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**WHINNEY AND WATERHOUSE'S GOVERNMENT ASSIGNMENT 1887-1888:
A STUDY OF ITS SIGNIFICANCE**

Abstract: The episode narrated in this paper is situated in late-Victorian Britain when leading chartered accountants, Frederick Whinney and Edwin Waterhouse, were engaged by a British parliamentary committee to examine the costing and accountability practices of the government's military manufacturing establishments (GMMEs). The contributions of this study to accounting's historiography are two-fold. First, the significance of Whinney and Waterhouse's appointment for the status of chartered accountants in late-Victorian Britain is assessed. Second, Whinney and Waterhouse's criticisms of existing accounting routines are examined and evaluated as is the impact of their findings on the subsequent course of accounting practices within GMMEs.

INTRODUCTION

Today, consultancy work ranks high in the range of services offered by chartered accountants in Britain, and it is a major source of fee income [Auditing the Auditors, 2013, p. 34]. But the willingness of accountants to undertake consultancy work is by no means confined to the modern era [Matthews et al., 1998]. The majority of consultancy engagements in the past, as is the case today, were undertaken on behalf of the business sector, but there were occasions, early on, when central government availed itself of the services of public accountants. An important signal of government recognition of professional accountants as suppliers of consultancy services occurred in 1887 when Frederick Whinney and Edwin Waterhouse were engaged to report on the accounting practices employed at the British government's military manufacturing establishments (GMMEs).

Whinney and Waterhouse (W&W) were leading accountants of the second half of the nineteenth century. In the early 1880s Whinney was in practice with the foremost corporate liquidator of the day, Robert Palmer Harding [Carnegie, 2004]. Their firm and its successors are the main progenitors of what became Ernst & Whinney in 1979, and is now Ernst & Young. Waterhouse jointly founded a firm whose name lives on in today's PriceWaterhouseCoopers. Both men were active in the development of professional

organizations in England: Whinney served as President of the Institute of Chartered Accountants in England and Wales (ICAEW) from 1884 to 1888 [Jones, 2004b] as did Waterhouse between 1892 and 1894 [Jones, 2004a]. Whinney was therefore President at the time his services were called upon by the government, and he “selected” Waterhouse to assist him [BPP 1888 (212), q. 2041].¹

Whinney was not the state’s first choice. Waterhouse’s personal diaries include a letter to his wife, Georgina, containing the following: “I am amused at being requested to call on Lord Randolph Churchill² on Wednesday, as he thinks he can make use of me in his investigation into the accounts of the Woolwich Arsenal” [quoted in Jones, 1988, p. 124].³ At the time of their meeting (July 16, 1887) Churchill was chairing the Select Committee on Army and Navy Estimates which, *inter alia*, focused attention on the accounting practices of the Britain’s GMMEs. At their meeting, Waterhouse and Churchill informally discussed “the line of action to be adopted by the committee” [quoted in Jones, 1988, p. 124]. Waterhouse subsequently visited the House of Commons, on a couple of occasions,⁴ to follow the Select Committee’s proceedings. Waterhouse’s observations from the public gallery led him to conclude that he “may have been of assistance to the chairman in the hints I conveyed to him as to the nature of the questions on the accounts which he might put to the witnesses” [quoted in Jones, 1988, p. 124].

At the end of its initial deliberations the Select Committee recommended the appointment of professional accountants to investigate the accounting practices employed at GMMEs, with Churchill favoring Waterhouse to fulfil that role. One of the Select Committee’s members – Edward Stanhope, Secretary of State for War (1887-1892) – objected to Waterhouse’s proposed appointment because Stanhope recognised him “in the Committee Room as a somewhat too interested onlooker” [Waterhouse quoted in Jones, 1988, p. 124]. Honour was satisfied when Whinney, who was next approached, “[h]aving regard to the circumstances”, suggested that the consultancy

¹ Parliamentary papers cited, and images reproduced therefrom, in this paper have been sourced from ProQuest’s collection of “House of Commons Parliamentary Papers” which are accessed at: parlipapers.proquest.com.

² Lord Randolph Churchill was the father of the most famous British political figure of modern times, Winston Churchill.

³ It is not known why Churchill chose to approach Waterhouse to investigate the Woolwich Arsenal, though Waterhouse does make the following comment: “I thought some one of our class would be called in, and am pleased to find it is myself!” [quoted in Jones, 1988, p. 124].

⁴ Quite likely these visits took place on July 22 and July 26, 1887 when the Accountant and Auditor to the War Office, Charles James Hurst, was interviewed.

engagement be conducted jointly with Waterhouse [Waterhouse quoted in Jones, 1988, p. 124]. This did not prove to be an entirely satisfactory professional liaison, at least from Waterhouse's viewpoint: "I was by no means satisfied with this piece of accountant's work, but it is possible that I should not have done better if I had a freer hand" [Jones, 1988, p. 125].⁵

Focusing on the consequences of W&W's appointment, this paper has two inter-related objectives. First, at a time when chartered accountants in England were beginning to pursue, actively, their professional project, we consider the significance of W&W's high-profile consultancy engagement for their standing within the public domain. Second, the study seeks to improve our knowledge of the development of accounting practices within Britain's GMMEs which have, to date, received little attention from accounting historians [Funnell, 2009]. This lacuna does not exist in certain mainland European countries with, for example, the accounting practices of royal arsenals located in Italy in the sixteenth/seventeenth centuries and in Spain in the eighteenth century the subjects of significant research endeavors [e. g. Zan, 2004; Gutiérrez et al., 2005; Zambon and Zan, 2007].

The remainder of this paper is structured as follows. We begin by reviewing evidence of state recognition of the rising status of the accounting occupational group in nineteenth-century Britain. Second, the concerns with military accounting practices that led to W&W's appointment are summarized. W&W's consultancy report is then studied as is their oral evidence when called before a government Select Committee for cross examination. The main changes subsequently made to accounting practices within the GMMEs are next identified. Concluding remarks assess the significance of Waterhouse and Whinney's report for changes in government accounting practices and for the accounting occupational group's professionalization process.

STATE LEGITIMISATION OF PROFESSIONAL STATUS

Studies of the history of professions over the last 30 years have caused the prior assumption that such institutions must necessarily be "a good thing" for the public to be superseded a more critical assessment of their role within society. Nearly two decades ago the British sociologist Keith Macdonald [1995, p. xii] captured this transition in the

⁵ As noted below, however, W&W's Report was judged to have made a valuable contribution to the development of accounting practices within GMMEs, and further government engagements followed for Waterhouse.

following question “How do such occupations manage to persuade society to grant them a privileged position?.” Accountants have done so in two ways. First by demonstrating the value of the services they provide in the market-place and, second, by engaging in a “professional project” designed to convince society of their claim to professional recognition [Macdonald, 1995, chapter 7; Matthews et al., 1998]. Although individuals styled themselves “Accomptant” before that date, it was the eighteenth century which saw the emergence of the accounting practitioner. During the following century, where the story depicted in this paper is located, the number of public accountants spiraled and, increasingly, they became recognised as expert practitioners through the provision of a coherent range of specialist services based on their jurisdiction over the technique of double entry bookkeeping and their ability to compete successfully with other occupational groups [Abbott, 1988; Edwards et al., 2007].

The successful pursuit of a “professional project,” a concept articulated by Larson [1977; see also Krause, 1971], is expedited by state recognition of services supplied by that occupational group.⁶ A strong-form of recognition consists of a state register of competent personnel permitted to supply a defined service, as was bestowed on medical practitioners in 1858 through *An Act to Regulate the Qualifications of Practitioners in Medicine and Surgery* [21 & 22 Vict., c. 90]. That level of state recognition has never been achieved by the accounting profession, but weaker forms of state acknowledgement of the specialist expertise possessed by public accountants are more conspicuous, and the various ways in which this was done are reviewed in the remainder of this section.

Way back in the 1710s Parliament instructed the “Accomptant,” Charles Snell, to investigate the affairs of a firm belonging to one of the directors of the infamous South Sea Company. Moving closer to the time-period covered by this paper, William Quilter was invited, in 1849, to give evidence before the Select Committee on the Audit of Railway Accounts. Ten years later, the government appointed his firm, Quilter, Ball & Co., to investigate the accounts of the Army Clothing Store at Weedon [Matthews et al., 1998, p. 121] and, on a number of other occasions, to make confidential reports on private firms planning conversion into limited companies [Obituary of William Quilter, reproduced in Parker, 1980, n. p.]. The public accountant Peter Harriss Abbott was another “who did much to alert British government to the expert contribution of public

⁶ For a review of research into the nature of professions and its application to studies of the history of the accounting profession, see Macdonald [1995], Poullaos [2009] and West [2003].

accountants in administering affairs of state” [Edwards, 2001, p. 679]. The Bankruptcy Act 1831 signaled parliamentary recognition of accountants, along with merchants, brokers “or persons who are or have been engaged in trades in the Cities of London or Westminster” [1 & 2 Will. 4, c. 56, s. 22], as eligible for appointment by the Lord Chancellor to serve as official assignees in the administrations of a bankrupt’s affairs.

Another public accountant worthy of mention is David Chadwick who served as the first president of the Manchester Institute of Chartered Accountants, established in 1871. Chadwick's “national importance as an industrial financier” saw him invited to give evidence to the 1867 Select Committee on the Limited Liability Acts and, ten years later, by which time he was a Member of Parliament for Macclesfield, to serve on the Select Committee on the Companies Acts [Cottrell, 2004]. On each occasion Chadwick enthusiastically advocated the introduction of a statutory requirement for companies to publish accounts in a standardized format – something which did not become a statutory obligation in Britain until 1981. Closer to the key actors in this paper is Whinney’s partner, Robert Palmer Harding, who, after serving as the second President of the ICAEW (1882-1883), left the profession to take up the appointment of Chief Official Receiver in Bankruptcy; an office created by the Bankruptcy Act, 1883. His services in that capacity caused him to become the first chartered accountant to receive state recognition in the form a knighthood [Carnegie, 2004].

It is certainly the case that Britain’s legislative assembly provided opportunities for work which an energetic occupational group with economic and social aspirations was determined to exploit. The Joint Stock Companies Act 1844 made readily available an organizational structure which increasingly required business and financial services that public accountants were able to supply. More specifically, the Act imposed an external audit for companies generally,⁷ as did statutes directed at railway companies in 1867 and banks in 1879. None of these enactments stated that the service should be provided by a public accountant, though market forces gradually decided that this should happen. Occasionally, Acts of Parliament entering the statute books in nineteenth-century Britain indicated the suitability of “public accountants” as providers of newly created services, as occurred when the Bankruptcy Act 1831 identified appropriate qualifications for an appointment as official assignee. Further statutory recognition of accountants as members of a skilled occupational group ensued when the Friendly

⁷ This requirement was repealed in 1856 and reintroduced by the Companies Act 1900 (63 & 64 Vict. c. 48, ss. 21-23).

Societies Act 1875 [38 & 39 Vict., c. 60, s. 30(9)] stipulated that the annual return made by larger societies should be “certified by some person not an officer of the society (otherwise than as auditor thereof), carrying on publicly the business of an accountant.”

