The largest staff employed by any one man which Miss Thrupp has found in the late medieaval craft records of London, consisted of the 11 apprentices and 7 hired servants of Thomas Dounton, pewterer in 1456.[1] The largest amount of capital required in the same period was about £20, and the average seems to have been about £5-£10.[2] We are not dealing with an industrial society; but rather peering through a microscope to try to discover the seeds of such a society.

Our first task is to cut down some exaggerated views about the scale of one of our industries. Dr. G.R. Elton writes that

"The only two mediaeval industries pursued on a sufficiently large scale to require major organisation, were textiles and shipbuilding (Building, which might have rivalled them, was in the hands of thousands of individual craftsmen.)"[3] In fact there was little difference between the organisation of building and that of shipbuilding.

With the single exception of the Henry Grace à Dieu,

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1. S.L. Thrupp The Merchant Class of Mediaeval London p 9
2. Ibid pp 110-1
3. England under the Tudors p 239

Henry VIII's fleet contained nothing significantly larger than many of the more outstanding merchant ships of the XVth Century.[1] Nevertheless, the King's ships were on the whole very much larger than the great mass of privately owned vessels, especially as the early XVIth Century saw a trend away from the exceptionally large merchant ship.[2] Dr. Ralph Davis has pointed out how little capital was required by XVIIth Century shipbuilders, and how few men they employed; none of the London shipbuilders of that time could have employed 100 men in peacetime.[3] It is to the royal dockyards then that we must look to see if shipbuilding was, in any sense, a large-scale industry; the more so, because of the disappointing lack of evidence about XVth Century shipbuilding.[4]

As far as labour, the basis of Dr. Elton's distinction, is concerned, the answer is that it did not; or at least that it shows no very striking difference to mediaeval building practise. L.F. Salzman has shown the large number of workmen who were collected together to build the castles and great churches of mediaeval England. In June 1253, for instance, 435 were employed at Westminster Abbey.[5] The fluidity of employment, its seasonal

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1. Anderson List pp 5-10; G.V. Scammell English Merchant Shipping at the End of the Middle Ages (Econ H.R. Vol 13 (NS) 1960-1, pp 327-41) pp 332-3. It should be remembered that measurement of tonnage was a very approximate business.
2. Scammell ibid pp 332-3;
3. Ralph Davis The Rise of the English Shipping Industry pp 55-6 C.p. also D.C. Coleman, in Naval Dockyards under the Later Stuarts (Econ H.R. Vol. 6 (NS), 1953-4, pp 134-55) p 154.
4. See M.A.S. Hickmore's London M.A. thesis (1937) on "The Shipbuilding Industry on the East and South Coast of England in the XVth Century."
5. L.F. Salzman Building in England down to 1540 p 35.

nature, is shown by the dropping of this number to 100 by November of the same year.[1] The crown could use its prerogative of purveyance to impress labour;[2] and did so, so widely that 29 masons from Yorkshire were employed at Windsor in 1362, and 40 from Somerset at Sandgate Castle in 1539.[3] The employer, not surprisingly, had to find lodgings for the workmen, and the purchase of beds for this purpose was quite common.[4]

All this is exactly paralleled in the shipbuilding accounts of our period. Shipwrights and other labourers were almost universally paid by the day or sometimes by the 'tide';[5] though occasionally there were exceptions such as the two men paid for a year's and eight months' service respectively on the building of the Henry Grace à' Dieu.[6] Work was on a distinctly casual basis, and the numbers employed varied widely; between the 1st and the 18th of December, 1521, 8 men only were employed in shipbuilding at Portsmouth; none at all till January 17th; and from that day until March 16th 126 for periods varying between 2 days and 36 days each.[7] Shipwrights were generally, though not invariably, impressed.[8] Conduct money for men working on the Henry Grace à' Dieu was paid to some 266 men, who came to Woolwich from as far afield as Fowey (14 of them), Plymouth (8)

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1. Ibid p 35
2. Ibid p 37
3. Ibid pp 34-5
4. Ibid pp 39-40
5. E.g. E36/6 passim
6. E 36/11 f 11r
7. E 36/6 pp 12-4
8. E 36/5 f 117r, payment to Robert Brigandine for riding with 6 others to impress shipwrights and to provide timber, (and similar payments ff 119r, 125r, 126v) Oppenheim points out that impressment was not used for the workers for Portsmouth dockyard. (Accounts and Inventories p 41r)

Dartmouth (22), Hull (7), York (1) and Beverley (2).[1] Lodging had, of course, to be provided, and on occasion large numbers of beds were bought or hired.[2]

The lack of permanent fixtures necessary for the building even of large ships is seen by the rebuilding in 1545 of the 450 ton "Grand Mistress" at Smallhythe in Kent.[3] Smallhythe had been a flourishing ship-building centre in the earlier part of the period. The Regent had been built there in 1487;[4] so probably had the Great Bark and Less Bark (of 200-400 tons, and 160-240 tons respectively) in 1515.[5] The Tenterden records show that a large number of Brigandines and Petts inhabited the parish, and the port can therefore probably lay claim to have produced the family of Robert Brigandine, Clerk of the Ships from 1495, and of the famous Pett dynasty of shipbuilders.[6] By 1549, however Smallhythe was sufficiently decayed for there to be an enquiry whether its chapel-of-ease should be allowed to function in spite of the Chantries Act.[7] The inhabitants stressed the town's former glories but their opponents deposed that

"there is no haven there, savyng onely a creke of

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1. Appdx. D.
2. E36/5 ff 69-70. This was a government charge in the Navy but not in the Works, except when the worker died or left without paying, "partly for thadvoydinge exclamacones and slaunder" (E351/3199).
3. A.H. Taylor The Chapel of St. John the Baptist, Smallhythe (Archaeologica Cantiana Vol XXX, 1914, pp 133-91) p 157. Oppenheim seems to have misinterpreted the phrase "new made", and declared that the ship was built there new (Administration, p 51).
4. Oppenheim Accounts and Inventories p xxi
5. Anderson List pp 16 & 21; E36/5 f 177r includes payment for men working on "the Barkes made at Smallhede."
6. A.H. Taylor The Municipal Records of Tenterden (pt I) Archaeologica Cantiana Vol 32 1917 pp 283-302)

(contd. over)

salte water wherin no shyppe can come but onely lyters and soch kind of small vessells, and that at full water."[1]

Smallhythe's shipbuilding resources when the Grand Mistress was overhauled, then, can have consisted of little more than its population of shipwrights. Large capital assets or an organised labour force would hardly have vanished so completely that such an assertion would not have been immediately ridiculous if they had existed recently. The "craft" rather than the "industrial" nature of shipbuilding is plain.

In so far as the building of warships sees a change in this system, it is less because of their size, or even their number, in itself, although these factors are important, than because establishments were created to keep the ships in a permanently sea-worthy state. The dry-dock at Portsmouth had been built in 1496;[2] by 1550 there were permanent establishments at Gillingham, Deptford (the most important) and Woolwich, as well as Portsmouth.[3] These developments fall into two periods those connected with the initial expansion of the navy, for about fifteen years after 1509; and those proceeding from the re-armament of 1539.

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1. Ibid p 159
2. Oppenheim Accounts and Inventories pp xxxv-xxxix
3. Oppenheim Administration p 102

(contd. from page 77)

The Pett family also had roots in Dunwich, Suffolk (The Autobiography of Phineas Pett, ed W.G. Perrin pp xlvi-xlvii).

7. A.H. Taylor The Chapel of St. John the Baptist passim

//The distinction is a real one. The first period sees the foundation of various storehouses,[1] the establishment of the dry-dock at Erith,[2] and the extension of facilities at Portsmouth.[3] Yet in spite of the many extant and very detailed accounts for the period there seems to be no permanent staff for any of these establishments, except for the supervisory officials whose posts were to develop into those of the Principal Officers of the Navy.[4] No payments are to be found for subordinates employed on a long-term basis in any of the ports. When, for instance, a rope-maker was required at Portsmouth to repair a cable, one had to be sent for from Bridport.[5]

From 1525 to 1536 there was a distinct lull in naval affairs; money was occasionally laid out for stores,[6] Cromwell reminded himself to see that the ships were repaired,[7] and a small fleet was fitted out in connection with the King's Danish ambitions.[8] Ship-repair continued at a respectable level. £1984 5s 8d, for instance, was spent on shipwrights' wages between December 1533 and December 1535; much less than the £2529 4s 7d spent between Christmas 1546 and Christmas 1547, but enough to argue against the view that lack of sources might

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1. Oppenheim Administration pp 69-71
2. See below p 106.
3. Oppenheim Administration pp 68-9
4. See below, Chapter 4.
5. C1/569/29
6. E.g. L.P. VI 1367, 1381; X 148, 240
7. L.P. VII 420
8. L.P. IX 260, 287.

lead us to assume, that the 1530s saw the fleet mouldering uncared for.[1] In fact, the Trinity Henry (250-300 tons) was built about 1530, and the Sweepstake (300-350 tons) and the Mary Willoughby (140-200 tons) about 1535;[2] while a considerable number of ships were rebuilt in 1536-9.[3] Nevertheless, the period sees nothing like the expansion in the number of ships comparable to those of 1509-24, and 1543-6.[4] Nor does it see any expansion of maintainance facilities.

The change comes with the renewed expansion after 1543. The main labour force remained fluctuating; as, abviously, it was bound to do. But certain elements of permanence begin to appear. The change is not so radical as to make the naval dock yards immediately an outstanding example of industrial organisation; rather, it sows the seeds of a permanent institution which was to become, at any rate by the late XVIIth Century one of the largest and most organised employers of labour in the country.

Thus the first patent for the payment of an annuity to a shipwright seems to be that of 4d a day to James Baker in 1538, increased to 8d in 1544.[5] A number of shipwrights were sent

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1. E36/3 p 68; E351/2588 (see below p 82)
2. Anderson List p 7
3. Ibid pp 7-8
4. Ibid pp 5-10
5. For this paragraph see The Autobiography of Phineas Pett (ed. W.G. Perrin) ppxx-xxiii. Westcott Abell's The Shipwright's Trade (Cambridge 1948) is so inaccurate as to be worse than useless for the period - e.g. the confusion between the Henry Grace à' Dieu and the Regent on p 26.

in 1541-2, and again in 1545 to examine the state of the ships;[1] three of these, with Richard Osborne, anchor-smith, were given an annuity of 4d a day in 1548.[2] Here we have a permanent nucleus of shipwrights, who probably acted as foremen in the naval yards, and possibly, as ship designers. Baker's position certainly, seems comparable to that of the later Elizabethan and Stuart Master-Shipwrights who were responsible for the design of new ships.

Feed shipwrights were not, however, the sole employees in the naval yards. In 1548, for instance, there were a number of "parsons...in ordinarie waiges" at various seaports throughout the country.[3] Many of these were "shipkeeper"; men employed as they had been in the earlier period, to guard ships which were laid-up, and presumably to carry out light repairs. Others, however, were clerks, purveyors and storemen. At Deptford, for instance, John Clarke and two other clerks were noted, though they also increased their wages by shipkeeping; there was also a full-time victualler and a "purvior", each at 1/- a day. Two men were employed full-time at Woolwich, with no specified duties, at 7d each; four men at Harwich; one, in charge of victualling, at Portsmouth; and two at Gillingham. In addition there were two full-time purveyors of timber, and two others, William Holstock, and Thomas Morlaix, who were in fact assistants to Legge, the Treasurer of the Navy.[4] Another list, reputedly of

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1. Cecil MSS Vol 201 ff 40-1 (HMC Hatfield I no. 71); APC 1542-7 p 233
2. Perrin op cit pxxi
3. Bodleian MS Rawl c 846 pp 135-41.
4. For Holstock and Morlaix see L.P. XXI i s 718 (7) & (9) and Legge's will (Cant CC Coode F 24).

the same year, repeats some of the names, and leaves out others.[1] But while the lists are unreliable in detail, they do at least establish the principle that there were some men employed on a permanent basis in the navy's shore-establishments.

In itself this is small enough beer. But is takes its place, along with the emergence of the Navy Board, and with the beginning of the concept of an "ordinary" naval expenditure in time of peace,[2] as a symptom of the growth of a Royal Navy as a permanent feature in the economic life of the nation.

Expenditure on shipwrights' wages had certainly risen to considerable proportions. In the year 1547, for instance, £2529 4s 7d was spent on the wages of various artificers engaged in shipbuilding.[3] This fell to an average of £1400 a year from 1548 to 1551;[4] but even this gives an average of about 100 men a day, and probably rather more.[5] This may be compared with the 172 men working throughout the year at Chatham in 1600, with 36 at Woolwich and a few at Deptford and Portsmouth;[6] and the £5032 spent on shipwrights' wages in 1618.[7] Since in the 1540s the Thames Estuary accounted for the greater proportion of

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1. Bod MS Rawl c 846 pp 139-41
2. Below pp 98-118.
3. E351/2588 (Christmas 1546-7) (£2599 8s 11d for artificers, minus £70 4s 4d for the wages of surgeons).
4. E351/2194, which gives £4192 5s 9d for artificers' wages for 3 years and 25 days.
5. Assuming 300 work-days a year, and an average wage of 9d a day, which is probably too high,(Shipwrights got 1/- a day in 1558, and labourers 7d; Bod MS Rawl c 846 p 54).
6. N. Macleod The Shipwrights of the Royal Dockyards (MM 2, 1925 pp 276-91) pp 282-3
7. J. Charnock Marine Architecture II p 220 (quoted, with wrong pagination, by Macleod, p 283).

naval expenditure, the navy must have been a fairly considerable employer on the local level.[1] This is borne out by an estimate drawn up just after our period, ~~in 1559~~, of the number of men to be employed in the first quarter of 1559.[2]

	Shipwrights etc.	Labourers
Deptford	190	35
Woolwich	200	25
Portsmouth	130	34

The wages for these men together with the provision of stores, was specially noted as being "within the Compas of the Orddinarie" charge.[3] The employment of shipwrights had thus definitely become by 1558 (and probably by 1548), a normal, regular part of peace-time expenditure. All this is a far cry from the number of men and the expenditure involved in the royal dockyards on the Later Stuart period;[4] or from the rational division of labour, and standardised production of galleys of the famous Arsenal at Venice.[5] Nevertheless, the unprecedented size of the Royal Navy under Henry VIII, involving for the first time a continuous programme of repair and maintenance, had led to the birth of an industry which was to become in time "the most comprehensive and in some respects the largest industry in the country."[6] Its importance in industrial history

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1. In 1547 £18,824 was spent at Deptford, £1439 at Woolwich, £4167 at Gillingham; c.p. £1632 at Harwich and £1212 at Portsmouth. (E351/2588).
2. Bod. Rawl MS c 846 pp 54-5.
3. Ibid p 54
4. D.C. Coleman Naval Dockyards under the Later Stuarts (Econ. H.R. 2 (NS) Vol 6 1953-4 pp 134-155).
5. F.C. Lane Venetian Ships and Shipbuilders of the Renaissance Chapters 8 & 9.
6. J. Ehrman The Navy in the War of William III p 174 (quoted by Coleman, op cit p 155).

lies less in its actual condition in our period than in its potentiality for the future.

The records about shipbuilding are naturally much fuller than those for gun-making. Since the state bought guns from contractors, no detailed accounts showing the internal workings of a gun-factory survive, with one exception relating to the Sussex cast-iron industry of the 1540s. Conclusions about the scale of gun-production, the number of men employed in a given plant, and the amount of capital required, must be based on circumstantial evidence. But there is little reason to think that the gun-making of this period was on a significantly large scale.

The wrought-iron business was, of course, a traditional one, and seems to have been carried on in craft conditions. Certainly Cornelius Johnson, as we have seen, was able to supply the crown with 78 guns in February 1513, hard on the heels of fulfilling another order the previous September and having been kept busy on repair work in the meantime.[1] The guns, however, were very small ones; the 78 weighed no more than 447 cwt altogether, less than 6 cwt each, compared with the 56 cwt of each of Poppenruyter's "Twelve Apostles".[2] Little can be discovered about Johnson's workshop. The production of wrought-iron guns would require little in the way of equipment except a rather elementary forge.[3] The number of workmen is unknown;

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1. Appdx. C.
2. Ibid, and MM 46 (1960) p 259
3. Straker Wealden Iron p 16; Schubert Iron and Steel Industry p 152.

Johnson claims for the wages of certain carpenters and sawyers,[1] but not for that of smiths and labourers employed on the actual iron-work; presumably these were his own responsibility, paid for at the standard charge of 2d a lb.[2] In 1523 he employed 6 alien workmen, but it is impossible to say whether this was his total labour force.[3] As Johnson was one of the major, if not the major, supplier of wrought-iron guns at this period, it is hard to see the industry as in any sense a "factory" one.

The casting of guns, both iron and bronze, by the foundry method required rather more in the way of capital equipment; a blast furnace instead of the simple furnace which was adequate for wrought-iron work.[4] Greater skill, too, was required, and production would, therefore, tend to be concentrated in a few hands. Even so, there is no evidence that the scale of production was very large; no great industrial empires were to be founded in England based on a monopoly of the armaments industry comparable, for instance, to that of Louis de Geer in XVIIth Century Sweden.[5]

By contrast to De Geer, the English pioneer Parson Levett was hardly a rich man, as far as this can be deduced from his will.[6] The major benefactions were £100 to his nephew John Levett, and £56 to John's children. His chief assistant, Ralph

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1. B.M. Stowe MS 146 ff 16v, 17r. 2. Ibid f 43r.
3. Wyatt, thesis p 131. 4. Straker Wealden Iron pp 16-7
5. For de Geer see M. Roberts Gustavus Adolphus II pp 111-7 E.g. of his iron interests, "The whole represented by far the largest concentration of industry in the hands of any Swedish subject, and probably also the most modern and the best managed", (p 114); or again "by far the greatest figure in Swedish economic life" (pp 113-4).
6. Cant CC F5 More.

Hogge got no more than £4 and some sows (bars) of iron, though according to his own description of Levett as "my master and my predecessor" he seems also to have taken over the furnace plant.[1] Robert Owen, when he drew up his will in 1570, was rather better off, leaving a total of £1450 in cash, his forge, and some plate.[2] Even this, however, was considerably less than the average estate of nearly £8000 which, according to Professor Jordan, was left by London merchants, and was roughly of the same order of magnitude as that of the average provincial merchant or London tradesman.[3] Military technology was far less lucrative than international commerce.

Some feeble light on the condition of the foundries for the production of bronze guns is cast by a short abstract, drawn up some time in the 1530s out of the (missing) account books of the Surveyor of the Ordnance, to show how much the Crown was being cheated by the founders.[4] The document records the amounts of metal (presumably brass or some copper alloy) delivered by the crown to the principal gunfounders, Bawde, the Owens and the Arcani. Unfortunately our conclusions can only be impressionistic, since there is no indication of the length of the period to which the document refers. For what it is worth, Bawde had received almost 1242 cwt of metal, and had so far produced 530 cwt of guns; the Owens had received 1300 cwt of metal, and

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1. Straker Wealden Iron p 147
2. Cant CC 19 Holney. No Inquisition Post Mortem survives, (Lists and Indexes Vol. XXVI)
3. W.K. Jordan Philantrophy in England pp 376-7
4. SP I/68 ff 222-5 (L.P. V 664).

had produced 839 cwt of guns; the Arcani, 1411 and 1261 cwt respectively.[1] This hardly seems to indicate a very different order of magnitude to the 447 cwt of wrought iron guns that Cornelius Johnson had been able to produce at a time.[2]

The greater expenditure on fixed capital with which the founders, as opposed to wrought-iron manufacturers, presumably were faced may be indicated by the liberal advances of money they had received from the Crown (assuming that they had had to re-equip their shops to meet the royal orders)[3]. Bawde had received a prest of £368 3s 4d, the Owens £254 19s 9d, and the Arcani £383 12s 6d[4] (Even the great Malines gunfounder Poppenruyter had had to be given a prest of £333 18s 4d "for to help hym" when contracting to supply bronze guns in 1510).[5] The supply of metal by the crown was presumably due to the need to keep circulating-capital down to a minimum; otherwise the Arcani's metal supply would have cost them £1411.[6] To this must be added the very generous allowance of 12lb a cwt. for "waste" of the metal; the Surveyor (admittedly the Owens' enemy)[7] claimed to have found a large cannon hidden in the Owens shop which they eventually confessed to have been made of the supposedly waste metal.[8] A large capital, then, was required

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1. ff 223-4 (figures to nearest cwt.)
2. Appdx. C.
3. The 1530s are, after all, the period which sees the first large-scale bronze gun production in England (above p 41)
4. SP I/68 ff 223-4
5. B.M. Galba MSS B III ff 3-4
6. The metal was valued at £1 a cwt. (SPI/68 f 223r)
7. L.P. XII ii Appdx. 7
8. SPI/68 f 225r.

for the establishment of bronze gun-foundries, which was made available by generous loans from the state. The scale of production must have been too small for the founders to use their flying start to establish themselves as leading figures in the economy. Doubtless their gifts were those of the craftsman rather than of the entrepreneur. But more important is the point that bronze, unlike cast-iron, was too expensive to give rise to any large-scale non-military demand.

It is unfortunately impossible to give instance to these impressions by citing the number of men employed in an English bronze-foundry at this time. The royal foundry of Scotland in 1511-3 employed 10 founders and 4 smiths.[1] William Woodward, the leading English founder of his day, employed 13 men in 1421.[2] It seems unlikely that the foundries of the Arcani and the Owens were much larger than this.

Rather more information is available about iron-foundries. A fair number of sources exist for the Sussex iron industry, sources which have been used extensively by Straker and Schubert.[3] The most interesting for our purpose are the accounts of the works at Sheffield and Worth for the period 1546-9, which provide some interesting figures about the order of magnitude of production; in the case of Worth, at least, production largely for ordnance purposes.[4]

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1. Accounts of the Lord High Treasurer of Scotland IV p.lxxiv.
2. S.L. Thrupp The Merchant Class of Medieval London pp 32-3. For Woodward see Tout Firearms (Collected Papers II pp 249-57).
3. Straker Wealden Iron; Schubert Iron and Steel Industry
4. Printed by M.S. Giuseppi in Archaeological Journal Vol 69, 1912, pp 271-311.

Thomas Seymour leased the manor of Sheffield and the iron-works there and at Worth from the crown, probably early in 1547.[1] These had been part of the property of the Duke of Norfolk before his attainder in 1546.[2] At Worth, again probably in 1547, and under the ~~supression~~ supervision of William Levett, the first "double furnace" in the country was erected, an important technological advance, intended for the production of ordnance.[3] The plant was on a reasonably large scale. The furnace itself cost £69 6s 1d to erect.[4] The attendant forge was probably already in existence when the lease was made to Seymour. Furnace and forge together had £10 worth of fittings.[5] A gun-founders' workshop had to be erected for £4 12s 3d.[6] It is, unfortunately, impossible to put a value on the raw-materials; that is, the unmined iron ores, and the timber used as fuel. (Seymour almost certainly got his lease on very favourable terms, while the timber and iron may well have come from the other Howard lands in Sussex which Seymour had acquired by royal grant).[7] An overseer and 34 workmen were employed; a hammerman, 2 "ffyners, a "ffyller" and a founder, 2 "Coleyors (Charcoal-burners), 3 miners, 7 gunfounders and 17 assistants.[8] The woodcutters are not mentioned; 53 were employed on a casual

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1. Ibid p 279
2. Ibid p 279
3. Schubert p 247
4. Giuseppi p 304
5. Inventory taken in 1549, printed by Sir Henry Ellis in Sussex Archaeological Collections Vol 13, 1861, pp 127-31 p 130 (checked against the original, SP10/6 f 13v)
6. Giuseppi p 305
7. Ibid p 279
8. SP10/6 f 13r (Ellis op cit p 129 has several inaccuracies here; the SP version gives a total of 33, but the number of individual workers as above).

basis at the similar-sized furnace at Panningridge.[1] Total production was fairly considerable; up to January 1549 £1973 3s 1d worth of iron and ordnance (including 56 ton 1 cwt of guns worth £560 15s, and 52 ton 5 cwt of shot worth £214 15s 3d) had been produced.[2] The sister works at Sheffield had produced £2135 7s 2d worth of iron in the same period;[3] how much of this went eventually into military use, if any, is of course impossible to say. Possibly production at Worth was increasing rapidly; certainly in January 1549 there was no less than £950 14s 4d worth of iron, in various stages of production, and of completed guns and shot at Worth and in the rented storehouse in Southwark.[4]

These figures are quite considerable, though the spectacular expansion (spectacular that is, relative to XVIth Century conditions) was to come after our period. In 1557 Richard Woodman claimed to have employed 100 people at his iron-works at a time, but this is doubtless the usual exaggeration.[5] More reliable is the evidence that Edward Carryll ~~emp~~ employed at least 49 miners in 1587.[6] Schubert has shown the great increase in the average production of iron per furnace per day; no more than 3 cwt with the "bloomery" or "indirect" method (wrought iron), it expanded in the XVIth and early

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1. E. Straker Westall's Book of Panningridge (Sussex Archaeological Collections Vol 72, 1931, pp 253-60) pp 254-5.
2. Giuseppi p 300
3. Ibid p 292.
4. Ibid p 306
5. V.C.H. Sussex II p 247
6. Ibid.

XVIIth Centuries to anything between 10 and 35 cwt.[1] The number of iron-works expanded also. After 1550 they began to spread from Sussex into Kent and Surrey, and in Elizabeth's ~~re~~ reign furnaces were erected in South Wales, the Midlands, and the North.[2] It is tempting to see, with Sombart, the English iron-industry as a child of military requirements.[3]

Unfortunately, the sequence of cause and effect is not so straight-forward. The first difficulty is to determine how large the market for cast-iron guns in fact was. While production in aggregate seems to have been considerable in the 1540s,[4] the crown became a very poor customer in the 1550s; the ordnance accounts for 1553-8 show only £164 spent on cast-iron guns ~~in 1553-8~~.[5] To this, however, must be added production for merchant ships, for towns worried about their defences, and possibly for export (certainly in the Elizabethan period).[6] In addition there was quite a considerable demand for iron-shot; the crown paid £1142 for this in the period 1553-8.[7] On the other hand, only 9 out of 49 furnaces in the Weald are known to have been casting guns and shot in 1573-4.[8]

The case for military requirements playing a decisive part in the "take-off" of the Wealden iron-industry rests on the coincidence in time of the demand for guns in the 1540s and the

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1. Schubert Iron and Steel Industry pp 346-7
2. Ibid pp 173-5; J.U. Nef Notes on the Progress of Iron Production in England 1540-1640 (Journal of Political Economy Vol. 44, 1936 pp 390-403.
3. Sombart Krieg und Kapitalismus pp 99-100
4. Schubert p 247
5. E351/2614 (to nearest £1)
6. See above p33
7. E351/2614
8. Schubert Iron and Steel Industry pp 174, 250.

fact that between 1543 and 1548 "more furnaces were erected than within the 50 years prior to 1543".[1] If, indeed, the iron produced at Sheffield was destined for non-military purposes (there is no indication either way)[2] then we must assume the sudden appearance, just when military requirements were at their height, of some other new demand. None has been suggested, and none seems very likely. It seems reasonable then, to assume that, even if the new furnaces of the 1540s did not cater for the military market, their initial development was either due to a hopeful estimate of the future of that market, or was financed by profits from it.

Our account of the gun-industry has been inevitably extremely impressionistic. In terms of the number of men employed, none of our three branches can be said to be "large-scale", although when, as at Worth, all processes from the mining of ores to the making of guns were carried out in the same place, there may have been about 80 employees. Quite expensive capital equipment was required in the foundry business and in bronze foundry the circulating capital needed for raw-materials was large. Finally, it seems reasonable to assume that the demand for guns was at least an important contributory factor to the take-off of the Wealden iron-industry. Yet over-all the impression remains of gun manufacture as primarily a craft, rather than an industry in any developed sense.

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1. Schubert p 173.
2. Above p 90.

//Schubert maintains that the armoury mill established at Greenwich in 1511 represented a great technological advance; the process of "flattening iron by means of a water hammer into plates and sheets was made available to English iron-masters", where previously, "the process of flattening bars of iron into plates and sheets was still conducted in Britain exclusively by hand".[1] Even so, its significance was again for the future rather than in immediate effect; the process does not seem to have been used to any practical purpose outside the Greenwich armoury until 1595.[2] The Armoury itself was no great industrial complex; in 1544 it employed 5 armourers, a gilder, 2 locksmiths a millman and an apprentice; and it was proposed to expand it into two workshops employing 12 armourers, 2 locksmiths, 2 millmen and 4 apprentices.[3] Normally armourers' establishments were smaller than this, fitting into the general craft framework; though, like the other metal trades, they needed rather larger capital than most other crafts.[4] The craft atmosphere, however, is apparent in an allegation by an aggrieved London armourer that William Gurre (the King's brigandarius)[5] and other "armorours of the seyd Citie....conspyred amongist ther selfes to banysshe & expulse your seyd Oratour" and "finally to distroye & beggar" him by arranging for his arrest annually at midsummer, "the tyme of

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1. Iron and Steel Industry p 302
2. Ibid.
3. C.J. ffoulkes The Armourer and his Craft p 182
4. S.L. Thrupp The Merchant Class of Medieval London p 111, cites an armourer who left his apprentice 20 marks and some armour to establish himself.
5. L.R. I i g 969 (6)

ther moost gaynes", and "have caused his shopp to be shytt up, & have takyn from hym his servantes".[1] Nor do the recorded activities of the Armourers' Company, with its continuous petty disputes with the Blacksmiths, Cutlers, and Bladesmiths, suggest anything but an old established craft.[2]

Nor was gunpowder-making carried on on any large scale. According to his own clerk, the King's gunpowder-maker, Richard Falconer, built a powder-house for 100 marks, and provided it with 200 marks worth of equipment, (90 new "trene morters ligned in the bottom within with coper plate", 28 "brason morters and a gon powder myll with a brason morter", 2 "leedis with coper bottoms", 3"Irn trevettes" (i.e. trivets)[3] and 2 "great marbill stonis for grynnyng (grinding) of Coole and bremstone roch into meell"), all at the King's expense.[4] But this degree of capital investment, ~~however~~, is probably exaggerated. William Huxley, Falconer's executor, defending himself from the allegation that Falconer had left behind an expensive gunpowder-mill, rightly the property of the King, which Huxley had sold for his own use, alleged that the mill was only

> "a sertayne Shadde with morters pestelles and other dyvers Implementes bo[ught] with his [Falconer's]

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1. C1/514/22
2. C. J ffoulkes The Armourers Company of London and the Greenwich School of Armourers (Archaeologica Vol 76, 1927 pp 41-58) pp 41-9; ffoulkes Some Account of the Worshipful Company of Armourers and Brasiers (passim); S.H. Pitt Some Notes on the History of the Worshipful Company of Armourers and Brasiers.
3. "A three-foot stand or support" (O.E.D.)
4. Sta Cha/2/Ev f 20r.

owne propre money." which cost altogether "not above tne some of ten poundes sterlinges." 1

These contradictory pictures are the only glimpse we get of the internal economy of a powder-mill; but we may conclude that the enterprise was almost certainly fairly small-scale. Even in Liége, that great centre of the continental powder industry, little capital was needed to establish a mill until monopolistic mass-production was stimulated by the needs of the Spanish armies during the Netherlands revolt.[2] In such conditions Liége was to produce a gunpowder-magnate, Jean Curtius, who was ennobled by the Emperor in 1628 for his services to the Catholic faith in the delivery of "pulverem nitratum" and "globos tormentarios et id genus varias munitiones".[3] Even in the Elizabethan period no English powder-man was to attain such distinction;[4] even less were Richard Falconer and his successors amongst the great commercial figures of their day.

Large-scale organisation is obviously not to be expected in the remaining industries. The claim, then, that in the early XVIth Century military needs fostered the growth of "capitalist organisation" stands or falls with the examples of ship-building and cannon-founding. Ship-building certainly involved large numbers of workers; but it was in all essentials organised on

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1. Sta Cha/2/XV f 29r
2. J. Lejeune "La formation du Capitalsme... à Liége pp 165-9
3. Ibid pp 279-304 esp.pp 286-7
4. VCH Surrey II pp 307-14

the lines of the mediaeval building industry, and lacked the element of permanency. Gunfounding involved a certain amount of capital investment in the shape of the provision of a furnace; but the numbers employed in each shop seem , though there is no conclusive evidence, not to have been very large. The period did, however, see the beginnings of the Thames dock-yards as permanent institutions, small enough at the time, but destined to become the outstanding example of industrial organisation in the later XVIIth Century; while gunfounding and the provision of shot may be held to have provided the necessary impetus for the "take-off" of the Wealden iron-industry which, though it remained on the whole a conglomeratio of relatively small-scale undertakings, ~~it~~ is significant for its geographical concentration and for its exports in a field where English craftsmanship had previously been little regarded The immediate results of military demand on industrial develop-ment in our period were small; but it helped to stimulate industries which were to be of considerable importance in the future. Not much more, after all, can reasonably be said of any other aspect of the much-vaunted "Industrial Revolution of the XVIth Century" in England.

C H A P T E R F O U R

Administration (Navy, Ordnance and Armoury)

The planning of campaigns, including of course the supply side, was obviously the concern of the highest reaches of government; of Wolsey in 1513 and 1523, of the leading Privy Councillors in the 1540s. We shall be examining their achievements later, when we examine the campaigns themselves. More immediately, we are concerned with the men who saw to the acquisition and stockpiling of guns and equipment and to the building and maintenance of the King's ships. We shall see how the pressure of circumstances produced a multiplication of offices and an increasingly complicated administration, which resulted almost inevitably in large scale reorganisation and the emergence of "bureaucratic" departments of state in place of (more or less) "household" offices. We shall examine, too, the backgrounds, personalities and emoluments of the officials concerned, in the hope thereby of throwing some additional light on the early Tudor bureaucracy.

(a) The Navy

The naval administration of the period has been described twice before; by Oppenheim in his great work on The Administration of the Royal Navy 1509-1660; and by A.W. Johns in his article on The Principal Officers of the Navy.[1]

Oppenheim stresses the great increase in the size of the navy in Henry VIII's reign, and the consequent beginnings of a complex system of naval administration. Not surprisingly, for his work was a wide-ranging pioneering effort, he is often wrong on questions of detail, and sometimes exaggerated in general interpretation. Johns was concerned with the true succession of officers, a subject on which Oppenheim had gone very much astray; but he confined himself, as he admitted, to making lists, and made no attempt to discover what work each officer in fact did or was supposed to do.[2]

Oppenheim wrote, with perhaps conscious exaggeration;

> "there is very much less difference between the great and complex administration of today and the Navy Board... of 24th April, 1546, than between the board of 24th April and what existed the day before. Within the twenty-four hours the old system had been swept away and replaced; its successor has

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1. M.M. Vol 14, 1928 pp 32-54. Unfortunately this article is without references; the sources appear to be L.P. for Henry VIII's reign and CPR for that of Edward VI.

2. Page 54.

altered in form but not in principle."[1]

I hope to show that the change was not as cataclysmic as this. Nevertheless, Oppenheim is right in essentials. By the early years of Elizabeth's reign there existed a board of seven officials, the "principal officers", with definite instructions about procedure, exercising almost total control over naval matters under the general (and often nominal) direction of the Lord Admiral; in Monson's words "the conduit pipes to whom the Lord Admiral properly directs all his commands for his Majesty's service and from whom it descends to all other inferior officers and ministers under them whatsoever."[2] In 1509, by contrast, the only official directly concerned with naval administration under the Lord Admiral was the Clerk of the Ships, and even he exercised only sporadic authority over certain aspects of the naval scene, with very little responsibility for policy, even on the lowest level. The Navy Board's development as a bureaucratic body was a gradual one, extending over the period 1509 to circa 1560, but the decisive steps had been taken by 1546.

The reasons for this development are obvious. In 1509 the crown owned 5 ships; during Henry VIII's reign 47 were built, (not counting 14 small "rowbarges"), and 35 were bought or taken as prizes.[3] Parallel to this there had been the great

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1. Administration pxii
2. Tracts (ed Oppenheim) III pp 397-8
3. Anderson List pp 5-10

growth in dockyard capacity, from the one dockyard at Portsmouth in 1509, to the yards at Portsmouth, Gillingham, Deptford and Woolwich which existed by 1550.[1] All this had been achieved without the construction of ships and shipyards by private contract, a system which was to become common under Elizabeth I and James I. I know of only one example of contract-work in our period, that of John Hopton building a "pond" at Erith for 5 great ships under contract in 1516.[2] Work had therefore to be done directly for the King, accounts compiled, expenditure laboriously and inefficiently checked. The Navy Board's development was, then, a direct function of a great increase in naval activity by the Crown. This is not to say that it was created as a conscious act, a necessary pre-requisite of an expanded Royal Navy. As we shall see, its development was a gradual one, following rather than preceding the expansion of the fleet. Administrative reform was a response, sometimes a rather belated response, to change, not its precursor.

The Lord Admiral does not figure large in our story. The office was described as one "of honor of estimation and profytt", but had in practise little connection with the day-to-day running of the navy.[3] John de Vere, Earl of Oxford, Lord Admiral in 1509, had held office since 1485, had never commanded a fleet, or concerned himself with administration, and had shown himself only occasionally interested in the judicial side of his office.[4]

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1. See above p 18
2. B.M. Add. Charter 6289
3. SP1/193 f 15 (L.P. XIX ii 336)
4. CPR 1485-94 pp 22-3; Harrison, thesis cited, pp 48-9, 53-5.

Indeed the Lord Admiral as such had no automatic claim to command the fleet in action; his patent spoke only of recruiting and arresting ships and men, and of punishing the recalcitrant.[1] The fleet which kept the channel in 1512, for instance was commanded by Sir Edward Howard (who was not Lord Admiral at the time) under a special commission issued to him as admiral of the expedition;[2] and Howard of Effingham, even though he was Lord Admiral at the time, was given a similar special commission to command the fleet in 1587.[3]

Nevertheless, the Lord Admiral's post ceased to be an honorary one with Oxford's death in 1513. The only exception is its tenure by the Duke of Richmond from 1525 to 1536; and in practise the office was held in this period by Richmond's predecessor, the Duke of Norfolk, and by Arthur Plantagenet, Lord Lisle (Edward IV's bastard) acting as vice-admirals.[4] Except for Edward Seymour, Earl of Hertford, who occupied the office for less than a month in 1542, all the Lord Admirals of the period had naval experience.[5] They were therefore expected to serve as commanders. Even in 1512 Sir Edward Howard was obviously regarded in practice as a deputy Lord Admiral.[6] In 1522, and in 1546 the fleet was led by the Lord Admiral, in

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1. Rymer Foedera XIV pp 42-3, XV pp 127-9
2. Ibid XIII p 326
3. G.K.C. Laughton (ed) Spanish Armada I pp 19-23
4. G.E.C. VIII pp 63-8: R.G. Marsden The Vice Admirals of the Coast (EHR XXII, 1907) p 473.
5. Appdces E & F.
6. The reversion of the office was granted him that year (L.P. I i g 1365 (11)).

the latter case in spite of the Admiral's protestation of incompetence.[1] It is hardly surprising therefore, that (in Dr. de Beer's words), the Lord Admiral, "because he happened to be commander of the fleet, was extending his function so as to include the control of naval administration."[2] Arthur Plantagene signed warrants for payment by the Treasurer for War Affairs to the Clerk of the Ships.[3] The Earl of Southampton, as Admiral, was evidently regularly consulted about naval affairs, for he asked Cromwell to consult William Gonson, the naval treasurer, during his own absence from London.[4] In 1543 the then Lord Admiral (John Dudley, Viscount Lisle) was at Deptford receiving orders about the rigging and disposition of ships.[5] Thomas Seymour gave orders to victualling commissioners about how much money was to be allowed to ships pursers.[6] Even so, these are isolated instances. As a general rule the Lord Admiral remained remote from details of day-to-day administration.

The sole official concerned with naval administration in 1509, under the inactive Oxford, was Robert Brigandine, Keeper or Clerk of the Ships since 1495. The office had been the lynch-pin of such naval administration as existed in the later mediaeval period, since indeed the post had been first held by

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1. G.E.C. IX p 616; Rymer XV 89-90; L.P. XVIII i 701.
2. E,S. de Beer The Lord High Admiral and the Administration of the Navy (M.M. 13, 1927 pp 45-50) p 47
3. SPI/45 pp 167, 170, 176, 180 (L.P. IV ii 3656)
4. SPI/150 f 104 (L.P. XIV.i.726)
5. L.P. XVIII.ii 348, 437.
6. E101/62/35 ff 7-8.

Archdeacon William of Wrotham during John's reign.[1] Brigandine for the first few years of Henry VIII's reign, exercised a general responsibility for naval affairs, both at Portsmouth and in the Thames Estuary. He seems, for instance, to have been active about ship-building at Woolwich.[2] Nevertheless, he was not in charge of the works there. William Bond, later Clerk of the Poultry,[3] was paymaster for the building of the Henry Grace à Dieu;[4] William Crane, gentleman of the King's Chapel, and later Master of the boys of the Chapel,[5] was overseer of the works.[6] Moreover Brigandine had no responsibility for the fleet in time of war; in 1513 victualling was the responsibility of Bishop Fox and the Southampton customers, and wages and the hire of ships, of a specially appointed treasurer, Sir Thomas Wyndham.[7] Brigandine was not even master of his own house at Portsmouth. Richard Palshide, the Southampton customer, received money "for the Reparacon of the kynges Storehouse and kynges Bruehouses in portesmouth", while Thomas Spert was paid direct from the money raised from the 1522 loan for the wages of masters and shipkeepers there.[8]

More important, however, was the fact that the Clerk of the Ships had no general discretion over naval expenditure.

