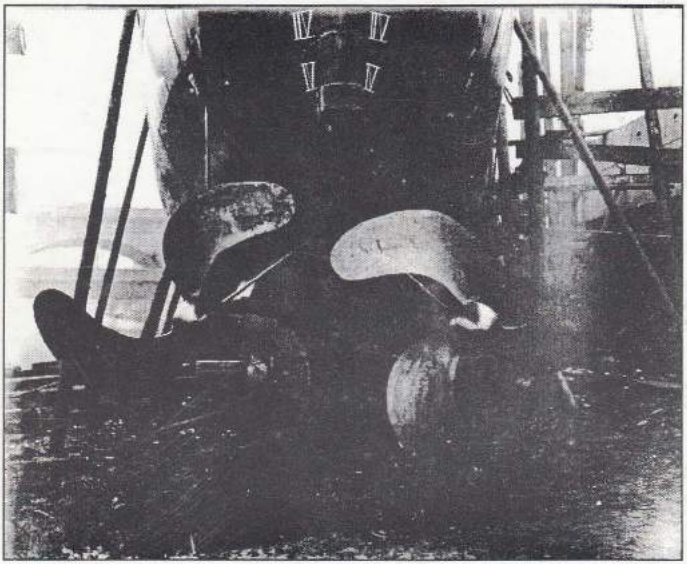
SCOTTISH INDUSTRIAL HISTORY



B·A·C
Scotland

Business Archives Council of Scotland
Scottish Charity Number SCO 02565

SCOTTISH INDUSTRIAL HISTORY

Volume 22

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Front: HMS *Fervent* propellers (W Donald)
Back: HMS *Fervent* under going initial trials c1895 (W Donald)

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Scottish Industrial History

Volume 22

CONTENTS

History and Archives in the Business Environment[i]

Edwin Green
Group Archivist - HSBC Holdings plc

It is a great honour and a great pleasure to be invited to speak to this Conference [Business Archives Council of Scotland Annual Conference, 23 November 2000], both because this session is in memory of Joan Auld and because we are celebrating the Council's long run of achievement over 40 years. Joan's work, always in the distinctive tradition of business archives in Scotland, was essential to that achievement.

This anniversary is the kind of occasion which calls for a wide-ranging review of business history and business archives, the twin motives and pillars of the Council's work. There have been many such surveys down the years.[ii] Yet much of this overview literature is from outside the business world - by historians inside history (the teachers and practitioners of business and economic history in senior academic posts) or by archivists inside major public sector archives specialising in business records.

Instead, this paper gives a view of history and archives from inside business, where I have worked as archivist and sometimes as historian for the best part of 30 years. The paper also looks beyond the special partnership of company archives with business history. One of the main themes here is that the relationship between business on one hand and history and archives on the other hand can bear fruit not just for business historians but for historians of many different persuasions. Most of what follows is necessarily from a London perspective but - as it comes from a former pupil of Colinton Primary School - I hope that it will not be too blinkered.

Business appears to be stony ground for history and archives. It is almost impossible to find anyone with the title of historian on the permanent payroll of a modern company. Wells Fargo has such an appointment, with the company historian supported by a corporate history team. BP has also had an historian as a 'staffer' for the last 30 years, but for practical purposes the appointment is now out-sourced (along with the BP archives) at Warwick

University. Otherwise established posts as 'company historian' are extremely rare.

Certainly the imperatives of business seem to leave little room for the past. Those imperatives are shareholder value, performance, and market strength, as reflected in share prices, profitability and the cost: income ratio. Moreover the business horizon seems too short for history and archives. It is unusual for the annual report of a company to look back or even give comparative figures for more than five years. Topmost executives and chairmen do not often hold contracts of more than twelve months' binding commitment on either side. It is increasingly clear that British companies are now assessed on each half year's results rather than the full twelve months and it may not be long before the North American pattern, with all the emphasis on the last quarter's earnings, prevails in the United Kingdom and in Europe.

In these ways the attention span of the business world is very short. At face value there is also the problem of career patterns. The brightest and best recruits to business expect that they can trade their new business skills on a regular basis, with the notion of a job for life not even up for discussion. It is clear that members of this hothouse generation are never in the same place long enough to recognise the desk or building where they work, let alone any facet of corporate culture. In this demanding, exciting world, does the history of the business, and its historical context, stand any chance at all?