A broader form of state recognition occurred when the existing accounting societies based in England succeeded in obtaining the award of a Royal Charter to signal the creation, by merger, of the ICAEW in 1880. This provided a mechanism – the label chartered accountant – to enable the public to distinguish the reputable from the *soi-disant* accountant [Leading Article, 1874, p. 2; Walker, 2004] who damaged the public image that “proper” accountants were striving to create. In so doing, the new Charter resonated with The Medical Act 1875 which enabled “Persons requiring Medical Aid ... to distinguish qualified from unqualified Practitioners.” The Charter also identified its anticipated role in the upward trajectory of the accounting occupational group, namely that differentiation, through incorporation, would result in “public recognition of the importance of the profession and would tend to gradually raise its character and thus to secure for the community the existence of a class of persons well qualified to be employed in the responsible and difficult duties often devolving on public accountants” [ICAEW, 1881, p. 197].

The above events are recounted as examples of ways in which, through interaction with the state, public accountants were in the process of transforming their public identity from broad occupational group to expert professional. The significance of W&W’s appointment, as part of this transformation, is discussed in the next subsection.

“Signal of movement” towards professional status: Lord Randolph Churchill, as Leader of the House of Commons and Chancellor of the Exchequer in Lord Salisbury’s Conservative government (1885-1886), ranked “second only to Salisbury in the ministerial hierarchy” [Quinault, 2004]. Churchill was a determined advocate of retrenchment in public finances and, in pursuit of that objective, sought to reduce substantially the state’s expenditure on defense. In the endeavor to impose his will, and overcome stiff opposition from the Secretary of State for War, W. H. Smith (1886-1887), Churchill threatened to resign his position as Chancellor of the Exchequer. The ploy failed and Salisbury accepted Churchill’s resignation with “profound regret” on December 20, 1886 [quoted in Quinault, 2004]. Churchill’s resignation speech to the

House of Commons called for the appointment of a select committee to examine the defense estimates.

In late-Victorian Britain, much more than today defense expenditure dominated fiscal affairs. Total military expenditure in 1885-1886 amounted to £29.7 million, and this exceeded the figures both for interest on the national debt (£23.5 million) and for expenditure on civil government (£19.2 million) [Mitchell, 1988, p. 588]. The cost of running the GMMEs was a significant element within total military expenditure. For the year 1885-1886 it amounted to £2.4 million with the average number of employees within those establishments no less than 12,262 [BPP 1887 (C. 5116), p. 625].

Parliament acceded to Churchill's request for the appointment of a Select Committee with, as noted above, himself as chairperson. In Churchill's own words, "Things went on very well till they came to the accounts of the Ordnance Department, and at that period it was absolutely necessary to secure the assistance of what they called expert accountants" [Churchill, 1894, p. 492], i.e. Whinney and Waterhouse. Churchill insisted that he

did not recollect any two gentlemen who rendered more assistance to a [government] committee of that importance than those two gentlemen did in unravelling the accounts and making a most clear, lucid, and telling report, which he believed had been of immense benefit to the administration of that great department [i.e. the War Office].

As noted above, leading accountants in England had successfully petitioned the state for a royal charter to enhance the public perception, and identity, of their occupational group through the creation of national organization in 1880. The legitimization of a profession is, however, a continuous process. Even where an occupational group has achieved state recognition, it needs to continue "building respectability" [Macdonald, 1989] in order to justify such recognition and to convince the public of its enhanced status. Whinney commented on the phase occupied by accountants in the coveted transition from occupation to professional status at almost the same time that Waterhouse met with Lord Randolph Churchill to discuss the accounting practices of GMMEs. In his presidential address to members of the ICAEW, Whinney [1887, p. 388, emphasis added] observed that "the exigencies of modern life

have called into existence certain *semi-professions*⁸ of which we form one.”

Contemporary comment from leading practitioners confirms Whinney’s assessment of accountancy within its professionalization process in late-Victorian Britain. For example, in Pixley’s [1882, p. 4] estimation, “the profession of a chartered accountant [in 1882] is in its infancy.” The contention in this paper is that the engagement of W&W to undertake this important government assignment, and their perceived success in carrying out this work, represents a meaningful “signal of movement” [Carnegie and Edwards, 2001, p. 321] by accountants towards their desired status within the public realm.

Growing concern, on the part of government bureaucracies, with the administration of Britain’s GMMEs is next considered, before moving on to a detailed study of the work undertaken for the government by W&W.

DISCONNECTED MILITARY MANUFACTURING ESTABLISHMENTS

The supply of armaments to the military was, historically, left as far as practicable to the business sector, and this policy remained broadly in place when W&W were engaged to advise the government. As observed by a government committee which reported in 1887: “As a matter of principle, it appears to us that the Government should rely to a considerable extent on the trade for the supply of warlike stores” [BPP 1887 (C. 5116), p. xxvii]. Indeed, the supply of armaments by the “private trade” [BPP 1887 (C. 5116), p. 2434] remained in tune with the prevailing political philosophy of *laissez-faire* beyond that date. The government had nevertheless extended its armament manufacturing facilities during the nineteenth century as the result of serious problems of quality and supply manifesting themselves during the Napoleonic Wars and, later, the Crimean War [Funnell, 1990; Lewis, 1996, p. 12; Pam, 1998, p. 46]. The expansion of weaponry manufacture at the Woolwich Arsenal and elsewhere, however, occurred on a piecemeal basis with each GMME “entirely independent of the others and each Superintendent [possessing] absolute control of the factory under him” [Hogg, 1963, p. 828]. Even the manufacturing establishments located on the same site at Woolwich “had

⁸ The term “semi-professions” was popularised by Etzioni [1969, p. v] to signal the fact that, for the occupational groups which he studied (teachers, nurses and social workers), “[t]heir training is shorter, their status is less legitimated, their right to privileged communication less established, there is less of a specialized body of knowledge, and they have less autonomy from supervision or societal control than ‘the’ professions.” Etzioni’s trait-based analysis, however, gives “semi-professions” a different meaning from that of Whinney who uses the term to signal an occupational group which aspires to, but had not yet achieved, full professional status.

no connection with one another” [Hogg, 1963, p. 828]. The outcome was diversity in practices and a “want of connexion and co-operation between the factories” [BPP 1887 (C. 5116), p. xiv].

The organizational structure and accounting routines of the GMMEs were placed under the microscope by three government committees appointed in the late-1880s: the Committee Appointed to Inquire into the Organization and Administration of the Manufacturing Departments of the Army chaired by the Earl of Morley (Morley Committee, 1887)⁹ together with the two Select Committees chaired by Lord Randolph Churchill: the Select Committee on Army and Navy Estimates (Churchill Committee, 1887); and the Select Committee on Army Estimates (Churchill Committee, 1888). The Morley Committee revealed considerable variation in the ways in which factory superintendents discharged their responsibilities and, in the endeavor to improve the efficiency of those military units and the co-ordination of their activities, recommended the appointment of a single individual to “superintend the whole of the manufacturing departments” [BPP 1887 (C. 5116), p. xix]. The Morley Committee also looked into the question of whether the principles of consolidation and co-ordination should be applied to the accounting practices of the ordnance factories. In response to Morley’s invitation to advise the Committee on whether “the [accounting] system could be improved in any material particular,” the Accountant and Auditor to the War Office Charles James Hurst [BPP 1887 (C. 5116), q. 3580; see also q. 3581] replied: “I should like to see more uniformity which might be obtained, and could only be obtained, I presume, from having one Accounts Branch in the Arsenal to attend to the whole of this business.”

The Churchill Committee (1887) also conducted a lengthy interview with Hurst, but their conclusion was that his evidence, though valuable, was of too “technical” a character to be fully comprehensible to the Committee. It was for this reason, or perhaps because they doubted Hurst’s independence, that the Committee requested the authority “to obtain, from professional experts independent of the War Office, an opinion as to the form and nature of those accounts” [BPP 1887 (239), p. 91]. W&W’s consultancy engagement is next examined and evaluated.

CONSULTANTS AT WORK

⁹ The Earl of Morley was well-qualified for this role having served as Under-Secretary for War (1880-1885) in Gladstone’s second administration [Sanders, 2004].

The report prepared by W&W is reproduced as Appendix No. 1 to the 1888 Churchill Committee's First Report (BPP 1888 (120), pp. 117-141),¹⁰ with the authors then called before that committee for cross-examination. The fact that the entire process is on public record provides a unique opportunity to study the nature and execution of a consultancy assignment undertaken by two prominent public accountants soon after the creation of the ICAEW in 1880.

At the time of W&W's investigation, there existed seven GMMEs – three at the Woolwich Arsenal (Royal Carriage Department, Royal Gun Factory, Royal Laboratory), the Royal Small Arms factories at Enfield and Birmingham, the Royal Gunpowder Factory at Waltham Abbey and the Royal Army Clothing Factory at Pimlico. W&W's terms of reference required them to express an opinion on whether “the accounts are correctly kept; whether the form of account is the most convenient and intelligible; further, whether the cost of articles is accurately shown, and generally to suggest any improvements in the said account” [W&W Report, para. 1]. Their report is dated March 2, 1888. Their assessment of the annual financial reporting practices and the costing systems then in operation, and the recommendations for change which they made, are examined below.

Principal financial reports: W&W undertook a detailed analysis of the accounting reports prepared for a single GMME – the Royal Carriage Department – with their findings considered to have general application given that the same broad principles were applied elsewhere [W&W Report, para. 36]. W&W directed the following criticisms at the two main financial statements presented to Parliament, focusing on those for 1884-1885 for illustrative purposes:¹¹

- Balance Sheet No. 1 (Figure 1). The use of the term “Balance Sheet” is criticized by W&W [Report, para. 21] as a misnomer: “They are not statements setting out the Balances of the Books [as would a company's balance sheet], but Accounts showing in a somewhat confused manner the whole transactions of the Department for the year.” The so-called Balance Sheet was in fact a statement of the source and application of expenditure on the production of armaments. The money voted by parliament for military expenditure is listed on

¹⁰ Their report is referred to here as W&W Report followed by relevant paragraph or page numbers.

¹¹ These are reproduced as Appendix No. 1 to W&W's Report [BPP 1888 (120), pp. 134-135].

the debit side with the cost of services supplied (the “Production Account”) on the credit side. Elements of accruals accounting are employed to convert flows of cash into flows of goods – in particular, account is taken of the opening and closing balances of stores and semi-manufactured articles. W&W [Report, para. 24] judged the system of accountability to be defective also because the published accounts “do not agree with the [War Office] Appropriation Account,¹² and they do not state clearly what has become of the Manufactures of the Departments.” In addition, they concluded that the annual accounts were “confused inasmuch as they include items of receipt and expenditure on Capital Account [£12,005 2s. 11d,¹³ Figure 1] in the same Statement [Balance Sheet No. 1] with the items composing the cost of their manufactures” [W&W Report, para. 24].

- Capital Account (Figure 2). W&W [Report, para 23] deemed this statement “defective” because it failed to show “the total amount of Capital for which the Department is responsible.” Instead it recorded only movements on non-current asset (land, buildings, and machinery) accounts during the year [W&W Report, para. 10].

W&W drew fleeting attention to the preparation of a second balance sheet – Balance Sheet No. 2 (Figure 3)¹⁴ – for each of the GMMEs. Balance Sheet No. 2 was first published in the mid-1860s “in response to an objection raised by some representatives of the Chambers of Commerce that the results recorded in the official publication known as the “Priced Vocabulary of Stores used in Her Majesty’s Service,” [were] made up without including Depreciation and Interest as part of Cost” [W&W Report, para 22]. Their concern was that, when reaching make or buy decisions, the omission of such costs negated comparisons between government costs of production and prices charged for similar weapons by the business sector.¹⁵ The depreciation and

¹² These report amounts issued by the Treasury, under the authority of Parliament, to individual government departments.