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1. Oppenheim Administration p 3; W. Laird Clowes The Royal Navy: a History I pp 114-5.
2. L.P. Add I 136, 152; E101/61/31 f 78; E 36/5 ff 120r, 125r. His part was clearly important; c.p. the reference to John Brigandine as "son unto hym that made the Kyng's great ship" (Lodge Illustration of British History I p 12; L.P. II i 1861)
3. L.P. III.i.219. 4. E 36/5 passim especially f 131r
5. L.P. III ii g 2807 (8), IV i g 2218 (12)

(contd. over)

He was allocated no specific sum for the upkeep of the navy; rather he was paid certain sums for certain tasks, each warrant specifying the particular use for which the money was intended. Thus in a collection of warrants for Sir John Daunce, Treasurer for Wars, we find some for the delivery of money to Brigandine's successor, Thomas Jermyn; £186 13s 4d for wages of shipkeepers from December 22nd 1525, to March 16th, 1526, £20 for the repair of docks and £20 for naval stores; or again, a list of the royal ships, each with the number of "shipkeepers" looking after it from 7th June to 19th December, 1527, with attached to it a warrant for the payment of the exact amount.[1] The Clerk of the Ships was thus not a one-man department of state; rather he was a permanent agent of the crown, of little standing, available for the performance of certain duties which could as easily be entrusted to other hands, and often were. Over-all control, even of relatively minor matters remained the concern of the highest levels of government. The King himself signed warrants to pay for naval stores, for repairs for a particular ship, for the purchase of land at Erith, even for the payment of "John browne owner of the Jermayne of Toppesham".[2]

From 1514 the Clerk of the Ships began to decline even

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1. SPI/45 ff 161-82, esp. ff 167, 168, 170.
2. E 101/61/31 ff 1, 3, 5, 6, 7.

(contd. from page 103)

6. E36/5 f 152r C.p. Sir Richard Guildford and Sir Reginald Bray supervising the building of the Sovereign and the Regent (Oppenheim Accounts and Inventories pp xix-xxi)
7. L.P. I ii 1845, 1858-9; A. Spont (ed) Letters and Papers Relating to the War with France 1512-3 pp 109-21
8. E101/612/57; L.P. IV.i.p 84.

from this position. Increasingly his duties were confined to Portsmouth;[1] Brigandine's successor, indeed, had "custos de le Doke apud Portismouth" added to his other titles.[2] After 1532 the office faded into relative insignificance. Leonard Thornton purveyed timber, and helped William Gonson and Sir Thomas Spert fit out ships for the Danish expedition of 1535;[3] but he was evidently the most junior, for a memorandum of Cromwell's leaves him anonymous, talking of calling "vppon william gonston Spert and other having charge of the kynges Snyppis to Cause the same to be Repayred."[4] In 1546, when the naval administration was rearranged, the Clerk was paid less than the other Principal Officers, all of whose offices were new since 1514.[5] When the Officers' duties were codified early in Elizabeth's reign the Clerk's was "to make provision of tymbre & other neccessarys for the building & repayring of our shippes from tyme to tyme."[6] The Clerk of the Ships, at one time the only permanent naval official, had sunk to being the most junior of the Principal Officers.

This resulted from the establishment in 1514 of a comparatively innocuous-looking office, the Keepership of Erith Storehouse. A good deal of the building programme of the early years of Henry VIII's reign had been carried out at

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1. Brigandine's accounts for the period 1522-4 show him engaged entirely on Portsmouth affairs (E36/6 passim).
2. C66/674/m13. For the succession of officers see Appdx. E
3. L.P. VI.g.417 (13); IX 199, 229.
4. B.M. Titus Bi, f 466v (L.P. VII 420)
5. L.P. XXI.i.g 718 (1) (2) (6) (8) (10)
6. Printed in MM 13, 1927, (pp 46-50) p 50.

Woolwich, especially the building of the Henry Grace à Dieu.[1] In February 1514 4 acres of land were purchased "upon the which ground we have newe edified & bilded a house called a store house for the Saffe keping of our ordynance and habillamentes of warre belongyng to our shippes."[2] On January 12th 1514, John Hopton (a shipowner who had served the crown at sea)[3] was appointed as keeper of the storehouse;[4] he was also appointed Clerk Comptroller, with no clearly defined duties.[5] His account book in fact shows him dealing with the same sort of payments as Brigandine dealt with; wages of shipwrights and shipkeepers, making new docks, purchase of naval stores and so on.[6] Most of these payments were for Thames Estuary matters. The difference between his and the Clerk of the Ship's spheres of action was therefore clearly geographical, the Clerk dealing mostly with Portsmouth matters. But the Comptroller was also more than just an additional naval official; he was on his way to becoming central treasure

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1. Above p 103.
2. E 101/61/31 f 6
3. L.P. I i 1453 ii, v
4. C 66/621 m 10 (L.P. I ii g 2617 (12))
5. For this there remains no patent. But his successor, Sir Thomas Spert, held the office by warrant dormant to the Chamber (see John Osborn's patent of reversion. C66/700 m 32); L.P. XV.g 942 (104)) Hopton and Spert received the same £16 13s 4d every 6 months from the Chamber (L.P. III ii p 1536: AllI ii 1280 f 11b) There are numerous references to Hopton as Clerk Comptroller (L.P. III i 931, IV.i.g 2362 (11), BM Add Charter 6289). Another variation is "overseer of the kinges shippes". (E101/57/1 f 4)
6. E 36/12 (well summarised in L.P. I ii 3318).

of the navy. Brigandine's own accounts for 1523-5 show that most of the money he disbursed at Portsmouth came to him from Hopton, or from Hopton's successor, William Gonson.[1]

Hopton had in fact two successors; Sir Thomas Spert as Clerk Comptroller, and Gonson as Keeper of the Erith Storehouse.[2] Paradoxically, the first of these was the less important. Spert's duties seem to have been restricted to carrying out a few miscellaneous tasks, acting as paymaster for a brief period, helping to fit out ships in 1535, carrying out inspections of ships, Portsmouth Castle, and the harbour at Harwich, and paying the wages of the garrison at Portsmouth, where he appears to have lived.[3] His successors performed similar miscellaneous duties.[4] If the Comptroller kept duplicate accounts, as the title suggests, none have survived.[5] Indeed the only specific duty assigned him under the Elizabethan regulations was to assist his colleagues in seeing that the ships were in good repair.[6] The Comptroller's life, then, seems not to have been a very busy one, his only major duty being to join in the deliberations of his colleagues on the Navy Board.

Gonson's office was to be more important. While there is

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1. E36/6 pp 5-9
2. Appdx. E
3. L.P. V pp 314, 315, 321, 324, 325, VIII 1148, IX 229, 232, XIV.i.520, 540, 682, 1097
4. L.P. XVIII.i.434, XIX.i.1035 (27), XX.i.799
5. The Comptroller in the Office of Works certainly kept no duplicate account at this time (D.R. Ransome "The Administration and Finances of the King's Works, 1485-1558, Oxford D. Phil thesis, 1960, p 79)
6. MM 13, 1927, p 50.

nothing in his patent to show that he was any more than a store-keeper,[1] by the time of his suicide in 1544 he was regularly described as "Paymaster of the Navy" or "Paymaster of our marine causes."[2] He had become in fact the sole official responsible for the receipt of money for naval purposes. A large exception,here, is the victualling of the fleet; even after this had been separated from the victualling of land-forces in 1550, the naval victuallers drew their money direct from central treasuries, not from the naval treasurer.[3] William Watson, the King's agent in Danzig, also drew money direct from the central treasuries.[4] There are, too, numerous minor exceptions; Richard Howlett, the Clerk of the Stores, was paid direct for rigging.[5] On the whole, however, money for "ordinary naval purposes began to be concentrated in the hands of the naval treasurer in the 1530s and 1540s. In 1537, for instance, we find in a fragment of Gonson's account payments for stores, for rent of storehouses, for the keeping of ships and for a pleasure ride by the King on the Solent, and payments to the successive Clerks of the Ships, Thornton and Waters, for their purposes.[6] There is none of that ad hoc payment of sums of money direct by the government to masters of ships or to those

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1. C66/644 m 29 (L.P. IV.i.g 693 (25))
2. See the references in L.P. XVIII i 436 ff 82, 86, 88
3. E351/2353
4. BM Add MS 5752 ff 28-9
5. L.P. XX ii 357
6. E 101/612/59.

in charge of shipbuilding which had been so common in the earlier part of the period.

Most striking of all the Treasurer of the Navy gained control in 1542-6 of almost all the payments for the navy in wartime, except for the victualling of the major fleet, whereas, as we have seen, in 1512-3 payments in wartime were dealt with by a specially appointed treasurer. Benjamin Gonson, for instance, deputising after his father committed suicide in 1544, received payments for the wages and victualling of the ships to keep the Narrow Seas that autumn.[1] Robert Legge's account for the period December 1546 to December 1550 show that out of an expenditure of £38,248, £11,252 odd was spent on diets and wages,--whereas there are no such payments in the accounts of Brigandine and Hopton.[2] The financing of the navy, even in wartime, now ran through one recognised channel, the new office of Treasurer of the Navy.[3]

At the same time there was another important financial change. At the beginning of our period, as we have seen, money was always allocated for a specified end, sometimes a very minutely specified end. When Gonson was Treasurer issues began to be more general; the earliest example seems to be one of March 1539 when Gonson was paid £500 "to be by him employed

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1. BM Add MS 7968 (L.r. XIX ii 674)

2. E351/2588 (Legge's); E36/6 (Brigandine's); E36/11 and E36/12 (Hopton's) (to nearest £1)

3. There are, of course, minor exceptions. The treasurer of wars against Scotland in 1548-50 paid various naval payments (A.O.I/283/1067).

about his Highness' affairs upon the sea".[1] In Gonson's time specific warrants still predominated; a good example is a warrant of March 20th 1537, by which Gonson is to be paid £187 18s 10d for the wages of certain ships, the wage rates being set out in detail.[2] The increased work of the war of 1542-6 obviously increased the tendency to issue "unspecified" warrants Of the £22,214 issued to Wynter and Legge as Treasurers between May 1545 and May 1546, only £3,214 was assigned to a particular end.[3] The naval bureaucracy had become mature enough to receive a lump sum to be disbursed at its discretion. The process was to reach its culmination in 1557, when a division was first drawn between "ordinary" and "extraordinary" revenue; a lump sum of £14,000 was to be allocated annually for the former, for the repair and rebuilding of ships, their equipment, the wages of shipkeepers and workmen in harbour, and the accumulation of "a masse of victuallies to be alwayes in aredynes to serve for one thowsand men for a monethe to be sette to the Sea vpon eny sodeyne.."[4] But although formal recognition of changed conditions was delayed until 1557, we can say that by 1546 the naval officials were in practise exercising their own discretion about the spending of the total sums allowed for naval expenditure.

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1. L.K. XIV ii 781 f 63
2. H.M.C. 8th R (Duke of Manchester) Appdx. Pt. II p 21a
3. L.P. XX.i. 782, 881, 1268; ii 156, 1051; XXI.i.100, 116, 208, 386, 635.
4. SPII/10 f 1. The transcription given by Oppenheim Administration p 112) is correct in essentials.

Disordered ad hoc payments from the central treasuries has thus been replaced by the payment of a lump sum for naval affairs to a specially appointed treasurer. It is this financial development which is the key to the development of the Navy Board.

In France the expansion of the navy also resulted in the growth of a naval bureaucracy In the words of Zeller "au moment où le roi décide la creation du Havre de Grâce [1517], apparaissent presque simultanément des contrôleurs, des commissaires, des trésoriers de la marine, et peu après, des gardes des arsenaux."[1] But in France centralisation resulted in the creation of a special secretaryship of state;[2] in England, of an institutional board. The board system had become normal in the 1530s as a method of dealing with new sources of revenue;[3] and in these conditions this solution must have been almost inevitable. Nevertheless, while the Treasurer shared his responsibility with his colleagues, his office made him the most important of the naval officials; the Treasurer's pay from 1546 onwards was to be higher than that of any of his colleagues except the Vice Admiral.[4] This underlines once again the primary importance of finance in the creation of the Navy Board.

There is no formal instrument establishing the Navy Board

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1. G. Zeller Les Institutions de la France au XVI^{e} siècle p 333; c.p. R. Doucet Les Institutions de la France au XVI^{e} siècle pp 652-4
2. Doucet: II p 659
3. G.R. Elton The Tudor Revolution in Government
4. Appdx. L

—— As the Elizabethan regulations state "sithence the erection of the said office by our late dearest father... there hath ben no certain ordenances established.."[1] The nearest approach to an actual establishment of the Board are two undated memoranda, assigned by Gairdner, almost certainly correctly, to early 1545, and a series of letters patent issued in April 1546.[2] The first memorandum lists seven names, and assigns each an office, a fee, and an establishment of clerks. It gives no further indication of the purpose, and goes on to jottings about day-to-day naval and military problems. The second repeats the list of names and offices, and appends a note that these men are "to be spoken with" about the number of ships that are to be "trymmed and Rigged", and about where this can best be done; they are to send them there, send certai other ships to join the fleet against the French, and to find out how many ships in the realm are "met to serve". From this it is apparent that the board was functioning as a body early in 1545, though evidently still something of a novelty. From about the same date there begin to be references in the State Papers to "thAdmyraltie" or to the "counseall of the mareyn"; the earliest seems to be one of March 11th 1545, in which Stanhope, the governor of Hull, writes of receiving letters "frome the vice-admyrall of Ynglonde with other of the Kinges

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1. MM 13, 1927, p 48

2. The memoranda are Cecil MSS Vol 137 ff 76-7. (The summary in L.P. XX ii Appdx. 27 includes everything important). The patents are C66/788 mm 27-30 (L.P. XXI.i.g 718 (1) (2) (5-10)).

majestes counseall of his mareyn".[1]

Clearly, then, the patents of 1546 merely gave permanent form to change which had already taken place. The officers and their emoluments are the same as those set out in the memoranda, though the death of John Wynter late in November or in December 1545 had resulted in a general post of office holders.[2] An indication of the increased standing of the officers is seen by a comparison of wage-rates. William Gonson had had a shilling a day; Robert Legge, the new treasurer had 100 marks a year, an increase of ~~about~~ almost 300%;[3] Brigandine had had a shilling a day as clerk of the ships; this was nearly doubled in the case of the new clerk, Richard Howlett, who was granted £33 3s 6d a year.[4] Presumably, too, there was in the Sixteenth Century something of the modern social distinction between payment reckoned by day and by year. The grants were back-dated to Christmas 1545, the date of the reshuffle after Wynter's death.

The only grant which provides useful information about the duties of the officers is that of the Treasurer, Robert Legge. It lays down the procedure for the audit of his accounts; it is

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1. H.P. II, 424; A.P.C. 1542-7 pp 176, 192; St. P I p 832. C.p. Edward VI's Journal (Literary Remains ed J.G. Nichols II p 288), "thei of thamiralty shuld set my shippes in redines."
2. L.P. XXI.i.g. 718 (8) shows that Legge was granted his pay from Christmas 1545; on November 20th 1545 Wynter made a will (Cant C.C. Alen F3)
3. L.P. IV.i.g 693 (25), XXI.i.g 718 (8)
4. L.P. I.i.g 132 (101), XXI.i.g 718 (2)

to be reckoned sufficient discharge if he appears before the auditors with his account book "having thandes of twoo or three of oure Officers of oure sayd maryne causes subscribed" and produces his patent.[1] This underlines clearly the problem raised by the expenditure of "unspecified" money, and the necessary corporate system established to deal with it. Whether the system was in fact a novelty in 1546 is not clear. The only account book, as opposed to brief abstracts, surviving for the period immediately before April 1546 is that of Benjamin Gonson for the last months of 1544.[2] This is signed on each page by Legge, the Comptroller, and by Waters, Clerk of the Ships. Gonson, however, was filling the office temporarily after his father's death, and the procedure may well be a special arrangement to deal with this situation.[3]

We have then clear evidence that the Navy Board was functioning as a corporate entity from early in 1545; and that, from 1546 (and ~~probably~~ possibly earlier), the officials were taking joint responsibility for naval payments. We must now deal briefly with the offices which constituted the Board. We have dealt already with the Clerk of the Ships and the Clerk Comptroller, and traced the transformation of the Keeper of the Stores into the Treasurer of the Navy. This leaves only the Vice-Admiral,

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1. C66/788m28 (LP XXI i 8.718 (8)) The same procedure is laid down in the Elizabethan regulations. MM 13 1927 p 49)
2. BM Add MSS 7968
3. E351/2193, a duplicate of the account, is prefaced by a statement of the special circumstances, and the procedure laid down by the Privy Council.

the Master of the Ordnance, the Surveyor and Rigger, and the new office of Clerk of the Stores. This last had been established in 1542. The others were new in 1545.

Richard Howlett was appointed "clerke vndre our..... Clerke Comptroller of our Shippes and Workes at Detford and other places within this our Realme."[1] In fact, he was soon referred to as keeper of the King's storehouse (an indication of how far William Gonson, the nominal Keeper, had become in fact Treasurer) and is to be found witnessing the receipt of stores.[2] His duties according to the Elizabethan definition remained what would be expected of the title.[3]

The office of Surveyor and Rigger, like that of the Comptroller, has few duties specially assigned it. The first mention of the office, is, in fact, that in the memorandum of 1545. No trace survives of what Benjamin Gonson did while he held the office from 1545 to 1549. The Elizabethan regulations state only that with the Clerk Comptroller and the Clerk of the Stores, he is to be responsible for the repair and maintenance of ships.[4] Presumably his duties were extensive, but have left no trace because of the sole responsibility of the Treasurer for accounts.

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1. C66/707 m 28 (L.P. XVII g 220 (61))
2. E.g. LP XX i 58.
3. MM 13 1927 p 50
4. Ibid p.50. Monson; Tracts, Vol III pp 405-6, gives the Surveyor's duties as the inspection of the quality of provisions, the condition of storehouses and wharfs, and the taking of inventories of ships returning to port. Monson in fact considered the work too much for one man (p.416)

The Vice-Admiral's office was new, and its purpose obviou A board needed a chairman; the Lord Admiral was too high a figure to preside over tedious details of administration. A vice-admiral was needed if only to prevent the Treasurer becoming effective head of the Navy.

The most interesting of the new offices was that of Sir William Woodhouse, naval Master of the Ordnance. Previously ships had drawn their ordnance supplies direct from the Tower; or their pursers had bought them and recouped the money from the government. The appointment of a special naval ordnance office is another indication of the tendency towards centralisation. The office, however, is exceptional in that it was not dependent financially on the Treasurer of the Navy.[2] Woodhouse was responsible for the purchase of iron "bases" (small ordnance), handguns, necessaries for the "stocking" of guns, their repair, and the repair of bows and arrows; for large artillery the navy remained dependent on the Tower.[3] The office was not an important one; in 1549 it was combined with that of the Surveyor, and it lapsed in 1589 on William Wynter's death.[4]

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1. For previous vice-admirals see Appdx. G
2. E351/2599, which shows that the office's income from September 1546 to May 1551 was £533 3s 4d, all derived from the Mint.
3. Ibid
4. DNB (William Winter): Oppenheim Administration pp 89, 160.

On the lower level, too, a permanent staff for the administration of the Navy had been recruited by the 1540s; permanently employed master shipwrights, officials in the various dockyards and so on.[1] Presumably at Portsmouth similar men, shipkeepers, local purveyance officials and so on, relying almost exclusively on naval employment, existed in 1509; but there seems to have been no concept of an officiall recognised permanent staff. The process of creating a more bureaucratic, a more permanently-organised administration, applies not only to the over-all direction of the Navy, but extends downwards to the various dockyards.

Lastly, the King's Merchant must be mentioned. Reckoned by Monson and Holland as an official on the naval establishment, though not a Principal Officer, the King's Merchant was responsible for buying stores in the Baltic.[2] William Watson seems to have been the first holder of the office. There is no formal appointment, but he was granted an annuity of £33 6s 8d in 1539, and was busy buying masts, cables and so on at Danzig in the 1540s.[3]

The Navy Board was to undergo considerable development in the period 1546 to 1560. Not until 1550 did it acquire some control of naval victualling.[4] About the same time a permanent

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1. Above pp 81-2.
2. Monson Tracts III p 392; Holland Discourses p 58
3. L.P. XIV.i.g 191 (46); see above p 56
4. C.P.R. 1547-53 III p 309

office was built for it at Deptford.[1] The concept of an "ordinary" revenue was, as we have seen, not formally recognised until 1557, and the duties of the officers were not codified until early in Elizabeth's reign. Nevertheless, in its essentials the Board was created in 1545-6, taking its origin from the financial changes which had begun to be noticeable in the 1530s. A bureaucratic body controlling a fleet had by 1550 replaced the one man exercising sporadic control over five ships with which Henry VIII's reign had begun.

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1. Benjamin Gonson's account for 1548-51 shows payments "vpon a newe hous buylded at Depfordestrande for thoffycers clarkes of thadmyraltye to wryte therein." (E351/2194)

(b) The Ordnance

The provision and issue of guns, gunpowder, of bows and arrows, even at times of pikes and lances, was the responsibility of the Ordnance Office. The office was a storehouse rather than a factory, and in this differed from the naval administration, which supervised shipbuilding. Guns and gunpowder were generally manufactured on a commercial basis by craftsmen working in their own shops, although the crown often provided materials.[1] Repairs and small-scale manufacture, on the other hand, were often carried out at the Tower.[2]

There is no adequate account of the development of the Ordnance Office between 1399 and 1683.[3] In the XIVth Century there existed a "Privy Wardrobe of the Tower", primarily a store house for arms and armour which supplied guns and powder and sometimes made or repaired weapons.[4] In 1414 Nicholas Merbury appears as "Magister Operationum, Ingeniorum & Gunnarum nostrorum, ac aliarum Ordinationum nostrarum pro Guerra".[5]

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1. See above Chptrs. II & III
2. E101/56/17 p 32 ff; E101/60/23; L.P. X 1231
3. For the period before 1399 see T.F. Tout Chapters in The Administrative History of Medieval England IV pp 439-84 C.M. Clode The Military Forces of the Crown II Chptr. XX deals with the period after 1683. Brigadier O.F.G. Hogg's typescript "Notes on the Board of Ordnance in the P.R.O. is based on Tout, on the CPR for the XVth Century, and is thereafter extremely sketchy. Lt. Col. J.H. Leslie's article on the "Honorable Board of Ordnance" J.S.A.H.R IV, pp 100-4 deals sketchily with the XVth Century. Material collected by Col. Leslie for the later period was incorporated in Brigadier Hogg's typescript (information supplied by Brigadier Hogg).
4. Tout Chapters IV pp 439-84
5. Rymer Foedera IX p 159.

There is no further reference to a Master of the Ordnance till 1456.[1] The appointment of Philip Herveys in 1461 laid down that he should hold the office as it had been held in the last year of Edward III;[2] but this was evidently a mistake, for a new patent was issued soon after, laying down a definite list of fees for himself and his assistants.[3] Thereafter a regular succession of Masters of the Ordnance can be traced.[4] A Clerk of the Ordnance is mentioned in 1414, and a Yeoman in 1430, but the first appointment by patent was in 1484.[5]

These three officers, the Master, Clerk and Yeoman, formed the administrative division of the Ordnance Office in 1509. The Master, Sir Sampson Norton, was a less exalted official than the contemporary Lord Admiral, as indeed his XVth Century predecessors had been;[6] Norton had been master-porter of Calais, steward of Denbigh, and for a while collector of customs at Southampton.[7] Unlike the Earl of Oxford or Thomas Howard, he played an active part in his department in peace-time; witnessing the receipt of stores, making payments and so on.[8]

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1. CPR 1452-61 p 342
2. CPR 1461-7 p 14
3. Ibid p 63
4. The list in Hogg's typescript is substantially accurate as far as it can be traced from the CPR.
5. Rymer Foedera IX p 159. CPR 1429-36 p 44 (quoted Hogg, p 27). CPR 1476-85 pp 433, 444. F. Grose Military Antiquities (1812 ed), pp 188-9.
6. Not one peer held office in the XVth Century (Hogg pp 43 ff)
7. CPR 1494-1509 pp 16-7, 215; L.P. I i 1803 (1) m 2
8. L.P. I i 1254, 1395; SPI/3 ff 22-4 (L.P. I i 1427)

The Clerk and Yeoman had no fixed duties, performing any miscellaneous tasks which might be necessary. William Huxley, the Clerk for instance, prested bowyers in the West Midlands, conveyed ordnance from London to Nottingham, and witnessed the receipt of stores.[1] But there is none of that casual employment of household officials which we have seen in the Navy. Again in contrast to the Navy, Ordnance officials were generally in charge of the artillery during hostilities; in 1513 the Clerk of the Ordnance was at sea while the Master was in charge of artillery on the invasion of France.[2]

The Ordnance finances, however, were just as hap-hazard as those of the Navy. Payments could be made on four levels. Creditors could go direct to John Heron and, if they were lucky, be paid from the Chamber Treasury.[3] Or, between 1509 and 1512, Heron might pay them from a special account he kept for the wars.[4] They might be paid from the special account kept by Sir John Daunce for "the kynges warres and other necessarie affaires and causes of our seid soveraigne lorde"[5]; or from that of Sir John Cutte, the special treasurer for military equipment;[6] or by the Master of the Ordnance himself.[7] The inter-relation of the various accounts is extremely complicated; again we see the outstanding feature of government at this stage, its

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1. L.P. I i 1004 (4), 1783, ii Appdx. 17
2. Spont French War p 117.; L.P. I ii 3392.; E101/56/17 f3.
3. E.g. Cornelius Johnson L.P. II ii p 1450
4. L.P. I i 1463 iv, v, vi
5. L.P. I ii 3608, Archaeologica Vol 47 pt. ii (1883) pp 309-13, and 326-36
6. L.P. I i 1420
7. SP 1/3 ff 22-4 (L.P. I i 1427).

chronically ad hoc condition. Payments for small and large purchases are found in even the most exalted of these accounts.[1] Daunce received money from successive Treasurers of the Chamber[2] Cutte from Heron, and sometimes from Daunce;[3] Norton from all three superior paymasters.[4] This criss-cross of payments illustrates vividly the complications of the financial system. Above all, it is evident that the Ordnance officials (even if we include Cutte in this capacity) controlled only part of the money spent on ordnance supplies.

We shall see considerable changes from these hap-hazard arrangements by the end of our period; the Master, Clerk and Yeoman had begun to give way to something resembling the later Board of Ordnance, which established a certain amount of centralised control over ordnance expenditure. The change is not as complete as in the Navy, but it is along the same lines.

Like the Clerk of the Ships, the Clerk and Yeoman of the Ordnance declined in importance. William Huxley continued as Clerk until 1544 and left little trace of his activities.[5] His successor, John Rogers, was much too busy acting as a fortifications' engineer to do much as Clerk of the Ordnance; he

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1. The file of warrants to Cutte (SP 1/230 ff 44-62 - L.P. I ii 2308) contains warrants for payments of £500 or £1000 to Norton (ff 47-8), and £35 12s 6d for 95 arquebuses to Peter Corse. (f 60).
2. f121 n°.
3. L.P. I i 1420, 1755
4. L.P. II i 254
5. L.P. V p 306, VI 1073, show him paying gunfounders, and having to advance £25 of his own money for the purpose.

was in Boulogne from 1544 to 1548, engaging in frequent quarrels with his colleagues and superiors.[1] On his return he saw to the provision of building-tools for Ireland, and then was sent to inspect fortifications in Guernsey.[2] The office was obviously a sinecure during his tenure, but it recovered some ground later, and the Clerk became a member of the Board of Ordnance, concerned, like the Clerk of the Ships with internal book-keeping.[3] Indeed, William Paynter, Clerk of the Ordnance for most of Elizabeth's reign managed, "hauing vsed meanes to intrude into Thoffice of Clarke of the Deliveries also," to defraud the Queen of considerable sums for which he was eventually convicted in the Exchequer.[4]

The office of Yeoman declined more completely. Leonard Skeffington subscribed to a report on the state of the Office in 1536, but soon afterwards departed to take charge of the ordnance at Nottingham castle, whence he pestered Cromwell to continue him in the royal service and to pay his and his soldiers' arrears.[5] Another Skeffington, Thomas (probably his brother)[6] succeeded him as Yeoman in 1545, and was also sent

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1. L.P. XIX ii g 337 (2): The references in L.P. XX-XXI are all of his activities as Surveyor of Boulogne, as are these in APC 1547-50.
2. APC 1550-2 pp 213, 227.
3. G.E. Aylmer The King's Servants p 480; B.M. Sloane MS 871 f 140r. Clode Military Forces I pp 458-60.
4. B.M. Sloane MS 871 f 129r: E.K. Chambers Sir Henry Lee pp 120-2
5. L.P. X 299. XII.i.214, ii 582, 1218
6. P.151 n

to Nottingham.[1] This post, too, had thus become a sinecure; and although it still existed in 1560, it had disappeared by 1584 and was not revived.[2]

More important were the new offices of Lieutenant and Surveyor. The latter first appears in 1538, when Henry Johnson was appointed.[3] Johnson, as Master Gunner, had been active about the Surveyor's duties before he was officially appointed. In 1534 he had inspected the ordnance at Calais, for instance, being highly commended for his efficiency by Lord Lisle, the Deputy.[4] Whether his appointment was the result of his report (undated) on the excessive allowance of metal to gunfounders, or whether this was the fruit of his new office is unknown;[5] but he was evidently vigilant about the detection of fraud. The principal duty of the Surveyor, as the name implies, was the inspection of new materials and the taking of 'remains' of ordnance brought back from ships or military ventures.[6] The parallel to the Naval Surveyor is striking.

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1. L.P. XX.i.g 621 (10); XXI i 585; APC 1547-50 pp 74, 458.
2. SP12/15 No. 71 C.G. Cruickshank Elizabeth's Army p 63. Peck Desiderata Curiusa (1735 ed) Lb II pp 10-1; CSP (Dom) 1595-7 pp 381-3, no. 105
3. L.P. XIII.i.g 384 (26)
4. L.P. VII 237; VIII 681
5. See above p 87 n 8.
6. Aylmer King's Servants p 480; Sloane MS 871 f 138v.

The other new office, that of Lieutenant, was the direct result of a change in the position of the Master in 1544. We have seen that Masters of the Ordnance had been of lower social position than the Lord Admirals, and had been more concerned with the running of their offices.[1] From 1544 the Master was generally a great man; Sir Thomas Seymour, Sir Philip Hoby (ambassador to the Emperor, and a key-figure in Somerset's deposition),[2] and in the Elizabethan period, the Earls of Warwick and Essex.[3] A permanent deputy thus became essential.

This contrast can, of course, be over-stressed. Among the earlier Masters, Sir Richard Guildford was a prominent figure in the court of Henry VII;[4] while the implication that earlier Masters devoted themselves to their duties in the Ordnance office can hardly hold for 1529 to 1533 and 1534 to 1535, when Sir William Skeffington combined the Mastership with the governing of Ireland.[5] Similarly, it would not be true to say that none of the later Masters paid attention to Ordnance affairs at all. Thus indentures for the receipt of stores are to be found signed by Seymour;[6] while Hoby found time between diplomatic missions to complain that the Ordnance

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1. Above p 120
2. DNB; A.J.A. Malkiewicz "An Eye-Witness Account of the Coup d' Etat of October 1549 (E.H.R. Vol 70, 1955, pp600-9)
3. List in Hogg pp 43 ff
4. D.N.B.
5. D.N.B. The implication that he gave up the Mastership is wrong; c.p. L.P. X 115 about the several suitors for the office on the report of his death. Skeffington came of a well-established but not very prominent gentry family (J.P. for Leicester in 1501, Sheriff of Leicester and Warwick in 1510) who probably owed his initial rise to his

(contd. over)

Office was being starved of money.[1] Nevertheless, the change in social status and in attention to duty is undeniable. It emerges most clearly from the career of Sir Christopher Morres, Master from 1536 to 1544, and then Lieutenant.

Morres had begun his career as a serving gunner;[2] in 1527 he became Master-Gunner, and engaged in work of a predominantly engineering character.[3] In 1535 he was chosen to lead the expedition to help Marcus Meyer.[4] As Master of the Ordnance he was deeply involved in day-to-day administration. He protected the Owen brothers against the hostility of Henry Johnson;[5] he was the normal recipient of payments from the various treasuries, and of writs to provide stores.[6] In 1539 and 1540 he toured the North and Calais inspecting fortifications, and helped to design new bulwarks in the Thames.[7] He rendered no account but he should have done so; on his death the King confiscated his goods on the grounds that as Master "he had the employement of severall sommes of money The accompte wherof duryng all his lief was never declared nor determyned"[8]

In 1544 there was a curious development. Sir Thomas

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1. SP 10/14 No. 56
2. See the excellent article by A.F. Pollard in D.N.B. L.P. I ii & 2535 (7). He was in charge of a culverin on the 1513 campaign (E36/2 p 243)
3. L.P. IV ii & 2927 (4); V 262. 4. See above pp 65-6.
5. L.P. X 756; XI 39.
6. L.P. XIII ii 1280 ff 2, 7, 14, 22, 41: L.P. XVII 646, 652.
7. L.P. XIV.i.33, 58, 156, 255, 398; XVI 303
8. C66/773 m 7 (L.P. XXi & 846 (60)).
5. (contd. from p 125) connection with the Grey family. (S.H. Skillington The Skeffingtons of Skeffington Transactions of the Leics. Archaeological Society, Vol 16 1929-31 pp 74-128; biography prepared for the History of Parliament).

6 L.P XIX i 990, ii 82.

Seymour became Master, with considerably increased fee (presumably to provide the King's brother-in-law with a suitable occupation); and a new office, that of Lieutenant, at a higher fee than the Mastership itself had previously carried, was created and given to Morres.[1] Fairly obviously, then, an honorific position had been created at the top, and the real duties of the Master transferred to the Lieutenant. Morres was fatally wounded at Boulogne in September 1544,[2] and was succeeded by Sir Francis Flemming, who proceeded to perform the sort of duties that Morres had performed.[3] Thereafter the Lieutenant was for all pratical purposes, at least on a day-to-day level, the effective head of the Ordnance Office.

By 1545, then, the Ordnance had a Master, a Lieutenant, a Surveyor and a Clerk; the resemblance to the emerging Navy Board is striking. There was, of course, a difference, the absence of a Treasurer of the Ordnance. Even so, there had been considerable changes in the vital field of finance.

With the end of the special accounts of Daunce and Cutte Ordnance finances had becomeless complicated, at least in peace-time.[4] Money was paid to the Master, sometimes to

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1. L.P. XIX i g 270 (10), g 442 (23). Morres as Master had had 2/- a day (£31 10s a year) (L.P. X g 392 (17)), as Lieutenant he got 100 marks a year; Seymour got 200 marks.
2. D.N.B.
3. L.P. XX i 746, 803, 997; APC 1547-50 pp 77, 94, 99 etc.
4. The last of these accounts seems to be that of 1522-7, (see Archaeologica 47 pt ii 1883, pp 326-336).

lesser officials, and often directly to creditors.[1] From about 1542 the Lieutenant of the Tower, Sir Edmund Walsingham, began to act as Ordnance treasurer, a function he and his successor, Sir Anthony Knyvett, fulfilled until the end of the reign;[2] they were never so called, but Flemming and Anthony, the later treasurers claimed a fee in 1553 on the ground that Knyvett had received it in 1545, as Lieutenant of the Tower.[3] In 1547 Flemming, as Lieutenant of Ordnance, and Anthony Anthony, the Surveyor, began to act as joint treasurers.[4] In none of these cases do Ordnance treasurers exercise anything like a complete control of payments; Parson Levett, and many other artificers and merchants continued to be paid direct from the central treasuries.[5] Nevertheless, we see the beginnings of a centralisation of Ordnance payments in the hands of the Lieutenant; a development that was to reach such a pitch by the end of the century that the then Lieutenant could claim that direct payments to John and Robert Evelyn for saltpetre were contrary to precedent.[6] Some sort of ordnance treasury was beginning to emerge in place of the chaos of earlier years.

As ordnance finances became increasingly centralised, so

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1. L.R. XIV. ii 781 passim (by the Treasurer of the Chamber)
2. See the various Augmentations Accounts, e.g. L.R. XVIII i 436 f 84, ii 231 p 127, XIX i 368 ff 51, 58.
3. E351/2614.
4. APC 1547-50 pp 77, 91, 99, 105, 145. The then Lieutenant of the Tower (Sir William Stoner) does not appear at all in APC receiving money for the Ordnance
5. L.R. XXI ii 775, f 88 APC 1547-50 p 121. E315/256 ff 76r 76r (Augmentation Accounts I Ed VI).
6. CSP (Dom) 1598-1601 pp 415-6.

more discretion was allowed the officers. The normal procedure was for the Office to send in a bill of the money it owed at any given moment, and for a warrant to be issued on one of the central treasuries for the amount involved. Walsingham put in one such bill in 1542-3, which includes payments for livery-arrows and bow-strings, for gunfounders, copper, shot etc., and even the wages of artificers and labourers working at the Tower. Attached to the bill is a warrant by the King, commanding the Treasurer of Augmentations to pay Walsingham the exact amount claimed (£3239 12s 3d).[1] No prests appear to have been issued to Walsingham in this period; whether the creditors bided their time, or were paid from his private pocket, does not appear. From about 1546 there begin to be examples of "unspecified" warrants, with which we have become familiar in the navy, payments in round sums, presumably in advance of actual expenses.[2] From 1547 to 1550 both sets of payments are found.[3] There is one essential difference between this and naval procedure. The signed approval of two of his colleagues was sufficient discharge for the Naval Treasurer, but there was no such provision in the Ordnance Office. Hence, in theory at least, the "unspecified" payment in this case is strictly speaking a

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1. E101/60/10.
2. E.g. L.R. XXI.i.643 ff 70, 71, 72, 76, 78: ii 775 f 83.
3. APC 1547-50 p 217 (£6 13s 4d for munitions), p 233 (£1000 "for the payements in their charge"), p 329 (£2000 "for defraymentes in his charge").

prest, and is often referred to as such; any of the expenses in Flemming's and Anthony's account could presumably be disallowed. Accounts of such magnitude, extending over such a lengthy period, could hardly be disallowed in practise, however; in Flemming's and Anthony's account for 1553-8 shows over £45,000 received, and over £44,000 spent, and the account itself was not presented till June 1560.[1] The realisation of the impossibility of retrieving money spent 7 years before probably lay behind the regulation of Elizabeth's reign that

> "the officers of the Ordenance viz. the Lieutenunt Surveyor, Clerk, and yeoman, shall assemble together ones in every moneth or offener if cause requyer... to consider the wantes of provisions...and then to make a book vnder all theyr handes of the proportion which shalbe nedefull with the prises...the same booke [they-erased] shalbe exhibyted to the....councell that order may be gyvan for the same..."[2]

Possibly this is a codification of existing practise. Either way, the Ordnance was less independent than the Navy, where expenditure was not so controlled.

Indeed, the development of the Ordnance Office was in general behind that of the Navy Board. Even when the Ordnance regulations were drawn up, about 1560, the pattern of "principal officers" did not correspond to that of the later Elizabethan

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1. E 351/2614.
2. SP 12/15 f 139.

and early Stuart periods.[1] The Yeoman was still on the establishment, though shortly to disappear; the Clerk of the Stores and the Clerk of Deliveries, members of the later Board of Ordnance, had not yet become leading officials.

Yet even here the seeds of change exist in our period, though it needs a microscope to see them. The evidence is circumstantial; the writings of John Lynewray about 1600, based on Ordnance Office records which have since disappeared.[2] Nevertheless, as far as they can be checked, they appear to be accurate.

Lynewray maintained that in effect John Leame was Keeper of the Storehouse in 1544 and after.[3] There is no record of his appointment to the office; Leame appears as a gunner in 1542, and as a clerk employed in the office between 1546 and 1551.[4] Nevertheless, Lynewray was right, and Leame was in fact Keeper of the Storehouse, or Clerk of the Stores; William Watson was appointed to succeed him as such in 1558.[5]

Lynewray also maintained that a Clerk of Deliveries existed at this period. Here his intention was polemical.[6] He held that William Huxley and Anthony Anthony were joint Clerks of the Ordnance in 1527-8; Huxley being always "imployed specially in

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1. B.M. Sloane MS 871 ff 129-51; Aylmer King's Servants p 480.
2. For Lynewray see Appdx. I
3. B.M. Sloane MS 871 f 140v.
4. L.P. XVII g 220 (38); E101/60/25
5. C.P.R. 1557-8 p 127
6. Appdx. I

the Accompts for mony & taking Charge of the King's Ordnance in services, as at Calice Newhaven Ambleteuse ..." etc. Anthony "did alwaies exercise Thoffice of deliuery out of the Store as appereth in the books of the Ships, Castles, fforts tempore H:8 : Ed:6 vnto whome Bryan Hogg was deputy all his time. All the proporcons (during this time) were drawne by the said hogg & all the Indentures vpon deliverys taken by him in the name of the Master of Thordnance..."