Even if this is an over-simplification of the imperatives of business life, there is immediately a discrepancy between the inhospitable features of the ground and the relatively blooming health of history and archives in business in the last quarter of the twentieth century. In that period the number of formal company archives in the United Kingdom increased from no more than ten in 1970 to 50 in 1985 and 87 by 1999. The number of business archivists - i.e. full-time professionals employed in the private sector - has moved up in the same period from half a dozen in the late 1960s to over 150 today. In the United States the picture is similar. The Ford Motor Corporation - which if you listened to Henry Ford should be the stoniest ground of all - has had a thriving business archive since 1951. The number of US companies making

provision for their archives shot up from 44 in 1964 to 133 five years later and 200 by 1980. [iii] Recession and downsizing knocked back those numbers in the 1980s but by the 1990s major US corporations such as American Express, Phillips Petroleum, Microsoft, Motorola and AIG were establishing corporate archives. This picture does not support Stephen Freeth's view that *'businesses, especially in the financial sector, are less and less willing to maintain their archives through an in-house archivist'*.[iv] Meanwhile, on the history front, the last two decades have produced a huge range of company histories, general surveys of business history and, as a new and popular genre, instant memoirs and autobiographies by those who have taken part in some of the great dramas of corporate history. We should not leave out the management writers, who are users of history in a more serious way than we might expect from titles such as *Thriving on Chaos* or *The Pursuit of Wow!*[v]

The survival and flourishing of history in business has a remarkably long pedigree, dating back at least as far as fourteenth century Italy. In the late middle ages, business-related institutions such as guilds and livery companies were conscientious record-keepers, compiling archives of permanence in much the same way as the Church. There was always a strong commemorative drive in such institutions. By the later seventeenth century, there were signs of a more explicit concern for history in business institutions. A retrospect of the Bank of England was published in 1695, written by Michael Godfrey, the first Deputy Governor, only one year after the Bank's foundation.[vi] The history instinct was undoubtedly strong at the Bank, and by 1794 its directors were marking their centenary in no end of style with a full banquet attended by Pitt the Younger. On a more modest scale the London Joint Stock Bank, one of the forerunners of HSBC Bank in the banking boom of the 1830s, arranged a ceremonial dinner to mark that bank's second anniversary. This was either very extravagant or very pessimistic about the chances of going the distance of three years. The Bank of England even managed to arrange a Court Room dinner to mark its 250th anniversary on 27 July 1944; wartime austerity and the constant threat of V1 doodle-bug raids on London could not prevent the Bank from celebrating this triumphant day.[vii] In

these examples the instinct to notice landmarks and to honour survival in the business community was remarkably strong.

The publication of company histories reflected the same instincts in business. In the first 200 years of the Bank of England there were no less than twelve separate histories of 'the Old Lady of Threadneedle Street', excluding the scores of tracts and pamphlets on monetary issues of the day. Elsewhere in the economy there is also evidence of the historical instinct. Francis Goodall's bibliography of business history lists no less than 340 company histories published before 1900.[viii] This is a surprisingly high number and most of these pre-twentieth century histories were published by the companies themselves. Moreover the history instinct in business was not confined to publications. In the eighteenth and nineteenth centuries, ancestry was increasingly deployed for marketing or prestige reasons. The heading 'Established 17XX or 18XX' proliferated on headed paper, shop fronts, carts and carriages, packaging and advertising and was perceived as a strong commercial advantage. It appeared in more permanent form through the Victorian liking for carving dates of foundation over doorways and in the window glass of buildings.

Until the early twentieth century the history instinct in business had a strong commemorative basis, with company histories and other efforts usually generated by the businesses themselves or by their owners and managers. History in business did not obtain an *external* dimension until business history began to emerge as a branch of economic history in the 1920s. In the United States NSB Gras and his colleagues at Harvard were using case studies in business history in the syllabus of the Graduate School of Business Administration, leading on to the formation of the Business History Society in 1926. At the same time, in the United Kingdom economic historians were penetrating business archives for new approaches to the Industrial Revolution. This was a highly productive research phase and its output included the outstanding series of monographs from Manchester University Press - GW Daniels, George Unwin, AP Wadsworth and Julia Mann on the cotton industry; TS Ashton on iron and steel; and Ashton and J Sykes on the coal industry.[ix] It was also a phase in which British historians were genuinely

excited about the rich resources of business archives, which then as now were surrounded by risks to their survival but were also being recognised as unique resources in view of the country's pioneering role in the Industrial Revolution.

This same sense of excitement, combined with a concern for the future of industrial collections, led to the formation of the Business Archives Council in 1934. The Council, and its sister in Scotland, gave business archives a focus which is retained to this day. The focus has always been especially sharp in Scotland, thanks to the efforts of this Council, the co-operation of the National Register of Archives (Scotland) and the key role of the Colquohun lectureship at Glasgow in the development of both business archives and business history.

The external activity in business history and archives in the 1920s and 1930s had related mainly to defunct companies. It was not until after the Second War that the history instinct generated a significant body of work on existing companies. In the forefront was Unilever, which asked Sir George Clark to write its history in the late 1940s. Clark was otherwise occupied but he recommended one of his new Cambridge colleagues, Charles Wilson, and this led to one of the outstanding achievements in British business history at that or any other time. Bill Reader, one of Wilson's assistants, went on to write the multi-volume history of ICI and, as a freelance, histories of Bowater, Metal Box, and many others.[x] Then in the 1960s and 1970s economic historians enjoyed a boom in commissioned business histories, and the leading exponents all continued to figure strongly in the development of business history as an academic subject. Examples include Theo Barker (Pilkingtons), Donald Coleman (Courtaulds), Barry Supple (Royal Exchange Assurance) and Bernard Alford (WD & HO Wills).[xi] Indeed when the Social Science Research Council reported on research opportunities in economic and social history in 1971, business history was specified as an area of special opportunity.[xii] Some university departments - in particular at Glasgow and later the London School of Economics and Reading - took up the challenge and generated a huge volume of company histories and special subject work in business history between the late 1960s and the early 1980s. Others held back in the conviction that business history was 'applied history' and was therefore