¹³ Prior to the decimalization of the British currency on February 15, 1971, there were 12 “old” pence (d) to the shilling (s) and 20 shillings to the pound sterling (£).

¹⁴ This financial statement is not included in W&W’s Report probably because, as will be shown below, it was generally ignored by them when formulating their criticism of prevailing practices. The copy reproduced as Figure 3 is taken from BPP 1886 (109), p. 5.

¹⁵ Hurst drew attention to the fact that India Office and the Colonies were treated in the same manner as external suppliers when computing relevant cost figures, i.e. the charges made for the supply of armaments were based on the numbers contained in Balance Sheet No. 2. In contrast, charges made to the

interest charges at the Royal Carriage Department for 1884-1885 totaled £27,421 16s 7¼d (Figure 3).¹⁶

Finally, W&W expressed a general concern that “delay in the preparation of these accounts has been such as to render publication of comparatively little value” [W&W, para. 65].¹⁷ In their estimation, the accounts prepared for each GMME should reveal the following in order to achieve effective accountability [W&W Report, para. 25]:

1. The amount of the supplies received under each Sub-Head of the Votes.
2. Total cost of production.
3. The recipients of goods manufactured.
4. Stores and other assets belonging to the department.

W&W devised two principal financial statements to fulfil those requirements

- *The Secretary of State in Account with the Department* [W&W Report, para 26, p. 138]. The opening credit balance, in the proposed statement, comprised the book “value of the assets [recognised] in the hands of the [manufacturing] Department” at the beginning of the year, £366,447 6s 0¼d (Figure 4). Given that those assets were financed by money advanced from the Secretary of State for War, the balance represents the financial accountability of the Royal Carriage Department to Parliament at the beginning of the year. The account was designed to receive credits for cash voted by Parliament and advanced to the department during the year, plus miscellaneous supplies transferred from other sources. The account is debited with the cost of goods manufactured during the year plus the cost of any services supplied to other departments. The closing balance therefore represented the amount due to the Secretary of State at the end of the year, £382,814 14s 8¾d (Figure 4).¹⁸ This financial record,

Navy – an internal customer funded in the same manner as the Army, through money voted by Parliament – were based on figures reported in Balance Sheet No. 1 [BPP 1890 (57), p. 155].

¹⁶ For a full discussion of the role of accounting in ensuring “fair competition” between private sector companies and GMMEs, see Edwards [2015], and for the evolution of accounting practices within GMME’s up to the time of W&W’s Report, see also Black and Edwards [forthcoming].

¹⁷ Major General Eardley Maitland confirmed: “that is a point upon which the Departments have been somewhat slack” [BPP 1888 (120), q. 443]. A particular problem was that the War Office failed to supply some of the required cost figures until six or seven months after the end of the accounting period [BPP 1888 (212), q. 2177].

¹⁸ The statement also contains debits for the annual depreciation charge that should have been included in manufacturing costs (this could not be done by W&W when rearranging available numbers for the purpose of constructing their recommended financial statements because it was not the practice of the department to so do – see further below) and assets transferred to the Commissary-General of Ordnance.

consistent with tradition within the government sector, is a charge and discharge statement recording the accountability of the Superintendent of the Royal Carriage Department (as agent) to the Secretary of State (as principal).

- *Balance Sheet* [W&W Report, para 26 and Figure 5]. This document is the equivalent of the private sector company balance sheet. It lists all the department's liabilities and assets at the year-end, with the difference between them "representing and agreeing with the amount to the credit of the Secretary of State" at the end of the year [W&W Report, para 26], i.e. £382,814 14 8³/₄ (Figure 5). Within Figure 5, therefore, this amount might be considered the equivalent of shareholders' equity in a corporate balance sheet.

Additional "subsidiary accounts," designed to "show the internal working of the Department and how the cost of its manufactures is arrived at," were recommended by W&W [Report, para 30]. These were titled: manufacturing account; materials account; wages account; and indirect expenditure account. When called before the Select Committee for questioning on the content of their report, W&W argued that these additional accounting statements were required "to obtain a clear idea of each" main head of expense [BPP 1888 (212), q. 2122].

Reviewing the contents of W&W's Report and the other evidence collected, the Select Committee on Army Estimates concluded that "it would seem to be highly desirable that the form of account which they suggest should receive the careful attention of the Secretary of State" [BPP 1888 (120), p. v].

Costing practices: When the Select Committee examined W&W on the content of their consultancy report later that month (April 1888), the main focus of attention was the costing system in operation within the various GMMs, though the nature of the costing system naturally had direct implications for the content of the published accounts. Some years later H. J. Gibson who, as Assistant Comptroller and Auditor in the Exchequer and Audit Department, claimed to possess "special experience in dealing with manufacturing and store accounts of the Army and Navy," emphasized the importance of proper costing [BPP 1907 (Cd. 3615), q. 4751]. He drew attention to the fact that the "ordnance factories are practically a separate entity; they are a manufacturing department, who supply their articles to the Army, Navy, Colonies, and India." Therefore, in his estimation, it was "important that their customers should be charged the true cost" [BPP 1907 (Cd. 3615), q. 4760].

W&W [Report, para. 10] observed that the annual financial reports prepared for Parliament already contained “very detailed schedules of the number and cost of the articles completed or services rendered during the year,” with the costing system in operation described as follows [W&W Report, para. 16, emphasis added]:

In the Cost Ledger an Account is opened for every order for manufacture received from the Commissary General, and to this Account is posted monthly the amount of materials used and wages expended, and also the amount of indirect expenditure when ascertained after the close of the year. *Such indirect expenditure is exclusive of interest and depreciation.*

W&W [Report, para 9, emphasis added; see also para 65] made complementary comments concerning the overall operation of the costing system: “The Cost and other Ledgers connected therewith are kept with great minuteness, and *are intended to show accurately the exact cost price of the articles manufactured or Services Performed*, such as Repairs, Conversions, &c.” Moreover, W&W judged the objective of the costing system to be broadly achieved: “It appears to us that by these accounts the cost of each article is ascertained as closely as circumstances will permit” [W&W Report, para. 16]. Therefore, “We have not proposed to interfere with the Cost Ledger at all,” nor “sought to interfere with the schedules” presented to parliament that provided a build-up of the cost of producing each article [BPP 1888 (212), q. 2140, q. 2142].

A key question which the Select Committee decided to explore, and one that is a constant throughout the history of cost accounting, is: “What is cost?” As the prominent liberal politician, Hugh Childers, expressed the matter: “Is not the object of the accounts themselves to see how much the articles which Parliament trusts the Government to have manufactured in the Manufacturing Establishments *really have cost?*” [BPP 1888 (212), q. 2131, emphasis added]. W&W’s reply was in the affirmative, but the question of how the books should be kept and the accounts prepared depended on the *reason* for calculating cost. Were the figures for cost designed to reflect accountability to Parliament for the actual amounts of cash advanced or was their purpose to enable fair comparisons to be made with the prices charged for the supply of armaments by private sector companies?¹⁹ Resistance to the preparation of separate financial statements for

¹⁹ As noted above, there was almost complete reliance on the private sector to supply military needs up to the nineteenth century. For a number of reasons, including reliability of supply and the quality of the armaments, government provision increased. Given the contemporary political philosophy of laissez-

each purpose appears to have been as strong in the nineteenth century as it is today [International Accounting Standards Board, 2010] and, as today, gave rise to the challenge of crafting multi-purpose financial statements. A further complication in the resolution of these issues was disagreement between witnesses concerning the substance and content of prevailing accounting practices.

W&W claimed that the existing system did not lead to the identification of “true cost” for the purpose of fair comparison with private sector firms when reaching make or buy decisions. Specifically, they pointed out that the cost schedules included in the published accounts contained “no amount for rent, Government taxes, fire insurance, depreciation on buildings and machinery, or interest on Capital” [W&W Report, para. 22]. Ralph Knox, Accountant General at the War Office, rejected these claims: “rates and taxes are included in balance sheet No. 1, and in balance sheet No. 2 all the other items to which they refer are shown; they [W&W] seem to have been criticising balance sheet No. 1 as if balance sheet No. 2 were not in existence” [BPP 1888 (120), q. 1331].

The truth of the matter lay somewhere between the two viewpoints. Knox’s claim that rates and taxes were included as was rent [BPP 1888 (120), q. 1331; see also q. 1334] was, in the main, dismissed by W&W. Whinney agreed that local rates were included but insisted, correctly, that government taxes were not.²⁰ He also argued that Knox’s claim that rent featured in the accounts was entirely disingenuous, given that it comprised trivial payments relating to a few cottages and for ground rent at the clothing factory in Pimlico [BPP 1888 (212), q. 2070].

Turning to the treatment of depreciation, W&W made much of their determination to ensure that this was included as part of the computed cost of production. Their report criticizes Balance Sheet No. 1 on the grounds that depreciation is “not included in the cost of the work done” [W&W Report, para. 10] and, as revealed in Figure 4, their recommended alternative financial statement – “The Secretary of State in Account with the Department” – exhibited the following item: “To Depreciation of Buildings and Machinery *which should have been added to the Cost of the items above.*” When interviewed by the committee, W&W insisted that depreciation was “a fair charge as against the cost of any article” [BPP 1888 (212), q. 2117], while their report contained

faire, however, the appropriate balance between public and private provision was the subject of continuing debate.

²⁰ GMMes did not sell their outputs and, therefore, had no profits to tax.

the clear-cut recommendation that “depreciation should be dealt with as part of cost, and distributed over the articles manufactured” [W&W Report, para. 22; see also para. 29].²¹

Here Knox’s complaint that W&W “seem to have been criticising balance sheet No. 1 as if balance sheet No. 2 were not in existence” [BPP 1888 (120), q. 1331] was entirely justified. Figures for interest (£12,931 19s 2d and £2,341 17s 9¾d) and depreciation (£12,147 19s 7½d), which appear as debit balances in Balance Sheet No. 2 (Figure 3), undoubtedly form part of the total cost of good produced reported in Balance Sheet No. 2 as £323,879 11s 3¼d (Figure 3). This can be confirmed by studying the detailed cost statements (C-I) supplied to parliament for each GMME. Those for the Royal Carriage Department, for example [BPP 1886 (109) on pages 6-53], report, for every component of every product manufactured, the materials cost, labor cost and share of indirect expenses aggregating:

- First, to the Production Account totals in Balance Sheet No. 1 (£296,457 14s 8d, Figure 1), and
- Second, with depreciation and interest added (£27,421 16s 7¼d, Figure 3), to the Production Account totals in Balance Sheet No. 2 (£323,879 11s 3¼d, Figure 3).

Any assessment of the comparability of GMME and private sector company accounting practices involves a need to review the items included in the accounts of the latter as well as the former. For example, company accounts would not have included rental charges where premises were owned nor interest charges where the company had no need to rely on borrowing to fund its activities. Moreover, there was the possibility that the calculated unit costs of GMMEs were, in certain respects, overstated compared with those of private sector companies. In particular, the accounts of government departments included superannuation costs for employees whereas this rarely formed part of the remuneration package of private sector employees. Again, however, the position was not clear-cut, with the possibility that private sector employees were paid more to compensate for the absence of superannuation arrangements [BPP 1888 (212), q. 2071]. As Whinney wisely observed, “It is not easy to make a fair comparison between the two” [BPP 1888 (212), q. 2071].