He maintained that Hogg succeeded Anthony when Anthony became Surveyor; Hogg received 12d a day "who exercised the said Office of deliuery quietly with the same ffee without any Pattent also," until one was granted him in 8 Elizabeth. Lynewray offered to prove his contention from records still in the Office.[1]

In general Lynewray seems right, as far as he can be checked (though Anthony became Surveyor in the first, not as Lynewray maintained, in the fourth or fifth year of Edward VI);[2] Hogg was drawing 12d a day in Flemming's account for Mary's reign.[3] He was signing receipt in 1544.[4] Anthony, before he became Surveyor, was referred to as Huxley's equal,[5] and was sufficiently important in 1537 to withstand Henry Johnson and

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1. Sloane MS 071 ff 144v, 145r.
2. Appdx. H
3. E351/2614
4. L.P. XIX ii 82
5. "william huxley antony antonyes Clarkes of the same office." (SP I/102 f 34).

uphold the Owen brothers.[1] During the absence of Seymour warrants were addressed to Anthony for deliveries.[2] All in all, we may conclude that Clerks of the Stores and of Deliveries existed in the later part of our period, exactly as Lynewray maintained, even if they were not yet important enough to be reckoned among the Principal Officers of the Ordnance. In practise, then, the Ordnance Office of Henry VIII's last years was much more like that of Elizabeth I and of James I than appears at first sight; sufficiently so to see this period as a decisive one in its evolution, even if formal recognition of the changes was, as with the Navy Board, to be delayed.

We must deal briefly with the Ordnance Office's subordinate staff. On the face of it, these seem to be more numerous and more important than the lesser officials of the Navy, but in practise their posts seem to have been largely sinecures. Amongst them, for instance, the Gunners of the Tower of London, were generally included. Numbering 12 in Henry VII's reign, numbers had increased to 110 by 1552.[3] Their duties included watch-and-ward in the Tower, and weekly shooting practise;[4] their pay was 6d, 8d and sometimes 1/- a day.[5] Many of them were gunfounders or powder-makers; men like Cornelius Johnson,

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1. L.P. XII ii Appdx. 7
2. L.P. XX i 1235, 1244, 1252
3. CPR 1494-1509 pp 494, 496, 501, 555. B.M. Harl. MS 7383 f 67r.
4. Stow Survey of London I 166; Hooker Tudor Military under Henry VII p 29
5. L.P. I i & 132 (104), 289 (40), 1123 (24), 1172 (14), ii & 2617 (32).

to whom a fee of 6d or 8d was obviously small-beer.[1] The position, in fact, seems to have been primarily a mark of favour. John Falley, for instance, became a gunner in reward for his services at Flodden.[2] Presumably the principal advantage to an important craftsman like Johnson of being a gunner was that the position was of some help to him in securing contracts.

Attached in a vague way to the Ordnance Office were such of the King's artificers (the King's fletcher, the King's gunstone maker, and so on) as were connected with ordnance affairs. From Edward VI's reign some of them were taken on to the Office's establishment.[3] Even before that, many of them were used by the Crown for administrative functions of various sorts. Walter Hendry, the King's fletcher, for instance, toured the country to purvey arrows, and dealt for the Crown with a Sheffield hard-ware manufacturer for 192,000 arrow-heads.[4] As far as the actual provision of guns, powder cannon-balls etc., goes it is difficult to see what advantage the Crown derived from paying them a retaining fee, since they charged the market price for anything they produced for the Crown. The reform commission of 1553 complained on this score

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1. L.P. I ii g 2684 (71) For Johnson see above, pp 35, 84-5.
2. L.P. I ii g 2617 (32).
3. B.M. Harl MS 7383 ff 6v-7r; Peck Desiderata Curiosa (1735 ed) Lib II pp 10-3; B.M. Add MS 6176 ff 36v-39v.
4. E101/55/29 f 4v; SP I/232 f 116.

that

> "the kynge hathe not at any time [their labour] without paieing for there workes as muche or more then any other besides ther ffees."[1]

Presumably their appointment was primarily a question of conferring some form of status as a reward for services rendered analogous to the modern royal warrant. The increased importance of ordnance may, however, ~~may~~ be reflected in greater specialisation among the artificers; both in joinery and in smith's work separate civilian and military artificers are to be found from 1515.[2]

The Ordnance Office fell behind the Navy in having no control over ordnance officers in garrisons. At Calais, for instance, the garrison had its own Master of Ordnance and staff, paid from the garrison account, and independent of the authorities in the Tower.[3] A similar situation existed at Boulogne and, of course, at Berwick, and in Ireland.[4]

In general, then, the Ordnance Office was a less developed, less self-contained and less self-sufficient department of state than the Navy Board at the end of our period. Nevertheless the development of new offices, the changes of 1544, and the

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1. B.M. Harl MS 7383 f 68r
2. Ransome, thesis cited, pp 148, 175-6
3. L.P. I i.g 218 (62), 589 p 339; V 942; E315/256 f 70r; B.M. Harl. MS 7383 ff 41-2
4. B.M. Harl 353 ff 50-4; L.P. II i 973. B. Trainor Extracts from the Irish Ordnance Accounts, 1537-9 (Irish Sword I, 1949-53, pp 324-34).

increased if imperfect control over finance coupled with the widespread belief in the XVIIth Century that the Office had been founded under Henry VIII,[1] confirm the impression that the period had been a radical reorganisation in the direction of bureaucratisation during our period. The parallel with France, where a similar reorganisation took place about 1537, is once again striking;[2] and proof, if one is necessary, that administrative reform is an almost inevitable response to changed circumstances.

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1. See Appax. J, the period "before the full and perfect Creaton or the same Office by patent" in Skeffington's day. It was held in the Earl of Devon's case that the Earl could not claim certain fees because the office had been erected "of late time"; viz. in 35 Henry VIII (Coke's Reports, Trans G. Wilson, (1776-7), Vol. VI f 90r)
2. Zeller Institutions pp 320-1; Doucet Institutions II p 646.

(c) The Armoury

The Armoury was a much less important office, which saw no large-scale changes at this period, and can be dealt with very briefly. Like the Ordnance Office, it had evolved in the XVth Century from the Privy Wardrobe of the Tower.[1] By 1431 the office of Sergeant of the Armoury existed;[2] the title changed gradually to that of Master.[3] The Master was assisted by a Clerk and a Yeoman, less important than the corresponding officials in the Ordnance Office, and therefore the more elusive because their appointments do not appear in the Patent Rolls. The Yeoman at the beginning of Henry VIII's reign, John Blewbery, was quite active, receiving money for armourers' wages and for purchases, witnessing the receipt of stores, purveying materials in the countryside.[4] The senior of the armourer artificers, known as the King's brigandarius, also performed occasional executive acts; William Gurre for instance, was given the responsibility of selling the harness captured at Flodden.[5] The Master had some financial responsibility, but generally the lower officials of the Armoury accounted direct.[6]

While the main duty of the Armoury, as we have seen, was

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1. Tout Chapters IV pp 481-2
2. C.P.R. 1429-36 p 182
3. Sir Richard Guildford was referred to in 1523 as "late maister of tharmory or Sergaunte of the Armory" (E101/612/56)
4. L.P. I ii 1935 pp 1496-7, 1502, 1513, II ii p 1457
5. L.P. I ii 2325.
6. E101/612/56 - a discharge for Sir Richard Guildford's son because Sir Richard had not accounted. See B.M. Royal MS 7F XIV 67 the accounts of Kirkener, the brigandarius.

the provision of expensive suits of armour for state occasions,[1] we find it also functioning as a storehouse; on one occasion 13,719 harness were issued by the Armoury, while in 1561 it possessed 27,446 "Armour compleat for the Body & serviceable".[2] Occasionally a free issue was made to soldiers who had lost their own in the royal service.[3] Occasionally too, the royal armour was let out on permanent loan; harness issued at the time of Wyatt's rebellion was still reckoned to be the Crown's property in 1561, though actually in the hands of noblemen and gentry.[4]

Nevertheless there was no obligation for the Crown to provide armour for its troops, and the amount kept in stock fluctuated wildly. At Henry VIII's death the armoury possessed, for instance, only 1923 pair of "almain rivets".[5] The early years of Henry VIII's reign had seen feverish buying of harness, as of other military supplies.[6] There was some buying in the reigns of Edward VI and Mary, and a good deal of confiscation from those who had played their political cards badly; but large scale buying on the scale of 1509-13 was not resumed until the beginning of Elizabeth's reign.[7]

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1. Above pp53-4
2. E101/61/1 (L.P. I ii 2053 (a)); B.M. Harl. MS 7457 f 19
3. L.P. XX.i. 468
4. B.M. Harl. MS 7457 f 14r.
5. Ibid f 1 v.
6. B.M. Stone MS 146 f 51 (receipt of 4500 harness for footmen, 30th March 1513, from Leonard Frescobaldi); L.P. I i 1463
7. B.M. Harl MS 7457 ff 1-3.

The Armoury's duties was then much less demanding than those of the Ordnance Office and the Navy; the issue and receipt of body-armour, and, occasionally, the removal of rust from that in stock, a task to which the armourers could be switched from their usual more craftsmanly occupations.[1] Not surprisingly the Armoury remained the most "household" of our departments.

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1. William Gurre, the brigandarius, was paid 4d a pair for cleaning and repairing 400 pair of Almain rivets (*L.R.* III i. 1009 p 371).

(d) The Pattern of Administrative Development

Dr. G.R. Elton's work on Tudor administration has made it almost inevitable that students of the subject should look out for evidence of a plan of campaign behind the bureaucratic changes of the period. The question of whether or not Thomas Cromwell was responsible for the changes which have been traced above is inescapable.

Clearly, we have argued that, on a long-term basis, the emergence of some sort of bureaucracy was an almost inevitable concomitant of the expansion of the navy and of the artillery. The stress which has been laid above on parallel developments in France, for instance, has shown that there is no need to look further than this obvious explanation for the fact of bureaucratic development. But the same would obviously be true of England's financial institutions; presumably Cromwell or no Cromwell, either new institutions would have to have been created to garner the profits of the Henrician Reformation, or the old financial courts would have been so strained as to change out of all recognition. The very slowness of the emergence of the Navy Board, from the foundation of a second clerkship in 1514, through the slow rise of a naval treasury, to the definitive foundation of the Board under Elizabeth, points to the same conclusion; that administrative change is a response to changed circumstances, and not a consciously created framework for ~~it~~ them. But neither of these arguments makes the question "was anybody responsible for the form the institution

actually took?" an idle one. Does, then, any answer to this question emerge from our narrative?

Before considering this question, we must survey briefly the development of a parallel body, the Board of Works. Dr. D.R. Ransome in his thesis "The Administration and Finance of the King's Works, 1485-1558",[1] has argued against the view that the Board of Works, as such, emerged before 1558. He holds that the evolution of the Board was a gradual one throughout this period, but that it "was almost certainly delayed by the continued building projects undertaken by Henry VII and Henry VIII; it is at the end of our period, when the spate of building was diminishing, that the administrative development is to be found; and such cohesion as did exist must be attributed not to some bureaucratic unity but to other factors."[2] Or again, he remarks that "the adumbration of a board of control which we have noticed [before 1558] cannot be regarded as more than the shadow of a coming event."[3]

By 1539 the officials of the embryonic Board of Works comprised a Paymaster, a Surveyor, a Clerk Comptroller, and a Master Carpenter.[4] There is some resemblance here, though not

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1. Oxford D. Phil, 1960.
2. pp 14-5
3. p 18
4. E351/3199, cited by Beveridge Prices and Wages I p 461.

Addendum

Lorde was not Paymaster of the Works as a whole but only of a special office established to build and maintain the King's palaces in the south-western Home Counties, distinct from the main office of Works which remained under the supervision of James Nedeham, Surveyor (Ransome p.31). It cannot therefore be argued that an embryo Board of Works was established in 1539. Nevertheless, the use of an accounting system and the establishment of a hierarchy of officers similar to those of the later Navy Board as early as 1539 in an important spending office (Lorde's sub-department of the Works) leaves our main argument unaffected - viz. that the pattern of administrative development for the spending departments was established when Thomas Cromwell was the King's first minister. I must thank Dr. Ransome for clarifying my views on this point.

an exact one, to the new arrangements in the Navy (Treasurer, Surveyor, Clerk Comptroller, and Clerk of the Ships), and rather less to those of the Ordnance Office (Lieutenant, Surveyor and Clerk, with the Lieutenant and Surveyor acting jointly as Treasurer).[1] More striking, however, is the fact that Robert Lorde, appointed Paymaster of the Works in April, 1539[2] was issued with a new patent the next month.[3] This stipulated that the Auditors were to accept

> "the booke...signed with thandes or markes of our Surveyor, Clerke Comptroller, of our saide woorkes, our Maister Carpenter, for the tyme beinge of the same woorkes or with Thandes of iij or ij of them... [as] .. suffycyent warraunt" to Lorde "in as large maner as though he hadd our especyall warraunt for every percell contayned in the same his bookes."

Apparently this practise had grown up in the Works during the 1530s though this seems to be the first official recognition of it.[4] It was, of course, the arrangement laid down for the Treasurer of the Navy in 1546.[5] If any "particular books" survived for the Navy in the 1530s and the early 1540s other

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1. As we have suggested above, p128 the resemblance is more striking from 1542 to 1547 when there was in practise a separate Treasurer of the Ordnance, namely the Lieutenant of the Tower.
2. L.R. XIV i 6 904 (20) backdated to the previous September.
3. Quoted by Lorde in his account (E351/3199); the patent seems not to have been enrolled.
4. Ransome thesis p 30.
5. Above pp113-4

than Benjamin Jonson's, we could tell whether the principles of the 1546 changes were in fact put into effect earlier.[1] As it is, we can at least say, that the Navy in the 1540s was following the path of the Works in the 1530s; and that its reorganisation of 1545 was modelled on the Office of Works in 1539.

The question of when and where "household administration" gave way to bureaucracy is always liable to become a sterile semantic dispute. Dr. Ransome might reasonably maintain that the crux of the matter is the formal recognition of the existence of an office, and the issue of instructions to regulate it. In this case, the Navy Office, the Ordnance Office, and the Office of Works did not become departments of state until Elizabeth's reign. But the fact that the Navy Board was quite definitely functioning as a collective body from 1545, at the latest, might modify one's opinion on this point. Moreover, Dr. Ransome agrees that the joint signing of accounts by various officials does show "the beginnings of collective responsibility."[2] When the changes in the Office of Works are set beside those in the Navy and in the Ordnance Office, it would seem reasonable to argue that the financial changes are the most important step on the road to "bureaucracy"; that, with the joint signing of accounts one has a "board", a

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1. Ibid

2. Ransome, thesis, p 14.

collective bureaucratic institution, even if not yet officially baptised.

There does, then, seem to be a bias towards a joint control of expenditure, exemplified in Navy and Works by the arrangements made for the Treasurer's discharge, and to a lesser extent in the Ordnance Office with the beginnings of "unspecified" payments in 1546. There seems to be a bias, too, towards an "ideal" board of Treasurer, Comptroller and Clerk and one other official; an ideal from which any particular example might deviate, but which is, as it were, the Lowest Common Denominator of all three. Moreover, while these arrangements were mostly carried into effect in the 1540s, the fact that the decisive document is the Work's patent of 1539, at about the time that William Gonson was beginning to become prominent as Naval Treasurer,[1] points once again at the administrative initiative of Thomas Cromwell. There is certainly no evidence of his direct involvement in any of these devlopments, but, considered within the context of Cromwell's other activities, it becomes still more apparent that wide-ranging administrative reform was a major characteristic of government under his aegis. The deviation in practise from the apparently underlying model may be the result of differing circumstances. On the other hand, they may be a reflection of the sudden and unforeseen cutting-short of Cromwell's career; the changes in the 1540s may be no more than pale reflections of what had been intended in 1539.

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1. Above pp107-8

Even as it was, the Navy Board acquired, and the Board of Works and the Board of Ordnance began to approach the form they were to retain until the XIXth Century.

One qualification must be inserted here. Cromwell's role appears to be that of tidying up of an existing proliferating structure, rather than of creating in abstract a framework for future development. The decisive changes in the expansion of the fleet and the increased importance of the artillery date from the early years of Henry VIII's reign. We must emphasise once again that administrative development of some sort was inevitable. What we are stressing is that Cromwell, or at least his associates during his period of ascendancy, were responsible for the form of that development, the concept of a formal Board exercising joint responsibility, and that the popularity of these ideas outlasted Cromwell's fall. We do not intend to add Thomas Cromwell to the already over-crowded list of "founders of the British Navy", or to suggest that the Royal Artillery and the Royal Army Ordnance Corps should honour his memory.

(e) Personnel

What sort of men staffed these offices? This can best be answered by first taking one example at length. William Gonson was Treasurer of the Navy during the pivotal period in the evolution of that office, from 1524 to 1544. He had commanded one of the royal ships in 1512-3,[1] and had assisted as Treasurer his predessor, John Hopton, in 1523;[2] indeed, a year later, with Richard Gresham and Nicholas Warren, he was standing surety for Hopton for £300.[3] Early in 1524 he was chosen to inspect a ship that the King of Denmark had up for sale,[4] and about the same time he is found as a gentleman-usher of the court,[5] and a Teller of the Exchequer, in which capacity he later made payments to himself as naval Treasurer.[6] He was also eminent as a merchant; in 1525 he was Warden of the Grocer's Company,[7] while the voyages of his ships to the Levant in the 1530s earned him mention in Hakluyt.[8] In 1536 he was appointed vice-admiral of Norfolk and Suffolk, a judicial post;[9] and also acted as judge in the central Admiralty Court.[10] Hardly surprisingly, he was

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1. L.P. I i 1453 v, ii 2686, 2842, 3513.
2. E36/6 pp 5-9
3. C1/415/33; in 1525 Gonson and Gresham were disputing the ownership of the Angel Hopton with Hopton's widow. (H.C.A. 3/1 ff 17-8).
4. L.P. IV. i. 8
5. L.P. IV. i. 297 (20)
6. E405/112/55. I owe this reference to Dr. R.S. Schofield. Another case of a Teller of the Exchequer holding a similar office is that of Thomas Warley, Clerk of the Works c 1494-1505 (Ransome, thesis cited, pp 56-7).
7. W.W. Grantham A List of Wardens of the Grocer's Company, 1345-1907.
8. Principal Voyages V pp 67-9 (1903-5 ed, Glasgow)
9. R.G. Marsden The Vice-Admirals of the Coast, E.H.R. Vol. 22

(contd. over)

described in a Chancery suit as "a man of great [su-]bstaunce and also...grettly frynded within the said Cittie of london."[1]

Gonson obtained a considerable number of landed estates from the crown during his period of office. In 1530 he was granted the reversion of the Manor of Fritwell, Oxfordshire;[2] in 1540 the reversion and rents of an estate at Maldon in Essex, and the site and buildings of Acon College in the City of London, a messuage called the Red Lyon at Smithfield, the site of chapel of Mulsam, near Chelmsford, and the manor of Magna Warley, also in Essex.[3] Soon after he obtained another messuage in London, Abbot's Inn, near Billingsgate.[4] He was allowed to alienate Acon College and Magna Warley;[5] the second was almost certainly the creation of a use for himself, his wife, and his descendents;[6] the first was probably alienated for the same reason.[7] Lewes Priory had granted him a 55 year lease of the rectory of Melton Mowbray in 1532;[8] and in 1537-8 he was given

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1. C1/742/36.
2. L.P. IV iii g 6418 (24)
3. L.P. XV g 262 (36). The college cost £333 6s 8d (E 325/2b pt I f 10v)
4. L.P. XIX.i.g 80 (5)
5. L.P. XVI.g 947 (46); XVII.g 362 (51)
6. C142/73 No. 50 (Inq. P.M.) The land went to his brother-in-law Edward Waters, and his son-in-law, Henry Tyrrell (c.p. below p 148 and L.P. XXI ii g 476 (107)
7. L.P. XVII g 362 (51). The land went to Sir Ralph Warren, presumably a business associate, and Thomas Mildmay, his son-in-law.
8. L.P. XX i g 125 (7): Sta Cha/2/XVI/173

(contd. from page 146)
1907, p 473. The Vice-Admiralty of Suffolk (alone) was sold to Sir Nicholas Bacon in 1578 for £310 (A. Simpson The Wealth of the Gentry, 1540-1640 p 59)

10 R.G. Marsden in Naval Miscellany (N.R.S) II p 35.

minor office on some Essex Augmentation estates.[1] Some of these lands would presumably have come his way as a wealthy merchant;[2] but the number of pickings is presumably an indication of the potential advantages of office. Certainly he had acquired sufficient social standing in Essex to be described as "armiger" on his death.[3]

He was, moreover, closely connected by family ties both with his fellow officials and with other men of influence. Edward Waters, Clerk of the Ships in 1540-5 was his wife's brother and Richard Howlett, Waters' successor her "gossepp" (presumably, here, godson).[4] William's son Benjamin was successively Clerk of the Ships, Surveyor, and (from 1549 to 1577) Treasurer of the Navy.[5] He, in his turn, was succeeded by his son-in-law Sir John Hawkins.[6] William Gonson's daughter Avicia (or Mawys) married Sir Thomas Mildmay, auditor of the court of Augmentations, and brother of Sir Walter Mildmay, General Surveyor from 1545.[7]

Gonson committed suicide in 1544, for reasons unknown.[8] This could hardly have been connected with any embarrassment about his account, for his son was immediately appointed to carry on his duties temporarily;[9] perhaps it was the long-term

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1. L.P. XIII. i. p 582
2. He was already getting favours from the Crown in 1513, before he obtained office (Spont French War p 131)
3. C142/73 No. 50.
4. Cant CC f4 Alen (Benedicta Gonson)
5. Appdx. E (L.P. XXI ii g 476 (107) for the relationship).
6. D.N.B. (Hawkins)
7. L.P. XXI ii g 476 (107) p 247; D.N.B. (Walter Mildmay); J.H. Round The Mildmays and their Chelmsford Estates (Transactions of the Essex Archaeological Socy. XV (NS) 1921 pp1-16)
8. L.P. XX i g 125 (7)
9. E351/2193.

result of the execution of his other son, David, a knight of St. John, in 1541.[1] An inventory taken after his death shows him to have been worth £4182 13s 8d in moveables (including £1100, the value of the ship Mathew Gonson), and the owner of at least two houses in London.[2] For what it is worth the inquisition on his Essex estates shows Magna Warley to have been worth £36 a year, and the Maldon lands £5 9s;[3] to these must be added the rectory at Melton Mowbray. Gonson's case shows clearly the use made in government of men of initiative and private substance.

Gonson was hardly a typical official. His career, however, suggests various themes which we will try to follow through for his colleagues and for the Ordnance officers.

Most of the naval officials were merchants or shipowners by origin.[4] Brigandine was probably an exception to this.[5] The backgrounds of Edward Waters, John Osborn and Richard Howlett are obscure. The rest, however, were all merchants, ship--owners, or both. Leonard Thornton is found ----------

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1. L.P. XV 520-2; XVI 973,1011
2. Cecil MSS Vol. 21 p 49
3. C142/73 No. 50
4. For list of officers see Appdx. E.
5. Oppenheim Accounts and Inventories pp xvii-xix.

as a "cape marchaunt" (a supercargo) in 1525.[1] Thomas Wynter was a wealthy Bristol merchant,[2] Robert Legge described himself as "Citizen and ffishmonger of London", and claimed in 1540 that he had been visiting Iceland for 26 or 27 years.[3] Sir William Woodhouse and Sir Thomas Clere were founder-members of the Russia Company.[4] John Hopton was a shipowner;[5] so was Sir Thomas Spert, first master and principal founder of Trinity House.[6] Indeed, they were liable to be sent to sea while serving as officials; in August 1545 the Admiral, Vice-Admiral Comptroller and Surveyor all had commands at sea.[7] In Dr. Scammell's words, "the real forerunners of Drake...were merchants or shipowners (or both) who spent much of their lives in arduous and often distinguished naval service."[8]

The backgrounds of the Ordnance officials emerge less clearly. The Masters, as we have seen, before 1544 were not men of the highest rank.[9] Francis Flemming, Lieutenant after Morres' death, was the son of a man who had been Sheriff and Mayor of Southampton; he seems to have had no connection with

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1. SP I/189 f 75
2. D.N.B. (William Wynter)
3. Cant C.C. Coode #24; J.G. Webb, Henry Tooley (London M.A. thesis, 1953) p 135.
4. T.S. Willan The Muscovy Merchants of 1555 pp 86, 129; Woodhouse sold the Anne of London to Thomas Gresham in 1549 (Mercers' Coy. MSS; Gresham Day-book Entries 4762, 4766.)
5. L.P. I i 1453 ii; II ii pp 1459, 1475
6. A.A. Ruddock The Trinity House at Deptford in the Sixteenth Century (E.H.R. Vol. 65, 1950) pp 467-8.
7. L.P. XX ii 88
8. Archaeologica Aeliana 4th Ser. Vol. 39, 1961, p 191
9. Above p 120.

ordnance before his appointment, which he probably owed to his connection with Sir Thomas Seymour.[1] Of the lesser officials, the most interesting is Anthony Anthony; an alien and an artist he regarded himself primarily as a brewer.[2] Lynewray preserved a tradition that Johnson was a shoemaker.[3] Huxley was a member of the Grocer's Company, and a Merchant Adventurer.[4] John Rogers had worked as an under-clerk in the office.[5] Elias Milton, Yeoman in 1509, was an expatriate Lancastrian who combined his office with one in the Queen's Wardrobe.[6] His successors were two of the sons of Sir William Skeffington, the Master

The naval officials were, then, men of substance, importan merchants in their own right; the Ordnance officials less so. Why then, (like their mercantile predecessors[8] before them) did they enter the royal service?

As far as the naval service after 1546 was concerned, the official salaries themselves were high enough to constitute a considerable attraction. The Treasurer, for instance, drew some

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1. Biography prepared for "History of Parliament".
2. Wyatt, thesis cited p 159-60; Cant C.C. 32 Chayre; he was responsible for the roll (now Magdalene Coll. Pepsyian MS 2991 and BM Add MS 22047) which gives a complete record of the royal ships in 1546.
3. B.M. Sloane MS 871 f 137r.
4. L.P. IV iii g 5815 (5) Acts of the Mercers' Company 1453-1527 p 703. His will (Cant CC 23 Pynnyng) reveals hardly anything.
5. B.M. Add MS 6176 f 29
6. L.P. III i p 246; IV ii g 4313 (5). He was born at Eccles (Cant C.C. 42 Porch)
7. Cant C.C. 10 Dyngeley (William Skeffington)
8. S.L. Thrupp. The Merchant Class of Medieval London ff 53-7

£220 p.a., and even the Clerk of the Ships £100, salaries as high as their successors in the 1630s, after ninety years of inflation.[1] These sums include expenses for clerks and for travelling, a part of which presumably represented a genuine call on the officers' pockets; but they are calculated as if every day, including Sundays and festivals, was spent travelling on government business.[2] But before 1546 naval fees were very low (Gonson got £18 5s as Treasurer).[3] Ordnance fees were even lower, and remained comparatively low (100 marks for the Lieutenant) even after the 1544 reorganisation; and there was no supplementary travelling allowance.[4] Occasionally individuals received annuities in addition to their fees; William Broke and Robert Legge, of the Navy, were receiving £20 and £30 in 1547-8;[5] John Rogers, of the Ordnance, £36 10s in 1551.[6] Almost all the Ordnance officials received an extra 6d - 1/- a day as Tower gunners.[7]

There were, of course, other supplements. The Naval treasurers were given portage money after 1546; Legge got in one year £126, (on over £40,000 of cash handled), Benjamin

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1. Appdx. L.
2. C.p. the sums in Appdx. L with the patents as summarised in L.P. XXI i g 718 (1) (6) (8) (10). The same practise existed in the Office of Works (Ransome thesis, p 28n[1]).
3. Appdx. L.
4. Appdx. L.
5. E315/256 ff 67v, 68r
6. B.M. Harl MS 7383 f 7r.
7. E.g. L.P. III ii g 2992 (3) (Morres); IV i g 2132 (n.d.) (Leonard Skeffington); VI g 1383 (4) (Anthony).

Gonson £232 (on some £66,000), in three years;[1] (in both cases less than 1d a pound, compared with 3d or 6d in the 1630s).[2] The naval officials had the chance of prize money when they commanded at sea.[3] Fees from admiralty jurisdiction went a good way towards making the Admiral's own office one of "profytt" as well as "estymation", and, as we have seen in Gonson's case, the lesser officials could share in this;[4] few of the officials, however, acquired a county vice-admiralty, only William Gonson, William Woodhouse and (after our period) William Wynter appearing in R.G. Marsden's (admittedly incomplete) list.[5] Another privilege of the Lord Admiral's was the monopoly in the supply of ship-ballast.[6] This monopoly was generally leased to a deputy, and seems to have been a profitable one; at least, in 1526, there seem to have been several contenders willing to pay £10 a year for the office.[7] Sir Thomas Spert was in fact reappointed in that year, having held the office since 1517, and continued in it until his death in 1541.[8] None of his successors as ballast suppliers, however, were officials of the naval administration; most of them had some connection with the Court of Admiralty.[9] Nor is there

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1. E351/2194, 2588
2. Aylmer King's Servants p 166
3. Scammell in Archaeologica Aeliana 4th Ser. Vol. 39, 1961 pp 201-2
4. Above p 146 ; For the Admiral's fees see Black Book of the Admiralty (ed Travers Twiss) I pp 20-3, 170-3.
5. E.H.R. Vol. 23, 1908, pp 736-57.
6. G.C. Harris' thesis (London M.A. 1962) "The History of the Trinity House at Deptford 1514-1660," pp 108-116.
7. L.P. IV ii 2450
8. Harris, thesis pp 113-4
9. Ibid.

evidence that our officials shared in any other of the Lord Admiral's privileges; the rights to royal fish, wrecks, waifs, flotsam, jetsam, and lagan (goods and wreckage lying on the sea bed).[1] The Lord Admiral, and possibly some of his officials also profited from their good offices in providing warships to escort the Merchant Adventurers' fleet in troubled times. Thus Thomas Howard received a £20 reward in 1514 "aswell for suche pleasure as he hath done to us in conductyng of oure shippes from and to the martes in tymes past, as for lyke pleasure, whiche he may do to this said Compeny in tyme to com."[2] In 1522 the Adventurers were willing to pay £100, of which the Admiral was to receive £20, Sir Thomas More (then Master of Requests, Sub-treasurer, and a Councillor)[3] 20 marks, and William Gonson no less than 100 marks; but this last payment may have been only the Adventurers' contribution to the expenses of the escort, or possibly a payment to Gonson personally as the potential commander of the warships.[4] Presumably there were other opportunities for naval officials to procure gratuities of this type, which have left no record.

The Ordnance officials, as usual, came off second-best. The Lieutenant and Surveyor received no poundage, only a fee of

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1. R.G. Marsden Select Pleas in the Court of Admiralty II pxxv.
2. Acts of the Mercers' Company 1453-1527 pp 418-9
3. D.N.B.
4. Acts of the Mercers' Company 1453-1527 pp 536-7; c.p. the alleged bargain in 1526 with the King's Captain, Christopher Coo to escort the Adventurers' fleet for £56 and £10 reward (Ibid pp 721-2)

£20 a year to be shared between them, for their duties as treasurers.[1] The Master was allowed considerable perquisites out of the stores. The Earl of Devon claimed in James I's reign

> "that such munitions as are utterly decayed and unserviceable, have been heretofore claimed, taken, and enjoyed by the Master of the Ordnance...as fees and avails'

and obtained a privy seal to butress his customary claim.[2] The fees were disallowed after his death, but his contention was correct. In the regulations for the Office early in Elizabeth's reign it was held that no provisions were to be taken as fees by any of the officers except such as were taken before 1544-5; and in that case, only if the provisions were to be declared "unfytt and unserysable" by all the officers.[3] The opportunities for misuse of stores here are obvious; and much more so if, in Henry VIII's reign, even the permission of the subordinate officers was unnecessary. In addition, the Master might get an occasional windfall; Sir Sampson Norton got £48 17s 4d in 1514, half the price of the cart-horses he had recently sold.[4] Opportunities for legitimate perquisites on the part of lesser officials seem conspicuously absent; although Anthony was able to pick up some concessions useful to him as a brewer.[5]

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1. E351/2614.
2. Coke's Reports (Trans G. Wilson, 1776-7) VI, ff 89r-93r.
3. SP 12/15 f 141 v.
4. SP I/5 f 15.
5. L.P. XIII ii g 249 (9).

Recent work on the XVIIth Century suggests that one of the attractions of office was the use which could be made by the officers of government money for their own private ends.[1] But in fact there was little scope for this in the spending departments in our period; government was too often financially embarrassed for its money to lie long in officials' hands and be put to profitable private use. The possibility only really existed with the introduction of "unspecified" warrants; and for this period we have only declared accounts, which give no indication of the dates of the expenditure; we are thrown back on seeing whether accounts generally ended in a "surplusage (money owed by the crown to the accountant) or not.[2] Occasionally there was an excess of income over expenditure which the accountant could turn to his own advantage.[3] More often, howeve the official had to make advances from his own pocket or pledge his own credit; Brigandine had had to advance £80 of his own money;[4] William Gonson claimed in 1538 that the crown owed him £2142 10s for accounts for the last five years.[5] Flemming and Anthony received £615 odd more than they spent in 1553-8, but this was more than balanced by the £1061 odd the crown owed them

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1. Aylmer The King's Servants p 167; R. Ashton The Crown and the Money Market, 1603-40 p 19.
2. The only exception is the detailed account of Benjamin Gonson for 1544 (B.M. Add MS 7968), which suggests that money was disbursed as soon as it was received; but since Benjamin's account was a temporary one until a new Treasurer was appointed, it may not be typical.
3. Legge's account for 1546-7 showed an excess of £208 8s 6d; from this must be substracted the £62 11s owed by him on his previous account (E351/2588).
4. B.M. Royal MS 7F XIV f 76r.
5. SP I/131 f 138r.

for their previous account.[1] Indeed, Philip Hoby wrote to Somerset in 1549 that the Ordnance debts (then over £7000) "Causethe the offyceres to loose their Credite and be vnhable vppon ther worde to make any further provissyone."[2] Sir William Skeffington's widow claimed that she was unable to pay her debts because the "diverse grete somes of money... [laid out when Skeffington was Irish deputy] ...and as yet not paide to the said defendaunt... [though she] ...hath to her grette Labor & costes sued from tyme to tyme to the kinges maiesty for the same..."[3] From this point of view office was distinctly a burden. Monson included amongst the ideal naval Treasurer's qualities the ability to "...take up a good sum of money for his Majesty's ease, and content the subjects that otherwise will be grumbling for their wages..."[4] The crown, be it noted, paid no interest to its officials for these long-term loans.[5]

It is also fair to add that William Monson's acquisition of lands was by no means typical of his colleagues; Spert, for instance, seems to have received only a messuage and some lands in Essex;[6] Legge none at all;[7] John Wynter, however, received a valuable grant, which may not have come his way but for his official position.[8]

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1. E351/2614
2. B.M. Galba B XII f 16r.
3. C1/1060/30
4. Tracts III p 416
5. Interest began to be paid on surplusages in the 1630s (Ashton Money-Market pp 83-4, 98-9). In our period the exact amount of surplusage is always paid.
6. L.P. XVII p 692.
7. L.P. and CPR (1547-53) passim
8. L.P. XX ii p 707 (7); the manor of Wyke (Glocs.), the advowson of the rectory, and 37 acres of wood for 500 marks and his services.

Other incidental benefits of office were, of course, contact with the influential. William Gonson, for instance, was on friendly terms with Edward IV's bastard, Arthur Plantagenet, Lord Lisle, and could solicit his influence for his friends.[1] When John, son of Robert Brigandine (Clerk of the Ships) was tried for piracy "Master Glydeforte" and the Earl of Surrey promised to help keep the fine to a reasonable sum.[2]

More difficult to calculate are, of course, the illegitimate profits of office. The evidence is scanty. The Edwardian Act against the iniquities of "the Offycers of thadmyraltie" probably refers to the judicial rather than the administrative officers.[3] An undated and anonymous complaint in the British Museum about the navy alleges that too many "shipkeepers" have been employed when ships are laid up, that labour has been hired more expensively than necessary, that the reckoning of munitions used on ships has been too lax, and that naval stores have been bought dear; above all

> "ther is many thinges passes for lak of a good overseer that myght be saved for it is no more expedyent for an owner of Shipes to bere Hewell and kepe the accompte of suche a costely busynes..then it is for a custom[er] to occupie marchauntdise..."[4]

In fact, as we have seen, most naval officials remained ship-

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1. L.P. XII ii 149.
2. L.P. Add i 6, 7.
3. 2 & 3 Ed VI c 6. They had been inflicting great exactions on merchants and fishermen. The Act is a by-product of the trial of Seymour, whose attainder mentions the same crimes and others which it would be "over tedyous" to relate.
4. B.M. Otho EIX f 70v. Full version, with modernised spelling in L.P. IV i 974 (3).

owners and merchants; and a large number of them sold stores (on their private account) to their colleagues for naval use.[1] Obviously both Navy and Ordnance officials were in a position to profit from the allocation of contracts; but there is no direct evidence of their doing so in our period.

It is tempting to see a bad conscience in the death-bed qualms of Robert Legge, Naval Treasurer. He devoted considerable space in his will to charging his clerks to have the account settled quickly, promising them a legacy after they had done so. Two days later he added a codicil which is concerned exclusively with his account, promising various gifts to Sir Walter Mildmay (a General Surveyor), and to Edward Mildmay "nothing dowting of his favor and further aVice in thexpedicion of my said accompte."; and large bequests were promised to his fellow officials and his executors, once again only after his account was safely settled.[2] His anxiety may have been prompted by memories of his previous account, on which Paget had observed "..there semith a wante of ij[m] li his reckenning is so ill favoredly framed that we can not well se what is become of it.."[3] But even without sharp practise to conceal, an unsettled account could easily be a burden to a widow.[4] Gratuities to the auditors may have been normal practise. Legge, too, to judge from the

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1. E36/5 ff 53v, 66r; E36/6 p 46; E36/11 ff 3r, 9v, 15r. The practise remained common at least until 1608 (W. Beveridge Prices and Wages...I p 611). 2. Cant C.C. Coode F24.
3. SP I/216 f 99 (L.P. XXI.i.527)
4. Sir Christopher Morres' widow's property was confiscated because her husband had not accounted (L.P. XX.i.846 (60)); a victualler, George Stonehouse, asked for his account to be taken (after 6 years) or his family would be in penury on his death. (H.M.C. Bath IV pp 105-6).

contradictory Catholic and Protestant professions of faith in the same will (he combined a very firmly stated belief in justification by faith alone and certainty that he was of the elect, with a request to the Virgin, saints and Church to pray for his soul)[1] was a neurotically prudent man. Nevertheless, it is difficult to avoid the suspicion that he had a good deal to hide.

We have seen in Gonson's case the close family connection between some of the naval officials. The Gonsons were not the only family interest, however. William Wynter who worked his way up to Treasurer in Elizabeth's reign was the son of John Wynter, William Gonson's successor as Treasurer.[2] In the Ordnance there is the Skeffington interest; Sir William, Master from 1513 to 1536, and his sons Leonard and Thomas, successively Yeoman, appointed in 1527 and 1544 or 1545.[3] This sort of family tradition seems to have been normal in Tudor bureaucracy, and does not in itself argue that office was highly desirable. Nor is there much evidence of strong competition for office. Considerable competition was reported for the Mastership of the Ordnance on Skeffington's death.[4] Edmund More canvassed Cromwell for help because of his poverty after devoted service and was afterwards appointed Clerk of the Ships.[5] If the grant of

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1. The date was 1549.
2. D.N.B. (William Wynter)
3. Appdx. H. For the relationship see L.P. V 787 and Sir William's will (PCC 10 Dyngeley)
4. L.P. X 115
5. L.P. XI 1477-8, XIII.i.6 384 (24).

reversion to an office indicates eager competition, then there was little; Leonard Skeffington joined Hilton as joint-Yeoman of the Ordnance in 1527, and John Osborn secured the reversion to the naval Clerk Comptrollership.[1] I have discovered no positive evidence of any of the offices we have studied being sold.

All this, however, is probably an indication of the state of the evidence rather than of anything else. After all in spite of the scattered nature of the general evidence about sale of offices at this period, an Act of Parliament against the practice was necessary in 1552.[2] We must conclude that officials undertook their duties before 1544-6 either for the profits which could be made on the side, or from motives of duty, the self-importance felt in serving the King, or for some other reason now equally untraceable; though in the higher reaches, the Treasurer of the Navy and the Master of the Ordnance could advance both their finances and their social position very considerably. After the reform of 1544-6 the Navy Board officers, especially, were extremely well paid even when only their official fees are considered; and since, presumably, the incidental advantages which had prompted their predecessors still existed, very much better paid than was necessary.

Dr. Elton has expressed the surprise of a Tudor specialist

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1. L.P. IV ii s 3087 (5); XV s 942 (104).