To increase the likelihood of fair comparison between calculated government manufacturing costs and the prices charged for weaponry by private sector companies, it

²¹ Also, “The charge for depreciation, we think, should be spread over the cost of the articles; there is no question about that” [BPP 1888 (212), q. 2111].

would be necessary to create accounting numbers, e.g., a notional figure rent. This was not a course the accounting consultants were willing to follow. Whinney described imputed rent as a “fancy item,” interest on capital as “a very fancy item,” and the inclusion of either simply a “matter of taste and opinion” [BPP 1888 (212), q. 2075, q. 2088]. The adopted stance possibly reflected the decision to privilege accountability to Parliament ahead of relevant data for make or buy decisions. When W&W agreed that “the approximate cost of every article is fairly represented in the accounts” [BPP 1888 (212), q. 2076], this probably reflected their conviction that it was more important to be aware of the limitations of accounting numbers when making business decisions than to include “fancy” items which might damage rather than enhance the validity comparisons between cost calculations for GMMEs and prices charged by private sector companies.

Finally, the question of how other indirect expenses should be re-charged to individual products manufactured needed to be addressed. W&W drew attention to the general practice of recovering indirect expenditure incurred by GMMEs as a percentage of direct wages [W&W Report, para 32]; indeed this was the system of overhead recovery that John Anderson explained was in operation at the Royal Gun Factory, where he was Assistant Superintendent, at least from 1860 [BPP 1860 (441), q. 6083]. W&W recognised the fact that more precise systems of apportionment were sometimes used by companies, e.g., based on machine hour,²² but their conclusion was that “such niceties of calculation are hardly necessary under the circumstance of the Department” [W&W Report, para 32].²³

The extent to which W&W’s recommendations were implemented is next assessed by examining changes made to government military accounting practices over the next twenty years or so.

NEW ACCOUNTING

²² This treatment was probably exceptional in 1887. Garcke and Fells [1889, pp. 72-73] oft-cited text on *Factory Accounts*, published around that time, confined attention to the recovery of indirect costs as a percentage of direct labour or of direct labour plus direct materials. It was only during the scientific management era of the early twentieth century that the machine rate method began to be more widely advocated [Boyns and Edwards, 2013, pp. 175-176].

²³ A detailed explanation of the operation of the costing system generally in 1887 was provided by Charles D. Piper, principal clerk, Royal Carriage Department. He explained the steps taken to help ensure that expenditure was properly allotted to each article and the method of recovering overhead expenditure which he believed could not be improved upon [BPP 1887 (C. 5116), q. 5500; see also qq. 5501-5505].

Government investigations examined above resulted in two structural changes in the administration of GMMs. First, the GMMs were placed under the control of a single Director-General of Ordnance Factories. Second, the whole of the anticipated expenditure on ordnance services was the subject of a separate vote instead of being split between the planned expenditure of the army and admiralty [BPP 1890 (57), p. 155].

Under these altered circumstances, it was decided by the Secretary of State to render and present to Parliament one consolidated balance sheet for the Ordnance Factories (in harmony with the details of the Ordnance Factories' Vote), instead of separate accounts for each department.

Henceforth, in line with recommendations made by W&W, the expenditures reported in the balance sheet were "identical with the amounts shown in the Appropriation Accounts" [BPP1890 (57), p. 156 and *cf.* BPP 1890 (57), p.2, p.4, BPP 1890 (22), p. 2].

W&W's proposal for the publication of a financial statement entitled "The Secretary of State in Account with the Department" was not acted upon. The label "Balance Sheet," previously used to describe the principal statement of accountability to Parliament, was replaced by "Balance Sheet and Production Account" (Figure 6), and it may be that this change was made to accommodate W&W's complaint that the term "Balance Sheet" was incorrectly employed.²⁴ Certainly, the new label continued to describe a statement of resource flows designed, as before, to report the cost of armaments manufactured during the year and the funding received from Parliament for that purpose.

The newly-branded financial statement (Figure 6) was, substantially, the old Balance Sheet No. 2 (Figure 3), with Balance Sheet No. 1 no longer featuring in returns made to Parliament. The content of the "Balance Sheet and Production Account" took no account of W&W's recommendation that the primary statement of financial accountability to Parliament should report the amounts due to the Secretary of State at the beginning and end of the year, representing "the value of the assets in the hands of the Department" on those dates (Figure 4). Instead, the only assets recognised in the account (as before) were the opening and closing balance of stores and semi-

²⁴ The returns to Parliament revert to use of the term balance sheet from 1896-1897, signalling how difficult it can be to achieve accounting change.

manufactured articles.²⁵ The only substantive difference between the old and new “Balance Sheets” (Figures 3 and 6) was that the latter now omitted the figure for interest on capital invested, which seems to reflect W&W’s overall sentiments on that issue, though there did exist an element of difference between them [BPP 1888 (212), qq. 2088-2091].

W&W’s recommendation for the publication of a business-type balance sheet, which included a capital account, was first acted upon when preparing the returns to parliament for the year 1892-1893. The new financial report was labelled “Statement of Liabilities and Assets” (Figure 8) perhaps because the term balance sheet continued to feature within the “Balance Sheet and Production Account” (Figure 6).

Of the “subsidiary accounts” recommended by W&W, only the statement of indirect expenses²⁶ for each military establishment, which is where W&W believed “waste and mismanagement would show themselves” [BPP 1888 (212), q. 2098], featured in exactly the proposed form in the annual reporting package for GMMEs developed in the early 1890s. Recommendations for the publication of separate manufacturing accounts, materials accounts and wages accounts were not adopted in the form proposed by W&W, though roughly similar data was reported in the “Statement of Manufactures”²⁷ and the “Details of the Cost of Work.”²⁸ The former document supplied, for each GMME, an enormous amount of detail, i.e. the cost and numbers produced of every component of each different types of output (i.e. field artillery, machine guns, repairs, ammunition, gunpowder, etc.) and, beginning with the financial year 1890-1891 [BPP 1892 (129), *passim*], also their cost per unit, called the “rate.” In addition, as recommended by W&W, these statements reported the destination of the goods manufactured at GMMEs, i.e. the army, navy, India and the colonies.²⁹

CONCLUDING REMARKS

²⁵ The carrying value of fixed assets continued to be reported pre-and post W&W only in the “Capital Account” (Figure 7).

²⁶ This statement also reported, for each GMME, overhead recovery rates based on direct labour costs.

²⁷ Re-titled “Production Statements” in 1896-1897.

²⁸ Renamed “Abstract of Productions” in 1890-1891 and “General Abstract of Cost of Work” in 1901-1902. There were other minor changes in wording and, sometimes, differences between the descriptions of financial statements in the list of contents and in the headings of those documents.

²⁹ The amount of production and costing data returned to Parliament was curtailed significantly in 1907-1908. Henceforth details of cost, units and cost per unit were provided only on the basis of destination (army, navy, India, the colonies), i.e. analysis by manufacturing department was abandoned. This enabled the length of the annual return to be reduced from 472 pages for 1906-1907 to 177 pages in 1907-1908 [BPP 1908 (52); BPP 1909 (16)].

Existing sources attach considerable significance to the part played by W&W in bringing about accounting change within Britain's GMMEs in the latter years of the nineteenth century. In evidence presented to the Departmental Committee on Accounts of Local Authorities [BPP 1907 (Cd. 3615), q. 4757], H. J. Gibson recounted that "an important Committee presided over by Lord Randolph Churchill, on Army and Navy Expenditure" appointed "two professional accountants, Messrs. Whinney and Waterhouse, to investigate the [accounting] system" within GMMEs. Further, that those "gentlemen made a very full report and sketched out new forms of account, which were in the main adopted and are still in force." Similar sentiments were expressed by Sir Charles Harris, Assistant Financial Secretary at the War Office, in evidence presented to the Committee on Public Accounts ten years later [BPP 1917-1918 (123), p. 214]:

About 1890 it was recognised that the internal accounts of the factories were open to criticism, and during the next five or more years the administration and accounting of the factories were completely remodelled, with the result that eminent Accountants called in to give advice on the subject, as well as (it is believed) the Comptroller and Auditor-General, were satisfied that the results shown were what they claimed to be, namely – the true cost to Government of the things manufactured.

Brigadier Hogg, formerly Assistant Master General of the Ordnance at the War Office, was well placed to recount the course of accounting change when compiling his authoritative history of the Royal Arsenal [Higham, 1964]. Hogg [1963, p. 873] described the system of accounting in operation at the time the Morley Committee reported (1887) as "not a particularly accurate system and failed to give an exact picture of the cost of production since it was impossible to apportion accurately the indirect expenditure between the various orders." In his estimation, W&W "proposed a special form of accounts for the factories which was adopted" [Hogg, 1963, p. 873]. More specifically, changes designed to achieve more reliable cost figures were introduced because of "the increased importance then being attached to the comparisons between government and trade prices for similar articles" [Hogg, 1963, p. 874]. The evidence presented in this paper indicates that these claims possibly exaggerate W&W's contribution to the development of costing and financial reporting practices within GMMEs.

Starting with the costing system, the identification of the various components of total cost, i.e. direct materials, direct labor and indirect expenses, remained, in

substance, unchanged by events *circa*. 1888-1889. As noted above, W&W clearly stated that “We have not proposed to interfere with the Cost Ledger at all” nor with the “schedules” presented to parliament that provided a detailed build-up of the cost of producing each article [BPP 1888 (212), q. 2140, q. 2142; see also Black and Edwards, forthcoming]. Moreover, the Accountant and Auditor to the War Office, Charles James Hurst, advised the Morley Committee and Churchill’s Committees that it was over a quarter of a century earlier that the financial reporting and costing systems were the subject of major improvements that remained in place in 1887. An investigation undertaken by Hurst in 1862 [BPP 1862 (448), pp. 182-188] revealed that the existing costing system was unscientific and provided only a very rough approximation of the actual costs incurred [BPP 1887 (C. 5116), qq. 3368-3382]. Changes then put in place, according to Hurst, created “the present system [which] is as good as any system that can be applied or that is applied in any of the large establishments of the kingdom” [BPP 1887 (C. 5116), q. 3383]. The possibility that Churchill had reservations concerning the objectivity of Hurst’s assessment led to W&W’s appointment but, following their report, the fundamental structure of the costing system in operation in the GMMs remained broadly the same as it was before.

An important amendment to the financial reporting system which can be attributed to W&W saw the replacement of Balance Sheets No. 1 and No. 2 by a single financial statement, and this change had implications for the detailed content of the costing system. The difference between Balance Sheets No. 1 and No. 2 was that interest on capital and depreciation was included in the latter but not in the former. Henceforth the single financial statement contained a charge for depreciation whereas the Secretary of State decided no longer “to charge the factories with interest on capital” [BPP 1890 (57), p. 155]. This latter change was in accordance with W&W’s recommendation, but there is no certainty that it resulted in better information for decision making.³⁰ The Report from the Committee of Public Accounts [BPP 1917-1918 (123), pp. xiii-ix] summarized the consequence of the omission of interest as follows: “Accounts [of GMMs] deal only with actual expenditure incurred [by the Government] and do not embrace such elements as profit, interest on capital or rent of Government lands in any

³⁰ The omission of interest might also have been a response to complaints that it was unfair to use Balance Sheet 2 figures (which included interest) for the purpose of costing supplies of weaponry to the Indian government and the Colonies whereas Balance Sheet No. 1 figures (which excluded interest) were used to cost supplies to the Navy [BPP 1890 (57), p. 155, p. 162; Hansard, House of Commons, March 25, 1892, Fourth Series, Vol. 2, Col. 1880].

form, and the results are not exactly comparable with contractors' prices." The issue of "fancy" items which W&W were keen to bury was back up for discussion.