2. See the references in Aylmer King's Servants, p. 228.

at the level of the profits of office in the 1630s.[1] His point is mainly about the incidental profits of office, rather than the formal fees. Yet if we multiply the formal fees of the Naval Treasurer of 1546 by three to allow for a century of inflation,[2] we find that they amount alone to over half the total pickings from office (fees, gratuities and poundage included) of his successor of the early 1630s;[3] presumably poundage and pickings in the 1540s would jack this total up to something very like the salaries of the supposedly degenerate officials of the 1630s. Using the same multiplier, the £155 6s 8d formal fees of the Navy Comptroller in 1546 was worth far more than the £258 which the Comptroller of 1640 could expect all told.[4] The formal fees of the Navy, of course, remained static over the period; that of the Ordnance Office, much lower in 1550, had been adjusted upwards by the 1630s.[5]

The Navy, of course, may not have been typical. But it can hardly be denied that the formal fees alone in the Navy were very attractive in 1545; those in the Ordnance less so, but certainly not contemptible. Moreover, it seems a reasonable assumption that the very low salaries of the 1520s and 1530s were compensated by considerable fees "on the side", and that these did not disappear after 1545. In these circumstances the

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1. Past and Present No. 20 (Nov. 1961) pp 77-8.
2. C.p. E.H. Phelps Brown and S.V. Hopkins in Economica (NS Vol. 23, 1956) p 312 which shows the index of "a composite unit of consumables" rising from an average of 192 in the 1540s to 615 in the 1630s.
3. Aylmer King's Servants p 207 C.p. Appdx. L.
4. Appdx. L.
5. Appdx. L.

fashionable contrast between the relative purity of the early Tudor bureaucracy and the iniquities of that of the early Stuarts is a questionable one. Changes in the cost of living tend to have been ignored here; while the absence of evidence about the existence of profits "on the side" due to the absence of private papers has been construed as if it were positive proof that such profits were relatively negligible. Dogmatism on the other side would be equally blameworthy. But the admittedly fleeting and circumstantial evidence which does exist (at least as far as the military and naval departments are concerned) suggests that there was rather more continuity in the scale of profits of office than has sometimes been allowed for; and that the limelight in which the failings of the early Stuart bureaucracy are bathed, derives more from the frenzied search for causes of the Civil War, than from the exceptional iniquities of that bureaucracy itself, objectively considered.

(f) Efficiency

These speculations, although interesting, are tangential to our main concern. After all, the interest of the scandals of the 1620s lies less in the fact that officials profited than in the fact of the disasters of Cadiz and la Rochelle. Our main concern is how well the machinery worked. Judging by the absence of complaints, the Navy comes well out of this. One anonymous complaint about the officials we have already mentioned.[1] The reforming commission of 1553 recommended that

> "..the fees of the officers of Thadmyraltie with ther ridinge chardges and other allowances would be specially considered because they are by the last warres much increased, whiche in tyme of peac have no good cause of contynewaunce"[2]

which, in the circumstances, was justified, though never carried out. But it does not reflect on the efficiency of the naval official's work in fitting out the fleet. Complaints about the sea-worthiness of the fleet are few; the only serious one seems to be that of Sir Edward Howard about bad work (or perhaps deliberate sabotage) on the part of a carpenter.[3] Throughout the period of expansion the navy remained perfectly serviceable. It retained its superiority in the Channel in the two French wars at the beginning of the period; and if in 1545 the outbreak

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1. Above p 156.
2. B.M. Harl MS 7383 f 43v.
3. Spont French War pp 105-6.

of plague in the fleet failed to result in disaster only because the French succumbed to the same disease some days earlier, this can be blamed on God or the victuallers, but hardly on the Navy Board.

The case of the Ordnance Office is rather different. Com plaints of inefficiency and of the bad state of the stores are frequent. In 1533 Ordnance accounts mention powder kept in the Tower "which pouder laye in worme Eten wesselles & Caskes decayd."[1] In 1536 Morres, Johnson, and Leonard Skeffington reported on their office, that the "howse wherein the Ordenaunc dothe stande [in the Tower]..is Redy to ffall,"; that the bows were unserviceable, that 3300 of the arrows were "sore decayed and that many of the pikes were "wormeeyton and krokyd"; gun-powder was short, and there remained only 4 last of salt-petre, while much of the shot was useless.[2] At Calais at the same tim the gunpowder was "sore in dekey ffor lacke of oversight."[3] This complaint was by the Ordnance officials themselves, and included a request for £400; the trouble is likely to have beer either neglect by the central government, or the effects of Sir William Skeffington's absence in Ireland.

Things improved in the later years. A new ordnance house was built[4] (used during part of Edward VI's reign as a prison for Bishop Tunstall).[5] No mention of quality is made in the next view of the Tower in 1543; but from the quantity of

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1. SP I/79 f 14r (L.P. VI 1073)
2. SP I/102 ff 34-6 (L.P. A 299)
3. Ibid
4. L.P. AIII ii 1280 f 41, AIV ii 781 f 64, AXI ii 775 f 82.
5. APC 1552-4 p 232.

weapons available (for example 14,700 bows of yew, 8000 "ffeyghtyngbylles" and 4500 morris-pikes), conditions seem better than in 1536.[1] Even so, Southampton, Russell, and Cheyney reported that the Ordnance officers showed little sense of urgency, and that the King's prophecy, that they would cost him a good deal of money to little advantage, was justified.[2]

Certainly in the 1540s complaints were rife. From Berwick it was reported that of all the new bases (small iron-guns) sent by Cornelius Johnson, only one worked; and that it was Morres' fault for not testing them, and also his fault for not providing sufficient bowstrings.[3] Again in 1544 there were recriminations, between the commanders in France and Seymour as Master, about faulty supplies.[4]

The real test of the workings of both the Navy Board and the Ordnance Office (and of the Armoury, on which little is available), however is how well they functioned in time of war; a final judgement must await our study of the campaigns.

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1. E101/60/3 ff 1-2
2. L.P. XVI 508
3. H.P. I 205 (L.P. XVII 928, 933)
4. L.P. XIX. i. 784

C H A P T E R F I V E

Victualling

At least in theory, soldiers' and sailors' food was not skimped. The chance of weather or the iniquities of pursers may have prevented them eating as well in practice, but, as far as government was concerned, large quantities of food had to be provided for armies sometimes twice/or three times as large as the largest provincial town.[1] Neither the Scottish marches nor the pale of Calais could suddenly find the resources to support an army of 30,000-40,000 men. The feeding of such armies, then, was a considerable problem of administration; and, above all, of transport.

There were three ways of feeding an army. Private victuallers were encouraged or ordered to take their wares to the camp. The government itself organised a flow of supplies to camp or port, sometimes bought in bulk from dealers, sometimes purveyed by its own agents in the country. Finally, an army could live off the country; either by plunder;[2] or, which amounted to much the same thing, by giving the inhabitants the choice of providing supplies at what the authorities reckoned a

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1. See above p 18
2. Gruffydd VII, 1944 p 4, for the 1523 French expedition; D.J. White Henry VIII's Irish Kerne in France and Scotland, 1544-5 (Irish Sword III, 1957-8) p 220, for kerne used as foragers in 1544.

fair price, or having their property destroyed.[1]

The last, obviously, has left few records of its operation. The most voluminous records are of the second, government victualling. The first, provision by private merchants, is less relevant to our purpose, but must be dealt with briefly.

Large-scale invasions of France depended on substantial provisions of victuals from the Netherlands, supplied by private merchants cajoled and ordered by their own government to proceed to the English army.[2] Absolute reliance was placed on these Flemish merchants by the English authorities; the Privy Council in 1544 were confident that they were so greedy that they would come whatever the risk.[3] Nevertheless, such reliance was dangerous; as was pointed out in 1523 (probably by Cromwell);

> "how moche the Inhabitauntes of the saide Archdukedome be desirows to haue moche of our monaye for Lytyll of their victuaylis....we haue hadde ryght good experyence" [in 1513 and 1523, when the] "Soldyers at their nettourne made of the raryte and high prysed victuales no lytyll complaynt.";[4]

an opinion shared by the King.[5]

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1. H.M.C. Rutland I p 51. The burden of victualling English garrisons allegedly alienated many Scots in 1548 (H.P. II page 619).
2. Edits et Ordonnances des Pays-Bas 1506-55 pp 119, 126, 127, 276.
3. L.P. XIX.i.603
4. R.G. Merriman Life and Letters of Thomas Cromwell I p 38.
5. St.P I p 136.

English private victuallers were also important. At times of crisis all those having protections for Calais were instructed to send provisions there immediately.[1] The victualling of garrisons in peace-time was invariably the province of the private victualler.[2] A clerk-of-the-market to see fair-play between victualler and soldier was a normal member of the establishment of a garrison or of an expedition.[3] Private victualling was by its nature unreliable, however, especially when danger threatened from the enemy or from unpaid English troops;[4] but little was done by the government to counter this unreliability. Occasionally bargains were made before campaigns, but there was nothing to compare with the indentures prepared for victualling Henry VII's army in France in 1492,[5] or with the large-scale contracts with a few great merchants of the late Elizabethan period.[6]

Government victualling was needed to supplement the spasmodic activity of private victuallers for invasions of France or large-scale operations in the North; the navy, moreover, or at least in wartime, depended almost entirely on government supplies.

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1. E.g. in 1523 (L.P. III ii 3260)
2. C.p. the Council's astonishment that Calais should need victualling from the King's provisions in peace-time. (APC 1550-2 p 124).
3. Cecil MS 239 f 9v; SP I/184 f 50r; B.M. Harl 353 f 53r.
4. L.P. II i 354 (license for Thomas Cressy, grocer of London, to beg for alms for his ransom, having been taken prisoner while conveying victuals); L.P. II ii 3320 (soldiers taking goods by force from victuallers because they had no money).
5. E101 Box 72 File 3. E.g. No. 1064 in which a man binds himself to deliver flour to Boulogne, his body, lands and goods to be forfeit if he fails.
6. Cruickshank Elizabeth's Army pp 52-5.

The biggest problem here was Scotland. Any large army deployed for any length of time in the North of England depende almost entirely on the chance of favourable winds for ships sailing from Lynn and London to Berwick; and it was not unusual for a ship to take almost two months on the journey in unfavourable conditions.[1] The history of the Scottish campaigns is full of complaints by the commanders about their desperate state because of the non-arrival of the victualling ships. During the English occupation of certain Lowland forts from 1547-50 the problem of overland transport to the garrisons was added to this; and, even worse, further sea-transport to satisfy the always complaining unfortunates established at Borthy Cragg, near Dundee.[2] Most of the grain came from East Anglia, though Hull and the East Riding also contributed.[3] Dairy products came almost entirely from Suffolk.[4] The only exception to the dependence on the East Coast sea-lanes was the supply of meat; oxen travelled on the hoof to their fate in the Berwick slaughter house.[5]

The problem at Calais was similar, but simpler, because of the shorter distances involved. Large quantities of victuals

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1. E101/63/9 f 4 (London - Holy Island, 17 September - 14th November, 1548). This was a 120 ton ship. In general the ships on this sort of duty were very small - one account shows ships of between 10tons and 70tons (E351/2491).
2. See below pp 260-2.
3. Appdx. M
4. Ibid
5. E351/128, 131.

were supplied from the Netherlands;[1] but these had always to be supplemented from England. Again, Norfolk and its hinterland were predominant in grain supply, although considerable amounts also came from Hampshire, and some flour from Hull.[2] Suffolk and Essex supplied most of the dairy products; indeed their agriculture was sufficiently specialised to provide almost all the dairy products both for the North and for France.[3] Fish was brought from Norfolk and Hampshire.[4] On occasion even hay and straw had to be shipped to Calais for the thousands of horses and oxen accompanying the army.[5]

Beer and flour were sometimes produced in Norfolk or Hampshire and sent to Berwick or Calais.[6] Berwick,[7] Portsmouth,[8] Calais,[9] and Boulogne[10] all had extensive bakeries, mills and brewhouses; however, bakers, brewers and so on for Berwick had to be ~~impressed~~ recruited from Newcastle;[11] on one occasion, indeed, they were sent from London by their companies.[12] Armies on the march had their own travelling mills, bakeries and breweries.[13] In 1544, for instance, the main battle of the Boulogne expedition included 100 bakers, 100 millers and 100 brewers, assisted by

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1. See below p. 232-3.
2. Appdx. M
3. Ibid
4. Ibid
5. E351/185
6. Appdx. M
7. E351/127 m 9v
8. E351/121
9. E351/188
10. E351/573 m 4v
11. E351/127 m 15v (payment to the Mayors and officers of Berwick and Newcastle for presting artificers).
12. E101/63/15 85/33 ff 67, 69
13. Travelling mills were a novelty in 1523 (L.P. III ii 2715) as were ovens in 1544 (XIX i 654 738)

large numbers of artificers and labourers;[1] the whole victuall ing train was estimated at 2136 men and 638 waggons, about 5% of the whole army.[2]

The provision of casks was a major difficulty. In 1542 Norfolk ordered captains to bring beer for themselves and their companions, ready casked, with them to the borders; but this, significantly, failed because the captains complained that it was impossible to bring carts over the bad northern roads.[3] Normally casks were provided by every means possible; raw-materials were acquired by the government, sometimes from the Netherlands;[4] coopers were sent from London to Berwick;[5] the Lord Mayor was set to seek out casks in London;[6] and, on occasion proclamation was made that all citizens should display their barrels to be taken up by the King's purveyors.[7] Nevertheless casks remained a perennial problem. A shortage came near to ruining the naval preparations of 1513;[8] and the same problem appeared in the 1540s.[9]

The major problem, as is apparent, was transport, and especially water-transport. Norfolk, for instance, was naturally pre-eminent for the supply of grains, not only because of its fertility, but also because grain could so easily be

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1. SP I/184 ff 56-62 (L.P. XIX i 272 (4)
2. Ibid
3. L.P. XVII 719, 969
4. L.P. I i 1691; III ii 3004
5. E101/63/15 85/33 f 69
6. L.P. XVII 717, 718. E101/63/10 65/20 a bill by a servant of the Lord Mayor "for goyng a monge the berebruers to staye all caskes for the kynges vse" in 1549
7. L.P. III ii 2065
8. See below pp 216-7
9. Mary of Lorraine's Correspondence No CLXXXVIII C.p. G. Mattingley The Defeat of the Spanish Armada pp 116-7 on Drake's capture of coopers' stores in 1587, as "probably a graver blow to Spain than burning the ships in Cadiz Bay"

(contd. over)

shipped down the Ouse from Huntingdon, Cambridge and Bedford. There are only rare references to victuals being transported for a long distance over-land; the most notable exception being the sending of grain from out of Wiltshire to Southampton by cart.[1] Carting wheat from out of Holderness to Hull cost 6d a quarter; the additional charge by sea onwards to Calais was only 1/2d.[2]

Land transport, on the other hand, was obviously necessary near the "front-line". On both the 1523 and 1544 expeditions to France the question of carts led to considerable acrimony between the governments of England and the Netherlands;[3] in 1523 indeed, the shortage of carts was one of the main reasons for the total failure of the expedition.[4] Even with carts supplied by the Netherlands, however, considerable numbers had to be shipped over from England in 1544.[5] The position on the Scottish March was even more difficult. Suffolk had reported in 1544 that a large-scale land invasion of Scotland, without sea-support was impossible, partly because of the lack of carts in the North.[6] A projected expedition of 1548 was considered to require 262 carts to be purveyed in Yorkshire "where the greates oxen be and best waynes."[7] The shortage of carts in the North,

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1. E351/178
2. A.O.I/453/2502
3. Below pp 237-8 and pp 271-3.
4. Below pp 238-41
5. Below p 273.
6. H.P. II 159-60
7. SP10/3 f 152r.

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9. (contd. from p 172) C.p., too, the Act of 1592-3 (35 Eliz c 11) to encourage the import and prevent the export of casks which might serve for the Queen's Household, her Navy, and for merchant ships.

and, probably still more, the difficulty of moving them over the Scottish roads is amply demonstrated by the fact that the only two effective "invasions" of Scotland, in 1544 and 1547, were designedly nothing more than extended ~~primitive~~ punitive border raids to the Firth of Forth where the men revictualled from English ships and set off home again. The cart problem was thu an important factor in the failure to force the Scots to agree to Queen Mary's marriage with Edward VI.

However complex the problems, the calls on government victualling were too spasmodic, restricted as they were to time of war, to stimulate the growth of any permanent bureaucracy on the lines of the Navy Board and of the Ordnance Office, (except, as we shall see, in the case of naval victualling after 1550). Not surprisingly, therefore, the back-bone of the war-time victualling services had to be provided by the royal household, the only body with experience of the feeding of large numbers, assisted by the usual assortment of country gentry and merchants who were the staple of local administration.

The ultimate control of this ad hoc machinery varied. Wolsey was in charge in 1513, assisted by William Hatteclyff, a clerk of the Green Cloth;[1] and Wolsey was in sole charge in 1522-3. [2]

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1. L.P. I i.g 1662(31)(35)(37)(54) g. 1732 (8); A.P. Newton in Tudor Studies (ed R.W. Seton-Watson) p 245; Spont French War Nos. 58, 62, 66; E 315/4/f 2r.

2. L.P. III ii 2341, 2349, 2362, 2793, 2985.

By the 1540s rule by a single minister had given way to rule by a committee, and this is reflected in the victualling arrangements. In 1544 Bishop Gardiner, Lord St. John (William Pawlett) and Sir Robert Bowes were to supervise the victualling supplies for the army against Scotland;[1] Gardiner, St. John, Sir Edmund Peckham (clerk of the Green Cloth[2]), Anthony Harvey (an official of the Court of General Surveyors[3]) and John Rythe (Prince Edward's Cofferer[4]) that against France.[5] Gardiner was on a similar commission in 1545;[6] while St. John had chief charge of naval victualling.[7] These two were clearly the mainspring of the victualling service, Gardiner, indeed, complaining that he had become known as "Simon Stockfish".[8] But though these two great men were dominant, household officials were joined with them in commission. Indeed St. John himself, as Lord Great Master, can be regarded as the most exalted of household officials.[9] This was a contrast to the days of Wolsey. The long years of war had given the victualling organisation something of the air of an established bureaucracy; but with

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1. L.P. XIX i. g 141 (26)
2. D.N.B.
3. L.P. XX ii Appdx. 13
4. L.P. XIX.i. 366 f 52
5. L.P. XIX i g 610 (1)
6. L.P. XX i 215
7. E351/121 m 1r; Kyther and Baeshe refused payment to Richard King saying "they can do nothinge withoute your Lordshipp..." (E101/63/15 65/33 f 70).
8. J.A. Muller The Letters of Stephen Gardiner p 303, & Stephen Gardiner and the Tudor Reaction p 114.
9. G.E.C. XII ii pp 757-62.

the return of peace in 1550 the organisation disappeared.

There was one important exception to this, the appointment of Edward Baeshe as Surveyor of Naval Victualling in 1550. Before the 1540s the victualling of fleets had been performed by officers appointed ad hoc.[1] From 1545 St. John controlled naval victualling, assisted by Sir Richard Southwell (an Augmentations official)[2] and John Ryther; Michael Wentworth (a Master of the Household)[3] took Southwell's place from 1549.[4] These were known as the "chief Comyssyoners of his maiestes vuctuelles"[5] The commissioners were the inter-mediaries between the Navy Board and the permanent agents at the ports;[6] but they kept a close control or proceedings, deciding, for instance, which brewers and bakers should be approached for supplies.[7]

Edward Baeshe and Richard Wattes, the agents in London, were the most important of the local agents. It fell to them, for instance, to pay excess hiring fees for victualling ships kept in service longer than had been intended, or to pay cash to pursers who had not received their full supply of victuals elsewhere.[8] The Victualler at Portsmouth, William Johnson, Baeshe's enemy, implicitly acknowledged Baeshe's superiority by asserting

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1. Below pp 213, 232
2. D.N.B.
3. L.P. XXI ii 770 (77) CPR 1547-53 IV p 283
4. Baeshe's papers (E101/62/40, and E101/63/9 - 16, passim).
5. E351/2354
6. E101/62/40 ff 3-4 - a letter from the Navy Board to the commissioners passed on to Baeshe and Wattes.
7. E101/63/13 [85/9] f 17v.
8. E101/63/9 ff 5r, 47v.

angrily that they had been social equals before entering the service;[1] his complaint about his preevious letter about Baeshe's infamous conduct having been given to Baeshe himself to answer, shows the latter's influence at the centre of affairs.[2] In spite of an extremely quarrelsome nature,[3] it was hardly surprising that Baeshe was placed in charge of the naval victualling office in 1550;[4] in effect he had held the office for some years previously.

The need for the office is obvious. The establishment of a naval bureaucracy had made it virtually impossible that an important part of naval activity should be administered informally; especially as peace did not mean the virtual end of naval activity as it had done in the past.[5] The disappearance of the victualling commissioners made a new, permanent office essential. But it was an exception, and serves to emphasise by contract the improvised and amateur nature of the victualling services in general; an impression high-lighted if we turn from the central administration to the purveyors in the counties and the victualling agents in garrisons and camps.

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1. E101/63/16, letter to Southwell and Rythe r. 8/12/1547, unnumbered, c 2/3 of the way through.
2. Ibid "..he hath aunswered me leke no honest man but rather as I were his slave and knave." Baeshe and Southwell were associates in land-holding (L.P. XX ii g 496(60) p 232; CPR 1547-53 I p 73)
3. Cromwell in 1538 had asked for his reinstatement to an office as deputy to Russell, King's secretary in the Welsh Marches after he had been dismissed after quarrelling with Russell's son (Merriman, Cromwell II pp 163-4) William Johnson complained that in his letters "is nothinge but quippes and Checkes.." (E101/63/16 c half-way through).
4. CPR 1547-53 III p 309.
5. Oppenheim Administration p 101.

Household officials played some part in local purveyance. For instance, Thomas Hungerford, the King's purveyor of wheat, helped to provide victuals for the French expedition of 1522.[1] More often, however, reliance was placed on local worthies, gentlemen or merchants prominent in their localities, some holding crown office, some not. Purveying grain in Norfolk in 1544, for instance, was Thomas Woodhouse, brother of William Woodhouse of the Navy Board, a Norfolk landowner and Justice of the Peace and a founder member of the Muscovy Company.[2] He was assisted by Thomas Waters, a merchant and prominent citizen of Lynn.[3] In Hampshire John Kingsmill and John Mills purveyed grain.[4] Kingsmill, a member of Cromwell's and Wriothesley's faction in Hampshire in the 1530s, had been on the commission to dissolve religious houses in the county.[5] Mills, also an agent of Wriothesley's, and a wealthy merchant, had been overseer of the Southampton customs since 1540, became Recorder of Southampton in 1547, and acted as paymaster for the King's castles in the Isle of Wight.[6] Others were less prominent. John Reppes, for instance, purveyor of grain in 1544 and 1546 achieved no higher

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1. L.P. III i 919 p 332, ii 2023
2. L.P. XVII p 362 (66), XIX i 272 (ii); T.S. Willan The Muscovy Merchants of 1555 pp 128-9.
3. E351/130; L.P. XVIII.i.675, XIX i 272 (ii), Add ii 1768; CPR 1547-53 II p 150, III p 324.
4. L.P. XIX i 272 (ii)
5. L.P. XIII.i.1190, XIV.i.520, 573 (p 224), 634, 662, 775 ii520
6. L.P. XIII i 19, 20, 151. XIV i 398 p 151. XVII 258 ff 50, 55, XIX i 368 f 53; J.S. Davies History of Southampton p. 185.

~~distinguish~~ distinction than the Cambridge commission of the peace;[1] his appointment as purveyor may be due to his being the brother-in-law of Sir William Woodhouse.[2] Occasionally a professional was employed, such as the prominent butcher John Lawnde who purveyed beef for the King.[3] Very occasionally the duty devolved on the Justices as such. Lord Lawarre in 1550 complained of this as an innovation.[4]

Purveyors were always supplied with a commission, though except in the early part of Henry VIII's reign these are not to be found on the patent rolls;[5] sometimes commissions under the Great Seal which were not enrolled;[6] sometimes under a lesser authorisation;[7] sometimes by a great officer, such as the Earl of Hertford as Lord Lieutenant in the North.[8] The commission was essential; when two captains took up food without commission, the Privy Council made arrangements that the supplies should be paid immediately, (in 1545 when most producers had to wait for payment).[9] How the purveyors went about their business is not clear. One draft set of instructions exist, which is not

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1. L.P. XIII i g 1519 (20), XIX i 272 (11), Add ii 1768, CPR 1547-53 ii p 150.
2. HMC Gawdy p 2; He seems to have acted for Woodhouse when the Anne of London was sold to Thomas Gresham (Mercers' Coy. MSS Gresham Day-Book Entries 4766, 4815, 4915).
3. E101/63/13 8571 f 5; E351/138, 191.
4. SP 10/11 f 3r
5. L.P. I i 1732 passim.
6. E351/178 records a commission issued under the Great Seal on 21st January 36 HVIII (apparently a mistake for 21/1/35 HVIII) which has not been enrolled.
7. H.M.C. 7th R p 603 for a commission under sign manual and signet.
8. H.M.C. Bath IV pp 61-2
9. L.P. XX i 435.

necessarily typical. This provides for two books to be made recording the amount of foodstuff taken, signed by the Constable of the parish in which it was purveyed and by a Justice at the port to which it was carried; one book was to be shown to the Council, the other to be kept locally and used to check payments when they were eventually made.[1] But this sort of cross-check was unusual; the reforms of Mary's reign were designed to avoid

> "the greate deceypte ministred & done dayly by the said purveyors."

by providing for the future just such a check as this on what was actually bought, and for how much.[2]

Household officials were more in evidence at the next stage; at the main bases like Berwick and Calais, and accompanying the army on the march. Thus the victualling train on the 1544 French expedition included 47 officers of the royal household.[3] The victuals for the army of 1513 were under the supervision of household officials;[4] Thomas Byrkes (Clerk of the Green Cloth),[5] John Roche (Serjeant of the Acatry)[6] and John Miklowe (Clerk Comptroller of the Household, later Treasurer of the Chamber)[7],

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1. SP I/224 ff 205-8. Earlier drafts (ff 159-62, 202-3) exist, all three drafts corrected by Paget.
2. 23 Hn & M. c 6
3. L.P. XIX i 275 (5) (ii-iv)
4. L.P. I ii g 2772 (41); E101/56/23
5. L.P. I ii 3048
6. L.P. I ii 3612
7. Richardson Chamber Administration p 269. L.P. II i 721.

while Anthony Legh, Clerk of the Kitchen, supervised the household on the march.[1] Local officers of the crown also played their part. Victualling at Portsmouth in 1513, for instance, was the responsibility of Richard Palshide and John Dawtrey, assisted on occasion by Bishop Fox.[2] Dawtrey had been customer of Southampton since 1490 at least;[3] Palshide was his deputy and successor.[4]

It would be tedious to trace a number of such examples. The career of George Stonehouse, a clerk of the Squillery may be taken as a general illustration. In 1542 he was appointed to assist with the victualling of the army against Scotland.[5] He took part in the 1544 Boulogne expedition, evidently as a victualler in Norfolk's ward.[6] Next year he was sent again to the North, where he remained in charge of victualling until March 1549.[7] It is hardly surprising that war was considered inconvenient for the good order of the household.[8]

The food eventually reached the soldier or sailor through the company victualler or ship's purser. The victuals were supplied on credit, the money being subsequently taken off the mens' wages, paid through the captain;[9] meanwhile the captain

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1. L.P. I ii 3611 II i 751
2. L.P. I ii 1845, 1858-9, 1864, 1001.
3. J.C. Wedgwood History of Parliament 1439-1509 p 263
4. L.P. I i 1393 vii
5. L.P. XVII 718
6. L.P. XIX.i.p 163, no. 675 (2)
7. L.P. XX i 648 E351/123, 127, 196
8. Household Ordinances p 137 (Eltham Ordinances).
9. L.P. XX.i.122; C. Scr I, 326; H.P. II 448 (p 607) Stoppages for victualling were specially allowed by statute (3 HVIII c 5).

was debited with what his company owed.[1] Presumably much the same applied to victuals received from private suppliers; ~~if (as often happened)~~ the captain must have used his own credit to pay the victuallers if only to avoid the incidents likely if he did not.[2] The company victuallers were appointed by the captains.[3] All those so described in lists of protections were not really victuallers; protections were sought after by debtors to guard against their creditors.[4] Nevertheless from a list in 1522 it seems reasonable to deduce that they were a mixed collection ~~of~~; minor gentry, small merchants of various sorts, yeomen, even husbandmen.[5] If household officials created what in practise approached a professional victualling service in the higher reaches, the company victuallers were as amateur as the armies they served.

At all levels the victualling service gave the unscrupulous ample oportunity for profit.[6] Those employed received official fees, presumably in the case of household officials in addition

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1. CSP Dom Add 1547-65 pp 349-50, no. 55. E351/121 m3r.
2. A scheme of advice in Mary's reign laid down that this was in fact the captain's duty, though it went on to complain that "somany Capteynes in tymes past have not thoroughly regarded the poore soulders so that some have perysshed for lack." (Cecil MS 239 f 7 r).
3. L.P. II i 352, IV.i.293; C1/1171/18
4. C1/561/5; C1/732/62. Thrupp Merchant Class of Medieval London p 270.
5. L.P. IV.i.293 (though an individual's rank seems often to have varied from time to time and place to place; Thrupp pp 270-1)
6. C.p. Henry V II i 116 "For I shall sutler be Unto the camp and profits will accrue."

to their normal salaries; Stonehouse at Berwick, with responsibility for the garrisons in Scotland, got 13/4d a day;[1] the local purveyors, obviously, much less (Lawnde, 2/0d, Robert Norton 3/4d).[2] In addition there were the usual allowances for clerks and servants. Certain purveyors were allowed poundage; 4d on every quarter of grain, for instance.[3]

Opportunities for illegal profits were considerable. There is, for instance, at least one case of accountants successfully claiming the same debt twice over. Charles Bulkeley, with Thomas Vachell and William Loveles presented in 1547 an account for providing victuals in 1544-5. On this they claimed "surplusage" of £129 5s 6d; that is, the crown was so much in debt to them. The surplusage was allowed, the Council issued a warrant for its payment on 4th October 1547, and it was duly noted on the account as paid on October 11th.[4] On October 2nd Bulkeley presented a different account, this time with William Button, for grain bought in 1545-6. On this they were found to owe the crown £232 17s 6d; Bulkeley set this against the sum owing him, which had not, at that date, been paid. When on February 9th 1548 he came to pay in what he owed, he paid only £103 14s 5d (£232 17s 6d less £129 5s 6d; 5d has appeared by mistake) in spite of the fact that the sum he set against his debt had by

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1. E351/127 m17r
2. E351/133, 136
3. E351/132

4. E351/181. APC 1547-50 pp 135-6.

this time had been paid to him four months before.[1] This fraud seems never to have been discovered. The auditors were more successful in spotting similar double charges by Baeshe in 1557-60.[2]

Better opportunities for the unscrupulous were provided by the "rear account", the addendum setting out the disposal of the goods the purveyor had bought. Obviously, if food was eaten by vermin, destroyed by water, or stolen, it was difficult to check that the amounts declared to be so wasted were in fact exact. Testimonials were produced if possible.[3] False testimonials must have been fairly easy to procure. Very often no testimonial was produced at all. Attached to the account of the Boulogne victualler Henry Leigh is a petition setting out the amount lost in a skirmish in 1544, quoting no testimonials; the petition is dated (in a different hand) 12th June 1551, seven years after the event and signedby Walter Mildmay, a General Surveyor.[4] Obviously it was almost impossible to check the claim

Exact values, too, were difficult to determine. Thus there was no way of checking the amount raised by the sale of bye-products (tallow, hides and offal) from slaughtered oxen. As it happens, we have here one of the few occasions on which the

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1. E351/107; E351/2507 shows the receipt of £103 14s 5d by Richard Knight.
2. B.M. Harl MS 569 ff 307-8. Oppenheim was under the impression that Baeshe in his service "had never been charged with dishonesty" (Administration p 145). Here he is shown charging double to the extent of £1120 1s 5¾d.
3. E.g. E351/122, E315/4 f 10r.
4. E351/573.

accountants' declaration can be checked. Thomas Gresham throughout 1549 was buying ox-hides from victualling contractors at 6/- a hide.[1] Osbert Mountford and Edmund Baker declared in their account, covering the same year, that they had sold 362 hides at 3/6d each.[2] The auditors suspected sharp practice here and increased the amount declared by 6d a hide. Even so, this left Mountford and Baker a profit of £36 4s. assuming (as we may from the fact that the price paid by Gresham never varied) that the market price was fairly standard. This was obviously an extreme example. But the lowness even of the auditors' revised price (based on the general level charged by other contractors) shows that a considerable profit was probably being made by most of the victuallers dealing in beef in the 1540s.

Similar opportunities for profit must have been provided by the chaotic system of weights and measures. It was necessary to lay down in the Boulogne regulations that "the measures there to be made evyn wyth the measures here".[3] Grey of Wilton discovered that the victualling clerk at Haddington erred in converting Scottish "bolls" to London measure.[4] Gardiner suspected that the Boulogne authorities were cheating in their estimate of how much wheat was made into how much flour.[5] The auditors certainly queried anything that seemed excessive. For instance they noted

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1. Mercers' Coy. MSS, Gresham Day-book Nos. 4065, 4068, 4417, 4419, 4733, 4734, 5284.
2. E351/192
3. SP 1/224 f 160r
4. C Sc P I, 251
5. Muller Letters p 142.

on William Harrington's account (victualler at Dover 1546-7) that his charge of 6/4d for milling and baking a quarter of wheat, seemed excessive compared with other men "by whome his highnes was better served"; St. John, however, "..answered all the said doubtes and ambyguyties by a book of Articles..."[1] The auditors also made "staye and doubtes for the allowaunces of the ffreyghtes of sertayne shippes" in the account of Baeshe, which Ryther was called upon to explain.[2] They were certainly alive to any attempt at large-scale fraud; but a miscalculation here and there could not easily be checked, even if each miscalculation was worth about £30 to the accountants, as in the case of Mountford and Baker. Their task would be more difficult when purveyors were friends or business associates of victualling officials. John Lawnde, the prominent butcher and contractor for beef,[3] was, at least in later years, a business associate of Edward Baeshe.[4] Many other cases would presumably be uncovered if the private papers survived in the same profusion as for the early Stuart period.

The purveyors, of course, could generally take up excessive stocks at the King's price and sell them again at their market value. As we have seen, there was no way of checking this before 1555.[5] I have come across only two direct allegations of this

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1. E351/125
2. E101/63/16 (folios unnumbered : near the end).
3. Above p 179
4. G.D. Ramsay (ed) The Accounts of John Isham pp lii & 86.
5. Above p 180.

sort,[1] but the Privy Council's exhortation to the Norfolk purveyors to forget "for the tyme their own commodities (whereunto it was thought they had overmoch regard)" implies that it was widespread;[2] and perhaps helps to explain why Thomas Woodhouse was prepared to serve as purveyor year after year.[3]

As far as the company victualler or the purser was concerned "vnlesse his owne soule speake vnto him, ther is no other Argus that can spie out his mischieves."[4] The chance of the soldiers keeping a check on what they had received was remote. Some check can be seen in the Boulogne regulations of 1547. Victuallers were reminded that they were the crown's servants, not retail traders; that they were allowed a fee of 2d on every shilling's worth of bread, and a similar discount on beer, and for all other goods were to charge soldiers only the cost price; and that captains were to examine the weekly reckonings between the victuallers and the men.[5] This fails to deal with the likely cases in which captains and victuallers were in collusion; though in Boulogne itself there was slightly less chance of this than usual, since victuallers were appointed by the highest garrison authorities.[6] Of the relations between captains and men we have little enough trace; though Gruffydd

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1. L.P. IX 243; Add i 520
2. APC 1542-7 p 325
3. Above p178† He was in the grain export business on his own account (biography prepared for History of Parliament) (citing A.P.C. 1558-70 p 260).
4. F. Markham Five Decades of Epistles of Warre (London 1622) p 104.
5. SP 68/1/26 ff 105-6, 110
6. SP I/224 ff 161v.

† and E351/132.

alleged that in 1544 the captains attempted to corner the food supplies and to charge monopoly prices.[1]

In so far as the misdemeanours of its agents lessened the profit or increased the loss of the government on victualling, they were a serious matter. Care was taken that government victualling should not run at a commercial loss. We read again and again of manoeuvres to sell victuals "to the King's most profit", or some such phrase. The government apparently hoped to make £5000 out of the victualling of the army sent to Scotland in 1544.[2] (The Privy Council denied the total of £5000, but the price of victuals had certainly been calculated well above the King's charges, while Gardiner paid a compliment to Hertford in saying that he would take as much as possible from each soldier to the King's profit),[3] The Council of Boulogne prided itself in 1545 that although they had to suffer

> "ill meale sent hither in hering barelles and lost by ill packing and taking of wete in the carriage... and also the corrupte lothesomeness of a great quantetie of bareld beif happening by myxture of the filthyness of a great nombre of coles Ladend in the vesselles vpon the same.....never the lesse we vsed soche pollice in mingling that ill wheate and meale with other corne of

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1. Gruffydd XI p 32
2. H.P. II 220
3. L.P. XIX i 411.

better sorte and by washing and clensing the beife after soche facion, That asmoche as may in any wise serve of every kinde of those victuales are put in dayly vse to the victualing of this garison..." [1]

The fact that "we thinke surely that meny people have dide amongst vs in their sikeines for lacke of socour of freshe meates being driven to take vnely of the provision of the store by the want of money to bye other victuales withall" did not deter them from self-congratulations.[2]

The crown's purpose, however, was not profit but breaking even; this may be seen from an abstract of Baeshe's account for victualling Calais in 1550-1.[3]

	Total Cost	Provisions Sold
Emptions	£ 3811. 2. 0	£ 4105. 2. 0.
Freight	53. 7. 3.	
Pasturage (oxen)	7. 0. 0.	
Storehouse rent	22. 19. 0.	
Assistants' wages	86. 17. 10.	
Land transport	15. 4. 7.	
Measuring of grain	5. 9. 9½	
Loss in waste	20. 5. 10.	
Baeshe's expenses	20. 0. 0.	
	£ 4042. 6. 3½	£ 4105. 2. 0.

A total profit of £62 15s 8½d seems not unreasonable, and not an indication that victualling from the government's point of view

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1. SP 1/203 f 105r (L.P. XX i 1123)
2. Ibid f 106r
3. E351/197

was normally a method of recouping as much as possible of the wages it had to pay. Indeed, on occasion, there was free issue of beer to the pioneers at the siege of Boulogne, for instance on another occasion £100 11s 4d worth of victuals was "delivere to soundrie Capitayns" on the Council's orders "for the relief of the souldiors at the furst arrival of the ffrenchemen in Thisle of Wighte...exonerated...becawse it was done at greate extremytie and nothing cowlde be answered thereof to the kinges maiesties vse."[2]

Brian Pearce has argued that one of the motives for governmental regulations of food prices in the Elizabethan period was the desire to keep down the cost of feeding the armed forces.[3] This motive certainly played its part in our period. All the years of military activity except 1523 see the issue of proclamations to keep down the price of victuals.[4] Obviously, again, this is not the sole motive of government food-policy; such proclamations were in fact issued in nearly all the years of high prices. But many of the proclamations are quite explicitly designed for military ends; for instance, that of December 1512 which stated that the King

> "hath appointed a grete nombre of shippes...to be sett in the see in the beginnyng of the moneth of marche next comyng...[and] by his Comissions...hath assigned dyuers his trustye seruantes to puruey and buy for his money at

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1. E 351/573 m 2v
2. E 351/121 m 3r
3. Elizabethan Food Policy and the Armed Forces (Econ HR Vol 12 (1942) pp 39-46).
4. Appdx. N.

reasonable price whete and other vitailles...within the saide shyre of yorke...[and] therfore..comaundith that noo maner of parson...engrosse forestalle or regrate within the saide shire...or carye and conuey oute of the saide shire...into any parties beyonde the see or on thisside the see...any maner of whete or vitailles";[1]

and there were numerous others, equally explicit. As far as government was concerned, there was a definite connection betweer purveyance and local prices.

It might be wondered why, if the government had the right to fix its own price through the prerogative of purveyance, it should bother about the local price-level at all. Professor Aylmer has adduced some reasons why the crown should care about the general price-level, even when it was in fact acquiring its provisions at a much cheaper rate.[2] But no attempt has been made to establish whether in fact, at this period the crown did use its prerogative to buy at less than a fair price. Miss Wood-worth gives no figures for comparison for this period;[3] and contents herself with quoting the well-known complaints by John Hales that the purveyance rate was often only about a half of the market value.[4] The absence of sufficiently detailed local price series makes any exact statistical comparisons impossible; but

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1. C66/619 m 9 dorse (Steele Proclamations No. 60)
2. G.E. Aylmer The Last Years of Purveyance 1610-60 (Econ HR (NS) Vol. 10, 1957-8 pp 81-93) pp 82-4.
3. Allegra Woodworth Purveyance for the Royal Household under Elizabeth.
4. Ibid p 19.

from the figures quoted in Appendix O it would seem that the crown in fact paid the normal market-price throughout our peri The purpose of purveyance would not seem to be to let the crow have the goods at an unfair price, but rather to prevent those having goods for sale from profiteering when the arrival of royal purveyors unexpectedly increased demand. Obviously, the activities of purveyors would drive up prices for other buyers, and these could be quoted by propagandists as the "fair price" which the crown had undercut; but this in fact means only that the producers got an unexpected profit on part only, instead of on all their goods. As proof may be cited a case (admittedly not about victuals) of 1542. When Sir Humphrey Browne refused to sell wainscott at a "reasonable price" to purveyors, the Privy Council ordered him either to sell at the price he had bee offered, or at one fixed by "indifferent men"; clearly the gover ment was not afraid of the comparison between purveyance and the market-price.[1]

This is not to say that purveyance was popular. It was open to abuse by the purveyors; whether or not the crown intended them to pay a fair price, they may have taken goods up cheaper for their own ends. But, as far as the government itself was concerned, the principal abuse must have been the delay in payment. The accounts for the early years of Henry VIII's reign, before his father's reserves had been exhausted, show that

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1. APC 1542-7 p 65.

purveyors received their money before they undertook their duties, and so were able to pay for goods immediately.[1] By the 1540s, however, the crown's financial embarrassment had made payments very slow. East Anglian farmers claimed that they could not pay the 1545 benevolence because the purveyors had no yet paid them.[2] A year later the Privy Council explicitly warne local collectors of the benevolence that they must not use the money to pay purveyance debts; all the money was to be sent to London where the Council would decide on priorities amongst the creditors.[3] The purveyor at Harwich received £1128 15s 8d in 1548-9, and spent an additional £1418 9 2¼d, which was not paid him till 1552.[4] John Lawnde purveyed oxen from August 1548 to January 1549; he received no payment from the crown till March 1549, and no final settlement till August.[5] Influential men interceded with purveyors to pay their friends; for instance Sir Edmund Peckham, Treasurer of the Mint, wrote to ask Baeshe that Elizabeth King "Sistre to my very loving frend master hope" might be paid for 2½ barrels of butter taken up six months before "I do well considere your Lack of mony which hath bene the only cause of none payment."[6] Certainly the influential secured rapid payment for themselves; Thomas Gresham, for instance, delivered £1052 worth of weapons to the crown on 5th March 1552,

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1. E315/4. SP I/2 f 140, SP I/3 ff 6-16.
2. St P I pp 789-90. (L.P. XX.i.999)
3. APC 1542-7 p 365
4. E 351/2491
5. E 351/136 APC 1547-50 p 319
6. E 101/63/15 85/41 f2.

and was paid in full on 26th March.[1] But common farmers had a different experience. Indeed, it was alleged in 1548 that non-payment had forced them to put up their prices for the general public.[2]

Because transport difficulties meant that supplies were only available for the army in relatively restricted areas of the country, it might be assumed that they would throw considerable strain on the areas concerned which would be reflected in short-term price fluctuations. Certainly it seems a reasonable *a priori* assumption that military needs would take their place with weather conditions as a cause of the recurrent years of dearth. The latest student of the price-history of the period neglects this aspect; he notes for instance, the unusual local variations in the range of prices in the harvest-year 1536-7, and links it with the Pilgrimage of Grace, but neglects the possibility of foreign war causing similar variations in 1543-4.[3] The point is certainly worth considering, if only because war and the activities of purveyors were seriously regarded by contemporaries as a contributory cause of dearth. A paper dealing with the high prices of the late 1520s, for instance, begins

> "ffyrst the kynges warres owtwarde with ij or iij yeres contynaunce of the same hath been oon occasyon of Derthe for yt was neuer seen butt in tyme of [Outwar]-de Warre

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1. Mercers' Coy. MSS - Gresham Day-book entries 6556, 6563.
2. Woodworth *Purveyance* p 19.
3. Y.S. Brenner Prices and Wages in England 1450-1550 (London M.S. thesis, 1960) pp 94, 96-7.

Darthe always hath ensued."

and goes on to couple the wars of the early 1520s with subsequent bad weather and cattle diseases as the cause or present difficulties.[1]

The opinion of contemporaries is borne out by a comparison of the years of high prices with those of military activity.[2] Obviously war was not the main, or only, cause of death; the late 1520s and the 1530s, except for 1536-7, are periods in which there was very little military activity and a considerable run of high prices. Nor does war necessarily cause high prices; 1522-3 is a low year, so is 1547-8, immediately after the Pinkie expedition. But the fact that all the other years of important military activity were years of relatively high prices indicates the liklihood of some sort of casual connection.

To establish this as much more than an interesting hypothesis, however, we would need to show significant variations in local prices: that is, higher prices in areas where purveyors were active than in those in which they were not. Unfortunately there are not enough materials for such a comparison, even amongst the statistics assembled by Lord Beveridge and his assistants and used by Y.S. Brenner.[3] The most extensive series of prices available are for grain, but even here the only really satisfactory series are from Cambridge, Exeter, London and for

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1. SP I/46 ff 58-61 (L.P. IV ii 3761)
2. Appdx. N.
3. Thesis cited.

a brief period, Robertsbridge in East Sussex;[1] Of these London is obviously a special case; Devon and East Sussex provided few supplies for armies. Cambridge, at first sight, seems ideal for our purpose, lying as it does in the heart of the wheat-producing area from which provisions were despatched *via* Lynn. This area, however, normally exported grain in large quantities anyway, both abroad and to the north-east coast.[2] Hence, the absence from the Cambridge figures of a greater increase in prices in military years than the national average is presumably due to the fact that the grain supplied to the army would, in other circumstances, have been sold out of the area in any case? The Winchester manors in Hampshire should provide a better case; but most of the manors seem to have concluded long-term contracts by this date which stabilised prices without regard to market-rates;[4] and Brenner can therefore make use of no more than one example a year in southern Hampshire, and from 2 to 4 in the north of the county, and even these prices seem so artificial as to make them suspect.[5] Our hypothesis, then, cannot be proved or disproved on the basis of the local variations; but the national correlation is enough to indicate that military victualling requirements are a factor worth bearing in mind in studies of price history.

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1. *Ibid*, Appdx. I
2. E.H.D. gives *The Evolution of the English Corn Market* Appdx. C, pp 289-90 and Appdx. D, pp 305-9.
3. The Cambridge figures are given by Brenner pp 120-9
4. Beveridge price materials
5. Thesis cited pp 151-2. Those in Southern Manrs. for instance, are in the period 1500-1520 always either 5/4d,

(contd. over)

The suggestion has been made that military victualling, through its effect on prices, helped to stimulate "the sixteent century growth in agricultural production".[1] From our narrative the following conditions could be deduced:

(a) Aggregate demand for English agricultural products would decrease; the total number to be fed would remain the same, whether or not they were on military service, but a large number of those in the army would in fact be fed from French or Flemish sources.

(b) The first condition may be modified, or even outweighed by two factors:

(i) The English harvest might be affected by labour shortage. This would seem unlikely except possibly in 1545, or locally in the North in years of border warfare.

(ii) Soldiers might be expected to eat (and drink) more than they would as civilians; and more food would have to be provided <u>per</u> soldier because of the waste resulting from the transport of food over long distances.

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1. J. Thirsk in War and Society 1300-1600 (Past and Present No. 22, 1962 pp 3-35) p 17; c.p. also W.W. Rostow The Process of Economic Growth (1953 ed) pp 154, 156, that war, in so far as it encourages investment in agriculture, retarded industrial development.

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5. (contd. from page 196) 6/8d or 8/-, which seems to indicate that certain prices had been fixed in advance to operate in various defined weather conditions.

(c) In certain parts of the country, however (e.g. Norfolk, Hampshire, the Scottish borders) the demand would increase, because they are supporting from local resources a body of men drawn from the whole country.

(d) Because of the inelasticity of demand for grain, and consequent extreme elasticity of price, these local dearths might increase the country's aggregate price level (as we have argued).

(e) Quite certainly these factors

(i) would not produce a decline in prices (in those parts of the country not acting as military supply bases) sufficient to act as positive disincentive to farmers.

(ii) would produce a rise in prices, perhaps sufficient to act as an inducement to agricultural investment in, e.g. Norfolk or Hampshire.

(f) Factor (eii) might operate in spite of the Crown's dilatory payment of farmers. The grain taken by purveyors could be regarded as a dead loss, which, provided that the purveyance was confined to moderate amounts, would have the same effect on the farmer as a moderately bad harvest; i.e. he would gain more on the high price for what he had left, than he would lose on what had to be written off. (the complaints of the Norfolk farmers about ability to pay their taxes are, after all, ex parte statements.)[1]

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1. Above p 193.

With this theoretical framework in mind we may consider Mrs. Thirsk's suggestion. The statistics we have discussed are insufficient to provide firm evidence, one way or the other. But it does seem, that if there was incentive to farmers at all it would operate only in the areas which served as supply bases. On the other hand, precisely because (with the exception of the Northern Marches) these areas were supply bases because of their transport facilities, they are areas which could equally well take advantage of local shortages throughout the country, or indeed throughout Western Europe, to dispose of their surplus grain. Plainly, then, military supply requirements would be only one of a number of factors operating on these key areas. Moreover, military activity was extremely spasmodic; only perhaps in the 1540s would it be both sufficiently extensive and sufficiently continuous for the farmer to regard improved prices not as a windfall, but as a sufficiently permanent feature of the economic scene to justify new investment. Plainly a definite answer to Mrs. Thirsk's question could only come from a very close study of a selected area like Norfolk or Hampshire. As it is, it would be ludicrous to isolate the military factor in a decade of debasement, violent inflation, and a boom in the cloth trade. Our verdict must surely be "Not proven, and unlikely", at least as far as this period is concerned. (The only comparable period of substantial military endeavour in the second part of the century would be the 1590s, again a period of considerable dearth, but one in which it is difficult to see the military factor as more than a minor contributory one).

Military victualling caused local shortages which effected the general price-level, but the scale and extent of military activity was too small to produce a long-term change in agricul ural history.

Ourstress on the size of the victualling problem is not, then, intended to suggest that it was large in terms of the national aggregate; only that it posed a considerable problem for the rudimentary administrative machinery available in Tudor England. How well the problem was solved will emerge from the following narratives of campaigns. Surprisingly we shall find that the victualling services functioned quite well, on the whole, in spite of their remarkably ~~and~~ amateur nature. When they seem to have been inefficient, it was more often the result of uncontrollable factors, especially the weather. There is one exception to this, the campaign in France in 1523; even this was the fault, not of the victualling services, but of their direction by Wolsey.

C H A P T E R S I X

The Campaigns of 1512-3

Henry VIII's first war produced very mixed results. An attempted invasion of Guienne in 1512 was a complete disaster. The exploits of the navy in 1513 were almost fatally crippled by deficiencies in victualling. On the other hand, the invasion of northern France in 1513 was considered a success, a portion of the French army being put to flight at the battle of the Spurs and the towns of Therouanne and Tournai captured, while the Scots were decisively defeated at Flodden.

Rather surprisingly, considering the King's interest in military technology, very few preparations had been made for the war. Dietz estimated that less than £2000 a year of the Chamber expenditure was spent on military preparations before 1512.[1] This does not give a complete picture; for instance, money to build two ships in 1510 came from the Exchequer, not from the Chamber;[2] while £5000 made over by the Treasurer of the Chamber to Sir John Cutte on a warrant of October 25th 1511, does not appear in Dietz's figures.[3] But the general impression is right enough, at least as far as the navy is concerned. Only two large ships (the Mary Rose and Peter Pomegranate, c450-600 tons of 1510) had been built to join Henry VII's Regent and Sovereign[4];

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1. F.C. Dietz English Government Finance 1485-1558 p 90.
2. Spont French War p 4 n3
3. E101/55/28; Dietz's figures are based on the summary of the King's Book of Payments. L.P. II ii pp 1441-80.
4. Spont French War p 4 n3; Anderson Hist p 5.

for the rest, the royal fleet comprised only the c. 200 ton Mary and John, the 80 ton Sweepstake and Mary Fortune and the 120 ton Lion (captured from the Scots pirate Andrew Barton in 1511).[1] The royal fleet of 1512 was composed for the most part of ships either hired or hastily bought.[2] The great expansion of the navy took place during, rather than before, the war; the building of the Henry Grace à Dieu in 1512-4 and the foundation of ship-building establishments in the Thames Estuary.[3] Yet the small English fleet dominated the Channel in 1512 until the arrival of the French galley squadron from the Mediterranean.[4] The ships were successfully repaired in the winter of 1512-3, and the only complaint about the condition of the ships in 1513 was one about leaks in the Katherine Fortileza.[5] All in all, the naval preparations, though modest, had been enough.

Rather more activity was shown on the ordnance side. Cutte had been entrusted with a special account for buying weapons and armour at the start of the reign;[6] he received over £6000 from the Chamber in the years of peace before October 1511, and laid in great quantities of copper, and a considerable stock of gunpowder.[7] The Treasurer of the Chamber himself paid lump sums to

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1. Anderson List p 5 (he also includes the Jennet Pyrwin but this was not a royal ship in 1512; Spont French War p 10, shows that poundage was paid and therefore that it was on hire to the crown).
2. Spont French War pp 3-13; Anderson List pp 5-6
3. L.P. I ii 3060; above p 106.
4. Spont p xxx
5. Spont pp xxxiii, 105-6.
6. E101/55/28 (L.P. I i1420)
7. Ibid.

Sir John Daunce and to the Master of the Ordnance for ordnance supplies.[1] Poppenruyter, the famous Malines founder supplied 48 great guns between December 1510 and June 1512;[2] Simon Giles, also of Malines, produced 6 culverins;[3] Cornelius Johnson, Humphrey Walker, and others were producing guns in England.[4] Bows, arrows, powder, shot and pikes were acquired in quantity, throughout these years.[5] Stockpiling continued throughout the war years, and the Ordnance Office was well able to meet the demands made on it.[6] Thus 149½ lasts of gunpowder were used in 1512-3, leaving 192 lasts in store for the future.[7] Again the picture is a satisfactory one as far as quantity is concerned; even if Thérouanne and Tournai had held out rather longer, or the war had continued into 1514, there would have been no serious shortage. But the quality of the stores often left a good deal to be desired.[8]

The long-term preparations, then, were adequate, if, on the naval side, unspectacular. How well things worked out in practice naturally depended on the top-level planning. It is

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1. See above p 121.
2. L.P. I i 324, 1529
3. SP 1/3 f 23r.
4. L.P. I i 1463 vi
5. Ibid
6. L.P. I ii 3612-3
7. SP I/5 ff 13-5 (L.P. I ii 2834)
8. See below p 407

difficult to fix the responsibility for this in 1512; Wolsey played a considerable part, but not necessarily a decisive one.[1] By 1513 he was in sole charge; and the French campaign of that year reflect's Wolsey's administrative abilities at their best.

The war had begun in 1511, ostensibly in defence of the Papacy against the attacks of the King of France.[2] Henry was allied with Ferdinand of Aragon, and the first major military operation in 1512 was a joint Anglo-Spanish invasion of Guienne, for which Henry was to provide 6500 troops, and Ferdinand 9000. Ferdinand also bound himself to provide food supplies, beasts of burden, and ammunition for the ordnance, at reasonable prices. Each monarch was to maintain a fleet with 3000 men in the English Channel.[3]

The naval side was quite successful. Henry's fleet, of about 20 ships was successfully enough victualled by local officials (Palshide, customer of Southampton,[4] and John Heron, supervisor of the London customs, for instance)[5] and household officers (John Shirley, Cofferer of the household,[6] and Thomas

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1. Appdx. P.
2. A.F. Pollard Henry VIII p 56
3. C.S.P Sp II 59, 65.
4. Spont French war p 15.
5. SP I/3 ff 6-16; this John Heron is distinct from the Treasurer of the Chamber, from whom he is shown receiving money. (E315/4 f 1v); they are confused by Richardson (Chamber administration p 115)
6. SP I/3 ff 6-16.

Birkes, Clerk of the Green Cloth),[1] and managed to remain at sea for six months, except for some short intervals. The Mary James was laid up for 9 days for lack of food supplies, but this was the only failure of this sort. The fleet successfully conveyed the army to Guienne, and played suffucient havoc with French shipping to cause the French Mediterranean fleet to be brought into the Channel.[2]

The Guienne expedition itself, however, was a disasterous failure. The army, (7000 men, at least in theory) commanded by the Marquis of Dorset, arrived at the Spanish Coast on June 7th.[3] Bows and arrows had been issued to each man from government stores[4] Captains had been issued with powder.[5] In addition the Ordnance Office supplied some bills, and 385 pikes and 10 arquebuses;[6] if the list is complete, presumably the only examples in the English army of these weapons which were becoming so fashionable in Europe.

The ordnance train was commanded by Sir Henry Willoughby, assisted by Nicholas Marland, (under-marshall of Calais)[7] and

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1. SP I/2 f 140 ff.
2. Spont French War pp xvii, xxxi
3. L.P. I i 1176, 1239
4. SP1/7 ff 43-6; L.P. I i 1422
5. SP1/7 ff 43-6
6. Ibid
7. L.P. II i 1977. He was provost of the Ordnance on the 1513 expedition (E36/2 p 101).

Everard Digby;[1] none of them apparently holding any position in the Ordnance Office. They had with them, however, William Skeffington, later to be Master of the Ordnance.[2] Guns were taken from England.[3] For the rest the ordnance train depended or local supplies; for 75 mules and 100 oxen "wyth theyr jockys", for iron shot, and for the raw-materials for gunpowder.[4]

The principal cause of the failure was the relative scarcity of food, and the outbreak of what seems to have been dysentry. The latter was probably unavoidable in the circumstances. The former was the fault of the Spanish authorities, who had undertaken to provide sufficient supplies. There was sufficient available on the army's arrival, although the quality was disappointing; "..we haue had vitails inowghe compotenth for men of warre but no thyng as we trustyd to have had," wrote William Knight on June 14th soon after their arrival.[5] But plentiful supplies depended on the King of Navarre; if he "kepethe vitails of his owen contre from vs I can not see how we shall contynew".[6] Navarre was invaded by Spaniards on July 21st, and supplies presumably ceased.[7] Thereafter food was expensive, and the soldiers became dissatisfied with their pay.[8] Such food as was

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1. L.P. I i 1176 i
2. E101/ 56/ 5 p 8
3. HMC Middleton p 129.
4. L.P. I i 1326
5. SP1/2 f 117v (L.P. I i 1239 is a misleading summary).
6. Ibid C.p. Hall (ed Whitley, 1904) Henry VIII I pp 43-4.
7. L.P. I i 1326 p 613
8. Ibid p 614.

provided damaged their health and offended their patriotism, for they

> "..had lyver for to drynke beer then wyne or sydere,
> for the hot wynes dothe burne theym, and the syder
> dothe cast theym yn dysese and sekenysys."[1]

Hall similarly complains that garlick, "hote wynes" and fruit "caused their bloudde so to boyle in their belies, that there fell sicke three thousande of the flixe, and thereof died xviii hundred men." [2]

Hall's imagination probably contributed here, but there was certainly considerable sickness.[3]

Dissatisfaction was fanned by inactivity. Ferdinand had decided that it was essential to conquer Navarre before attempting Guienne, and Dorset had refused to join him in this.[4] Thereafter, it was believed by the English that they had been cheated, Stile, writing to Henry that "the Kyng your good fader" "by hys polocy and longe dryftys...attayneythe many thyngys to other mens payneys."[5]

Nevertheless, the English arrangements were far from perfect Only 200 of the 8000 bows were serviceable.[6] Tents were not provided and the men "..the moost parte...nyghtly remayne vndyr the bushis"[7]

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1. Ibid p 617
2. Hall I p 46
3. SP1/2 f 119 (L.P. I i 1286)
4. L.P. I i 1326 pp 612-3
5. Ibid p 616: c.p. Thomas Howard's even more outspoken comment (L.P. I i 1286)
6. H. Ellis Original Letters (2nd Ser.) I p 200.
7. SP1/2 f 117v.

The English crown had been deceived about the victuals it had supplied.[1] On the outward voyage sailors had helped themselves to the victuals while the soldiers were sea-sick.[2] All this aggravated the indiscipline of the troops, who vented their annoyance at Ferdinand's proceedings by affrays with the Spaniards and who in July or early August mutinied for more pay because of the price of provisions.[3] Little attempt was made by the officers to keep order;[4] and another mutiny caused the Council of the Army to decide to return home, in spite of receiving letters from Henry ordering them to winter in Spain.[5]

While the main cause of the fiasco had been the food situation and English inactivity, it seems doubtful on this showing whether the English troops would have given a good account of themselves if they had invaded Guienne. Planning and preparation had been conspicuously absent. This was not so of 1513, with Wolsey's rise to undisputed pre-eminence; and the story then is a rather different one.

There is no need to narrate the course of events on the invasion of France in 1513, the battle of the Spurs, and the capture of Thérouanne and Tournai; this has fortunately been done by Wilhelm Busch. [6]

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1. Ellis p 200
2. L.P. I i 1239
3. Ellis p 191; L.P. I i 1496 iv
4. Ellis p 191
5. Ellis pp 195-6 CSP Sp II pp 72-3; Hall I p 51
6. Englands Kriege im Jahre 1513 : Guinegate und Flodden Historische Vierteljahrschrift N.F. 13, 1910 pp 1-69).

The strategy of the campaign was particularly futile; the destruction of Therouanne and the capture of Tournai were of no use to the English national interest. Nevertheless Henry seems to have been quite satisfied with the cheap glory of the Battle of the Spurs, and quite prepared to consider Maximilian's interests rather than his own. The futility lay in the conception of war as an occasion to win honour, as an end in itself; it was not dictated by any faults in the supply services, which did what was demanded of them.

It should not be assumed that a lack of complaints means that the organisation was perfect. Wolsey was with the King on the expedition, and complaints would obviously be verbal ones. Nevertheless the contrast to the French campaigns of 1522-3 is striking; this expedition, at least, was not fatally crippled by supply difficulties.

As early as February and March commissions were being issued for the supply of victuals; to household officials like John Rycroft, serjeant of the larder, on the one hand;[1] on the other, to men like the four London coopers who were commissioned to provide empty "pipes" (casks equivalent to 4 barrels)[2] and wood for making barrels.[3] William Hatteclyff, Clerk of the

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1. L.P. I i g 1804 (22)
2. O.E.L.
3. L.P. I i g 1732 (31)

Green Cloth, was in charge of victualling arrangements in general.[1] Household officials, too, were in general charge of the victualling arrangements with the army on the march.[2]

As early as April Sir John Wilsher was hiring Flemish ships to transport the army of 30,000 men to France; he hoped to be able to provide 500 ships by the beginning of May.[3] Ships were being hired at the same time in the West Country, in East Anglia and in Newcastle.[4] These arrangements were successful. The vanguard of 8000 men under the Earl of Shewsbury arrived at Calais on June 6th and 7th; Lord Herbert with the 6000 men of the rearward on June 10th; and the King with the main body on June 30th.[5] The whole operation seems to have been performed quite smoothly, without major mishap. Moreover (and this is important for the contrast it supplies with 1522-3) the army had arrived in France early enough to perform some exploit before the campaigning season ended.

Each of the three wards had its own ordnance train; the Master of the Ordnance commanded that of the Vanguard,[6] while the others were entrusted to men with no apparent experience as ordnance officers, the Rearward ~~by~~ to Sir Robert Curzon,[7] and ~~that~~

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1. L.P. I i g 1732 (8) (14)
2. See above pp 180-1.
3. L.P. I i 1768
4. L.P. I i 1801, ii 1982
5. Busch Englands Kriege pp 13, 14, 19
6. L.P. I ii 2052
7. B.M. Royal MS 14B xII , Curzon was often styled Lord Curzon: he held an Imperial peerage (G.E.C. III pp 579-80).

the Main Battle to Sir Richard Carew, Captain of Calais Castle.[1] The rearward, which was presumably typical, included 200 gunners (two for each piece of ordnance), 100 miners, 600 carters, 20 smiths, 40 carpenters, 20 wheelers, various other artificers and four chaplains.[2]

Not surprisingly, a major problem was the provision of sufficient carters, who had to be drawn from the whole of England as far north as Yorkshire, and also hired from the Netherlands.[3] Nearly all the gunners also were Netherlanders, an indication of England's backwardness in military technology.[4] All in all, with its Flemish gunners firing its largely Netherlands-built guns, the Ordnance department performed its functions adequately, though Shrewsbury complained of a shortage of guns at the beginning of the campaign.[5] Battery and mining operations were carried out successfully at Therouanne, though they were not pressed to a conclusion since the garrison surrendered after Henry's victory over the relieving French field army at the Battle of the Spurs.[6] Tournai surrendered with hardly any resistance at all.[7]

The Ordnance Office was also responsible for the issue of

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1. L.P. I i g 414 (59), ii 2053 (2)
2. B.M.Royal MS 14B XII
3. E36/2 pp.91-5
4. Ibid. pp.107-8,111-2,117-8,121-2,125
5. SP I/4 ff 92-3 (L.P.I ii 2057)
6. L.P. I ii 2186
7. L.P. I ii 2391 p.1061

personal weapons; at Calais, for instance, there were collected together:-

6084	pikes
8757	bows of yew
16,005	sheaf of arrows
11,548	archers' stakes
10,748	bills.[1]

The intention seems to have been to issue a personal weapon to each soldier taking part; thus 1000 spears, 2000 demi-lances, 2000 pikes, 5000 bills and 5000 bows were issued to the Main Battle of some 14,000 men.[2] Again, it will be noticed that the number of pikes is very small, and handguns apparently non-existent. The main strength of pikes came from hired Landsknechte.[3]

In these circumstanves it is fortunate that the main French army was away in Italy, and that the Battle of the Spurs was fought against a numerically much inferior force.[4] All in all, operations in France were not particularly glorious. Yet at least they were not a disastrous failure; this, by comparison with 1512 and 1522-3 was no mean achievement.

Naval operations gave more scope for complaints which had to be put in writing and which have therefore survived; those of 1513 provide, therefore, an opportunity for a close look at the victualling machinery at work, with all its deficiences. These

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1. SPI/7 f 181. The document is mutilated, but it is clear that a good deal of the equipment came from store at Calais; the summary in L.P. I ii 2812 mistakenly implies that it was all shipped from London.
2. E101/62/31 f 1
3. C.W.C.Oman: The Art of War in the XVIth Century p.291
4. IBid pp. 292-6

were not the fault of Wolsey or Ruthall, but of the unprofessional and temporary nature of the supply organisation and of the forces themselves.

The problem was the provisioning of a fleet of 34 fighting ships (6 of them Spanish) and 55 victuallers (6 Spanish, 7 Flemings) carrying some 9000 men.[1] Preparation had begun well in advance. From December 1512 10 brewhouses were being prepared at Portsmouth.[2] John Heron the London customer was collecting oxen from the East Midlands and Lincolnshire, biscuit from London bakers, fish from Boston, Hull and London, wheat from Hull and Flanders.[3] In the West Country local customs officials were collecting victuals, with the help of Nicholas Waryng, collector of tonnage and poundage in London.[4] John Dawtry, the Southampton customer, was in charge at Portsmouth;[5] and he had the benefit of the advice and experience of Bishop Fox.[6] All these men seem to have done their best; but even so, the whole course of events is nothing but a series of complaints about/inefficiency of the arrangements.

Edward Howard left London, without his victualling ships on March 19th.[7] On April 5th he was at Plymouth assuring Wolsey that "was never army so falselie vitailled"; the barrels of meat

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1. Spont French War pp 109-21. The number of ships varied from month to month.
2. L.P. I ii 3612, nos. 70-4, 88-9.
3. E315/4 ff 1-16
4. L.P. I ii 1864 (For Waryng, L.P. I i g 94 (73))
5. Spont p 109
6. L.P. I ii 1898-9, 1912
7. Spont French War pp 94-9

were underweight, and many of the ships had brought only one month's supply of beer, not two; the victualling ships had still not arrived, and Howard was making desperate attempts to have sufficient supplies provided locally.[1]

The victuals had still not arrived on April 10th, when Howard left Plymouth to blockade Brest. On the 17th he was still at Brest, and still without victuals, in spite of what he considered "as fair wynds to com unto us as can be wysshyd".[3]

The reasons for the delay emerge, in part at least, from the narrative of Edward Echyngham, who was providing escort for the victuallers.[4] He left England on April 13th, and arrived off Brest on the 19th. Part of the delay was due, he claimed, to adverse winds; but part, too, to a lack of urgency on Echyngham's part, so that he engaged on exploits of his own instead of merely seeing that the victuallers got to Howard as soon as possible. On April 13th he pursued a sail for two or three hours, eventually finding it belonged to a "hulk of Ffreselonde".[5] On the 14th he pursued three French men-of-war into Fécamp harbour. When at last he did arrive, "I trow was never knyght more welcome to his sovereign lady [than] I was to

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1. Ibid pp 104-5
2. Ibid p xxxiv
3. Ibid p 127
4. Ibid no. 76
5. Ibid p 151

my lord Admyrall...for by [cause I.] brought the vytlers with me."[1]

William Sabine arrived on April 25th with nine more victuallers, in time to remonstrate with Howard for his intended attack on the French galley, but not in time to stop him.[2] Howard was killed, and the fleet returned to Plymouth, arriving there on April 30th.[3] Echyngham, without any thought that his earlier lack of urgency in conveying the victuallers might be a contributory factor, reported that in each ship there were sick men "and many dethe of the measilles and other siknes that is among us."[4] Thomas Howard, sent to take over his brother's command, and to enquire into the fleet's unauthorised return, reported the captains as saying that before Sabine's arrival they had only three days supply of victuals. Those which had been dispatched from London had arrived at Dartmouth and not proceeded on to join the fleet. This, coupled with the captains' dread of the manoeuverability of the French galleys when sailing ships were becalmed made them unwilling to return to Brest.[5]

Plans were therefore changed. Sir Charles Brandon was to join Howard with 8000 men at Southampton, on May 18th; Fox and Dawtrey were to supply the victuals.[6] Dawtrey claimed on May 5th that three ships from the West Country loaded with victuals were ready, that certain Spanish ships had brought victuals from

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1. Ibid p 153
2. Ibid pp xxxvii-xl nos. 74, 77
3. Ibid p 151
4. Ibid p 151
5. Ibid No. 77
6. L.P. I ii 1858

London, and that 26 sail of victuallers had left Cowes to join the fleet.[1] Already, however, the question of beer-barrels, which was to bedevil the whole operation, had been raised. Dawtrey wrote to Howard to ask him to send empty ones back.[2] Perhaps, prompted by this, Howard appointed William Symons to ~~be~~ the "clarke comptrollership of the riall arme for the oversyght and destrebutyng of our vetell".[3] On the 21st May Dawtrey wrote to Wolsey after interviewing two pursers; one, who should have been in a position to return 590 barrels, promised only 90.[4] Wolsey himself took the matter up, pointing out to Howard that it was impossible to revictual the navy unless barrels were returned promptly; offenders must be punished, and the possibil ity of deliberate sabotage by "lewde persons that wold not haye the King's navye contynue any lenger on the See", suggested.[5] By 8th June Howard was in the Solent, ready to depart as soon as the beer was loaded; apparently there was enough of it, and much of that sent from London could be sent back as inferior stuff.[6] Fox wrote to Wolsey commending the speed with which Dawtrey had victualled the fleet, and lamenting that Howard had not paid more attention to mundane matters like pipes.[7] By

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1. L.P. I ii 1845
2. L.P. I ii 1858
3. Spont French War pxli n[3]
4. L.P. I ii 1913
5. Spont French War No. 82
6. L.P. I ii 1978. (c.p. Heron's writing off of the beer, L.P. I ii 2544 ii)
7. L.P. I ii 1976

now, however, the delays created by wind and the shortage of casks had proved too much. The main invasion was under way, and the projected attack on Brittany was abandoned; Brandon crossed with the King to Calais.[1]

We must deal finally with the Flodden campaign. Professor Mackie has seen the English victory as the result of superior organisation.[2] This superiority, however, was shown in ways which do not concern us, primarily in the recruiting of troops; and even here the case is a dubious one.[3] Little is known about the equipment of each side. Artillery played a very unimportant part in the battle, which was fortunate for the English, for the Scottish guns seem to have been very much better;[4] Surrey, moreover, was issued with only 3 lasts of powder from the Ordnance Office, though this could doubtless be supplemented from Berwick.[5] More immediately to the point is the question of victualling; and here Mackie agrees that there was little to choose between each side.

Even this, however, seems to exaggerate the efficiency of the English. Certainly Scottish victualling arrangements were primitive; the French soldier Jean de Beaugué, writing of the

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1. L.P. I ii 1948 (68)
2. J.D. Mackie The English Army at Flodden (Miscellany of the Scottish Historical Society Vol. VIII, 1951 pp 33-85)
3. Appdx. Q
4. W.M. Mackenzie The Secret of Flodden pp 49-50.
5. SP 49/1 f 11

1540s writes of the astonishment of the Scots "de veoir vivandiers ordonnez pour suyvre les armées".[1] But there is no evidence that the Scots were badly victualled. An anonymous English witness and Bishop Ruthal (reporting the news of the battle to Wolsey from London) talk of the abundant victuals found in the Scottish camp after the battle.[2] Mackie suggests that these might be stores reserved for the King and gentry.[3] But, surely, if the Scots had been short of victuals this would have been one of the excuses put forward by their government to the King of Denmark to explain their defeat.[4]

The English victualling service was a good deal less successful. Food had been provided through government channels; Richard Gough, under-chamberlain of London,[5] had been despatching grain north from Hull to Berwick and Newcastle since July 12th.[6] Beer, too, had been sent, probably from London.[7] Private victuallers were at work; the Mayor of Newcastle was paid £81 for food "spoyled stollen and dystroyed", and presumably provided a good deal more.[8] Nevertheless, on the day of battle the English were without food, and for two days had drunk only water.[9] Moreover, the English army was dismissed immediately

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1. L'Histoire de la Guerre d'Ecosse (1862 ed) p 146; see also p 64
2. The True Account (printed by James Maidment and Robert Pitcairn in Nugae Derelictae (1822, repr. 1888) p 14; L.P. I ii 2283
3. Mackie p 47
4. R.K. Hannay (ed) The Letters of James V pp 4-5
5. L.P. I ii 3611 pt i.
6. E101/56/28 f 10r (L.P. I ii 2524).
7. L.P. II ii p 1462 (September)
8. E101/56/27 (printed by Mackie pp 72-85) p 80
9. Hall I pp 106-7; L.P. I ii 2283

after the battle; its commander claimed that he did this to save the King money, but it may well have also been the result of a shortage of victuals.[1] Both Hall and Ruthal lament the inability of the English to follow up their victory because of the food shortage.[2]

This, of course, was a matter of strategy. An attack from Scotland had been foreseen, and the army had been prepared since July.[3] No attempt, however, was made to prepare for an invasion of Scotland if the Scots were defeated. Henry's interests were in France and his Scottish policy purely defensive. But equally, if the invasion had been so long foreseen, more efforts could have been made to provide food for the army so that it could have fulfilled its defensive role more surely. Surrey seems to have been forced to fight by the shortage of victuals;[4] and if he had not managed to lure James down from his strong position on Flodden Hill, he would have fought at a grave disadvantage.[5] English prestige would have lost far more if the Scots had won at Flodden than it gained by the Battle of the Spurs; and James' excellent artillery might have recaptured Berwick. As it happened, the English won the battle; but they were lucky to do so.

All in all, the military activity of these years is not very inspiring; the Guienne fiasco, the not very impressive

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1. L.P. I ii 2051 (3)
2. SP 1/5 f 41 (L.P. I ii 2283); Hall I p 111
3. Mackie pp 55-7
4. Mackenzie p 40
5. Ibid pp 37-44

jaunt in France in 1513 during the absence of the main French army, a fleet crippled because of an inadequate supply of beer-barrels, the lucky victory at Flodden. The King was satisfied, to judge from Wolsey's rapid advance from Dean of Lincoln to Archbishop of York, and from royal almoner to undisputed pre-eminence at court. Nevertheless it is plain that the size and complexity of armies had outstripped the professional administrative facilities for their support. If a reasonable amount of planning and preparation was carried out, as on the French campaign of 1513, disaster could be avoided; what happened when planning and preparation were bad or non-existent emerges from the events of 1522-3,

C H A P T E R S E V E N

The War of 1522-5

Large-scale military operations in the war of 1522-5 were confined to 1522 and 1523. As before, England was allied with the Burgundian-Spanish interest, represented now by the Emperor Charles V against France; as before, the situation was complicated by Scotland, where the minority of James V had resulted in a series of faction fights in which the French interest was represented by the Duke of Albany, heir to James' throne and himself, in effect, a French nobleman. The main interest of the war centres on the two invasions of France in 1522 and 1523. For neither is there as much material as there is for the campaign of 1513, let alone that of 1544. Both were disastrous failures. But they throw an interesting light on the character and abilities of Wolsey. And again, they drive home the lesson that for armies composed of untrained soldiers supplied by largely ad hoc arrangements, any setback almost inevitably involved complete failure; a well-conducted retreat seems to have been almost out of the question.

Henry seems to have acquired enough ships and arms during his first war to last him for several years. The period 1514-22 saw little shipbuilding activity. No large ships were built between the Great Galley of 1515 and the Trinity Henry of c 1530; the largest was the 180 ton Minion of 1523, and most of the others were around the 50-100 ton mark. No large ships were bought in the same period, though one (of unknown

tonnage) was given by the Emperor in 1522.[1] The relative lack of documents may conceal activity in the Ordnance Office, but the absence of any official fulfilling Sir John Cutte's position of the earlier period, of special treasurer for war supplies, indicates that large-scale stockpiling was now unnecessary. The Tower of London was adequately stocked, to judge by an inventory taken in September 1523, after the Duke of Suffolk's French expedition had been fitted out.[2] Of course, local garrisons were in a poor way. Surrey reported that at Portsmouth

> "all thordynance there so ferre oute of ordre that noo pece can be shot the most parte of the stockes being rotton and the welling [?] clerely consewmed and moche of the Iron werk fayled."[3]

Numerous complaints were received from the border castles. Dacre, for instance, complained of the ruinous condition of the fortifications at Carlisle, and about the West March's having received no guns or artillery supplies since the fourth year of Henry VII's reign.[4] In September 1523 Surrey wrote that the Scots would attack Berwick if they only realised how weak it was;[5] but supplies of guns, gunmen, powder, bows and arrows evidently arrived from the south in October, and Surrey, with enough supplies to spare for Dacre, began positively to

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1. Anderson List pp 6-7
2. L.P. III ii 3351. The MS (SP I/68 ff 221-8) adds nothing of substance.
3. SP I/24 f 315v. (L.P. III ii 2337)
4. L.P. III ii 2931, 3096
5. St. P. IV p 38

hope that Albany would attack Berwick.[1] The greatest shortage in fact, had not been of supplies but of trained gunners;[2] and while these were eventually procured,[3] the continuing English shortage of technicians is shown by Wolsey's successful attempt to get the government of the Netherlands to supply 200 for the English service.[4] As always, it was touch-and-go; it was doubtless too much to expect local garrisons, even those exposed to Scottish attacks, to remain in a state of readiness when the danger was not immediate.

Victualling arrangements in general were very similar to those in 1513. The usual assortment of household and other officials directed operations in the field. The victualling of the army which invaded France in 1523 was the responsibility of Edward Weldon, Clerk of the Green Cloth, and of William Brisewood, Surveyor of the Works at Calais.[5] Richard Palshide and James Betts, Southampton customers, took charge at Portsmouth;[6] Edward Madison, shipowner, Staple merchant, and subsequently member of the Reformation Parliament, at Hull.[7] The problem was the same as in 1513, especially in 1523, when the south had to ship large quantities of grain to the Scottish

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1. L.P. III ii 3418, 3458, 3472
2. St. P. IV p 38
3. L.P. III ii 3447
4. L.P. III ii 3259
5. L.P. III ii 3261; II i 527 (Brisewoode), III ii Appdx. 58 pt. 10 (Weldon)
6. L.P. III ii 2472, 2750
7. L.P. III ii 2545; IV iii 6043 pt. 2 ii.

border and to Calais simultaneously.[1]

Before considering the campaigns in France, it is worth considering briefly the Scottish and the naval side of the war. Albany had returned to Scotland late in 1521, and by September 1522 had won over the lords to an invasion of England.[2] But supply arrangements on the Scottish side were bad, and Dacre managed to inveigle him into a truce;[3] fortunately, for Dacre considered the Scots could easily have taken Carlisle, the main English army being still on its way north from York.[4]

Next year a large-scale invasion of Scotland was contemplated.[5] Wolsey produced a plan for an army of about 20,000 or 25,000, provided with eight days victuals, to enter Scotland and there make contact with the fleet which (it was hoped) should by then have captured Leith or some other convenient port.[6] The difficulties lay in the provision of victuals, casks and carriage;[7] the first was primarily a question of sea-transport; vigorous attempts were being made to remedy the second;[8] while for the third Wolsey hoped that by making mounted troops dismount, and by sending out commissioners to the northern counties, the difficulty could be overcome.[9] This, however, was impractical; when Hertford successfully carried out a similar scheme in 1544, the land force was kept to a mere

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1. L.P. IV i 58, 281, 691; Add I 382
2. Brewer Henry VIII pp 519, 531
3. Ibid p 533
4. L.P. III ii 2531, 2536
5. CSP Sp. Spl II pp 176, 182, 196
6. L.P. III ii 3114, 3115
7. Ibid
8. As early as February householders had been commanded to display their casks for the royal purveyors L.P. III ii 2065 (cont'd p 225)

4000 men, all mounted, as opposed to Wolsey's contemplated 20,000 foot soldiers.[1] Dacre pointed out that it was doubtful if enough carriages could be provided without seriously damaging the prospects of the harvest in the north;[2] and even if the plans were carried out, the army would be able to do little but pillage.[3] This pinpoints the basic problem of the Scottish wars. The north could not provide supplies for a large army of invasion; any attempt to deal with the Scots on any basis except large-scale border-raids was doomed to failure unless a powerful party in Scotland itself was first won for the English cause; and border-raids, as Queen Margaret pointed out, while causing acute suffering to the peasantry, failed to achieve anything "for the Lordes set not by the hurt of the pore foulkes, but lawhis at the same".[4] Dacre's advice was taken, presumably because of renewed English interest in France, and the English confined themselves to large-scale border-raids so as to devastate the country and make a Scottish invasion of England impractical.[5] This policy was successful; Scottish peasants died of hunger[6] and Albany's invading army retreated as

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1. Below p256
2. St. P IV pp 26, 29 (C.p. L.P. III ii 3360)
3. L.P. III ii 3134
4. St. P IV p 26
5. L.P. III ii 3134, 3360, 3364
6. St. P VI p 173

(contd. from page 224)

9. L.P. III ii 3115

soon as Surrey advanced to meet it, probably because it was so badly supplied as to be unable to fight.[1] Albany fled; and the borders returned to their normal condition of intermittent raiding.[2]

There was a good deal of naval activity in 1522, very much hampered by supply difficulties. About 5000 - 7000 soldiers, and probably at least 2000 sailors, were at sea throughout the summer.[3] The intention was to destroy French shipping from Normandy.[4]

The climax came with the intended attack on le Havre in June. Surrey (Thomas Howard of the last chapter) was ready on the 8th, but Vice-Admiral Fitz William , delayed by winds, had not arrived.[5] After Fitz William's arrival there was further trouble about victuals not being ready.[6] On the 21st Surrey embarked, and sent the King a long letter of complaint about the victuals; a full two months' supply had been promised for the end of May, yet they had only received one month's beer; some of Fitz William's ships were victualled for eight days

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1. L.P. III.ii 3506
2. L.P. IV. i 278
3. CSP Sp. Spl. II pp.66,144; the Treaty of Windsor (June 19th 1522) laid down only 3000 soldiers and 2000 sailors as the English contribution to a joint Anglo-Imperial fleet, but the major naval activity was over before the terms of the treaty were carried out.(CSP Sp. II 430;see below p.228)
4. CSP Sp. II 430
5. L.P. III ii 2308
6. L.P. III ii 2315

only, most for a fortnight; casks were in short supply, for beer, but this made little difference because the victuallers were as behind-hand with food as with beer; Palshide had no money to pay the brewers, who refused to work; and some substantial man should be sent from London to supervise things.[1]

John Jenyngs, sent to get a grip on the London end of the victualling chain, reported that the principal trouble was lack of transport, caused apparently by lack of escort; Thomas Vaughan, who was supposed to be available for such duties, was said to have gone to Flanders.[2]

Surrey was still complaining about a shortage of victuals on his return from the Channel Islands on June 27th.[3] But victuals presumably arrived, for by July 1st he was back in Britanny, sacking Morlaix, and preparing to attack Brest: he still complained of the shortage of food in Fitz William's ships, but his tone is less desperate than it had been.[4] Surrey declared that he would remain off the Trade as long as he could even if the beer ran out and "we shulde drynk water".[5] Surrey returned to England on July 21st, and on August 3rd departed to

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1. L.P. III ii 2337 (The MS version. SP I/24 ff 315-6 adds nothing substantial).
2. L.P. III ii 2349
3. L.P. III ii 2351
4. L.P. III ii 2355, 2362; CSP Sp Spl II p 140; Hall I pp 258-9
5. SPI/25 f 22r (L.P. III ii 2362).

take up his land command at Calais, from which he wrote criticising Fitz William's lack of activity.[1] In August Charles' Spanish fleet arrived with inadequate provisions which had to be made good by the English.[2] The combined fleet did nothing of any note until a part of it was put out of action by a storm on October 15th.[3] All in all the supply service had worked, though in a rather ramshackle way. Surrey had been delayed from June 13th to the 21st, but had then managed to keep his fleet at sea until he took up his new command. The Spanish fleet had been successfully victualled at short notice. Thereafter, inactivity probably reflects less supply failings as the absence of a commander with Surrey's determination to get in a blow at the enemy at every opportunity.