In one other respect W&W's Report does appear to have brought about significant accounting innovation, namely the adoption of the commercial form of balance sheet – the Statement of Liabilities and Assets (Figure 8). It was a form of financial statement discussed again and again down the years – for example, by the Committee on the Form of Government Accounts, 1950 [BPP 1950 (Cmd. 7969)] – and which assumed prominence only in recent decades as part of the New Public Management reforms.

Turning to the question of the professionalization of the accountancy occupational group, the perceived value of W&W's consultancy engagement was undoubtedly important irrespective of its intrinsic worth. Influential members of the state apparatus such as Churchill, Gibson and Harris believed, or at least claimed to believe, that W&W had made an important contribution to both the costing practices and public accountability of GMMs. It is also clear that the state *continued* to value Waterhouse's professional expertise given that he was "subsequently asked to conduct similar investigations into the Admiralty's dockyards (1888-89) and the Royal Ordnance factories (1901)" [Jones, 1988, p. 30]. Waterhouse was also invited to sit on the Joint Stock Companies Departmental Committee which reported in 1895 and on the Company Law Amendment Committee of 1906.

Not all Waterhouse's dealings with the state bore fruit. One of his Presidential initiatives was to lead the campaign to establish the type of professional monopoly for chartered accountants, through state registration, already enjoyed by medical practitioners [Stacey, 1954; Macdonald, 1985, p. 546; Macdonald, 1995, chapter 7; Walker and Shackleton, 1995]. Waterhouse's campaign did not meet with state approval and, therefore, failed to achieve a form of recognition capable of quickly creating, for accountants, professional legitimacy within the public domain. The work undertaken in collaboration with Frederick Whinney nevertheless comprised a high-profile engagement that deserves recognition as a "signal of movement" [Carnegie and Edwards, 2001] along the pathway from "semi" to full professional status.

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FIGURE 1
Balance Sheet No. 1 of Royal Carriage Department, 1884-1885

(A.)—BALANCE SHEET (No. 1) of the ROYAL CARRIAGE DEPARTMENT, ROYAL ARSENAL,
WOOLWICH, 1884-85.

Dr.	(AS RENDERED BY THE DEPARTMENT.)				Cr.
<p>To Balance:</p> <p>For Stores in Stock on 1st April 1884</p> <p>For Semi-manufactured Articles in Stock on 1st April 1884</p> <p>To Army Supplies:</p> <p>For Cash advanced through the Paymaster-General, and expended on the following Services during the Year:</p> <p>(Vote 9)—Police</p> <p>(Vote 10) { Water Supply</p> <p>{ Carriage of Stores</p> <p>{ Travelling Expenses</p> <p>{ Emptying Ashpits and Sweeping Chimneys</p> <p>Pay of Establishment:</p> <p>Salaries</p> <p>Regimental Pay</p> <p>Contingencies:</p> <p>Schools</p> <p>Postage and Telegrams</p> <p>Insurance of Boilers</p> <p>Miscellaneous</p> <p>Divine Service</p> <p>Medical Department</p> <p>Chemical Department</p> <p>Library</p> <p>Gas</p> <p>Wages, &c.:</p> <p>(Vote 12) { Wages</p> <p>{ Sick Pay</p> <p>Materials:</p> <p>Timber</p> <p>Fuel</p> <p>Metals</p> <p>Manufactured and Miscellaneous Stores</p> <p>Hire of Horses</p> <p>Machinery:</p> <p>New Machinery</p> <p>Establishment for Instruction:</p> <p>Regimental Pay</p> <p>Extra Pay</p> <p>Lodging Allowance, &c.</p> <p>Wages</p> <p>(Vote 13) { Works, Buildings, and Repairs:</p> <p>{ New Works</p> <p>{ Maintenance (including Repairs to Gas Fittings)</p> <p>{ Works Department (Proportion of Departmental Expenses)</p> <p>(Vote 24) { Superannuation Allowances:</p> <p>{ Superannuation Allowances (including commutation of Pensions, &c.)</p> <p>To Miscellaneous Services:</p> <p>For Expenses not defrayed out of Army Supplies:</p> <p>Stationery</p> <p>Rates</p> <p>Rental Value of Official Quarters</p> <p>To Sundry Departments:</p> <p>For Value of Stores received from various sources</p> <p>For Value of Blooms manufactured, and cost of rolling Iron, converting Timber, &c.</p> <p>For Value of Work performed by other Departments, &c.</p> <p>To Suspense Account:</p> <p>For Value of Buildings brought forward from 1883-84</p> <p>For Value of Machinery brought forward from 1883-84</p>	<p>£. s. d.</p> <p>27,559 13 10½</p> <p>101,256 1 11½</p> <p>492,515 15 10</p> <p>1,473 11 -</p> <p>210 8 -</p> <p>11 2 1</p> <p>316 17 8</p> <p>16 10 4</p> <p>3,215 5 7</p> <p>766 10 -</p> <p>78 19 10½</p> <p>15 4 6</p> <p>15 4 6</p> <p>33 9 7½</p> <p>95 5 19</p> <p>582 2 3½</p> <p>100 - - -</p> <p>192 7 7</p> <p>1,563 1 7½</p> <p>141,290 3 7</p> <p>3,996 7 4</p> <p>31,591 4 1</p> <p>7,163 6 7</p> <p>13,631 12 6</p> <p>32,539 1 2</p> <p>587 4 49</p> <p>11,974 14 -</p> <p>211 7 11</p> <p>290 - - -</p> <p>27 6 9</p> <p>1,125 17 5</p> <p>2,360 17 8</p> <p>4,016 15 11</p> <p>390 - - -</p> <p>14,295 6 4</p> <p>273,577 19 5½</p> <p>386 5 4</p> <p>1,870 - - -</p> <p>163 - - -</p> <p>2,419 5 4</p> <p>20,412 10 4</p> <p>38,109 1 7</p> <p>36 19 49</p> <p>58,558 11 3½</p> <p>1,619 18 8</p> <p>1,697 - - -</p> <p>£. 537,418 10 7¼</p>	<p>By Balance:</p> <p>For Stores in Stock on 31st March 1885</p> <p>For Semi-manufactured Articles in Stock on 31st March 1885</p> <p>By Capital Account:</p> <p>For New Buildings added during the Year</p> <p>For New Machinery added during the Year</p> <p>By Suspense Account:</p> <p>For Value of Buildings carried to 1885-86</p> <p>For Value of Machinery carried to 1885-86</p> <p>By Production Account:</p> <p>For Manufactures during the Year, as per Statement (C.)</p> <p>For Conversions during the Year, as per Statement (D.)</p> <p>For Repairs during the Year, as per Statement (E.)</p> <p>For Repayment Services performed during the Year, as per Statement (F.)</p> <p>For Miscellaneous Services performed during the Year, as per Statement (G.)</p> <p>For manufacturing Blooms, rolling Iron, converting Timber, &c., during the Year, as per Statement (H.)</p> <p>For Additions to Plant in the Department during the Year, as per Statement (I.)</p> <p>By Sundry Departments, &c.:</p> <p>For Value of Stores issued during the Year</p> <p>For Value of Material returned into Store, &c.</p>	<p>£. s. d.</p> <p>109,727 - 7</p> <p>105,493 10 - 3</p> <p>215,220 10 7¼</p> <p>3,553 2 11</p> <p>8,452 - - -</p> <p>12,005 2 11</p> <p>220 - - -</p> <p>4,277 - - -</p> <p>4,497 - - -</p> <p>126,629 13 9¼</p> <p>104 17 9¼</p> <p>20,587 2 9½</p> <p>66,185 15 1½</p> <p>44,264 5 5¼</p> <p>38,109 1 7</p> <p>576 18 2¼</p> <p>296,457 14 8</p> <p>2,693 15 8</p> <p>6,544 6 8½</p> <p>9,238 2 ¼</p> <p>£. 537,418 10 7¼</p>		

Examined,
H. J. Alderson, Brigadier General,
 Director of Artillery and Stores.
James C. Hurst, Accountant and Auditor.
Fredk. Close, Colonel, R.A.,
 Superintendent.

FIGURE 2
Capital Account of Royal Carriage Department, 1884-1885

STATEMENT (J.)—CAPITAL ACCOUNT of the ROYAL CARRIAGE DEPARTMENT for the Year 1884-85.
 (AS RENDERED BY THE DEPARTMENT).

Dr.								Cr.
To Balance:								
For Net Amount of Capital on 1st April 1884:								
Land - - - - -	£.	s.	d.	£.	s.	d.		
	5,602	3	9					
Buildings - - - - -	79,079	12	4					
Machinery - - - - -	81,940	-	2½	166,621	16	3½		
To Army Supplies:								
For Amount expended during the Year:								
New Buildings - - - - -	3,553	2	11					
New Machinery - - - - -	8,452	-	-	12,005	2	11		
To Production:								
For Amount added during the Year:								
Machinery - - - - -				576	18	2½		
				£.	170,203	17	4½	
By Production:								
For One Year's Depreciation on Plant, viz:								
Five per cent. on Buildings (79,079 l. 12 s. 4 d., per contra) - - - - -	3,953	10	7½					
Ten per cent. on Machinery (81,940 l. - s. 2½ d., per contra) - - - - -	8,194	-	-½					
								12,147 10 7½
By Sundries:								
For Value of Machinery issued to Commissary- General of Ordnance - - - - -								19 2 9
By Balance:								
For Net Amount of Capital on 31st March 1885:								
Land - - - - -	5,602	3	9					
Buildings - - - - -	78,678	15	7¾					
Machinery - - - - -	82,755	15	7¼					167,036 15 -
								£. 170,203 17 4½

H. J. Alderson, Brigadier-General
 Director of Artillery and Stores.

Examined,
 James C. Hurst,
 Accountant and Auditor.

Fredk. Close, Colonel, R.A.,
 Superintendent.

Source: W&W Report [1888, p. 135]

FIGURE 3
Balance Sheet No. 2 of Royal Carriage Department, 1884-1885

No. 1.—ROYAL CARRIAGE DEPARTMENT, WOOLWICH ARSENAL—*continued.*

(B.)—BALANCE SHEET (No. 2) of the ROYAL CARRIAGE DEPARTMENT, ROYAL ARSENAL,
 WOOLWICH, 1884-85.