Things were not much different in 1523. A fleet of 36 great ships cruised in the Channel and occasionally raided the French coast.[4] A small fleet cruised in the Irish sea, unsuccessfully trying to prevent the return of Albany to Scotland.[5] Another small fleet kept open the supply lines to Berwick and raided the Scottish coast.[6] All this was a considerable maritime effort, although it has left few traces in the documents; the absence of references presumably argues a supply service

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1. Hall I p 261; L.P. III ii 2419, 2431.
2. CSP Sp Spl II p 145; L.P. III ii 2442
3. St. P. I pp 112-3 (L.P. III ii 2627)
4. L.P. III ii 3046; St. P. VI pp 171-3
5. St. P VI pp 171-3
6. L.P. III ii 3071, 3241; Scammell in Archaeologica Aeliana 4th Ser. Vol. 38, 1960, pp 82-5.

functioning with reasonable efficiency.[1]

In all this there has been little enough for which Wolsey can be criticised. Such faults as we have discovered seem to be the almost inevitable result of XVIth Century conditions generally, the supply services functioning in their usual manner. With the two French campaigns, however, we can criticise the central direction of affairs. And from this analysis Wolsey's reputation as a war-minister emerges extremely badly. He failed to take fundamental decisions about the armies assembled in 1522 and 1523, to decide what they should do, and to see that they were equipped to do it. In fact, as we shall see, they were not equipped to do anything at all.

There is no denying that the responsibility was Wolsey's. His absence in the Netherlands in 1521 makes it possible to see in writing what normally must have passed by word of mouth between the King and his minister. Henry was not a cipher; he had ideas of his own, or (at least in Wolsey's absence) listened to the advice of others. He objected to Wolsey's plans to send a force of archers to Calais; and apparently rejected Wolsey's advice on whether it was safe to send ships to Bordeaux for wine cargoes.[2] But such initiatives were unusual; Wolsey

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1. There is one complaint about bad victualling. (L.P. III ii 3071)

2. L.P. III ii 1488; St. P. I pp 58-61 (L.P. III ii 1594)

suspected machinations by Pace.[1] Normally Wolsey himself dealt with business, receiving reports from commanders, directing the provision of money and supplies. The King himself was away from the centre of affairs, even when his troops were invading France.[2] He might write at times with a suggestion; he was particularly insistent, for instance, on the provision of adequate posts.[3] But generally he acted as if such things were not really his concern; More has described his difficulty in getting Henry to sign urgent documents when he was hunting in 1522, the King continually putting things off from day to day.[4] In practise, therefore, Wolsey was in complete control. When Surrey wrote in September 1522 enquiring whether it was the King's pleasure he should stay in France, Wolsey took it on himself to say that it was, and told the King afterwards what he had done.[5]

The first expedition, that of 1522, was prepared very hurriedly. The Emperor had visited England in June and July 1522, and on July 2nd signed a treaty by which Henry was to send, before August 1st, 10,000 foot and two batteries of ordnance to Calais, there to be joined by an Imperial contingent

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1. St. P. I pp 79-81 (L.P. III ii 1713)
2. Cal sp Spl II p 153, for the King's absence in September 1522.
3. L.P. III ii 2374, 2385
4. St. P I pp 110-1. (L.P. III ii 2555) In 1523 Surrey was goaded into complaining about delays caused by the King and Wolsey being so far apart (Ellis Original Letters 1st ser. I p 227)
5. L.P. III ii 2526.

the Emperor's subjects in the Netherlands were to provide provisions, and transport for the artillery.[1] The purpose of the campaign was left extremely vague; Surrey and Count Buren (the Imperial commander) were to march on Boulogne if they thought they could capture it; if not, they could devise any plan, provided only that they continued the war for three months.

A siege of Boulogne was out of the question. There is no direct evidence of the size of the ordnance train included in Surrey's 10,000, but it could not have been very large. Siege operations were certainly in prospect, and more than 700 miners were recruited from the Forest of Dean, and from Cornwall.[2] No information exists about the guns in the two English batteries, but if they were matched by the Emperor's 12 falconets, they were hardly very large; and a mere three boats seems to have been enough to ship them back to England.[3] As it happened the ordnance was too insignificant to assault the inland town of Hédin.[4] This, Surrey blamed on the incapacity of the miners, as he had excused his decision not to attack Boulogne by referring to lack of transport.[5] But any comparison with the huge ordnance train which successfully took Boulogne in 1544 makes it clear that Surrey's army was inadequately equipped for a major siege.

The alternative was to try and goad the French into a fight

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1. CSP Sp II 442 (Treaty of Waltham)
2. L.P. III ii 2374, 2560
3. L.P. III ii 2639
4. L.P. III ii 2568
5. L.P. III ii 2500, 2568

This, indeed, is what was done; the Chronicle of Calais says that the aim was "to seke Frenchemen, but they durst not abyde them".[1] Surrey occasionelly justified his policy of burning villages on these grounds, although at other times he seems to have regarded pillage as an end in itself.[2] The French wisely avoided battle, as they had tried to do in 1513. The army advanced deep into French territory; the further it advanced the more seriously it became aware of its own lack of horse and transport for victuals.

Part of the difficulties here ~~was~~ were due to the usual inadequacy of the supply services. In August Sandes, from Calais, was urging that the army should stay in England because the victuals were not yet ready.[3] The mills at Calais could not work because there was no wind; Surrey hastily improvised horse mills and hand mills.[4] All this is the result of the inadequate time for preparation between the signing of the Treaty of Waltham (July 2nd) and the end of the campaigning season. Nevertheless, in spite of Sandes' warnings the army was sent across.[5]

Any English inefficiency was venial compared with that of the Netherlanders, however. Although the Emperor had promised to order his subjects to provide provisions for both armies, noth-

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1. Ed. J.G. Nichols (Camden Soc 1847) p 32
2. L.P. III ii 2499, 2511, 2540
3. L.P. III ii 2443
4. L.P. III ii 2451
5. L.P. III ii 2454

ing had been done by August 25th.[1] On September 1st Margaret of Savoy at last issued a placard exhorting (but not commanding merchants to victual the armies.[2] She excused herself by saying that the placards should have been asked for sooner.[3] Either, then, Margaret had not been properly told about the Treaty of Waltham, which would be the fault of the Emperor; or she had failed to make the proper preparations which were obvious and called for in the treaty.

Worse still, however, was the lack of transport. Victuals were sent from Calais to St. Omer and there wasted, "all for ffawte of Careage & Condewt"; moreover, there was the usual shortage of casks, and no hope of any being returned empty from the army "now that the ffeld is so ffarre hense"; in the circumstances it was better to send no more grain and flour to Calais.[4] Similarly, the lack of transport was probably the reason why goods supplied from the Netherlands were expensive.[5] This is the reverse of the coin to the inadequate arrangements for a siege of Boulogne; inadequate transport was provided for a major raid into France. Wolsey and the advisors of Charles V had failed to provide sufficient equipment for either of the alternatives envisaged in the Treaty of Waltham.

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1. L.P. III ii 2490
2. L.P. III ii 2491 Édits et Ordonnances des Pays-Bas p119.
3. L.P. III ii 2515
4. SP I/26 ff 64-5
5. Merriman Cromwell I p 38; L.P. III i 2568, 2638

The narrative of the campaign (or pillaging raid) is a depressing one. Three days were wasted at the beginning (September 3rd to September 6th) awaiting victuals.[1] 10 days were wasted besieging Hédin; the English miners accomplished nothing, the Imperial ones were not at hand.[2] The Imperial authorities began to fall behind with payments to their troops, Margaret denying that it was her responsibility to pay 2000 Spaniards who had disembarked from the fleet.[3] By October 4th many of the Spaniards were deserting, and disease had set in among the troops.[4] On the 15th October the army returned to Calais. No record of why it did so survives. De Hesdin, an Imperial officer, told Wolsey that there were three or four reasons, any of which would have been enough on their own to justify the break-up of the army.[5] Presumably they were disease shortage of victuals, the desertion of the Spaniards, and the rain.[6] The expedition failed principally because of the inability of the Imperial government to honour its obligations. But Wolsey, who was active in throwing stones,[7] might have reflected that had he had some clear idea of what the army was supposed to do, and how much transport would have been necessary to do

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1. L.P. III ii 2530
2. L.P. III ii 2560
3. L.P. III ii 2558
4. L.P. III ii 2581, 2592
5. L.P. III ii 2616
6. L.P. III ii 2632, 2638; CSP Sp Spl II p 154
7. L.P. III ij 2638

it, and had these things stipulated in the Treaty of Waltham, the result might have been less disastrous.

More damaging, however, is the fact that the same story was largely repeated in 1523. At the beginning of that year the English wanted to postpone any invasion of France, so that they could devote themselves whole-heartedly to Scottish affairs. The rebellion of the Duc de Bourbon, however, changed the situation; a French civil war was too good an opportunity to miss. On July 2nd a treaty (of Valladolid) was signed by which 15,000 troops were to be sent before August 17th to besiege Boulogne.[2]

A large ordnance train was included for the siege; over 1600 men (the bulk composed of miners and pioneers) commanded by Skeffington, the Master of Ordnance, assisted by Curzon, with his experience of 1513 and 1522;[3] the force included some 62 gunners (at least some of them presumably foreigners) under the command of Hans of Antwerp, while Margaret of Savoy was expected to provide at least 330 additional gunners from the Netherlands.[4] Again this was a much smaller force than proved to be needed against Boulogne in 1544; but at least it was

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1. St. P VI pp 114-5. CSP Sp Spl II p 182
2. CSP Sp II 561; rumours of Burbon's intended treason were circulating in February 1523, but not till May was an invasion of France actively contemplated in England. Even so, the English would have preferred Bourbon to put off his enterprise for a year. (CSP Sp Spl II pp 190, 212-3, 215-6, 247).
3. L.P. III ii 3288 (the MS, SP I/28 ff 193-209 adds nothing to this).
4. Ibid; L.P. III ii 3259; CSP Sp Spl II pp 255, 264-5.

strong enough to show that the siege was considered the prime purpose of the expedition.

The army (of about 10,000 men)[1] arrived at Calais on August 24th, where it met with considerable delay while the Netherlanders tardily fulfilled their obligations to provide horses.[2] At the beginning of September Henry still believed the object of the exercise to be the capture of Boulogne, in spite of the Emperor's and Margaret's attempts to dissuade him. Wolsey, however, changed his mind, for which he was thanked by Margaret.[4] The King set out at length his objections to the new plans, objections which show considerable strategic insight: the year was too far gone for a massive thrust into the French interior, the roads would be too wet for the great artillery; the Somme towns were less indefensible than had been maintained even if they were captured by assault the King of France could recapture them as easily; that they could not be starved out,

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1. L.P. III ii 3288 gives 10,688 + 1648 in the Ordnance. Daunce's accounts (Archaeologica Vol. 47 pt. ii, 1883 pp. 328-31) show no more than 8739 receiving wages from various dates in August. Hall says that 1700 were taken from Calais garrison; these added to the Daunce figures, give c9500 men. (Hall I p 296)
2. Below pp 237-8.
3. St. P I p 131; CSP Sp Spl II pp 221, 223, 269; L.P. III ii 3317, 3318
4. L.P. III ii 3371. What induced this is difficult to tell. Mattingley (CSP Sp Spl II pp xxiii-iv) argues against the view that it was because of Wolsey's need to curry Charles' support for the Papal election, on the grounds that the death of Adrian VI was not known in England until September 30th, after plans had been changed. The Pope, however, was known to be dangerously ill on September 9th (ibid p 272), and while this may not have caused Wolsey to change his plans immediately, a few days reflection may have done. There is certainly no positive evidence, however, that Wolsey changed the plans for personal reasons.

Unless the army remained in arms all winter; that insufficient carriages were available to victual the army if it penetrated deep into France; and that since pillage was to be prohibited so as to win over the inhabitants, the troops would desert as soon as winter set in.[1] The document is a tribute to Henry's good sense; his prophecies were almost exactly fulfilled. The fact that he failed to over-rule Wolsey does him less credit.

Victuals were to be supplied from England and the Netherlands. On August 21st the usual order was issued for Londoners with Calais protections to go there immediately with victuals.[2] Next day Margaret attempted to persuade Netherlands merchants to do the same, promising them relief from tolls; this was evidently insufficient, for on September 21st she repeated the edict, adding that the Emperor guaranteed payment.[3] Private enterprise was supplemented by a limited amount of government victualling.[4]

Margaret was to be entirely responsible for transport. She was misled into thinking that the English would not arrive at Calais until about September 8th.[5] Consequently when the English army, under the Duke of Suffolk, arrived on August 24th,

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1. St. P I pp 135-40.
2. L.P. III ii 3260
3. Édits..des Pays Bas pp 126, 127
4. SP I/28 ff 28-62 (Calais baking accounts); SP 2/B ff 8-12 (Thomas Hatteclyffe) providing grain at Grimsby.
5. CSP Sp Spl II p 264.

she was unable to provide the lymoners and even offered to provide additional soldiers if she was let off her obligations on this score.[1] In the circumstances this was a senseless proposal; the English army had brought no carts, and was even deficient in mounted troops.[2] There was consequent delay while Margaret sought out lymoners from as far afield as Cleves and Juliers.[3] By 20th September (a month after his arrival) Suffolk had been joined by 357 lymoners; Bartholomew Tate estimated he could probably get 200 more waggons and that Suffolk would have eventually 600 waggons and 357 lymoners, 300 and 213 respectively less than he had been promised.[4] Ten days later Margaret sent her apologies, and hoped that sufficient transport would arrive within a few days.[5]

The tactics of the campaign have been adequately described by Sir Charles Oman.[6] Suffolk had set out, before his transport was complete, on September 19th.[7] He was to advance on Paris, joining a force led by Bourbon at Compiègne. As before, the French avoided battle; Gruffydd commented that Francis I

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1. L.P. III ii 3281, 3284
2. Hall gives only 800 (600 demi-lances, 200 mounted archers) (I p 296) 388 demi-lances appear in the Daunce accounts (Archaeologica Vol. 47 pt ii, 1883, p 330); these were probably joined by mounted archers from Calais.
3. L.P. III ii 3319, 3323
4. L.P. III ii 3347
5. L.P. III ii 3371
6. Art of War in the XVIth Century pp 322-9
7. L.P. III ii 3347, 3348, 3371, 3516.

"was sufficiently familiar with the English to know that they would do no harm in the world, only take their sport...and as soon as winter came they would keep to their custom as they were used to", i.e. return home.[1] This tactic should not have surprised Wolsey, who had earlier that year recommended it to Surrey if Albany should invade the North of England. In fact, everything materialised as the King had prophesied. The English penetrated deep into France, dangerously stretching their lines of communication. Some soldiers were reluctant to cross the Somme for "if they did so they were past all succours and vitail, none could be brought to them".[2] Nevertheless the Somme was crossed, and victuals duly provided by the inhabitants.[3] Henry, forgetting his caution was elated, and began to think that he would soon obtain his "auncient right & title to the croune of ffraunce".[4] By the end of October, however, Bourbon's army had broken up, the Landsknechte having returned home with their booty.[5] By the time Suffolk's army reached Nêle (November 2nd) "the Burgonians beganne to waxe wey, and so dyd thee Englishemen for every day was foule wether and raine both daie and night."[6]

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1. Gruffydd VII p 6
2. Hall I p 308
3. Hall I p 308 Gruffydd p 4
4. B.M. Calig Ms f 94v (L.P. III ii 3485)
5. L.P. III ii 3498
6. Hall p 313 L.P. III ii 3516

Disease was rife.[1] Allied harmony was disturbed, the English alleging that the Netherlanders used the scarce carts to carry away booty; "we bete the bushe and they take the byrdes."[2] Sandes was sent to the King on November 8th to declare the army's misfortunes.[3] The army, now lodged at Fermont was apparently well victualled, but very mutinous (Hall blaming the Welshmen, Gruffydd the non-professional soldiers).[4] The King commanded the troops to stay under arms all winter, but the army broke up of its own initiative; the soldiers saying "that it was no worse being hanged in England than dying of cold in France."[5] The weather does seem to have been exceptionally cold.[6] Nevertheless this ignominious result would have been inevitable sooner or later whatever the weather, if only because the supply services could not conceivably victual an army of 10,000 men throughout the winter.

One acute observor (possibly Thomas Cromwell) thought that a successful invasion was anyway impossible; the days of living

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1. L.P. III ii ~~3515~~ 3580.
2. Hall I p 313
3. Hall p 314
4. Hall p 314. Gruffydd pp 7-8. There had already been a mutiny on October 20th, due to the rain and the soldiers belief that they would be out in the open all night. (Gruffydd p 3).
5. Gruffydd pp 8-10 C.p. Hall I pp 314-5
6. Gruffydd (p 8) talks of frost and snow, though he alleges that the soldiers could have used a little more ingenuity in keeping themselves warm.

off the country were gone; supplies had either to be got from the Netherlands which, as was apparent, was dangerous, or they had to be transported from England, and be at the mercy of the wind in the Channel.[1] But if an invasion was attempted at all there should at least be adequate planning in advance. Both in 1522 and 1523 action was not decided on till July, and by the time the armies were ready half the campaigning season was gone, while the harassed Regent of the Netherlands had been given inadequate time to prepare transport. On neither occasion was the aim of the expedition clear; Surrey certainly, and Suffolk probably, had inadequate artillery to besiege Boulogne, yet sufficient to encumber them if their principal aim was merely to damage the French countryside. In fact, there seems to have been no aim at all except that of remaining in France for a certain period of time. Wolsey's plans admittedly, were spoiled in 1523 by the failure of Bourbon's invasion and the lack of the hoped-for spontaneous rising of the French nobility. But it is impossible to escape the conclusion that both invasions were badly mismanaged. Wolsey's reputation as a war-minister rests on his achievements in 1513; if we set against that not very dazzling success the events of 1522 and 1523 the picture is very different. It is not that Wolsey was incompetent; but that he was negligent.

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1. Merriman Cromwell I pp 39-42.

C H A P T E R E I G H T

The Wars of the 1540s

Almost £3,200,000 was spent by the English government on war in the 1540s; of which about £1,300,000 was spent on the capture and upkeep of Boulogne, almost £1,000,000 on Scotland and almost £500,000 on the navy.[1] The consequences are familiar; the increased burden of Parliamentary taxation, the raising of forced loans, the debasement of the coinage, the sale of quantities of the newly acquired monastic lands, and complicated credit operations in the Netherlands involving the great German banking houses.[2] And yet for all this nothing was gained. Boulogne was captured in 1544, and handed back to the French in 1550. The English failed to end the Franco-Scottish alliance; in spite of the death of James V in 1542 and the subsequent attempts to induce the Scots by stick-and-carrot methods to allow the marriage of their infant queen to Edward, Mary sailed for France in 1548, and in 1550 such Lowland castles as remained in English hands were given up. While it is difficult to suggest a viable alternative policy in Scotland, Boulogne was totally valueless except as a sop to Henry VIII's continuing military vanity.[3]

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1. SP 10/15 ff 18-29. See Appdx A & B.
2. Dietz English Government Finance pp 144-77; W.C.Richardson Some Financial Expedients of Henry VIII (Econ H.R. (NS) Vol. VII, 1954, pp 33-48).
3. L.P. XX ii 738

As far as administration is concerned, however, the wars were conducted with remarkable efficiency;[1] that is, of course, when considered in the context of the over-all limitations bound to apply to XVIth Century warfare.

A brief summary of events is needed here, since we shall be dealing with Scottish and French affairs separately. In 1542 a great army was sent to deal a sharp blow at the Scots; it petered out in a grandiose border-raid. In 1543 events in Scotland seemed to be playing into English hands; amidst the complicated faction fights which followed James V's death a marriage was arranged between Queen Mary and Prince Edward; but the Catholic Franco-phile party regained power, and the Scottish Parliament in December repudiated the marriage. A punitive expedition was sent to Scotland in 1544 under Edward Seymour, Earl of Hertford, which went to Leith by sea, burned Edinburgh, and returned to England by land leaving a trail of destruction. In the same year a two-pronged invasion of France was mounted in which Boulogne was captured. The centre of interest in 1545 is the defence of Boulogne against a French siege, and an attempted French invasion of England which nearly resulted in a large-scale naval battle. Peace with France was concluded in 1546; Boulogne was to be retained by the English until 1554.

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1. C.p. Richardson Augmentations p 20. "Even Cromwell..would have found it difficult to do more in devising new ways of raising revenue than did the Council during the last French war."

In 1547 Seymour, now Duke of Somerset and Protector, tried agai to force the Scots by a show of military strength to agree to Mary's marrying Edward; the English were lucky to win the battle of Pinkie, and establish a number of garrisons throughou the Lowlands, as well as capturing (by sea) Broughty Castle, near Dundee. Mary escaped to France in 1548, and thereafter th English strove in conditions of great difficulty to maintain their garrisons. The war with France re-opened in 1549, due to French mistrust of English proceedings at Boulogne. The English weakened by the rebellions and the coup d'état of 1549, made peace on both fronts in 1550, surrendering Boulogne, and withdrawing their remaining garrisons from Scotland.

After 1541 no single minister emerged to play the dominant role of Wolsey and of Thomas Cromwell. Instead, the newly organised Privy Council, subject to the over-riding will of the King, planned campaigns and allocated money for them from the plethora of revenue courts. Victualling arrangements were in the hands of various committees, of which the two most prominent members were Bishop Gardiner (while Henry lived) and Sir William Pawlett, (Lord St. John, later Marquis of Winchester).[1] As we have seen, bureaucratic organisation was beginning to spread into what we may anachronistically call the service departments; the Navy Board and the Ordnance Office take on their regular

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1. See above p 175.

from during these years.

From 1523 to 1535 the service departments had been generally inactive. There were periodic bouts of inspection of ships garrisons, and arsenals, but no large-scale building of ships or purchase of weapons. From about 1535 things began to change. The c.325 ton Sweepstake, and the 170 ton Mary Willoughby were built in that year.[1] Several of the older ships were extensively rebuilt in the period 1536-9.[2] The threatened Franco-Hals-burg entente of 1539 produced a general shake-up. The Master of the Ordnance was sent to inspect fortifications and arsenals. Supplies were hurriedly purchased from the Netherlands;[4] trained gunners were sought out in Germany;[5] above all, the great line of castles on the South Coast were erected and stocked with guns.[6] This activity continued until the outbreak of war; in 1541-2, for instance, the King's ships were being inspected by shipwrights, and extensive purchases of brass guns were being made from the Owens, the Arcani, and Bawde.[7]

This preparation, of course, was not enough to mean that the war, when it came, raised no problems. Some 19 ships had to be built in 1542-6 (not counting "rowbarges"), and six large

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1. Anderson List nos. 51-2
2. Ibid nos. 54-61. This included the Henry Grace à Dieu which was thus a modern ship in the 1540s, not, as de la Roncière would have it (Marine Française III p 411) "un vénerable débris."
3. L.P. XIV i 33, 58; E101/60/3
4. L.P. XIV i 535, 842, 948
5. Ibid 489, 490
6. B.H. St. J O'Neil Castles and Cannon pp 41-65.
7. Hatfield MSS 201 f 39; E101/60/10.

ships bought from the Hanse.[1] Supplies of powder ran very low during the siege of Boulogne; Henry gave orders for ships in the Thames to be searched for gunpowder, while the King's agents in the Netherlands tried to lay their hands on supplies.[2] The northern garrisons remained, as always, very weak. In 1545 when an attack from Scotland could reasonably be expected, Carlisle was almost indefensible. The largest guns available were 4 sakers, 12 falcons and 6 falconets; there was a multitude of small iron guns, most of them lacking chambers, or stocks, and sometimes "hollyt throwght with canker". There were only 150 saker-shot, though 400 were necessary; there was no shot at all for falcons; 1000 were needed. Six lasts (168 barrels) of gunpowder were needed; there were only eight barrels available. Even the one gunner was a very old man. The whole place must have been more like a scrap-yard than a fortification.[3]

Perhaps it was impossible for any XVIth Century administration to function without major blemishes like Carlisle Castle. Yet, amidst the usual complaints about the supply services, the remarkable fact is that on the whole they

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1. Anderson List pp 8-10
2. L.P. XIX ii 31, 147, 177, 187, 195
3. L.P. XX i 491, 580 (1) (2). Some of the figures differ in the various documents.

functioned reasonably well in the 1540s, at least by comparisor with what we have studied before; and in some respects, especially the victualling of the garrisons in Scotland, achieved quite remarkable results. The faction-ridden Privy Council of Henry's declining years and Edward's reign have not yet received the credit due to them for this state of affairs.

(e) The War with Scotland

The whole history of the English intervention in Scotland in these years is an illustration, not of the deficiencies of the supply services in the 1540s, but of the hard geographical factors which made a purely military solution of the Scottish problem at this period quite impossible. A large invading army could not stay long in Scotland without starving to death. Leaving a number of garrisons behind in Scotland was useless unless a reliable and strong ally could be found for the English cause amongst the nobility, or unless the lords paid more attention to the sufferings of the peasantry than they had in 1523.[1] If an invasion could produce any result at all, that of 1544 should have done so; if the garrison method had any hope of success, then it should have succeeded in Edward VI's reign. But before we deal with these, we must consider one last attempt to do what had failed so disastrously before, to mount a large-scale land-based invasion with no very clear idea of what it was to achieve, in 1542.

To be fair, on this occasion there was not much time for preparation. Although Berwick's fortifications were inspected in May and June, the English were caught by surprise by the outbreak of border-raids in July.[2] The first record of a plan for a large-scale invasion of Scotland dates from August 24th;[3] if the King was in doubt whether to take up the idea, the news

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1. Above p 225.
2. L.P. XVII pxxxii
3. H.P. I 126

of Hadden Rig (also August 24th), when an English raiding-party was ambushed and many border notables captured, must have decided him.[1]

The size of the army is nowhere stated. The Duke of Norfolk (the Thomas Howard of 1513, and Earl of Surrey of 1522-3) had a commission to raise "thole powers" of all the northern counties, and Cheshire, Nottingham, Derby, Stafford, Norfolk and Suffolk.[2] James V, appealing for help to the Pope, claimed that the English were preparing an army of 40,000 men.[3] On this basis it seems quite likely to have been at least 20,000 in fact.

Considerable activity was shown in the immediate planning of the expedition. On August 25th Norfolk was reminding the Privy Council, telling them to find out from Berwick the capacity of the mills and brewhouses there;[4] and again, on September 2nd, reminding them to make arrangements about horses, ordnance, and surgeons.[5] On September 1st Edward Shelley, a master of the household, was sent north with a staff of eighteen to see about victualling, and to help Sir John Harrington, the Treasurer at War.[6] Thomas Waters and Thomas Woodhouse were commissioned to provide grain in East Anglia.[7] The London

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1. H.P. I 146/1
2. H.P. I 126
3. L.P. XVII 1060
4. H.P. I 152 (see L.P. XVII 719 for a note about the date).
5. H.P. I 143
6. L.P. XVII 718
7. H.P. 144

brewers agreed to provide 1000 tons of beer, guaranteed to last five months;[1] similarly the London coopers agreed to provide ~~the~~ 1000 costrels (vessels for carrying wine) by September 2nd, and the Lord Mayor was to see about the provision of more casks[2]

Yet all this activity came to nothing. This was partly due to the dangers of relying on sea-transport. The original muster of the army at Newcastle on September 27th had to be postponed till October 7th, while hopes remained of negotiations with the Scots and while victuals were still short.[3] Throughout this period there are complaints and recriminations about the non-arrival of the ships bringing provisions from East Anglia and ordnance supplies from London.[4] When the ships did arrive, their size and the prevailing winds prevented many of them from entering Berwick harbour, and Norfolk had eventually to set off from Berwick (on October 22nd) without the supplies they had brought.[5] Such delay was disastrous, for the army while waiting was consuming such victuals as had already arrived.[6]

Delay by wind was a normal hazard of operations. Even if the ships had arrived on time, however, it seems unlikely that Berwick could have coped effectively with the task of converting grain into bread and beer for such a large army. There

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1. APC 1542-7 p 25: L.P. xVII 718 (2)
2. APC 1542-7 p 27: L.P. xVII 718 (2)
3. H.P. I 168
4. H.P. I 168, 170, 190, 198
5. H.P. I 221, 229
6. H.P. I 195.

were only three brew-houses in the town, of which only two were in working order.[1] There were no mills; corn had to be sent to the country round-about, where the mills were liable to be attacked by the Scots.[2] That Norfolk should have found it necessary to get the Privy Council to find out the baking and brewing capacity of Berwick just a month before the invasion shows, indeed, the dangers of an improvised, non-professional victualling service; such information ought surely to have been always available in London.[3] Berwick, too, was shor of casks.[4] Norfolk's scheme to provide adequate transport and beer by getting every company to bring with it two carts filled with barrels of beer, fell through; the captains said that it was impossible to get the carts through on the bad roads.[5] They ignored, too, his orders that only spears, javelins and archers should come mounted beyond Newcastle, their other soldiers giving up their horses for supply duties; they came on "naughtie nagges", saying that otherwise they could not have come at all.[6] Norfolk's orders to the Yorkshire authorities to supply carts produced very few.[7] The ordnance, when it eventually arrived, was largely useless; three of the four "bassys" tested were not in working order, the fault of

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1. H.P. I 168, 190
2. H.P. I 170
3. H.P. I 152
4. H.P. I 170
5. H.P. I 152, 218
6. H.P. I 218
7. H.P. I 229

Cornelius Johnson, who had made them, and Morres, as Master of the Ordnance for not testing them; and too few bow-strings had been sent.[1]

Norfolk lamented that the best army he had ever had, had been crippled by logistic blunders.[2] The Earl of Southampton, struck down by an illness which proved to be fatal, eloquently suggested that it was caused by anger at the supply arrangements.[3] Rumours had been spread in London, and duly reported by ambassadors, of an army of 100,000 about to deliver a great blow against the Scots;[4] in fact the great invasion degenerated into a six-day border-raid.[5] The Scots boasted that the English had retreated when the Scottish army approached.[6] Norfolk's report was more credible; his men were starving, and were reduced to drinking puddle-water; the carriages were breaking; it was almost impossible to transport the ordnance.[7]

Victualling troubles continued even after the main army had departed. It was considered impossible to feed 4000 men in garrison throughout the winter, and the number was reduced to 2000.[8] The price of wheat was fixed by Hertford as high as 12/- to 16/- a quarter in November; and the maximum charge laid down

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1. H.P. I 205, 211
2. H.P. I 227
3. H.P. I 173, 177
4. L.P. XVII 806, 835
5. L.P. XVII 998
6. L.P. XVII 1072 (Beaton to Paul III)
7. H.P. I 226
8. St. P V pp 214, 217-8. H.P. ii pp lxv-lxvi.

for soldier's meals (1d for breakfast, 2d each for dinner and supper) took up 5/6½of their wages daily.[1] In these circumstances of victual shortage it would have been quite impossible to resist any fair-sized Scots' incursion. It was remarkably fortunate for the English that the Scots should have been so completely and inexplicably routed at Solway Moss on November 24th, and that this should have been followed so soon by the death of James V, thus removing any immediate Scottish threat and blotting out the ignominy of the summer.[2]

A better-organised ordnance department would have provided usable guns. An efficient victualling service would have seen that Berwick was supplied with sufficient mills, bakeries and brewhouses, to act as a major base. But even so, the lack of transport in the North of England, and the necessary reliance on sea-transport with all its attendant hazards, make it apparent that, however efficient the services, the invasion of Scotland, by a large modern army was almost impossible. This it seems, was not immediately realised. The Duke of Suffolk was proposing in 1543 that an army of 24,000 should enter Scotland for a month in June.[3] Preparations began in April but fortunately came to nothing.[4] Suffolk again suggested a

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1. H.M.C. Bath IV p 31.
2. H.P. I pp xxxiii-xxxvii
3. L.P. XVIII i 123
4. Ibid 409, 460, 466, 469. Henry still thought it feasible in August and September, but the Borderers objected that it was too late (Ibid ii 119, 169, 170, 192, 195, 198, 207, 234, 236).

mass-invasion in January 1544; 20,000 men were to invade Scotland for six weeks, devastating the entire country as far as the Firth of Forth, and establishing English garrisons at Edinburgh, Stirling and other fortresses; wine was to be provided, on the grounds that wine would need only 100 carts instead of 1000 for beer; even so carts would have to be got from Yorkshire.[1] Suffolk insisted that this could only be attempted in May. Even on this basis it seems an optimistic scheme, but in fact it was ruined by the King's insistence tha if carried out at all, it must be in March, to free the summer for the invasion of France.[2] This was the last of such dreams thereafter the concept of mass-invasion was rightly abandoned.

The alternative which took shape in 1544 was for a sea-borne invasion. This seems to have originated in the mind of Suffolk when his first scheme was turned down; if there was to be an invasion in March, it could only be managed by sending provisions by sea, to Edinburgh, to be distributed to the army there.[3] In this form the plan was extremely dangerous; the ships might be delayed or the army might not get to Edinburgh at all. This soon developed into a scheme for the soldiers to be shipped to Leith, burn Edinburgh, and to return again by sea.[4]

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1. H.F. II 156
2. H.F. II 160
3. H.F. II 165
4. H.F. II 166. That the 1544 plans grew out of Suffolk's suggestions is not to say that he was necessarily the originator of the idea. For instance, Hertford had been thinking along these lines in 1542 (H.M.C. Bath, IV pp 56-7)

Much of the planning was Bishop Gardiner's work. He drew up lists of the areas which were to provide troops, made rough calculations about the amount of victuals needed for an army of 15,000 men for two months, and worked out which ports should supply the 200 ships he thought necessary for the enterprise.[1] With St. John and Sir Robert Bowes he was in charge of victualling.[2] Provisions were, as usual, sent north by officials; for instance, beef by Thomas Rolfe, customer of Sandwich, and by Roger Moore, Serjeant of the Acatry.[3] Nevertheless, there was heavy reliance on private victualling. Hertford, for instance, complained that the prohibition of grain export from East Anglia was causing him difficulties;[4] on the other hand he had difficulty in selling government fish and beef because the private victuallers' supplies were cheaper. The usual difficulty of providing land transport was, of course, absent on this occasion; but even so, horses for the ordnance had to be sought out as far away as Derbyshire.[5] Christopher Morres, now Lieutenant of the Ordnance, was in charge of ordnance arrangements in general, supplying weapons from store at Berwick;[6] the Mayor of Newcastle sold bows and arrows from the King's store there to the troops.[7]

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1. St. P. V p 338; SP I/183 ff 146-55 (L.P. XIX i 140 (3)).
2. L.P. XIX i g 141 (26)
3. L.P. XIX i 411, 749
4. H.P. ii 179; Haynes State Papers I pp 13-4
5. L.P. XIX i 189
6. L.P. XIX i 265
7. H.P. II 314.

The arrangements were, on the whole successful. There was the usual initial delay while the ships battled north against unfavourable winds. They left London and East Anglia before March 24th; but on March 30th some were reported lost in a storm.[1] The Lord Admiral did not arrive at Newcastle with the main fleet until April 20th.[2] The fleet as a whole included some 119 ships, most of them small ones, each with a crew of about 10 men and carrying about 70 men, though there were some large Baltic hulks;[3] some 12,000 or 15,000 soldiers all told.[4] Winds again delayed the ships, so that they did not arrive at Leith, where they were joined by 4000 horse who had come overland, till May 3rd.[5] Edinburgh was duly burnt, though the ordnance brought upon the ships (complete with draught horses) was insufficient to take the castle;[6] hardly surprisingly, considering it could only be approached by the "hyghe strete", against which the castle's best guns were trained.[7] The ordnance was re-embarked, and Hertford prepared to return by land with an unspecified number of horse.[8] On

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1. Haynes State Papers I pp 20-1; H.P. II 199
2. L.P. XIX i 366
3. SP I/185 ff 215-8
4. L.P. XIX i 501; H.P. II 227 p 356
5. H.P. II 225, 229, 230, 235; Late Expedicion p 3
6. H.P. II 232, 233, 237
7. Late Expedicion p 7. Edinburgh Castle was, of course, taken by English artillery in 1573 ~~by English artillery~~, but this only after a three-month siege, and in alliance with the Regent Morton who controlled the city and countryside. (P. Hume Brown History of Scotland II pp 157-9)
8. H.P. II 237

this march, of course, provisions were short; shortage of victuals, of ordnance and powder prevented attacks on Hume and Temptallon castles;[1] while Hertford, to prevent some of his troops being sent immediately to France, reported how "what with colde and gret travayle and scant victualling" they had caught various diseases.[2] This, of course, was due to the peculiar circumstance of the forced march home with a minimum of provisions to dispense with an unwieldy baggage train. All in all, the expedition had been a success, in that it had achieved what it had been intended to achieve; a large-scale demonstration.

Yet, as the events of 1545-6 showed, a demonstration was insufficient, and Edward VI's government in 1547 was faced with the ancient and almost insoluble problem of how to impose its will against the Scots. Somerset's success at Pinkie and the subsequent establishment of English garrisons in the Lowlands might indicate that the problem had been solved; and it appears to contradict our argument that an effective land-invasion of Scotland was an impossibility.

Certainly the usual total failure of the supply services was avoided on the Pinkie campaign, to judge by the absence of references (indicating an absence of complaints) in the

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1. H.P. II 240

2. H.P. II 240 p 382

ddendum

There is no official list of the troops on the 1547 expedition. Patten's figures (pp.75-6) produce 12,000 foot and 6,200 horse; Pollard (Somerset p.157) gives 12,000 foot and 4,000 horse, and in this he is followed by Oman (Art of War p. 359) I can find no definite justification for this latter figure, but it seems reasonable to assume from Patten that the army was rather under 20,000 men.

official correspondence. For the victualling side, for instance, we have nothing except the remarks of William Patten one of the English soldiers, that "we carried with us in the army by cart, and to be sure, rather, among us, [enough] to have somewhat too much than any whit too little."[1]; and that, after the battle, "began the Scots to bring victail to our camp, for the which they were so well entreated and paid, that, during the time we lay there, we wanted none of the commodities their country could minister."[2]

Yet this apparent refutation of our arguments about supplies is only possible because of one circumstance, one which was very nearly fatal; the fairly small number of the English troops on the Pinkie campaign.