Dr.	£.	s.	d.	£.	s.	d.	Cr.
To Balance:							
For Stores in Stock on 1st April 1884	97,359	13	10½				
For Semi-manufactured Articles in Stock on 1st April 1884	101,956	1	11½	109,515	15	10	
To Army Supplies:							
For Cash advanced through the Paymaster General, and expended on the following Services during the Year:							
(Vote 9.)—Police	1,473	14	-				
Water Supply	210	8	-				
Carriage of Stones	11	2	1				
(Vote 10) Travelling Expenses	316	17	8				
Emptying Ashpits and Sweeping Chimneys	16	10	4				
Pay of Establishment:							
Salaries	3,215	5	7				
Regimental Pay	760	10	-				
Contingencies:							
Schools	78	19	10½				
Postage and Telegrams	-	15	6				
Insurance of Boilers	15	4	6				
Miscellaneous	33	9	7½				
Divine Service	95	5	1½				
Medical Department	552	2	3½				
Chemical Department	100	-	-				
Library	102	7	7				
Gas	1,563	1	7½				
Wages, &c.:							
Wages	141,090	3	7				
Sick Pay	3,066	7	4				
(Vote 12.) Materials:							
Timber	31,891	4	1				
Fuel	7,163	6	7				
Metals	13,031	12	6				
Manufactured and Miscellaneous Stores	32,439	1	2				
Hire of Horses	537	4	4½				
Machinery:							
New Machinery	11,074	14	-				
Establishment for Instruction:							
Regimental Pay	211	7	11				
Extra Pay	200	-	-				
Lodging Allowance, &c.	97	6	9				
Wages	1,128	17	15				
(Vote 13.) Works, Buildings, and Repairs:							
New Works	2,380	17	8				
Maintenance (including Repairs to Gas Fittings)	4,018	15	11				
Works Department (Proportion of Departmental Expenses)	390	-	-				
(Vote 24.) Superannuation Allowances:							
Superannuation Allowances (including commutation of Pensions, &c.)	14,295	6	4	273,677	19	5½	
To One Year's Interest, at 3½ per Cent., on Invested Capital, viz.:							
Stores and Semi-manufactured Articles in Stock on 1st April 1884	109,515	15	10				
Land	5,692	3	9				
Buildings	71,070	12	4				
Machinery	81,940	-	2½				
Suspense Account	3,316	18	8				
£. 369,484	10	9½	12,031	19	2		
To One Year's Interest, at 3½ per Cent. on Working Capital, viz., One-fifth of Annual Expenditure	2,341	17	9½				
To Depreciation, at 5 per Cent. on Buildings, and 10 per Cent. on Machinery, as per Capital Account	12,147	19	7½	27,421	16	7½	
To Miscellaneous Services:							
For Expenses not defrayed out of Army Supplies:							
Stationery	386	16	4				
Rates	1,870	-	-				
Rental Value of Official Quarters	163	-	-	2,419	5	4	
To Sundry Departments:							
For Value of Stores received from various sources	20,412	10	4				
For Value of Blooms manufactured, and Cost of rolling Iron, converting Timber, &c.	98,109	1	7				
For Value of Work performed by other Departments, &c.	30	10	4½	58,558	11	3½	
To Suspense Account:							
For Value of Buildings brought forward from 1883-84	1,649	18	8				
For Value of Machinery brought forward from 1883-84	1,007	-	-	3,246	18	8	
£. 564,840	7	2½	£. 564,840	7	2½		
							£. 564,840
							7 2½

Examined,
James C. Hurst, Accountant and Auditor.

H. J. Alderson, Brigadier General,
 Director of Artillery and Stores.

Fredk. Close, Colonel, R.A.,
 Superintendent.

FIGURE 4
W&W recommended form of accounts: the Secretary of State in Account with the
Department

ROYAL CARRIAGE DEPARTMENT, WOOLWICH ARSENAL.