The Scots position was almost impregnable. Before them was the river Esk, crossed by only one bridge, on their right a marsh, on their left the sea.[3] Nevertheless instead of waiting for the English to attack, they abandoned their position (rather as they had at Flodden) and attacked first. When the English cavalry recovered from its initial panic it managed to check the Scottish infantry until the English guns were brought

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1. William Patten Expedition (ed Arber, in English Garner III pp 51-155) p79.
2. Ibid p 145
3. C.W.C. Oman The Battle of Pinkie (Archaeological Journal Vol 90, 1933, pp 1-18); Pollard Somerset pp 157-8

up to blast the solid phalanx of footmen.[1] The Scots mistake had undoubtedly been their abandonment of their defensive position. An amazed French Protestant fighting on the English side could find no explanation except "la voulenté de Dieu et le peu du praticque des cappitaines Escossoys."[2] In fact the captains probably mistook Somerset's manoeuverings for an indication that he was about to retreat.[3] Had they held their ground the English would either have had to launch an extremely difficult attack or retreat ignominiously. The victory, then, was less the result of good generalship by Somerset than of a miscalculation by Arran, the Scottish commander. If this interpretation is correct, then Pinkie is not an argument that the English could launch an army large enough to defeat the Scots in reasonable circumstances; only that on this occasion they were able to fit out a small army which was lucky to win.

The Scots fled in disarray; yet the English were not strong enough, especially in ordnance, to attempt to occupy Edinburgh, which would have involved the difficult task of capturing the castle. The main army retired to England.

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1. Patten (p 110) pays tribute to the solidity of the phalanx; "as easily shall a bare finger pierce through the skin of an angry hedgehog, as any encounter the front of their pikes."
2. Berteville Expedition en Écosse p 14
3. Oman Pinkie pp 11-2

There followed the attempt to dominate Scotland from a system of garrisons. Of these the most important, Haddington, "étant comme au coeur d'Escosse", a mere 18 miles from Edinburgh, was captured in February 1548.[1] Broughty Castle, at the mouth of the Tay, had been captured by the English fleet on September 20th, 1547;[2] and Dundee was occupied briefly from the base at Broughty, from October 27th 1547, to January 1548.[3] During 1548-9, for instance, there were, excluding Broughty, at least eight garrisons manned in Scotland, ranging from 13 men at "Fast Castle" to 4529 at Haddington.[4] These obviously presented considerable problems to the victuallers. In so far as the intention remained primarily ~~to~~ the conciliation of the Scots, living off the country was at first forbidden.[5] This in fact was not kept up; the garrison at Haddington lived off the country during the siege of 1548, alienating a good deal of pro-English feeling by doing so;[6] while Rutland in 1549 put into force a system of compulsory purveyance which in practice probably differed very little from outright requisition.[7] Nevertheless, a large part of the supplies had to come from

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1. Beaugué Guerre d' Escosse (1862ed) p 44. C Sc P I 168.
2. E351/213
3. C Sc P I 74, 132
4. A.O.1/283/1067. 17,315 men served on the borders between 1548 and 1550 at various times. (ibid)
5. C Sc P I, 143
6. H.P. II 454
7. Above p 168 n.

Berwick.

As usual a major difficulty was transport. Stonehouse, the Berwick victualler, asked allowance in his account for 165 carthorses "being decaied by often Journeyenge with harnes into Scotelande & Destroied & stollen in thesame Jorneyes and also ded in the wynter for lacke of kepinge".[1] Horses were provided by the Archbishop of York, presumably from Yorkshire.[2] Haddington, especially, was liable to have its communications cut; in 1548 it was besieged by a large Franco-Scottish army, the siege only being raised on the approach of the Earl of Shrewsbury with a large army (which in turn had to be dissolved before doing anything of note because of victualling difficulties).[3]

Supplies, of course, came to Berwick itself by sea from the south, so that they were exposed to the usual delays from the wind. The garrison at Broughty Cragg was, of course, completely dependent on supplies by sea, so irregular that there were continuous complaints of shortage of food and weapons, of sickness, of desertions and so on.[4]

Above all, there was the general problem of a shortage of money; in February 1548, for instance, the soldiers of Broughty and Roxburgh had been seven months unpaid; even the Spanish

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1. E351/127 m 10r
2. C Sc P 131
3. C Sc P I 259, 318, 321; Literary Remains of Edward VI, II, p 223.
4. C Sc P I 74, 105, 107, 129, 231. Mary of Lorraine Correspondence Nos. CLXVII, CLVIII, CLXXIII, CLXXXVIII, CXCIV.

mercenary troops were four or five months in arrears.[1] The treasurer in the North, Uvedale, had to keep secret the money he received so as not to infuriate those who were not paid on any particular occasion; the English commander, Grey of Wilton, was so displeased he sent him letters decorated with gallows.[2] Uvedale's successor had to raise loans from local merchants and £104 from eight men-at-arms "taken of their wages".[3]

In these circumstamces the wonder is not that the garrisons were badly victualled but that they were victualled at all. Yet Broughty, in spite of complaints, held out until 1550.[4] Haddington was stocked with six months supply of victuals before the siege in 1548;[5] and was only abandoned in September or October 1549, in conditions of raging plague.[6] About the same time new garrisons were put into Jedworth, Hawick and Peebles.[7] Of course the garrisons were given up in 1550, when rebellion, coup d'état and financial crisis made peace with Scotland almost essential; especially as Mary had sailed for France in 1548 and could not now be married to

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1. C Sc P I 171, 182. It was difficult to get German mercenaries to serve because of the reports of lack of pay and victuals (CSP For 1547-53 143-4)
2. C.S.P. Dom Add 1547-65 p 383 no. 64.
3. A.O. 1/283/1067.
4. Lord Treasurer's Accounts (Sc) Lxpxl.
5. C Sc P I 241
6. Lord Treasurer's Accounts (Sc) Lxpxxxix. B.M.Calig BVll f 383. Haddington had two "buriers of the dead" on its establishment. (A.O.1/283/1067).
7. B.M. Calig BVll f 471r.

Edward. Once again, English policy towards Scotland had failed Yet Somerset had made the most concerted attempt since Edward I's reign to enforce Anglo-Scottish unity, and might have succeeded if English control of the sea had been surer.[1] He was helped by the fact that, in conditions of great difficulty, the garrisons had been efficiently supplied with food and weapons.

On the whole English policy towards Scotland had been more intelligent after 1544 than in the earlier years of our period. Attempts had been made to get beyond the concept of a large army assembling, burning a few towns near the Border, and breaking-up because of a victualling crisis. As a raid, the amphibious operation of 1544 was more worth-while than the usual Border proceedings; the garrison policy of 1547-50 a return to the methods by which Edward I had once come near to bringing Scotland to heel (or at least, nearer than any other English king).[2] Both operations demanded, and obtained, a degree of efficiency in the supply services which had been notably lacking in the earlier years.

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1. Below pp 286-90.
2. W. Stanford Reid, Sea Power in the Anglo-Scottish War 1296-1328 (MM Vol 46, 1960 pp 7-23).

(b) The French War

The capture of Boulogne in 1544 was the major military achievement of Henry VIII's reign. Its subsequent defence was not easy, and involved in 1545 the biggest fleet action of our period. The French campaigns were, then, a considerable test of the organisational ability of the Privy Council; a test from which it emerged, on the whole, rather well.

Henry and Charles V bound themselves by a treaty signed on December 31st, 1543, to a joint invasion of France in 1544; Charles with 35,000 foot and 7,000 horse through Champagne, Henry with a similar number through Picardy and across the Somme; both were to march on Paris.[1] In fact Henry restricted his campaign to the simultaneous sieges of Boulogne and Montrueil. Charles concluded the peace of Crépy with the French King on September 18th 1544, five days after Boulogne had surrendered.[2] This obviously made an attack on Paris by Henry impossible. Whether he had ever intended to do so is a different matter. Certainly Henry (perhaps with uncomfortable memories of 1523) expressed his doubts about an attack on the French interior, in June 1544 to Chapuys;[3] and Chapuys concluded

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1. L.P. XVIII ii 526
2. L.P. XIX ii 230, 249
3. CSP Sp VII i 134

that Henry had no intention of carrying one out.[1] Whatever his ultimate intention it is clear from the course of events that the taking of Boulogne was his primary purpose, at least.

We have already examined the size and composition of the army, and concluded that, at about 36,000 Englishmen, it was probably the largest sent across the Channel up to that date.[2] We have seen, too, that a committee, headed of course by Gardiner and St. John, and composed for the rest of household officials was responsible for its victualling;[3] that the usual assortment of country gentlemen, merchants and so on purveyed food in England, and that some 47 household officials acted as victuallers with the army.[4]

The victualling machinery with the army was more elaborate than this, however. One estimate of the numbers required is shown in the following table:-[5]

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1. Ibid pp 206, 324
2. Above pp 9-15.
3. Above p 175.
4. Above pp 178-80.
5. L.P. XIX i 272 (4) pt i (The MS, SPI/184 ff 56-67, adds nothing of substance).

	Vanguard	Rearguard	Main Battle	Total
Chief masters	2	2	2	6
Clerks	2	2	2	6
Officials to sell bread	6	6	8	20
" " " drink	10	10	16	36
" " " meat and butchers	12	12	16	40
To guard the victuals	20	20	30	70
Herdsmen and drovers	12	12	16	40
Carters (2 per waggon, 30 cwt. per waggon)	290	290	468	1048
Carters for waggons for timber, nails etc.	10	10	12	32
Coopers	2	2	3	7
Cartwrights	2	2	3	7
Smiths	2	2	3	7
Labourers	12	12	20	44
Total	382	382	599	1363

In addition there was a baking company of 463 men (186 carters, 100 bakers, 100 millers, 10 millwrights, 10 cartwrights, 12 bricklayers, 2 mortar-makers, 2 clerks, 30 soldiers a priest, a surgeon, 3 drums and 6 captains and petty-captains) and a similar brewing company of 310 men (100 carters, 50 master brewers, 50 under-brewers, 100 labourers, 6 captains and petty-captains, 3 drums and a surgeon). The aggregate, ~~there~~ was some 2136 men, about 5% of the whole army. They accompanied 683 waggons (93 the bakers', 50 the brewers'). [1] The travelling bakeries and breweries were evidently a novelty, and gave at first a considerable amount of trouble, so that

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1. L.P. XIA i 272 (4) pt ii gives 2328 men and 724 waggons.

recourse had to be had to the Flemings for help.[1] The complaints come to an end, however, and the bakeries and breweries were eventually successful.[2]

Nevertheless, the assistance of the Flemings was, as usual, essential. The Privy Council was so confident of their greed "to have our money as they wyl spare noo travayl ne feare any Jeoperdus daungier to aventure to repare with victualles to our armyes.."[3] The imperialist authorities preferred a less hap-hazard arrangement, however; the Regent would have liked Henry to send two commissaries and some money, and she would have raised the victuals by purveyance.[4] In the absence of English commissaries and money, however, reliance had to be placed on the individual enterprise of private merchants; on May 19th all "aubergistes, cabaretiers, provandiers et autres" were ordered to take victuals to the English army.[5]

On the whole the Main Battle, which besieged Boulogne, seems to have been adequately victualled throughout, presumably because it received priority, the King himself being with it. The Vanguard and Rearguard, however, which, under Norfolk and Russell besieged Montrueil, suffered a good deal of victualling

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1. L.P. XIX i 654, 738
2. L.P. XIX i 763, 875
3. B.M. Harl MS 6989 f 113r
4. L.P. XIX i 409, 877 (1), (2).
5. Edits..des Pays-Bas. p.276.

trouble. It was found that the Flemish victuallers were less reliable than the Privy Council had hoped;[1] not surprisingly, if, as sometimes happened, they were physically assaulted by English troops.[2] On top of this there was transport trouble, described vividly by Gruffydd;[3] made worse by a successful French ambush on the road between St. Omer and Montrueil.[4] The situation was relieved a little by the capture of Étaples, which thereafter served as a port for supplies from England;[5] but if Gruffydd is to be believed, Gardiner refused to let English merchants go there, presumably so that the government victuals already supplied could be disposed of first, although (according to Gruffydd) "most of it was stinking before it came into the field".[6] The country-side around was reduced to starvation by Norfolk's army, so that no more supplies were available locally; when a country-woman begging bread was offered money, she replied "God in heaven, what should I do with money, or anything else but bread, and only a little of so that that/we can eat it now, because we do not dare to store it for fear of the wild men, who, if any of them got any bread or money from any of us beat us and batter us..."[7] But in spite

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1. L.P. XIX i 816, 835 (2), 873, 919
2. L.P. XIX ii 320
3. Gruffydd XI p 22
4. Ibid pp 25-9 L.P. XIX ii 27. 5. Gruffydd XI p 31
6. Ibid pp 32-3. This motive was certainly a powerful one. Earlier in the campaign the removal of the army out of Calais into camp was justified by the argument that this way government supplies of victuals could be disposed of more easily and profitably. (L.P. XIX i 835).
7. Gruffydd XI p 36.

of these deficiencies, Norfolk's army remained at Montrueil until the King, after the news of Crépy, ordered it to raise the siege on September 25th.[1]

We have discussed already the number of guns, the amount of munitions, and numbers of draught-horses and carts which were supposed to be provided for the ordnance train.[2] The totals were based on the assumption that the guns would be in active use for 18 days.[3] In fact, they were in use for rather longer, and the preparations went by the board. Norfolk's and Russell's force, too, had not received all the munitions which they had been assigned:-

	Original Estimate[4]	Deficiency[5]
Falcons	8	2
Shot for falcons	500	720
Sacre shot	1000	720
Pikes	1000	1000
Miners' tools	Unspecified.	Number Unspecified.
Horse-shoes	6000	3000
Horse-shoe nails	300,000	222,000

(The original estimate was, presumably, later revised, and it is the revised version against which the deficiencies are

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1. L.P. XIX ii 297
2. Above p p13-5
3. Above p 13.
4. L.P. XIX i 272 (13), assuming that the vanguard and rearguard were equipped identically.
5. SP I/189 f 112 (L.P. XIX i 784 (1))

measured; hence the discrepancy in falcon shot). Some of these deficiencies were serious; the Master of the Ordnance claimed that some of the articles had been sent, but admitted that in certain cases he could spare no more.[1] Nevertheless, the full number of large guns, at least, seem to have been provided; while, as the Master of the Ordnance himself implied, priority had been given to the King's part of the army, which was presumably adequately supplied.[2] The guns at Boulogne did indeed run short of powder, during the siege.[3] Nevertheless, enough seems to have been found for operations not to be held up by shortages.

As usual sea-transport was a major problem. The Regent of the Netherlands was induced to fix a maximum hiring-charge for ships of 28-30 stivers (about 3/6d[4]) a ton a month, after the English commissary had failed to hire them at this rate on the free market.[5] 300 were eventually raised.[6] Norfolk's division was safely shipped on June 8th; Russell's on the 18th; the main battle on July 2nd and 3rd; and the King himself crossed on the 14th.[7]

Getting ships for the return journey was more difficult.

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1. SP I/189 f 113 (L.P. XIX i 784 (3))
2. Ibid
3. See above p 246.
4. L.P. XIX i 546
5. Ibid 474
6. Ibid 546
7. Ibid 654, 724, 747, 819, 928; E.H.R. Vol. 16 (1901) pp 503-4.

The shipowners produced a list of grievances; the English had altered the exchange rate unfairly, sailors had been beaten and set in the stocks at Dover and Calais (this later grew into a complaint "that some of theym had their hedes broken stricken to the grounde thrust thrugh the arme and the hangman had abourde treatening to nayle their earis to the mastis.")[1] and anyway that it was now winter, and since the Emperor had made peace with France, they could get business elsewhere; they therefore demanded 38 stivers and two months' guaranteed employment.[2] Even the intervention of the Regent, and the offer that the King's commissary should remain as a hostage guaranteeing Henry's intention to pay any damage done the ships, were in vain.[3] The men of Middleburgh, at least, refused to serve, and the return of the army was a slow process.[4]

More immediately important, however, was the carriage question. Again, the Netherlands contribution was essential, though attempts were made to calculate the saving if ~~only~~ only English carts were used.[5] As usual, the question led to considerable bitterness between the allied governments. The Regent sent an elaborate defence of her conduct; by July 9th she had supplied 1100 lymoners and 800 4-horse carts to the

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1. SP I/193 f 117r
2. L.P. XIX ii 389
3. Ibid 472
4. Ibid 472, 556
5. L.P. XIX i 272 (8)

Vanguard and Rearguard, and 1360 lymoners and 1000 waggons for the Battle.[1] She later supplied at least 300 more waggons out of a demand for 500.[2] If our calculations are correct, this provided enough lymoners to haul the guns.[3] The chief trouble was about the carts, the English having based their calculatior on 7-horse carts.[4] Yet the Regent had stated that the waggons were 4-horse ones in a letter to Chapuys on April 1st.[5] Possibl the ambassador forgot to stress this to the Council. Moreover, the Regent was to be blamed for delay in providing carts.[6] Yet as early as April 26th she was asking for English commissaries to be sent to the Netherlands to help with the hiring.[7] The Privy Council ordered Francis Hall to help with this, but he did not arrive at the Regent's court till June 7th, demanding that 1100 lymoners and 500 waggons should be at Calais by the following Thursday.[8] Recriminations of this sort continued; yet in practise all the carts which the Regent should have supplied arrived on time except for those of the second draught for Norfolk's ward;[9] and this was primarily due to the sudden

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1. Ibid 877 (2)
2. Ibid 922
3. Above p 14.
4. L.P. XIX i 272 (7) (8) (9), 709
5. C.S.P. Sp Vii 58 p 87
6. L.P. XIX i 835 (2)
7. Ibid 409 p 264
8. Ibid 607, 642
9. L.P. XIX i 741, 747, 755, 763, 831.

increase in numbers due to English miscalculation of the size of the carts.

English grumbling at the supposed deficiencies by the Regent has distracted attention from the real fault on the English side. Commissaries had been deputed with the aid of J.Ps., to select horses and oxen for the carts, on the basis of a county survey they had drawn up earlier.[1] The carters on their arrival in France, however, were such poor specimens that the ever-accusing Norfolk thought the commissaries had pocketed half the "coat" money (provided to fit-out the carters).[2] The horses, too, were lean and small, so that 14 or 15 were needed to haul the portable ovens.[3] With Flemish carters, at least, there was no complaint of technical inefficiency. Yet, for all the grumbling, all the delay, the transport services did most of what was required of them; though they would have been grossly inadequate if the projected march on Paris had taken place.

This indeed, seems to be the verdict on the supply services as a whole. The siege of Boulogne was successful; there are no signs of lack of food; and, if the guns ran short of powder and failed to make much impression on the walls, they at least undermined the morale of those within. The town surrendered

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1. L.P. XIX i 272 (9) (MS, SP I/184 f 73, adds nothing)
2. Ibid 654
3. Ibid 763

on September 14th, after almost two months' siege.[1] Norfolk's and Russell's siege of Montrueil was less gratifying; they were short of food and of munitions because they had to take second place to Henry. Even so, their failure was primarily the fault of the Imperialist commander, de Roeulx, who had held that the town could be taken in four or five days;[2] and secondly, of Henry, who refused to call off the plan when it became obvious that Montrueil was well defended, that the besiegers had insufficient men to surround it (the French could enter and leave on one side),[3] and that they had insuffi cient artillery to take the town by bombardment.[4] Gruffydd seems reasonably to have concluded that the whole scheme was nothing more than an attempt to provide cover "so that the King and his host might take their ease and sleep more easily in their beds in the camp around Boulogne."[5] With the departure of de Roeulx's men after the Peace of Crépy, the situation became hopeless unless the bulk of the Boulogne army was sent to Montrueil. Boulogne, however, was enough, and on September 25th Norfolk began to withdraw.[6] Ordered to remain at Boulogne

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1. L.P. XIX i 903 ii 424 p 241. The siege had begun on July 19th (i 932).
2. St. P IX p 708
3. L.P. XIX i 816
4. Ibid 795, 876, 903, 907; ii 89
5. Gruffydd XI p 33
6. L.P. XIX ii 297

Norfolk moved to Calais, alleging insufficiency of victuals and the disease raging in the army, much to the King's annoyance;[1] from Calais the soldiers gradually returned to England.[2]

Without the Emperor's assistance further large-scale designs against France were out of the question. The problem now was the defence of Boulogne. This was a larger problem than keeping an adequate garrison there, however. Command of the sea had to be retained in order that Boulogne might be kept supplied. Preparations had to be made against a French invasion of England, designed, perhaps, to seize a town which could be exchanged for Boulogne. As always, there was a danger of the Scots, smarting from their humiliations, attacking the North. All in all the number of troops involved was considerable, their provisioning a difficult task.

The crisis came in July and August 1545, when Boulogne was besieged, an invasion by the Scots expected, and a French fleet of some 55 ships and 25 galleys, carrying an army of 25,000 men, menaced Portsmouth and the Isle of Wight.[3] Armies, nominally, at least, of 30,000 men each, stood ready in the West Country, on the South Coast, in East Anglia and Lincolnshire, and in the North.[4] A fleet was kept in being throughout the winter of 1544-5; from the middle of June 1545 this

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1. Ibid 347, 353 Gruffydd Al p 50.
2. L.P. XIX ii 399; Gruffydd Al pp 58-9
3. L.P. XX i 1235, 1237; Roncière Marine Française III pp 412-6.
4. St. P X p 468.

was increased to about 12,000 men and over 90 ships, not being reduced again until September.[1] Boulogne garrison consisted nominally of about 8000 men, reinforced in August by 5000 more (though many of these must have taken the place of men who die of plague, deserted, or had otherwise become non-effective).[2] Calais and Guisnes had at least 1400 men, and probably many more.[3] At the peak, in July and August 1545, there were at least 140,000 men under arms or manning the navy.

The defensive armies were not under arms for long, and presumably provided their own food. The North, however, could not supply Hertford's 30,000 men;[4] the navy, of course, had to be victualled; while throughout the period Calais and Boulogne were dependent on official supplies. Certainly attempts were made to get private victuallers to cross the Channel; Calais and Boulogne were specially exempt from the general embargo on shipping victuals, while Surrey wrote for compensation for a merchant whose ship had been captured by the French, so that other merchants would not be discouraged.[5] This incident, however, shows how dangerous the Channel crossing was, and plans

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1. L.P. XIX ii 549; XX ii 27, 88, 368
2. L.P. XX ii 200 (3); St P X p 584
3. L.P. XXI ii 722 gives 1474 in January 1547 when the war was over.
4. L.P. XX i 531, 535, 555
5. L.P. XX ii 271, 371, 372.

were based on the assumption that the bulk of the provisions would have to be supplied by the crown.[1] Indeed, in the crown's state of financial embarrassment this could be an advantage, since it could pay the troops in goods for which it had not itself paid the suppliers.[2]

Gardiner and St. John, of course, headed the victualling commission.[3] St. John was responsible for the fleet at Portsmouth, Thomas Kolfe, the Sandwich customer, for that in the North Sea;[4] Michael Stanhope, governor of Hull sent provisions for the army in the North, assisted on occasion by the Archbishop of York as President of the Council of the North;[5] Anthony Rouse, Comptroller of Calais, supervised the victualling of Calais and Boulogne.[6]

Victualling was complicated by the fact that these were years of dearth.[7] Easterlings were selling grain in the North in 1545, and victuals were being sent there from the Netherlands.[8] William Watson and John Dymmock were sent in 1546 to get corn and rye from the Netherlands and the Baltic, for which the

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1. Müller Letters of Stephen Gardiner No. 73
2. After peace was made the authorities at Boulogne concluded that government victualling would have to continue for a while, until it was possible to pay the troops monthly (L.P. XXI i 1487); St P I p 789, APC 1542-7 p 365 for the crown's default on payment for supplies.
3. L.P. XX i 215
4. L.P. XX i 215, 297, 821; ii 430; XXI i 520
5. H.P. II 403 p 547; St. P V p 434
6. L.P. XX i 63, 215
7. Appdx. N
8. L.P. XX i 673, 1285

crown was prepared to pay no less than 25/- a quarter (wheat) and 16/- (rye).[1]

The garrison victuallers, at least at Boulogne and Calais, were notably slack. At Boulogne, for instance, nominal rolls and returns of supplies in hand were neglected; the King concluded that

> "they were generallie from the hyest to the lowest geven soo moche to their private comodities in embraceng of fermes applied by them to graseng and pastureng...with other compaces to their own lucres, they could not of congruence have leysour at all tymes to wryte or remembre their charges in his Majeste's service."[2]

Calais was not much better. When the Privy Council suspected that complaints of shortages were contrived so that a surplus could be built up and sold for private advantage they sent over one "Pagnam" to investigate, who reported that Calais had sufficient; there were no subsequent complaints of shortage.[3]

In terms of quantity, indeed, there were always sufficient

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1. L.P. XXI i 170, 195, 201, 228, 251.
2. APC 1542-7 pp 560. The authorities put forward an unconvincing excuse, (L.P. XXI ii 666). Not that slackness was unusual at Boulogne; the Surveyor of Works, for instance, was absent in England and the walls were falling down (L.P. XX i 39).
3. APC 1542-7 pp 189, 197.

victuals. There were complaints that victuals would soon be exhausted, never that they had been. The Lord Admiral, Lisle, made no complaints of shortage of victuals in the 1545 fleet, in spite of ships arriving at Portsmouth from the West Country with insufficient supplies.[1] The complaints of shortage at Calais, as we have seen, were ill-founded. The nearest that Boulogne came to running-out was in late August 1545; even so grain was the only thing complained of, and there remained 19 days supply of that, as well as 86,000 lb. of unpalatable biscuit.[2] This was due to the activities of the French fleet in the Channel in July and August, not to miscalculation by the authorities.[3] On August 15th the French fleet, harassed by plague, returned to le Havre.[4] Presumably Boulogne was then satisfactorily re-victualled; at any rate no more complaints appear.

Where government victualling was bad was in quality, not quantity. As usual, this is described vividly by Gruffydd, who, referring to Boulogne, talks of "lack of food which was eatable and which would have strengthened them and for lack of

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1. St P I p 798 n[1]
2. L.P. XX ii 200 (1) & (4)
3. C.p. Gardiner's calculations in July about what would be necessary and the return in August of what had actually been used. (Muller Letters of Stephen Gardiner pp 141-4; L.P. XX ii 200 (4).
4. de la Roncière: Marine française III pp 428-9
   M. du Bellay Mémoires (ed. Michaud & Poujoulat, 1838) p 559.

money to buy such food.....So they had what they could from th King's storehouse, where it had been kept too long. The bread was hard and baked with corn and meal which had lost its taste and savour, and the salt beef stank when it was lifted out of the brine. The butter was of many colours and the cheese dry and hard, for this was the best they could get from the king's store, which made most of the soldiers miserable and reckless.[1] This is borne out from official sources. Boulogne garrison received £26,000 worth of food between September 1544 and October 1545; over £11,000 of it was written off as waste.[2] The Council at Boulogne blamed this on the purveyors.[3] Gardiner himself acknowledged that some of their complaints were justified, and that Stanhope, the governor of Hull, should answer for it (there is no record that he ever did).[4] The victuals supplied to the fleet were also bad. On August 2nd Suffolk, Lisle and St. John wrote from Portsmouth that sailors had fallen sick "whiche we thinke groweth by the greate hete, and the corruption of ther victuall, by reason of the disorder in the provision, and strayte and warm lying in the shippes."[5] The Privy Council wrote to St. John on August 30th "to dismisse the shippes that cary the whete in respect of the ilnes of the same."[6] When George Pawlett, the victualler at Portsmouth,

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1. Trans. M.B. Davies, Surrey at Boulogne, in Huntingdon Library Quarterly Vol. 23, 1959-60, pp 339-48, p 343.
2. L.P. XX ii 558
3. Above pp 188-9
4. Muller Letters of Stephen Gardiner p 142.
5. St. P I p 799
6. APC 1542-7 p 237.

sold some of his surplus victuals to Thomas Gosling, and Gosling offered them for sale "the most parte of the bieffe and here was by ordre of thofficers of the same places burned & cast away for avoyding of infection to the people."[1] Presumably it was the shipping of provisions which spoiled them; beer and biscuit made at Portsmouth was more popular with sailors than that shipped from London, and was to be restricted in issue to masters and captains only.[2]

How far this contributed to the diseases which raged both in Boulogne and in the fleet it is impossible to say. At Boulogne an epidemic raged from early July to the end of August, loosely referred to as the plague.[3] On September 11th 13 of the 34 ships appointed to keep the Narrow Seas with Seymour were infected.[4] Of 12,000 men mustered on September 4th for an attack on Treport only 8488 were still healthy on the 12th and 13th.[5]

The nearest we come to an adequate description of the disease is Lisle's "swellynge in theyr hedes and faces, and in theyr legges, and dyvers of them with the bloody flyxe."[6] ("Bloody flux" is diarrhoea).[7] Accurate diagnosis is impossible on this basis. Alan Moore holds that it could be scurvy;[8] the

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1. E351/121 m3r.
2. L.P. XX ii 265
3. St. P X p 583
4. St. P I p 832
5. Ibid p 833
6. St. P I p 798 n1
7. R.S. Allison Sea Diseases pxxi
8. St. Bartholomew's Hospital Reports Vol. 47, 1911, p 73.

more recent objection that 3 months —— of vitamin deficiency have to elapse before scurvy appears can be countered if, as Sir Jack Drummond asserts, the normal diet of the period induce "a pre-scorbutic condition".[1] Surgeon-Commander Keevil does not commit himself about 1545, but evidently considers the disease similar to that of 1588, which he holds to be "food-poisoning in its most virulent form with rapid death from toxaemia".[2] Bad food was not necessarily the cause, though the most obvious one. The men were badly clothed, "those that be hole be veraye vnsightlye havyng not a ragg to hang vppon ther backes".[3] The ships were overcrowded.[4] Possibly in XVIth Century conditions it is in any case unnecessary to look for particular causes for "plague" when it was anyway almost an annual occurrence.[5] Nevertheless, the point remains that contemporaries believed that the provision of bad food was the cause; and that no investigation seems to have been made into the acknowledged deficiencies.

The Ordnance Office was hardly tested in 1545-6. Vital statistics about the fitting out of the fleet are absent. In the engagements English ships were not inhibited by a munition shortage, but the engagements were too short for this to be much of a test. When the French were off the Isle of Wight from July 18th to the 21st, the English did little but try to

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1. Sheldon Dudley, in R.S. Allison's Sea Diseases p viii; J.C. Drummond & A. Wilbraham The Englishman's Food (Rev. ed 1958) p 77.
2. J.J. Keevil Medicine and the Navy 1200-1900 I pp 61-2, 76
3. SP 1/207 f 27v.
4. Above p 17.
5. C. Creighton History of Epidemics in Britain I pp 282-300

lure them into the Solent, from which the French admiral was wisely dissuaded.[1] On July 22nd Lisle offered battle, and the French fled.[2] The fleets did not meet again until August 15th; but that night the French (succumbing to "plague" a little before the English) escaped under cover of darkness.[3] Lisle's landing at Tréport on September 2nd was only a "hit-and-run" attack.[4] There were no more major/engagements in the war, and no opportunity of knowing whether the English fleet had enough munitions to withstand an attack on the scale of 1588.

Much the same applies to Boulogne. There was a shortage of powder and armour at Boulogne early in 1545.[5] The town, nevertheless, was succesfully held against a large besieging army;[6] though things would have been different if the French fleet had succeeded in holding the Channel.[7]

Certainly the Ordnance Office was busy with preparations against invasion; a culverin and four slings, for instance, had hurriedly ~~to be~~ provided for Rye.[8] Munitions were demanded on a large scale for Portsmouth and the Isle of Wight.[9] Shot was ordered ~~demanded~~ from Parson Levett.[10] Supplies were hastily sought in the Netherlands (Charles V's qualms about neutrality being

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1. Ronciere Marine Française III p 424
2. Ibid
3. L.P. XX ii pp x-xi
4. Ibid pxii
5. L.P. XX i 813, 1122-3
6. L.P. XX ii pp xiii-xiv
7. St P V p 473
8. APC 1542-7 p 163
9. Ibid p 213; L.P. XX ii Appdx. 20
10. A.P.C. 1542-7 p 214

mollified by disguising arquebuses as barrels of sugar).[1] With the departure of the French fleet, what might have been the supreme test of English military preparations in the period was averted.

Peace followed on June 7th 1546. It was an uneasy one, th French believing that English building operations in Boulogne indicated a design to hold the town permanently, rather than to return it in 1554;[2] Somerset refused to allow the English to retaliate to considerable provocation, and war was staved off until August, 1549.[3] Nothing of interest happened in the war, and peace was restored in March 1550.

The French war of the 1540s, then, produces much the same sort of impression as the war in Scotland. The Boulogne exped-ition was hardly very glorious, especially if we switch our attention from the Main Battle favoured by the royal presence, to Norfolk's and Russell's "forgotten army" at Montrueil. Never-theless sufficient food and munitions were provided for the cap-ture of Boulogne. A fairly static, besieging army was of course an easier proposition from the supply point of view than an expedition into the interior like that of Suffolk in 1523; but against this must be set the ~~unexpected~~ unprecedented size of the army of 1544 If, as seems likely, an attack on Paris was never seriously considered, the King and Privy Council must take credit for restricting their aims to what was reasonably practical in the

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1. L.P. XX i 606, 676, 1248; C.S.P Sp VIII., 120.
2. SP 10/4/ f 74r
3. Pollard Somerset p 143.

circumstances. In 1545 the food provided by the government was bad, and may have caused the disease which afflicted both Boulogne garrison and the fleet. The question of whether the Ordnance Office could have matched up to the demands made upon it if the French fleet had proved itself a more serious menace must remain an open one. The supply machinery certainly creaked very badly. Yet, complete breakdown, on the 1523 model was avoided. Where moderate success is unusual, its attainment is a matter for congratulation.

(c) The Navy

The navy's activities have been sketched above; but it is useful to draw the threads together here. Briefly, its work consisted of two parts; guarding the sea-routes to Berwick and for a time, to Broughty, supporting military operations in the Scottish Lowlands, and engaging in a blockade of Scottish commerce, and of French communications with Scotland, on the one hand; and keeping the English Channel and (in 1545) repelling a French invasion, on the other.

In all this a large part was taken by merchant ships, taken into the royal service for the occasion. Obviously only a minority of the 104 ships assembled in 1545 were royal ships;[1] while most of the convoy work on the East Coast was performed by armed merchantmen.[2] As Michael Lewis would put it, the task ~~is~~ was that of the "Navy of England" rather than that of the Royal Navy alone.

On this basis it may be wondered whether the expanded royal fleet, and the installations provided to service it performed any useful functions at all. The answer is to be found in a consideration of the armament of a warship compared with a merchant ship. L.G. Carr-Laughton has conclusively shown that, at least as early as 1495 the concept of a war-ship was of a heavily armoured gun-platform, differing in essence

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1. L.P. AA ii 27

2. Scammell in Archaeologica Aeliana 4th Ser. Vol. 38, 1960, pp 85-93.

from the merchant ship.[1] Certainly the Newcastle merchantmen Elizabeth mounted 72 guns, 6 of them brass, which on the face of it compares very well with the 78 iron and 6 brass pieces of the royal Sweepstake.[2] But Sweepstake (300-350 tons) was about twice the size of the Elizabeth;[3] and it seems unlikely that the Elizabeth's brass guns were as powerful as the Sweepstake's 3 culverins, 2 demi-culverins and a sacre.[4] Moreove Elizabeth was exceptional in size amongst merchant ships,[5] while Sweepstake's armament was light compared with the larger royal ships, Anne Gallant or Peter Pomegranate, for instance, not to mention the huge Henry Grace à Dieu or Jesus of Lübeck.[6] The importance of royal ships, large and small, was, then, out of all proportion to their number.

Armed merchantmen were enough for most East Coast duties since, after the Great Michael was sold to France in 1514, the Scots possessed no large warships.[7] Even so, royal ships played their part in East Coast duties; Sweepstake, for instance, did not distinguish herself when she went aground at Tynmouth in 1544.[8]

In May 1549 11 royal ships were in service on the North Sea, mostly ships of moderate size (c.150 tons - e.g. the

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1. Early Tudor Ship-Guns (MM Vol. 46,1960,pp.242-85).
2. Scammell op.cit. Vol. 39 (1961) p.187; Soc. of Antiquaries MS 129B f 391r.
3. Anderson List No.51;L.P. XVIII i 59, XIX i 140 (6ii) shows the Elizabeth as c.140-160 tons.
4. The similar Newcastle ship James had only 1 brass gun, a falcon (Scammell op cit p.187)
5. L.P. XIX i 140 (6ii)
6. Soc. of Antiquaries MS 129 B ff 383-95
7. I.F.Grant The Social and Economic Development of Scotland (1930 ed.) p. 364.
8. Scammell op. cit.Vol.38 p. 92.

Marlion and Sacar) but also including the 400 ton Less Bark.[1] In addition the blockade of Scotland was enforced, and English coastal shipping protected from the French by a fleet of 8 small (60-120 ton) ships in the Narrow Seas, and 8 much larger ones (three of 350 tons or more) in the Irish Channel.[2] The Henry Grace a Dieu (now renamed the Edward), the Jesus of Lubeck and so on were at Gillingham or in the Thames, obviously kept in reserve for a full-scale challenge by the French fleet, as in 1545.

How successful, then, was the navy? A large-scale sea battle with the might of France was, of course, only likely in 1545 and even then it did not in fact materialise. Except for a brief period in August 1545 communications with the English footholds ~~with~~ on the continent were never severed, as they were to be in 1558, and therefore these footholds were maintained. Moreover, the great army of 1544 crossed and re-crossed the Channel without any molestation from the French. French communications with Scotland, on the other hand, were never completely cut off. Five French ships, for instance, arrived at St. Andrews in May 1544, just before Hertford's invasion;[3] nor could the English prevent the arrival of French galleys which

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1. B.M. Lansd. MS 2 ff 66v-67r.
2. Ibid ff 67r-68v
3. Correspondence of Mary of Lorraine p 61.

forced the murderers of Cardinal Beaton, who were holding St. Andrews in the English interest, to surrender in 1549.[1] Even more important was the arrival of a French fleet in the Firth of Forth in June 1548 with 6000 men;[2] by bolstering Scottish morale this probably foiled Somerset's schemes when they were nearest to success.[3] Again, the fleet could not guarantee absolutely the sea-lines to Broughty; Grey of Wilton wrote to Luttrell at Broughty that he could not expect any provisions for some time "bycause we dare not nor may yet adventure on the seas with victuallers or passengers, the Frenche flete being owerlie loked for".[4] The English never possessed a complete command of the sea (if they had, Scottish resistance would probably have been overcome); but they did have a predominance, one sufficient to keep open their communications with Calais and Boulogne, with Berwick and Broughty, with only occasional interruptions. On the other hand, Franco-Scottish communications, though never completely cut off, were only maintained with difficulty; Beaugué, for instance, treats a voyage from France to Scotland as a great risk, a running of the gauntlet.[5] Scottish coastal communications, too, were difficult; as when in 1549 Dunbar had to be victualled by

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1. Ibid pp 167-8.
2. P. Hume Brown History of Scotland, II pp 32-3
3. The vigorous siege of the English at Haddington, which followed the French arrival, must have put heart into the Scots, and resulted in the Treaty of Haddington, by which Mary was promised to the Dauphin (Hume Brown II p 33). The subsequent French attack on the English borders must also have improved Scottish morale. (Beaugué Guerre d Escosse, (1862ed) pp 209-224).
4. Correspondence of Mary of Lorraine, No. CLXVII
5. Guerre d Escosse, pp 184-7 C.p. the list of French prizes

(over)

land, past the English-held fort of Haddington "for their victuelles by See is interrept by our Navy".[1]

The navy, then, had played its part in a respectable way. While positive evidence is lacking, there seems no reason to suspect that ships were maintained or fitted out inadequately, or that the naval dockyards functioned inefficiently. The Navy Board, like the other supply services had on the whole, done its duty in the war of the 1540s.

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contd. from p. 289

5. taken by Sir Thomas Wyndham (H.A. Wyndham A Family History 1410-1688 pp 80-1.)

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1. B.M. Calig. MS BVll f 386v.

(d) Conclusion

Quite clearly the success of failure of military expeditions depended to a very large extent on the quality of the over-all planning, as the contrast between 1513 and 1523 made plain. From this test the Privy Council in the 1540's emerges quite well. Apart from the invasion of Scotland in 1542, the declared objectives were always within the bounds of possible attainment, while careful planning of the provision of food and munitions is apparent. The results, the capture of Boulogne and the occupation of Scotland, were considerable achievements.

What part in all this had the bureaucratic changes which we have shown as taking place in the 1540's? There had obviously been no sudden transformation to a well-run supply service; victualling in 1545 would be a rude reminder if one were tempted to think so. But the increase in the scale of warfare, even compared with 1523, obviously demanded considerable changes in the organisation of the supply services. These changes had taken place, and in the event provided a reasonable fleet and passable munition supplies. Without them, the task of the Privy Council would have been far more difficult, if not impossible; without careful planning by the Council, on the other hand, administrative reform would ~~shave~~ have been valueless.

C O N C L U S I O N

The first half of the XVIth Century was a period of far-reaching changes both in the scale and in the technique of warfare, which were calling forth a far greater effort on the part of the state throughout Europe. What we have been describing was the response of the English government to those changes.

Yet a challenge does not automatically call forth a response. States and individuals may respond only after a good deal of time has been wasted, after a series of crushing defeats or continuing humiliations. Their response may be inadequate, or it may be too late. It may be manifestly inferior to other lines of action open to them. In certain circumstances they may not respond at all. To point to the general problem facing Henry VIII's ministers, then, is not to make further search unnecessary. It is still necessary to pin down the form which their response took, to see who was responsible for it, to examine how successful they were. The long-term explanation does not make the short one irrelevent.