THE SECRETARY OF STATE in Account with the DEPARTMENT, Year ending 31st MARCH 1885.																																																																																																																																																																																																																																																																																																																																			
Dr.	£.	s.	d.	Cr.																																																																																																																																																																																																																																																																																																																															
<p>To Manufacturing Account for Work Completed and Services Rendered during the year—</p> <p><i>Commissary-General of Ordnance—</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>New Stores Manufactured</td> <td style="text-align: right;">126,629</td> <td style="text-align: right;">13</td> <td style="text-align: right;">9½</td> </tr> <tr> <td>Conversions - - -</td> <td style="text-align: right;">104</td> <td style="text-align: right;">17</td> <td style="text-align: right;">9½</td> </tr> <tr> <td>Alterations and Repairs -</td> <td style="text-align: right;">20,587</td> <td style="text-align: right;">2</td> <td style="text-align: right;">9½</td> </tr> <tr> <td>Miscellaneous Services -</td> <td style="text-align: right;">44,264</td> <td style="text-align: right;">5</td> <td style="text-align: right;">5½</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">191,585</td> <td style="text-align: right; border-top: 1px solid black;">19</td> <td style="text-align: right; border-top: 1px solid black;">9½</td> </tr> </table> <p><i>Repayment Services, including Services rendered for other Departments—</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Admiralty - - -</td> <td style="text-align: right;">57,995</td> <td style="text-align: right;">-</td> <td style="text-align: right;">6½</td> </tr> <tr> <td>India - - -</td> <td style="text-align: right;">1,682</td> <td style="text-align: right;">14</td> <td style="text-align: right;">1½</td> </tr> <tr> <td>New South Wales - -</td> <td style="text-align: right;">1,609</td> <td style="text-align: right;">3</td> <td style="text-align: right;">11½</td> </tr> <tr> <td>Canada - - -</td> <td style="text-align: right;">322</td> <td style="text-align: right;">9</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Contractors - - -</td> <td style="text-align: right;">727</td> <td style="text-align: right;">6</td> <td style="text-align: right;">6½</td> </tr> <tr> <td>Royal Gun Factory -</td> <td style="text-align: right;">1,028</td> <td style="text-align: right;">8</td> <td style="text-align: right;">5½</td> </tr> <tr> <td>Royal Laboratory -</td> <td style="text-align: right;">784</td> <td style="text-align: right;">15</td> <td style="text-align: right;">1½</td> </tr> <tr> <td>Royal Gunpowder Factory</td> <td style="text-align: right;">10</td> <td style="text-align: right;">19</td> <td style="text-align: right;">9½</td> </tr> <tr> <td>First Commissioner of Works</td> <td style="text-align: right;">1,445</td> <td style="text-align: right;">19</td> <td style="text-align: right;">3½</td> </tr> <tr> <td>Inspector of Works -</td> <td style="text-align: right;">174</td> <td style="text-align: right;">16</td> <td style="text-align: right;">3½</td> </tr> <tr> <td>Sundries - - -</td> <td style="text-align: right;">404</td> <td style="text-align: right;">1</td> <td style="text-align: right;">5½</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">66,185</td> <td style="text-align: right; border-top: 1px solid black;">15</td> <td style="text-align: right; border-top: 1px solid black;">1½</td> </tr> </table> <p>To Depreciation of Buildings and Machinery which should have been added to the Cost of the items above :—</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Buildings - - -</td> <td style="text-align: right;">3,953</td> <td style="text-align: right;">19</td> <td style="text-align: right;">7½</td> </tr> <tr> <td>Machinery - - -</td> <td style="text-align: right;">8,194</td> <td style="text-align: right;">-</td> <td style="text-align: right;">1½</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">12,147</td> <td style="text-align: right; border-top: 1px solid black;">19</td> <td style="text-align: right; border-top: 1px solid black;">7½</td> </tr> </table> <p>To Commissary-General of Ordnance—</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>For stores delivered to him</td> <td style="text-align: right;">2,693</td> <td style="text-align: right;">15</td> <td style="text-align: right;">8</td> </tr> <tr> <td>For machinery ditto -</td> <td style="text-align: right;">4</td> <td style="text-align: right;">5</td> <td style="text-align: right;">-</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">2,698</td> <td style="text-align: right; border-top: 1px solid black;">-</td> <td style="text-align: right; border-top: 1px solid black;">8</td> </tr> </table> <p>To Balance 31st March 1885, being the value of the assets in the hands of the Department at that date as per Balance Sheet (p. 139) - - - - -</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td></td> <td style="text-align: right;">382,814</td> <td style="text-align: right;">14</td> <td style="text-align: right;">8½</td> </tr> </table>		£.	s.	d.	New Stores Manufactured	126,629	13	9½	Conversions - - -	104	17	9½	Alterations and Repairs -	20,587	2	9½	Miscellaneous Services -	44,264	5	5½		191,585	19	9½		£.	s.	d.	Admiralty - - -	57,995	-	6½	India - - -	1,682	14	1½	New South Wales - -	1,609	3	11½	Canada - - -	322	9	7	Contractors - - -	727	6	6½	Royal Gun Factory -	1,028	8	5½	Royal Laboratory -	784	15	1½	Royal Gunpowder Factory	10	19	9½	First Commissioner of Works	1,445	19	3½	Inspector of Works -	174	16	3½	Sundries - - -	404	1	5½		66,185	15	1½		£.	s.	d.	Buildings - - -	3,953	19	7½	Machinery - - -	8,194	-	1½		12,147	19	7½		£.	s.	d.	For stores delivered to him	2,693	15	8	For machinery ditto -	4	5	-		2,698	-	8		£.	s.	d.		382,814	14	8½	<p>By Balance 1st April 1884, being the value of the assets in the hands of the Department at that date, as per Balance Sheet (p. 23) - - - - -</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td></td> <td style="text-align: right;">366,447</td> <td style="text-align: right;">6</td> <td style="text-align: right;">1½</td> </tr> </table> <p>By Supplies under Vote 12—*</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Pay of Establishment -</td> <td style="text-align: right;">3,981</td> <td style="text-align: right;">15</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Ditto Schools - - -</td> <td style="text-align: right;">52</td> <td style="text-align: right;">2</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Contingencies - - -</td> <td style="text-align: right;">31</td> <td style="text-align: right;">19</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Wages £.141,082 19 -</td> <td style="text-align: right;">141,082</td> <td style="text-align: right;">19</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Sick Pay - 3,077 2 6</td> <td style="text-align: right;">3,077</td> <td style="text-align: right;">2</td> <td style="text-align: right;">6</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">144,160</td> <td style="text-align: right; border-top: 1px solid black;">1</td> <td style="text-align: right; border-top: 1px solid black;">6</td> </tr> <tr> <td>Timber - 31,891 4 1</td> <td style="text-align: right;">31,891</td> <td style="text-align: right;">4</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Fuel - 7,163 6 7</td> <td style="text-align: right;">7,163</td> <td style="text-align: right;">6</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Metals - 13,631 12 6</td> <td style="text-align: right;">13,631</td> <td style="text-align: right;">12</td> <td style="text-align: right;">6</td> </tr> <tr> <td>Miscellaneous</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Stores - 32,839 1 2</td> <td style="text-align: right;">32,839</td> <td style="text-align: right;">1</td> <td style="text-align: right;">2</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">85,525</td> <td style="text-align: right; border-top: 1px solid black;">4</td> <td style="text-align: right; border-top: 1px solid black;">4</td> </tr> <tr> <td>Hire of Horses - - -</td> <td style="text-align: right;">587</td> <td style="text-align: right;">4</td> <td style="text-align: right;">4½</td> </tr> <tr> <td>Machinery - 11,032 - -</td> <td style="text-align: right;">11,032</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Ditto Repairs 42 14 -</td> <td style="text-align: right;">42</td> <td style="text-align: right;">14</td> <td style="text-align: right;">-</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">11,074</td> <td style="text-align: right; border-top: 1px solid black;">14</td> <td style="text-align: right; border-top: 1px solid black;">-</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">245,413</td> <td style="text-align: right; border-top: 1px solid black;">1</td> <td style="text-align: right; border-top: 1px solid black;">1½</td> </tr> </table> <p>By Supplies, &c., under other Votes and through other Departments, viz.—</p> <p>MATERIALS—</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Per Commissary of Ordnance - - -</td> <td style="text-align: right;">13,849</td> <td style="text-align: right;">2</td> <td style="text-align: right;">11½</td> </tr> <tr> <td>Per Royal Clothing Department - - -</td> <td style="text-align: right;">19</td> <td style="text-align: right;">-</td> <td style="text-align: right;">8</td> </tr> <tr> <td>Stationery for Drawing Office - - -</td> <td style="text-align: right;">143</td> <td style="text-align: right;">6</td> <td style="text-align: right;">4</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">14,011</td> <td style="text-align: right; border-top: 1px solid black;">9</td> <td style="text-align: right; border-top: 1px solid black;">11½</td> </tr> </table> <p>NEW BUILDINGS—</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Per Works Department - - -</td> <td style="text-align: right;">2,123</td> <td style="text-align: right;">4</td> <td style="text-align: right;">3</td> </tr> </table> <p>INDIRECT EXPENDITURE for Sundries as under—</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td>Police - - - Vote 9</td> <td style="text-align: right;">1,473</td> <td style="text-align: right;">14</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Water - - - Vote 10</td> <td style="text-align: right;">210</td> <td style="text-align: right;">8</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Travelling Expenses and Carriage - - - Vote 10</td> <td style="text-align: right;">357</td> <td style="text-align: right;">19</td> <td style="text-align: right;">9</td> </tr> <tr> <td>Emptying Ashpits, &c., ditto - - -</td> <td style="text-align: right;">16</td> <td style="text-align: right;">10</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Superannuations, Vote 24</td> <td style="text-align: right;">14,295</td> <td style="text-align: right;">6</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Stationery - - -</td> <td style="text-align: right;">242</td> <td style="text-align: right;">19</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Rates - - -</td> <td style="text-align: right;">1,870</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Rental of official quarters</td> <td style="text-align: right;">163</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Medical Establishment -</td> <td style="text-align: right;">582</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3½</td> </tr> <tr> <td>Chemical Establishment -</td> <td style="text-align: right;">100</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-</td> </tr> <tr> <td>Royal Gas Factory - -</td> <td style="text-align: right;">1,760</td> <td style="text-align: right;">18</td> <td style="text-align: right;">10½</td> </tr> <tr> <td>Establishment for Instruction - - -</td> <td style="text-align: right;">1,631</td> <td style="text-align: right;">15</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Royal Laboratory for Printing, &c. - - -</td> <td style="text-align: right;">22</td> <td style="text-align: right;">1</td> <td style="text-align: right;">7½</td> </tr> <tr> <td>Ditto for Divine Service -</td> <td style="text-align: right;">95</td> <td style="text-align: right;">5</td> <td style="text-align: right;">1½</td> </tr> <tr> <td>Ditto for Library - -</td> <td style="text-align: right;">102</td> <td style="text-align: right;">7</td> <td style="text-align: right;">7</td> </tr> <tr> <td>Ditto for Schools - -</td> <td style="text-align: right;">26</td> <td style="text-align: right;">17</td> <td style="text-align: right;">6½</td> </tr> <tr> <td>Fire Brigade - - -</td> <td style="text-align: right;">17</td> <td style="text-align: right;">10</td> <td style="text-align: right;">7½</td> </tr> <tr> <td>Works Department for Repairs, &c. - - -</td> <td style="text-align: right;">4,468</td> <td style="text-align: right;">12</td> <td style="text-align: right;">1</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">27,437</td> <td style="text-align: right; border-top: 1px solid black;">8</td> <td style="text-align: right; border-top: 1px solid black;">6½</td> </tr> </table>		£.	s.	d.		366,447	6	1½		£.	s.	d.	Pay of Establishment -	3,981	15	7	Ditto Schools - - -	52	2	4	Contingencies - - -	31	19	-	Wages £.141,082 19 -	141,082	19	-	Sick Pay - 3,077 2 6	3,077	2	6		144,160	1	6	Timber - 31,891 4 1	31,891	4	1	Fuel - 7,163 6 7	7,163	6	7	Metals - 13,631 12 6	13,631	12	6	Miscellaneous	-	-	-	Stores - 32,839 1 2	32,839	1	2		85,525	4	4	Hire of Horses - - -	587	4	4½	Machinery - 11,032 - -	11,032	-	-	Ditto Repairs 42 14 -	42	14	-		11,074	14	-		245,413	1	1½		£.	s.	d.	Per Commissary of Ordnance - - -	13,849	2	11½	Per Royal Clothing Department - - -	19	-	8	Stationery for Drawing Office - - -	143	6	4		14,011	9	11½		£.	s.	d.	Per Works Department - - -	2,123	4	3		£.	s.	d.	Police - - - Vote 9	1,473	14	-	Water - - - Vote 10	210	8	-	Travelling Expenses and Carriage - - - Vote 10	357	19	9	Emptying Ashpits, &c., ditto - - -	16	10	4	Superannuations, Vote 24	14,295	6	4	Stationery - - -	242	19	-	Rates - - -	1,870	-	-	Rental of official quarters	163	-	-	Medical Establishment -	582	2	3½	Chemical Establishment -	100	-	-	Royal Gas Factory - -	1,760	18	10½	Establishment for Instruction - - -	1,631	15	4	Royal Laboratory for Printing, &c. - - -	22	1	7½	Ditto for Divine Service -	95	5	1½	Ditto for Library - -	102	7	7	Ditto for Schools - -	26	17	6½	Fire Brigade - - -	17	10	7½	Works Department for Repairs, &c. - - -	4,468	12	1		27,437	8	6½	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td></td> <td style="text-align: right;">655,432</td> <td style="text-align: right;">9</td> <td style="text-align: right;">11</td> </tr> </table>		£.	s.	d.		655,432	9	11	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right;">£.</td> <td style="text-align: right;">s.</td> <td style="text-align: right;">d.</td> </tr> <tr> <td></td> <td style="text-align: right;">655,432</td> <td style="text-align: right;">9</td> <td style="text-align: right;">11</td> </tr> </table>		£.	s.	d.		655,432	9	11
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New Stores Manufactured	126,629	13	9½																																																																																																																																																																																																																																																																																																																																
Conversions - - -	104	17	9½																																																																																																																																																																																																																																																																																																																																
Alterations and Repairs -	20,587	2	9½																																																																																																																																																																																																																																																																																																																																
Miscellaneous Services -	44,264	5	5½																																																																																																																																																																																																																																																																																																																																
	191,585	19	9½																																																																																																																																																																																																																																																																																																																																
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Admiralty - - -	57,995	-	6½																																																																																																																																																																																																																																																																																																																																
India - - -	1,682	14	1½																																																																																																																																																																																																																																																																																																																																
New South Wales - -	1,609	3	11½																																																																																																																																																																																																																																																																																																																																
Canada - - -	322	9	7																																																																																																																																																																																																																																																																																																																																
Contractors - - -	727	6	6½																																																																																																																																																																																																																																																																																																																																
Royal Gun Factory -	1,028	8	5½																																																																																																																																																																																																																																																																																																																																
Royal Laboratory -	784	15	1½																																																																																																																																																																																																																																																																																																																																
Royal Gunpowder Factory	10	19	9½																																																																																																																																																																																																																																																																																																																																
First Commissioner of Works	1,445	19	3½																																																																																																																																																																																																																																																																																																																																
Inspector of Works -	174	16	3½																																																																																																																																																																																																																																																																																																																																
Sundries - - -	404	1	5½																																																																																																																																																																																																																																																																																																																																
	66,185	15	1½																																																																																																																																																																																																																																																																																																																																
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Buildings - - -	3,953	19	7½																																																																																																																																																																																																																																																																																																																																
Machinery - - -	8,194	-	1½																																																																																																																																																																																																																																																																																																																																
	12,147	19	7½																																																																																																																																																																																																																																																																																																																																
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For stores delivered to him	2,693	15	8																																																																																																																																																																																																																																																																																																																																
For machinery ditto -	4	5	-																																																																																																																																																																																																																																																																																																																																
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	382,814	14	8½																																																																																																																																																																																																																																																																																																																																
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Ditto for Schools - -	26	17	6½																																																																																																																																																																																																																																																																																																																																
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* These figures differ from the Appropriation Account owing to certain errors of apportionment, &c., referred to in Report.

Source: W&W Report [1888, p. 138]

FIGURE 5

W&W recommended form of accounts: Balance Sheet

<i>Dr.</i>		BALANCE SHEET, 31st MARCH 1885.		<i>Cr.</i>	
	£. s. d.				£. s. d.
To WAGES UNCLAIMED OR ACCRUED DUE -	3,825 19 6	By LAND, as at 1st April 1884 - - -			5,602 3 9
To ditto INSTRUCTION BRANCH	£. s. d. 23 12 5	By BUILDINGS, as at 1st April 1884 - - -	£. s. d. 79,079 12 4		
SICK PAY ACCRUED DUE -	89 19 -	Ditto in progress ditto -	1,649 18 8		
	113 11 5	Additions per Works Department - - -	2,123 4 3		
			82,852 15 3		
		Depreciation 5% on 79,079 l. 12 s. 4 d. - -	3,953 19 7½		
		Balance, 31st March 1885, of which 220 l. in progress - - -			78,898 15 7
To SECRETARY OF STATE, being the balance to his Credit - - - - -	382,814 14 8½	By MACHINERY, as at 1st April 1884 - - -	81,940 - 2½		
		Ditto in progress ditto -	1,697 - -		
		Additions under Vote 12 -	11,032 - -		
		Ditto per Manufacturing Account - - -	576 18 2½		
			95,245 18 4½		
		Depreciation 10% on 81,940 l. 0 s. 2½ d., 8,194 - -	- - ¼		
		Sales per Commissary General -	4 5 -		
		Loss on Sales, &c. -	14 17 9		
			8,213 2 9¼		
		Balance, 31st March 1885 of which 4,277 l. in progress.			87,032 15 7¼
		By STORES IN HAND - - - -			109,727 - 7
		By SEMI-MANUFACTURED ARTICLES - -			105,493 10 - ¾
		By CASH IN HAND—dealt with in district paymasters' accounts - - -	4,282 12 10		
	£. 386,754 5 7½				£. 386,754 5 7½

Source: W&W Report [1888, p. 139]

FIGURE 6
Royal Ordnance Factories Balance Sheet and Production Account
1888-1889

THE ORDNANCE FACTORIES BALANCE SHEET			
Dr.			
To BALANCE ACCOUNT:	£. s. d.	£. s. d.	
For Stores in Stock on 1st April 1888 - - - -	342,844 9 7		
For Semi-Manufactures on 1st April 1888 - - - -	662,706 3 - 3		
For Floating Stock (R. L.) on 1st April 1888 - - - -	35,038 9 2 1/2		
For Factory Balances (W. A.) on 1st April 1888 - - - -	6,233 7 10 1/2		
For Forgings rejected and paid for, not replaced until 1889 - - - -	5,544 2 6	922,366 12 2 1/2	
To SUSPENSE ACCOUNT:			
For Value of Buildings, from 1887-88 - - - -	5,529 15 6		
For Expenditure on Steel Plant, from 1887-88 - - - -	4,064 - 11		
For Expenditure on Saw Mills Plant, from 1887-88 - - - -	1,143 15 5		
For Value of Machinery, from 1887-88 - - - -	18,062 17 8	28,799 9 6	
To EXPENDITURE:			
For Amounts expended, as per Appropriation Account, 1888-89:			
Establishments:			
General Superintendence - - - - -	13,797 15 11		
Clerical Staff - - - - -	7,176 2 6		
Mechanical Staff - - - - -	1,581 13 4		
Works Staff - - - - -	3,269 14 8		
Works Staff (Office Keepers, Messengers, &c. - - - - -)	140 10 -		
Storeskeepers, Electricians, &c. - - - - -	124 2 -		
Medical Establishment - - - - -	2,279 11 6		
Schools and Libraries - - - - -	521 8 1		
Chaplains - - - - -	584 2 5		
Superannuation Allowances, &c. - - - - -	4,610 4 8	34,085 5 1	
Wages and Police - - - - -		1,132,774 - 6 1/2	
Materials:			
Value of Stores obtained from Contractors - - - -	854,265 8 10		
Value of Supplies received from, and Services performed by, various Departments - - - -	76,673 13 1 1/2	900,939 1 11 1/2	
Machinery:			
For Value of Machinery obtained from Contractors - -	48,360 3 0		
For Value of Machinery received from various Sources - - - - -	1,128 10 -	49,488 13 0	
Buildings:			
Additions, Part I. - - - - -	38,905 18 2		
" " II. - - - - -	17,000 6 10		
Maintenance, Part III. - - - - -	26,966 10 7	82,901 4 7	
Carried forward - - - £.		3,180,605 7 7	

AND PRODUCTION ACCOUNT, 1888-89.			
			Cr.
By PRODUCTION ACCOUNT:	£. s. d.	£. s. d.	
For Articles Manufactured and Services performed:			
Army - - - - -	947,530 1 10 1/2		
Navy - - - - -	992,412 14 1 1/2		
India - - - - -	58,955 10 9 1/2		
Colonies - - - - -	36,960 9 1 1/2		
Miscellaneous - - - - -	6,213 2 7		
Machinery - - - - -	26,618 13 10 1/2	2,062,600 12 5	
By CAPITAL ACCOUNT:			
For New Machinery added during the Year, per Contra - - - -	45,987 18 10		
For Machinery added during the Year from various Sources, including Suspense Account - - - - -	24,762 16 11		
For Buildings added during the Year, per Contra - - - -	53,156 17 11		
For Buildings from Suspense Account - - - - -	5,929 15 6		
For Land added during the Year - - - - -	181 10 1	131,618 19 3	
By SUSPENSE:			
For Value of various Stores, &c. issued to, and Services performed for, Army Departments, viz.:			
Ordnance Store Department - - - - -	14,646 7 9		
Army Inspection Department - - - - -	2,703 18 3 1/2		
Assistant Director of Artillery - - - - -	5 - -		
For Unclaimed Wages in hand on 1st April 1888 - - - -	383 19 11 1/2		
For Amounts paid in 1888-89, chargeable to 1887-88 - - - -	23,793 1 11		
Carried forward - - - £.	40,821 - 11 1/2	2,104,200 11 8	

To SUNDRIES—continued.		Brought forward	3,180,505 7 7
Miscellaneous:			
Carriage of Stores	- - - - -	1,616 4 1½	
Travelling Expenses	- - - - -	1,178 4 3½	
Horse Hire	- - - - -	987 6 3	
Water Supply	- - - - -	1,102 11 4	
Clothing	- - - - -	1,568 7 2	
Rents	- - - - -	830 2 8½	
Medical and Surgical Instruments	- - - - -	426 8 -	
Contributions to Local Schools	- - - - -	290 - -	
Postage, &c.	- - - - -	231 2 8	
Furniture	- - - - -	829 5 -	
Insurance of Boilers	- - - - -	60 7 6	
Medical Comforts	- - - - -	113 1 7	
Winding Clocks, Removing Ashes, and Sweeping Chimneys	- - - - -	32 18 10	
Miscellaneous	- - - - -	836 2 8	
			10,111 2 11
For Value of Stationery received from Her Majesty's Stationery Department	- - - - -	3,200 10 8	
For Amount paid by Her Majesty's Treasury in lieu of Rates	- - - - -	7,553 6 5	
For Estimated Value of Official Quarters occupied free of Rent	- - - - -	1,054 9 -	
For Law Expenses paid by Her Majesty's Treasury	- - - - -	24 15 5	
For Unclaimed Wages in hand on 31st March 1889	- - - - -	644 13 2	
For Amounts chargeable to 1888-89, not paid till 1889-90	- - - - -	27,475 7 5½	
For Amounts chargeable to 1888-89, paid in 1887-88	- - - - -	410 17 6	
			40,383 8 7½
To CAPITAL ACCOUNT:			
For 5 per cent. Depreciation on Buildings	- - - - -	25,100 - -	
For 10 per cent. Depreciation on Machinery	- - - - -	66,449 17 2½	
For Net Loss on Sale of Machinery	- - - - -	303 8 1	
			92,033 5 3½
		£.	3,323,033 4 4½

Ralph H. Knox,
Accountant General.

Examined,
James C. Hurst,
Accountant and Auditor.

By SUNDRIES—continued.		£. s. d.	£. s. d.
Brought forward		40,821 - 11½	2,104,309 11 8
For Amount paid in 1888-89, taken up in 1889-90		4 14 3	
For Miscellaneous Receipts:			
Gas supplied on Repayment	- - - - -	282 8 -	
Stores sold to Contractors	- - - - -	6,844 12 10½	
Miscellaneous	- - - - -	649 3 4	
			48,601 10 4½
By BALANCE ACCOUNT:			
For Stores in Stock on 31st March 1889	- - - - -	- - -	388,981 4 7½
For Semi-Manufactures on 31st March 1889, viz.:			
Army	- - - - -	370,013 15 10	
Navy	- - - - -	261,589 5 11	
India	- - - - -	46,133 16 -	
Colonies	- - - - -	52 12 2½	
Miscellaneous	- - - - -	4,500 - 8	
			682,290 10 8½
For Forgings rejected after being paid for, but not replaced in 1888-89	- - - - -	- - -	8,850 18 -
		£.	3,323,033 4 4½

W. Anderson,
Director General of Ordnance Factories.

Source: BPP [1890 (57), pp. 2-5]

FIGURE 7
Royal Ordnance Factories Capital Account, 1888-1889

Dr.	THE ORDNANCE FACTORIES.—LAND, BUILDINGS,					
	£.	s.	d.	£.	s.	d.
To BALANCE ACCOUNT :						
For Net Capital on 1st April 1888 :						
Land - - - - -	72,250		11 -			
Water Power (Waltham) - - - - -	£. 59,000		s. -			
Less Value reduced - - - - -	25,000		- -			
Rifle Range and Butts (Enfield) - - - - -	7,089		7 9			
Buildings - - - - -	532,816		- 9½			
Machinery - - - - -	698,263		11 1½			
				1,335,419		10 8
To EXPENSE ACCOUNT :						
For Services in progress, to be capitalised on completion :						
Buildings - - - - -	12,482		9 2			
Machinery - - - - -	23,237		6 11			
						35,719 16 1
To ARMY SUPPLIES :						
For Amount expended during the Year on provision of :						
Land - - - - -	181		10 1			
New Buildings - - - - -	55,166		17 11			
New Machinery - - - - -	45,087		18 10			
For Machinery obtained from other sources than Contract - - - - -	1,525		10 -			
						102,861 16 10
To PRODUCTION ACCOUNT :						
For Machinery made or erected by the Factories - - - - -				26,618		13 10½
				£. 1,501,609		17 5½

Ralph H. Knox,
 Accountant General.

Examined,
 James C. Hurst,
 Accountant and Auditor.

AND MACHINERY.—CAPITAL ACCOUNT, 1888-89.	Cr.					
	£.	s.	d.	£.	s.	d.
By SURPLUSES :						
For Issues to Army Inspection Branch and Director of Artillery College :						
Buildings - - - - -	36,968		13 8			
Machinery - - - - -	5,029		18 8½			
For Issues to Commissary General of Ordnance :						
Machinery - - - - -	1,773		- -			
						43,771 12 4½
By PRODUCTION ACCOUNT :						
For One Year's Depreciation on Plant in use in the Ordnance Factories, viz. :						
Five per cent. on Buildings (503,800 l. 0s. 9½ d.) - - - - -	25,190		- -			
Ten per cent. on Machinery (664,498 l. 11 s. 6½ d.) - - - - -	66,449		17 2½			
						91,639 17 2½
By BALANCE ACCOUNT :						
For Net Capital on 31st March, 1889 :						
Land - - - - -	72,482		1 1			
Water Power - - - - -	23,000		- -			
Rifle Range and Butts - - - - -	7,089		7 9			
Buildings - - - - -	532,206		14 2½			
Machinery - - - - -	722,380		4 10½			
						1,366,198 7 10½
				£. 1,501,609		17 5½

W. Anderson,
 Director General of Ordnance Factories.

Source: BPP [1890 (57), pp. 6-7]

FIGURE 8
Royal Ordnance Factories Statement of Assets and Liabilities at March 31, 1893

ROYAL ORDNANCE FACTORIES.							
STATEMENT OF LIABILITIES AND ASSETS, 31st March 1893.							
Dr.	LIABILITIES.				ASSETS.		Cr.
	£.	s.	d.		£.	s.	d.
To Capital:				By Land, Buildings and Machinery	1,536,816	10	5
Net Balance on 31st March 1893 (including 63,500 <i>l.</i> issued from the Exchequer on account of Parliamentary Grants from 1st April 1888 to 31st March 1893)	1,085,845	10	0	„ Stores in Stock	487,889	5	1
„ Sundries, viz. :—				„ Sundries, viz. :—			
Unclaimed wages in hand	804	0	7	Materials not brought on charge	290	16	3
Amounts unpaid on 31st March 1893	33,011	4	5	Contractors, for forgings rejected	116	—	—
Overcharges to Production, to be re-credited	229	15	0	Amounts undercharged to Production	1,585	4	4
Proceeds of Sales, to be credited to Production	927	17	8	Amounts outstanding for recovery	375	7	2
„ Advances by Departments (after deducting the cost of the year's work), viz. :—				„ Value of work not covered by Advances from Departments, viz. :—			
Army	26,185	19	1	£.	s.	d.	
India	72,354	13	1	Admiralty	4,947	12	—
Colonies	8,000	—	—	Army (Imperial Defence Loan)	3,687	1	3
	100,540	12	2		8,534	13	3
	£.	2,127,359	6 10	„ Cash, viz. :—			
				In the hands of Sub-Accountants	0,484	13	5
				In the hands of the Paymaster General	85,266	16	11
					91,751	10	4
					£.	2,127,359	6 10
Notes:				£.	s.	d.	
Advances, not covered by work				100,540	12	2	
Less,—Work not covered by advances				8,534	13	3	
				98,005	18	11	
Less,—Deficit on Appropriation Accounts, 1888-93				6,254	8	7	
				Cash Balance	91,751	10	4

Ralph H. Knox,
Accountant General.

Source: BPP [1894 (61), p. 9]