Yet sketching the matter in terms of "problems to be faced" is perhaps to over-rationalise it. As George Unwin said

"Policy in the sense of a deliberate, consistent, and far-sighted scheme..is more often an illusion of the scholarly mind than a fact of history...Policy, as actually found in history, is a set of devices into which a Government drifts

under the pressure of practical problems, and which gradually acquire the conscious uniformity of a type and begin at last to defend themselves as such."[1]

Henry VIII's ministers were doubtless more immediately concerned with safeguarding themselves from the King's whims, planning a forthcoming expedition, improvising machinery to deal with the "augmentation" of the royal revenue, and intriguing against each other, to devote themselves wholeheartedly to the foundation of an administrative system consciously designed to serve for the forseeable future.

Charting an exact course between these extremes is impossible in the absence of the private papers of the ministers concerned. But some sort of conclusion, albeit a provisional one, can be set out on the basis of the evidence reviewed above.

As far as _matériel_ was concerned, it seems clear that there was some sort of realisation that the scale of war was growing, that England had become dangerously dependent on foreign sources of supply, and might well be brought to her knees if the threatened Franco-Habsburg _rapprochement_ had ever materialised. Another fear may also have been present here, especially in the 1540s, the fear that the Crown's credit might sink so low that supplies would be unobtainable. There does seem to have been an attempt to attract foreign craftsmen,

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1. _Studies in Economic History_ p 184

to foster the growth of an up-to-date gun-industry, and to discover native copper and saltpetre supplies. The fact that this attempt was a continuous feature of the reign, and that the King displayed a personal interest in military technology, strongly suggests that the driving-force here was Henry himself. How powerful a driving-force is a different matter. The unsuccessful search for copper, the failure to discover the artificial method of making saltpetre, suggests that it was not in fact very strong. In this field, at least, Henry's ideas were right, but not pursued with much vigour.

On the administrative side the question is more complex. The general tenor of development was empirical; more ships were built, the stock of artillery became larger, additional officers were appointed to deal with them, and the Navy Board and the Board of Ordnance took shape gradually and naturally out of the confusion. Certainly it is impossible to see any definite single plan behind the gradual development from the appointment of John Hopton in 1514 to the codification of the duties of the Navy Board in Elizabeth's reign. On the other hand there is evidence that in the late 1530s there was a distinct attempt to pull the various developments in the Navy, the Ordnance, and the Works into some sort of line, to lay down a distinct model of a board with joint responsibility, and,above all, with centralised finances, to replace the system of ad hoc payments which was threatening to get out of hand. If this supposition is correct, many of the changes eventually carried through in the 1540s and later, were the continuation,

and perhaps the modification, of a scheme drawn-up under Cromwell's aegis. Even if this hypothesis is not accepted, however, it is clear that there was a good deal of "tidying-up" of the existing structure in the 1540s, and that this was the reflection of ~~a~~ the more business-like approach to administration which had established itself by then.

How did these changes work out in practise? As far as military autarky is concerned, the question was, of course, never raised. Throughout the period, with a brief exception, the Netherlands market remained open, communications with the Baltic were unimpeded, and the Crown's credit never completely disappeared. We find no case of military action inhibited because of a national shortage of guns or sail-canvas or powder. The nearest approach to such a situation was the siege of Boulogne, accompanied as it was by feverish buying in the Netherlands. Nevertheless, the potential danger was always apparent.

Once again, the answer on the administrative side is less straight-forward. Quite clearly it would be foolish to say that disaster was certain if a large-scale military venture was administered by ad hoc means. The modest triumph of 1513 proves the contrary. It would be equally foolish to imply that soundly-organised bureaucratic departments guaranteed success. The loss of Calais is enough to show that they did not. Part of the difficulty here is, of course, that military planners are not faced with a static problem; the fact that military administration was also being modernised in France meant that

England had to undergo considerable changes if only to avoid dropping too far behind her principal opponent. Nevertheless it is clear that the success of 1513 was only made possible by great exertions on Wolsey's part, and by the limited aims of the invasion of France. By the 1540s the scale of events had again increased; and it seems unlikely that the siege of Boulogne or the occupation of Scotland in Edward VI's reign would have been possible under the old administrative conditions.

This is not merely a matter of the changes in the organisation of the Navy and of the Ordnance. Indeed the most important of the supply services, victualling, remained "unorganised" throughout. Rather we are referring to changes of which these reforms are the symbol, and which are perhaps misleadingly forced into the straight-jacket of "household" and "bureaucratic" government. Quite clearly the personality of the leading ministers remained of overwhelming importance. The effect of this is obvious enough for the 1540s. The King could not be prevented from following a policy which almost ~~rui~~ ruined the Crown's finances in return for the possession of a second continental foothold of no commercial or strategic importance. The mutual jealousy of members of the Council, and the jostling for the King's favour, presumably played their part in preventing opposition to the royal wishes becoming manifest. Within the administration itself, as Professor Hurstfield has shown, corruption was rife in Edward

VI's reign;[1] while our study of the inflation of officials' fees would suggest that the rot had set in before this, in the declining years of Henry VIII. Yet in spite of corruption, personal jealousies and ideological vendettas, the ministers of the 1540s achieved considerable success in the execution, if not in the determination, of policy. There does seem to be a greater air of efficiency, a more bureaucratic outlook, if not a more bureaucratic organisation, in the 1540s, contrasting with the more "amateur" aspect of Wolsey's time. It is not a question of an absolute contrast, but of shift of emphasis. What had caused the change? Was it the upheaval of the Henrician Reformation? Was it the influence of Thomas Cromwell, acting at long-range even on his enemy Bishop Gardiner? To answer these questions it would be necessary to embark upon a study of the Privy Council in the 1540s, a body which has been so far more a convenient target for abuse than a subject of analysis. A "Tudor Revolution" is too sweeping a phrase for what we have been describing, implying as it does a once-for-all change of secular importance. Rather, our conclusion must be that government, faced with a rapidly changing situation, had managed to adapt itself remarkably successfully; an achievement the more noteworthy when the fiascos of the earlier part of the period are borne in mind.

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1. Corruption and Reform under Edward VI and Mary (E.H.R. Vol. 68, 1953, pp 22-36).

A P P E N D I X A

The various lists seem to show considerable disparities, but in fact they agree quite well. They are summarised as follows:-[1]

(A) L.P. XVIII.ii 526. Henry VIII was to supply 7000 horse and 35,000 foot; in this total was included

(i) 2000 horse and 2000 foot at Charles V's expense.

(ii) An unspecified number of mercenaries at Henry's expense. The King tried to raise 1500 horse and 6000 foot in Germany.

(B) L.P. XIX. i. 273 (1); a total (Englishmen only) of 3684 horse and 31,955 foot. If we add foreign troops as above, we get 7184 horse, and 39,955 foot. This list is probably an early compilation allocating the "power" of various gentlemen to the wards, and allowing room for alterations.

(C) L.P. XIX i 273 (5). A rough calculation, in French, in Masons hand[2], giving a total of 42,000, including Almains (which presumably in this case includes the Emperor's contingent).

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1. The MS versions have been examined in all cases, but only quoted if the L.P. version is inadequate or incorrect.

2. French secretary, and clerk to the Council (L.P. XIX, index).

(D) L.P. XIX i. 273 (6), a calculation of wage-costs, which gives 5226 horse and 33,639 foot. Mercenaries are included, the imperial contingent not. Adding the latter, the total is 7226 horse and 35,639 foot.

(E) L.P. XIX i.274, 275 (2), 276, lists of the three wards (Englishmen only), 4078 horse, 28,311 foot. Adding mercenaries and imperial troops, as above, 7578 horse and 36,311 foot.

All except (B) therefore agree quite well. The King probably tried to fulfill his treaty obligations, of 7500 horse, and 35,000 foot.

Officers, however, are not included in these totals. According to (D) they totalled 778 captains and petty-captains. I have added a similar proportion to the imperial troops, and assumed that the hire of mercenary companies included officers.

The auxiliary services for victuals and tents are included in these figures (the names in L.P. XIX i. 275 (5) (6) appear also in 275 (1)). The ordnance does not seem to have been included in these totals, and numbered 4552 (L.P. XIX i. 272(6)).

Thus the total size of the army is some 47,900. This, of course, is a theoretical maximum. Presumably numbers were in fact reduced by desertion, sharp practise on the part of captains and so on.

No English armies which crossed to France in earlier campaigns were as large as this. (J.H. Ramsay The Strength of English Armies in the Middle Ages, in E.H.R. Vol 39, 1914, pp 221-7; A.E. Prince The Strength of English Armies under Edward III, in E.H.R. Vol 46, 1931, pp 353-71).

A P P E N D I X B

Types of Guns

This is an extremely confusing subject. Changes in design were frequent, the same name is often found describing two entirely different types of gun or one type is known by several names. The confusion is the worse because the article Early Tudor Ship-Guns (M.M. Vol 46, 1960, pp 242-85) was edited by Professor M. A . Lewis from working-notes left behind at his death by L.G. Carr Laughton, to which Lewis has added additional comments. Lewis' own Armada Guns is also useful, but refers, of course, to a later period.

The exact specifications of each type have been discussed, in so far as they can be discussed at all, in those works. For our purpose only a broad classification in terms of order of magnitude is necessary.

In general, early XVIth Century guns can be divided into three main classes: (Laughton p 271; Lewis pp 15-39)

(a) Cannon - medium-barreled, medium-range guns firing heavy shot.

(b) Perriers - short-barreled, short-range guns firing medium shot.

(c) Culverins - long-barreled, long-range guns firing light shot.

Within these classes, guns can be ranged in order of size as follows, (approximate size of shot in pounds in parentheses). (Laughton passim; Lewis pp 15-39).

Cannons		Perriers		Culverins	
Cannon	(50)	Cannon-perrier	(24)	Culverin	(17)
Demi-cannon	(32)	Port-piece	(8)	Demi-culverin	(9)
				Saker	(5)
				Falcon	(3)
				Falconet	(1½)
				Base	(½)

Other names also occur.

Bombard — Apparently a synonym for a large cannon, e.g. the 12 Apostles, or Mons Meg. (c.p. Laughton pp 261-2).

Curtow — Another synonym for a cannon, probably smaller than a bombard, and possibly the ancestor of the cannon-perrier (Laughton pp 264-6).

Fowler — Very small guns, probably shooting "dice of iron" (Laughton p 268).

Sling — A very ambiguous term; a "great sling" might have been as large as a 60 pdr. The term had changed to cover a very small "man-killing" gun by the end of the century, which may indicate that the large sling of our period was a somewhat ineffective piece. (Laughton pp 275-8).

Serpentine — Even more ambiguous; some might be as large as a demi-curtow, but more frequently extremely small guns, shading-off into arquebuses, or large hand-guns, (Laughton pp 272-4).

A P P E N D I X C

Guns supplied by Cornelius Johnson

August 1512 - February 1513

From B.M. Stowe MS 146 ff 12-7, 26-33, 41-4.

August - November 1512

Folio	Date	Nos. and type of guns	Weight Cwt	Lbs.	Price £	s	d
12r	16/8/12	2 stone guns	3	32	2.	9.	3.
12r	16/8/12	2 serpentines (X)	5	0	3.	15.	0.
12v	1/9/12	1 long sling (X)	10	90	8.	2.	0.
14r	—	6 serpentines (X)	15	38	11.	10.	0.
14v	23/11/12	1 long sling	21	80	10.	17.	4.
14v	23/11/12	1 long sling (X)	29	39	27.	12.	8.
			85	55	64.	6.	3.

20th February 1513

Folio	Nos. and type of guns	Weight Cwt	Lbs.
41r	50 serpentines (X)	171	6
42r	14 long slings (X)	222	6
42v	14 stone guns (X)	53	24
		446	36

(X) 2 Chambers per Gun.

6 small new chambers (109 lb. total weight) were also made for February 20th (f 27v).

The cwt. is reckoned at 112 lb. (f 43r)

A P P E N D I X D

Shipwrights for the Henry Grace a Dieu

E36/5 ff 179-88 lists by names all shipwrights who came to Woolwich to work on the Henry Grace a Dieu and three galleys, and on "the Barkes made at Smallhede" (f 177r). The list gives the town from which they came, the mileage, and their conduct money.

34 are noted as going first to Smallhythe. 38 others came also from Smallhythe to Woolwich, either shipwrights normally resident at Smallhythe, or possibly men who had already been paid for their journey there from their home ports.

The list of towns gives some idea of the "penny-packet" nature of the shipbuilding industry. In the original document the towns are not arranged in order. I have compiled a list of towns (under their modern spelling if this is obvious, reproducing the original spelling, in the form in which it first appears, in case of doubt) with the number of shipwrights from each, and have arranged them in regions. Shipwrights indicated as coming, e.g. "fro beside plymouth" have been included under Plymouth if the name of the village is not given, and similarly for other places.

Perhaps the biggest concentration of shipwrights were normally to be found in the Thames Estuary; these shipwrights obviously do not appear in this list of conduct money payments.

West Country

Otterton (Devon)	6	
Beer (Devon)	2	
Dartmouth	24	Including 2 from "dedbroke beside dertmouth"
Plymouth	9	
Fowey	14	
Exeter	12	
"kyneton beside Excetor"	1	(Kingsteighnton, Devon?)
"lynton beside Excetor"	2	(Lynton, North Devon?)
"Colleton Royall besides Excetor"	2	(Collaton St. Mary, near Paignton?)
Saltash	2	
"bedford besides Barstaple"	6	Bideford
Bodmin	3	
St. Dominick (Cornwall)	1	
"Penton beside Excetor"	1	(Paignton?)
Exmouth	1	
Bristol	1	
St. Ives	1	
	88	

South Coast

Southampton	4	
Portsmouth	16	
"Southwyk"	3	(joiners) Southwick (Hants.)
Poole	1	
"Smalhede"	38	Smallhythe (Kent)
Canterbury	2	
Tenterden (Kent)	2	
Sandwich	1	
	67	

East Anglia

Ipswich	25	
"brekolse" "brekilsey"	3	(120 miles to Smallhythe+)
Salcott (Essex)	1	
Dunwich (Suffolk)	15	
Yarmouth	15	
"Southold"	10	(Southolt in Suffolk?: 94 miles to Woolwich+)
Lynn	10	
Holme (Norfolk)	2	
Thornham (Norfolk)	1	
Hempstead "	8	
"leveestoke"	1	(Lowestoft? 100 miles to Woolwich+)
"levistofte"	1	(Lowestoft? 96 miles to Woolwich+)
Salthouse (Norfolk)	2	

+ Distance for which conduct money paid.

(over)

East Anglia (contd.)

Harwich	2	
"Cetyrsale"	1	?
Colchester	1	
	97	

North-East

York	1
Hull	7
Beverley	2
	10

A P P E N D I X E

PRINCIPAL OFFICERS OF THE NAVY 1509-50

Lords Admiral

	Appointed	References
John de Vere, Earl of Oxford	21-9-1485	CPR 1485-94 pp 22-3
Edward Howard	19-3-1513	LP I i g. 1732 (40)
Thomas Howard (subsequently Earl of Surrey and Duke of Norfolk)	4-5-1513	LP I ii g.1948 (13)
Duke of Richmond	16-7-1525	LP IV i 1500
William Fitz William, Earl of Southampton	16-8-1536	LP xI g. 385 (15)
John, Lord Russell	18-7-1540	LP xV g.942 (117) see LP xV p.xlii
Edward Seymour, Earl of Hertford	28-12-1542	The first date he is mentioned as such; no patent; see LP xVII 1240; xVIII i 19.
John Dudley, Viscount Lisle	26-1 -1543	LP xVIII i g.100 (27)
Thomas, Lord Seymour	17-2 -1547	CPR 1547-53 i p.189 [1]
John Dudley, Viscount Lisle, Earl of Warwick	28-10-1549	CPR 1547-53 ii p.245
Edward, Lord Clinton (later Earl of Lincoln)	14-5 -1550 (till 1553 & from 1558-85)	CPR 1547-53 iii p. 252 GEC vii pp 690-1

Clerks of the Ships

Robert Brigandine	1-5-1495 (patent renewed 28-7-1509)	Oppenheim: Accounts and Inventories pp.135-8 LP I i g.132 (101)

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1. Until his attainder (27-2-1549).

Clerks of the Ships (contd.)

	Appointed	References
Thomas Jermyn	3-4-1526	LP IV i g.2132 (3)
Leonard Thornton	25-10-1532	LP V g. 1499 (31)
Edmund More	5-2-1538	LP XIII i g.384 (24)
Edward Waters	28-12-1540	LP XVI g.379 (56)
Benjamin Gonson	1545?	No grant;referred to as such in LP XX ii Appdx.27 iii, iv)
Richard Howlett	25-12-1545 (at least until 1558)	LP XXI i g. 718 (2)

Treasurers

	Appointed	References
John Hopton(x)	12-1-1514	LP I ii g 2617 (12)
William Gonson(x)	29-9-1524	LP IV i g 693 (25)
John Wynter	1544	No grant. See LP XIX ii 777
Robert Legge	25-12-1545	LP XXI 1 g 718 (8)
Benjamin Gonson	8- 7-1549	CPR 1547-53 III p.164

(x) Officially "Keeper of the Erith Storehouse".

Clerks Comptroller

	Appointed	References
John Honton(x)	12-1-1514	LP I ii g.2617 (12)
Thomas Spert	26-10-1524	Warrant dormant to the chamber (see LP XV g.942 (104))

(x) As Keeper of the Storehouse.

Clerks Comptroller (contd.)

	Appointed	References
John Osborn	24-7-1540	LP XV g.942 (104) (reversion of the office)
Robert Legge	late 1544	BM Add MS 7968, in which Legge as Comptroller signs Benjamin Gonson's accounts.
William Broke	25-12-1545 (till 1562)	LP XXI i g.718 (10)

Surveyors and Riggers

	Appointed	References
William Broke	1545	LP XX ii Appdx.27iii,iv
Benjamin Gonson	25-12-1545	LP XXI i g.718 (6)
William Wynter	25-12-1548	CPR 1547-53 II p 178

Clerks of the Stores

	Appointed	References
Richard Howlett(x)	17-3-1542	LP XVII 220 (61)
William Wynter	25-12-1545 [1]	LP XXI i g.718 (2).

(x) As clerk to the Clerk Comptroller)

Vice-Admirals

	Appointed	Reference
Sir Thomas Clere	Early 1545 (to 1552)	LP XX ii Appdx.27iii,iv patent from 25-12-1545 LP XXI i g.718 (5)

1. Date of Howlett's appointment as Clerk of Ships. For Wynter as Clerk of Stores in 1546 see LP XXI i 1334.

Master of the Ordnance

	Appointed	Reference
Sir William Woodhouse	Early 1545 (to 1552)	LP XX ii Appdx.27iii,iv (patent from 25-12-1545, LP XXI i g.718 (1))

A P P E N D I X F

NAVAL EXPERIENCE OF LORDS ADMIRAL

Sir Edward Howard commanded the fleet in 1512.[1]

Sir Thomas Howard served with his brother against the Scottish privateer Andrew Barton in 1511.[2]

William Fitz William, Earl of Southampton, was wounded off Brest in 1513, and was vice-admiral in 1522 (LP III ii 2213; GEC Vol.XII pt. 1, pp 118-22)

John, Lord Russell accompanied Surrey in his attack on Morlaix in 1522 (DNB)

John Dudley (Lord Lisle) commanded a small fleet in 1537 (LP XII i 457, 601)

Thomas, Lord Seymour, had commanded fleets in 1544 and 1545 (DNB)

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1. Rymer XIII p.326

2. DNB (Edward Howard) is sceptical about the tradition preserved in Holinshed, but Holinshed's story seems to be borne out by the issue of money to Edward Howard to prepare ships to safeguard the Merchant Adventures against rovers, August 1511 (LP I i 1463 vii).
   C.p. also the references to the extensive ballad literature (W. Stanford Reid Skipper from Leith p 95).

A P P E N D I X G

VICE-ADMIRALS OF ENGLAND

About 1524-5 Sir Francis Bryan was evidently acting as deputy to the Earl of Surrey, as Lord Admiral. He was addressed by Hopton and William Gonson as "viceadmyrall of England", in a letter concerned with discovering the King's pleasure as to how an unpaid merchant was to be satisfied.[1] On another occasion, in January 1525, "my lord lysle & sir ffraunces Bryan knight vice admyrall of Englande" were taking inventories of the Portsmouth breweries.[2] These are, however, the only references to Bryan as Vice-Admiral of England. No patent survives of the appointment, which was presumably a temporary one during the Admiral's absence in the North.[3] Bryan was similarly appointed Vice-Admiral in 1543 when Lisle was engaged in the North.[4] The temporary arrangements do not invalidate the contention that the office of vice-admiral, as an institution, dates from 1545.

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1. ~~PRO~~ E101/674/21 f24
2. SP I/33 f 121 (LP IV i 1020)
3. DNB (Thomas Howard)
4. LP XVIII i 19

A P P E N D I X H

ORDNANCE OFFICERS

Masters

	Appointed	References
Sir Sampson Norton (X)	12-11-1494 (arrears from Michaelmas 1493)	CPR 1494-1509 pp 24-5
Sir William Skeffington	30- 5-1513	LP II i 530
Sir Christopher Morres	8- 2-1536	LP A g 392 (17)
Sir Thomas Seymour	18- 4-1544 (arrears from Michaelmas 1543)	LP AIA i g 442 (23)
Sir Philip Hoby	26- 3-1547	CPR 1547-53 I p 101

(X) Robert Clifford was subsequently granted the same office (CPR 1494-1509 p 37); but Norton resumed it later without further patent.

Lieutenants

	Appointed	References
Sir Christopher Morres	28- 4-1544 (arrears from Michaelmas 1543)	LP AIA i g 278 (10)
Sir Francis Flemming	9- 4-1545 (arrears from Michaelmas 1544)	LP AX i g 620 (10)

Surveyors

	Appointed	References
Henry Johnson	26-3-1537	LP AIII i g 384 (26)
Anthony Anthony	23-1-1549	CPR 1547-53 I p 355

Clerks

	Appointed	References
William Huxley	Before 1509	LP I i g 1004 (4) No reference in Patent Rolls
John Rogers	28-2-1544 (arrears from Michaelmas 1543)	LP XIX i g 141 (72)

Yeomen

	Appointed	References
Elias Hilton	Before 1509	LP II i p876 No reference in Patent Rolls.
Leonard Skeffington(X)	5-4-1527	LP IV ii g 3087 (5)
Thomas Skeffington	1544-5 (no date)	LP XX i g 621 (10)

(X) Jointly with Hilton, who died in 1528 (Cant C.C. 42 Porch).

A P P E N D I X I

BM MSS Sloane 871 ff 129-51, and Add 6176 ff 29-39

Sloane 871 ff 129-51 seems to be the MS referred to as "Lynewray's book" in Brigadier O.F.G. Hogg's "Notes on the Board of Ordnance" (pp 124 ff). It is entitled "The Coppie of Mr Lynewrayes Booke for reformation of abuses in the Office of the Ordnance".[1]

Sir John Lynewray was Clerk of Deliveries in the Ordnance Office at the end of Elizabeth's reign, and subsequently Surveyor He was dead by 1606.[2] The bulk of the MS consists of his report on abuses, with historical argument,to back it up, culled apparently from records then extanct in the office.[3] He was especially intent on proving that his office of Clerk of Deliveries existed in the mid XVIth Century, and in the course of his argument provided some interesting information about the internal workings of the office in the 1540s.[4] Lynewray also included certain proposals for reforming the customs.[5]

The copyist has brought the lists of offices up to date to the early years of Charles I, and has incorporated additional

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1. CSP Dom 1598-1601 pp 415-6; Sloane 871 f 147r.
2. British Records Association, Index Library Vol 43, 1912, p 292.
3. ff 144-5
4. f 145v; for Lynewray's quarrel with his colleagues see CSP Dom 1597-1601 pp 415-6, HMC Hatfield Vol 11 pp 551, 560.
5. f 133

matter.[1] He has also added a cynical comment to Lynewray's suggestion that fraud would be avoided if the Clerk of Deliveries were given full powers to exercise his office.[2] It is presumably the copyist who added the transcript of various letters about Ordnance affairs in the period 1590-1601.[3]

Add MS 6176 ff 29-39 is another version of the same, omitting a good deal of the more extraneous matter, but adding a list of fees in the Ordnance Office in Skeffington's day, and lists of some of the ordnance artificers.[4] These presumably were either compiled by Lynewray, or by the copyist from the same records.

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1. ff 136-7
2. f 130r
3. ff 145-7
4. ff 29, 38-9

A P P E N D I X J

(BM Add MS 6176 f 29)

"Officers of Thordnance with their Allowaunces before the full and perfect Creaton of the same Office by patent.

Allowed to Sir William Skevington knight Master of Thordnance for himselfe by the day	vi^{s} viij^{d}
To viij of his servants pro diem a peece	viij^{d}
Allowed William Uxley Clarke for wages pro diem	ij^{s}
To his Clarke by the day	viij^{d}
To henry Welles Clarke pro diem	viij^{d}
To Jeffery hues Clarke pro diem	viij^{d}

Clarkes in tempore King Henry the Eight: within thoffice of his Majesties Ordynance viz.

Allowed to John Shadwell of London Scrivener for wrighteing of Indentures & engrosseing of Bookes of deliveryes pro diem	viij^{d}
John Rogers Clarke pro diem	vj^{d}
John Barber Clarke pro diem	vj^{d}
William Beyerley Clarke pro diem	vj^{d}"

A P P E N D I X K

MASTERS OF THE ARMOURY

	Appointed	References
Sir Edward Guildford	1-12-1493	CPR 1485-94 p 467
(jointly with his father, Sir Richard, who died in 1506 - q.v. D.N.B.)		
Sir John Dudley	29- 6-1534	LP VII g 1026 (15)
Sir Thomas d' Arcy	9- 6-1544	LP XIX i g 812 (30)
	(to 1553 - c.p. CPR 1553-4 p 199)	

A P P E N D I X L

OFFICERS' FEES

The sums given are of the total fees paid by the Crown, neglecting official perquisites like "poundage" for treasurers. They include allowances for expenses, and for payment of clerks etc., (except for the figure for the Master of the Ordnance in the 1550s, which as given here, does not include the fees of the Clerk and Yeoman of the Ordnance, though in fact these were included on the Master's patent).

References are given for the fees of the 1530s. Those of 1550 are taken from B.M. Harl MS 7383 ff 5-7. Those of the 1630s are taken from Aylmer The King's Servants, pp 207-8.

Navy	1530s		1550	1630
Treasurer	£18. 5. 0	LP IV i g 693(25)	£220.13. 4	£221-271
Comptroller	33. 6. 8	LP xV g942(104)	155. 6. 8	155
Surveyor	-	-	145. 6. 8	145
Clerk	27. 7. 6	LP IV i g2132(3)	99.16. 8	100
Lieutenant (Vice-admiral)	-	-	277. 8. 4	Not given
Master of Naval Ordnance	-	-	238.18. 4	Office abolished
Ordnance				
Master	36.10. 0	LP A g 392 (17)	151.11. 8	Not given
Lieutenant (Mr.	-	-	66.13. 4(A)	139
Surveyor	36.10. 0	LP XIII g384(26)	36.10. 0(A)	92.10. 0

(A) The Lieutenant and Surveyor of Ordnance also received £20 p.a. jointly for acting as treasurer. (E351/2614)

Ordnance (contd.)	1530s		1550	1630
Yeoman	9. 2. 6.	LP X g 392 (17)	9. 2. 6.	Office Abolished
Clerk	9. 2. 6.	LP X g 392 (17)	12. 3. 4.	£105

A P P E N D I X M

Provisions for Berwick and Boulogne.

The accounts show receipts from particular purveyors, but the ports from which they operated are easily ascertainable from their individual accounts in the series E351. The list is only intended to give a rough idea of which parts of the country contributed most to military victualling. "Norfolk", for instance, includes all grain shipped from Lynn, much of which originally came from Huntingdon, Bedford, Cambridge etc. Odd fractions of units have been disregarded.

(i) Provisions supplied to Berwick, 14-10-1546 to 18-3-1549 (E351/127).

Wheat (qrs.)		Malt (qrs.)	
In store	529	Store	1546
Norfolk	5925	Norfolk	12,932
Portsmouth	62	Newcastle	630
Newcastle	141	Portsmouth	131
Bought locally	559	Bought	488
Taken from a Newcastle ship	140		

Oats (qrs.)		Beans (qrs.)	
Norfolk	2691	Store	422

Miscelyn (mixed rye and wheat)(qrs.)

Store	67
Norfolk	70
Bought	26

Beer (tuns)

Newcastle	22
Yarmouth	32
Dover	24
Hampshire	195
London	217
Harwich	93
Hull	284
Brewed locally and at Newcastle	5706
Bought	85

Meal Flour (barrels)

Store	555
Norfolk	1500
Newcastle	168
Hull	434
Harwich	864

Cheese (wey)

Suffolk	1950
Hull	95
London	124

Butter (barrels)

Suffolk	587
London	31
Hull	104

Stockfish

Suffolk	24,220
Norfolk	10,000
Portsmouth	36,000
Newcastle	407
London	13,200

Salt beef: Various quantities from Newcastle, Norfolk, Dover, Harwich, London and Hull.

Saltfish (different sorts specified); c7000 from Hull, 8000 from London, smaller amounts from Norfolk and Newcastle.

Red-herring: Bought locally.

Oxen: 1328 bought, c2100 from purveyors, 199 from Archbishop of York

Hops: From Portsmouth, London and Norfolk.

N.B. Most of the supplies from Newcastle originated in fact further south, at Hull or in Norfolk (E351/122).

(ii) Provisions for Boulogne, 23-10-1544 to 27-8-1545 (E351/180).

(fractions of units disregarded, as also provisions found in Boulogne and those sent from Calais)

Wheat (qrs.)

Norfolk	2363
Kent	586
Hampshire	1171
London	401

Flour (qrs.)

Kent	161
Hampshire	1048
Hull	582
Norfolk	38

Barley (qrs.)

Hampshire	401

Malt (qrs.)		Oats (qrs.)	
Kent	96	Norfolk	1317
Norfolk	2995	London	1286
London	2668	Kent	371
Hampshire	986		

Beer: Made at Boulogne

Hops: Almost all from London

Beef: Mostly from London

Bacon: Mostly from Hampshire

Cheese (wey)		Butter (barrels)	
London	655 (X)	London	144 (X)
Suffolk	205	Suffolk	70

(X) From Malby who purveyed it from Essex, Suffolk and Norfolk. (E351/186).

A P P E N D I X N

Effect of Military Activity on Price of Wheat

Harvest Years	Price [1] (shillings)	High [2] price years	Military activity	Proclamations [3]
1500-1	7.30			
1501-2	7.67	✓		
1502-3	8.46	✓		
1503-4	7.46	✓		
1504-5	5.81			
1505-6	5.67			
1506-7	5.50			
1507-8	6.56	✓		
1508-9	4.76			
1509-10	4.01			✓
1510-11	4.50			
1511-12	6.74			
1512-13	8.49	✓	✓	✓
1513-14	7.10			
1514-15	6.05			

1. Price of wheat in quarters. Averages calculated by Y.S. Brenner from the Beveridge price material, (thesis cited pp 140-1). I must thank Mr. Brenner for allowing me to quote so very extensively from his thesis, and Lord Beveridge and Professor Postan (for the Economic History Society) for permission to look at the price material.
2. As defined by Brenner, on basis of their being higher than the average for the decade (p 108).
3. Years of proclamations to control the price of food, forbid exports etc., from Steele Proclamations.

Harvest Years	Price (shillings)	High price years	Military activity	Proclamations
1515-16	7.30			
1516-17	6.30			
1517-18	6.52			
1518-19	5.74			
1519-20	8.25	✓		
1520-21	11.51	✓		✓
1521-22	9.83	✓	✓	
1522-23	5.98		✓	
1523-24	6.44			
1524-25	5.89			
1525-26	5.73			
1526-27	6.53			
1527-28	13.37	✓		✓
1528-29	10.32	✓		—
1529-30	9.14	✓		✓
1530-31	7.52			✓
1531-32	9.23	✓		✓
1532-33	8.82	✓		
1533-34	7.91			
1534-35	6.97			
1535-36	12.67	✓		
1536-37	9.17	✓	✓	✓
1537-38	6.44			
1538-39	6.69			
1539-40	7.03			

Harvest Years	Price (shillings)	High price years	Military activity	Proclamations
1540-41	8.14			✓
1541-42	8.79			
1542-43	8.46			
1543-44	10.71	✓*	✓	✓
1544-45	11.26	✓ *	✓	✓
1545-46	17.31	✓	✓	✓
1546-47	8.19			
1547-48	6.11		✓	✓
1548-49	9.01	✓*	✓	✓
1549-50	15.44	✓	✓	✓
1550-51	18.48	✓	✓	✓

* Not classified as years of high price by Brenner, because the average of the decade is so high.

Of the proclamations, about victuals, the following definitely state or imply that they are intended to keep down prices for the needs of the army.

No. (in Steele)	Date	
60	Dec. 1512	
61	Dec. 1512	(contd. into 1513: see No. 65)
87	Nov. 1522	
248	Jan. 1544	See MS version (B.M. Harl 442 f 195)
281	Dec. 1545	See MS version (Soc. of Antiquaries Proclamations II, 158)
282	Dec. 1545	

No. (in Steele)	Date	
285	Jan.1546	See LP version (LP XXI i 6)
342	Jan.1549	See version in Strype (Ecclesiastical Memorials 1822ed) Vol. II pt. i p. 186

A P P E N D I X O

Purveyance Prices

The following examples have been selected at random, and apply to grain prices only. It would be possible, but hardly worth-while, to analyse all the prices given in the large number of victualling documents.

Reference	Date	Place	Price per qr.of wheat(shillings)	National[1] Average	Local Average
E315/4 f 4v	4-1513	London	11.0	8.49	10.0 (2)
SP 2/B f 9	2-1523	Grimsby	4.66-4.83	5.98	-
E351/121	1-1545 to 6-1546	Hants	12.0,16.0 20.0	11.26 (1544-5) 17.31 (1545-6)	10.67 12.00 (3) 16.00 (4) 16.00
E351/125	6-1546 to 4-1547	Dover	8.0	8.19	
E351/129	1547	Norfolk	8.0	8.19 (1546-7) 6.11 (1547-8)	
E351/130	3-1547 to 11-1549	Norfolk	6.66	6.11 (1547-8) 9.01 (1548-9)	

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1. Appdx. N
2. Brenner, thesis p 137 (Sion House, City Companies, London Assize).
3. North and South Hants. (Brenner p 132)
4. Ibid.

Reference	Date	Place	Price per qr.of wheat(shillings)	National Average	Local Average
A.O.1/453/2502	1-1542 to 12-1543	East Riding	7.66	8.79 (1541-2) 8.46 (1542-3)	
E351/2491	3-1548 to 3-1549	Harwich	6.0	6.11 (1547-8) 9.01 (1548-9)	

Obviously the figures are too arbitrary on both sides to make for statistical precision; but, all in all, they hardly show that the Crown was paying prices which were unfairly low.

A P P E N D I X P

Wolsey and the events of 1512

A priori judgements have been abundant on the question of whether Wolsey was responsible for the Guienne expedition of 1512; from Brewer, holding that "a measure of so much boldness can be attributed to no other genius than Wolsey's,"[1] to Ernest Law's description of

> "the terrible fiasco of Fontarabia in 1512 - due to gross mismanagement by incompetent, wrangling obstinate-minded ministers, and slow foozling old officials surviving from Henry VII's reign."[2]

The only positive evidence concerns Ruthal, who wrote in April 1512 that he and others were preparing the army to be sent to Guienne.[3] Brewer asserts that Ruthal was only "the patient drudge of Wolsey".[4] But was this true as early as 1512? Ruthal, after all, was ahead of Wolsey in the race for preferment; he had been secretary to Henry VII, and became Bishop

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1. J.S. Brewer The Reign of Henry VIII, I p 18
2. England's First Great War Minister (1916) px. Law's purpose was to contribute to the political debate of 1916 by depicting Wolsey as the paladin of the vigorous, forceful war-minister, based on an enthusiastic judgement of the events of 1513 and complete silence about those of 1522-3.
3. SP I/2 f 97. The version in LP (I i 1147) misleadingly implies that Ruthal was solely responsible; the key-phrase is in fact "..we be so occupied here in settyng forthe of the kynges armyes..."
4. Brewer Henry VIII I p 55

of Durham in 1509.[1] In 1511 he disagreed with Wolsey about Papal policy.[2] It is difficult to accept that by 1512 he was Wolsey's minion.

Wolsey's place at court was certainly privileged as early as 1511, when his verbal account of the King's wish could short-circuit the complicated procedure for setting in motion the Great Seal.[3] By 1512 he was privileged to receive intelligence kept secret from other members of the Council.[4] We find, too, a victualler's account of goods delivered "by master almoners comandement"[5] William Knight sent him a number of letters from Guienne;[6] in one of them he reports that he defended Wolsey when some of the leaders spoke against him, and in another that Sir William Sandes "saide yt was not unkowen to them all that yoor Mastership was the grownde of all this myschefe."[7]

Clearly, then, Wolsey played an important part in planning the Guienne expedition; but there is no evidence that he

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1. D.N.B.
2. L.P. I i 880
3. L.P. I i g784 (44) (quoted by K. Pickthorn Henry VIII p 8)
4. L.P. I i 1329
5. SP I/3 f 15r
6. L.P. I i 1239, 1327, 1422. The editors also assume that Thomas Howard wrote to Wolsey, but the letter's address is missing, and it seems in fact as likely to be addressed to Howard's father, or perhaps to Ruthal (SP I/2 f 119; L.P. I i 1286).
7. Ellis Original Letters (2nd Ser. I) pp 192, 195.

played the decisive part. Considering Wolsey's almost single handed responsibility for events in 1513, a responsibility he would hardly have acquired if the failure of 1512 was his fault, it seems unlikely that he did.

A P P E N D I X Q

Causes of the English Victory at Flodden

Professor J.D. Mackie has held that "the real cause of the English victory was that the English brought to the actior an army better organised and more efficient than that of the Scots."[1] It is difficult to see in what this superiority consisted, and how it affected the issue of the battle.

Mackie's main point is that the English method of raising troops was better than that of the Scots.[2] Certainly Surrey's army was raised commendably quickly.[3] But Mackie goes beyond this and credits the English with "a semi-professional army",[4] yet this description seems euphemistic for the indenture system even as described by Mackie himself.[5] As for the assertion that fighting experience had been gained in the insignificant military exploits of HenryVII's reign,[6] the northerners (who provided the bulk of Surrey's army)[7] are unlikely to have taken part in any but the Scottish wars, presumably giving their enemies as much practise as themselves. The English certainly did well to fight on an empty stomach;[8] but this can hardly be

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1. The English Army at Flodden (Miscellany of the Scottish Historical Society Vol. VIII (1951) pp 38-85) p 42.
2. p. 71
3. pp. 55-60
4. p. 71
5. pp. 49-51
6. p. 50
7. pp. 60-5
8. p. 71

due to the indenture system or to the experience of a few of them in the previous reign.

W.M. Mackenzie has described the reason for the Scottish victory in the battle itself.[1] The Scots attempted to fight in the "Almayn manner"; that is, their troops were marshalled as a phalanx of pikemen, a manner of fighting which the Swiss were practising with success, but which demanded a high standard of training, and above all of discipline if it was to succeed.[2] Once a phalanx lost its cohesion disaster resulted, because the 20 foot-long pikes were too unwieldy for personal defence. This, apparently, is what happened at Flodden. The Scots failed to maintain good order over irregular ground, and fell victim to Englishmen armed with "bills", a shorter, more manoeuverable weapon. Thus the victory was not due to the English being more "professional"; but rather to the fact that unlike the Scots, they did not adopt a technique which was over-ambituous for an untrained army.[3]

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1. The Secret of Flodden.

2. This sort of formation was, of course, traditional in Scotland (see F M. Powicke The Thirteenth Century pp 689-90 on the battle of Falkirk); but it was only likely to be really effective if discipline and training was as good as that of the Swiss. The Scottish recruiting method made this impossible.

3. Mackenzie pp 65-74, 89-90.

Mackie accepts this analysis; but he goes on to look for a "real cause".[1] But since the Scots were defeated in the battle, it seems unnecessary to look elsewhere; especially when the arguments produced give a distorted picture of English efficiency.

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1. Mackie p 42.

A P P E N D I X R

Cost of the Wars in the 1540s

Total cost was £3,173,479, made up as follows:-

Capture and upkeep of Boulogne	£1,342,552
Expenses at Calais and Guisnes	371,429
Scotland	954,136
Navy	478,862
Expeditionary force to help Charles V, 1542	26,500

(All figures to nearest £1.)

This is taken from SP10/15 ff 18-29 compiled in Edward VI's reign from various treasurers' accounts. I have not included the costs of building and garrisoning fortifications in England from 1539 (£290,663) or of supressing the 1549 rebellions (£27,330). It is arguable that the Calais expenses should be left out on the same principle; but the wars undoubtedly made these much greater. Part of the naval expenses would have been incurred in peace-time. But other charges do not appear in the account; artillery, for instance, is only included to the value of guns lost, powder used, and so on, Not of guns and supplies purchased, and this may be taken as providing some sort of balance for the Calais expenses.

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†indicates that no thorough search has been made in these classes. In other classes I hope to have uncovered all that is relevant to my subject in the period concerned.

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