'below the salt'.[xiii] That attitude retreated in the face of some of the great comparative work in business history such as Sydney Checkland's history of Scottish banking, Peter Payne on Colvilles, Youssef Cassis on City élites and Geoffrey Jones on multi-nationals.[xiv]

This boom in business history also opened up a gap between the traditional, often anecdotal approach and the more rigorous academic approach of the new business historians. In 1973 Donald Coleman published his persuasive 'Gentleman and Players' argument.[xv] This article picked up the old cricket distinction between the amateur approach or gentility of the public school tradition on one hand and the dedicated professional world of the practical man on the other hand - and then applied that distinction to the business world. He did not dispute that such a distinction existed and that it was thoroughly indulged in the Victorian and Edwardian period but he did dispute that the gentlemanly code in business had any causal relationship with 'entrepreneurial failure', as claimed by Martin Wiener and others.[xvi]

The gentlemen and players analogy also has its uses in business history. Until Gras in the United States and the Manchester School over here got into their stride, business relied entirely upon the amateur approach. Company histories were written in the spirit of family memoirs with comfortable titles to match, such as *Our Centenary* and *Peeps into the Past.* In some cases they were written by members of the owning family or by former directors and employees; so far as I can judge, they were produced without payment or salary. In most cases a chairman's foreword records 'our thanks to Mr Quill, who has for many years made our history his special concern'. This was what Forrest Capie describes as the 'great tome' tradition - *'books which, once you had put down, you could not pick up again'.*[xvii]

Many of these efforts are greatly under-rated. Modern historians may call them anecdotal or quaint but, having turned to them many times over the years, I am persuaded that they can offer a solid core of careful, well-documented antiquarian research in the best sense of that description. Gentleman historians in business worked in a noble and creative tradition. In banking history, in 1906 John Hughes published his *Liverpool Banks and*

Bankers.[xviii] This was a study of some of the great banking and merchanting houses of Liverpool which were either on the brink of vanishing or had already vanished - business families such as Roscoe, Leyland, Moss, Heywood and Gregson. It was work which Hughes saw as 'local patriotism' but which emerged as a vital source for the history of banking and merchanting - and even the slave trade - in Liverpool. Thirty years later Wilfrid Crick and John Wadsworth also turned out for the gentlemen when they published *One Hundred Years of Joint Stock Banking*, to mark the centenary of Midland Bank.[xix] This history, by two young bank economists, was perhaps the most thoroughly source-based history to appear until then. It led to the formation of the one of the first serious banking archives in Europe and there is not a day in our own office when we do not consult this inspired and enthusiastic work.

In the modern period (that is, the last two decades or so) business was using both traditions for its company history projects. Major national and multi-national companies continued to sponsor substantial history projects by academic historians in that period. Examples include Edgar Jones (GKN), the BP history, the multi-volume history of the coal industry, and work by members of this Council such as Peter Payne, Michael Moss, Charles Munn and Richard Saville.[xx] Most of these projects were on a simply heroic scale, leaving no doubt that the businessmen who had commissioned the work had not only the instinct but also the commitment to history. Frank King's four-volume history of the Hongkong and Shanghai Banking Corporation - which has strong echoes of Scottish banking - was commissioned in the late 1970s, completed in the early 1990s and was a truly multi-national, multi-archival enterprise.[xxi] The project employed a team of researchers not only in Hong Kong and London but also in far-flung parts of the HSBC operation such as Singapore, Bombay, Hamburg and Lyons. The output that project comprised not only four substantial volumes on Eastern and international banking, but also the companion histories of other HSBC subsidiaries such as the British Bank of the Middle East.[xxii]

The gentlemanly tradition also survived and even flourished in the modern period. Some companies turned to novelists or journalists, in the same way that the Chartered Bank had hired Compton Mackenzie for *Realms of Silver*.[xxiii] The Bank of England turned to a specialist quite outside the history disciplines when it commissioned John Fforde for its huge book on the 1941-1958 period. John Fforde had served as Chief Cashier in the late 1960s - and he himself was surprised to be asked to take on this project.[xxiv] Fittingly he was an expert in monetary policy, which was the principal theme of that volume. Elsewhere in the City, the old Barings commissioned Philip Ziegler, biographer of William IV, Melbourne, Diana Cooper, Lord Mountbatten and other glittering subjects.[xxv] Philip Ziegler was and is a professional biographer but, as he himself explained, he was a newcomer to the history of banking or business of any kind. One much smaller house in the City chose its historian on the basis that one of the director's wives was the author of children's books of the fantastical, Harry Potter kind - perhaps these were ideal qualifications for writing about the London discount market, with its mixture of horseplay and mystery. All these examples provided entertaining but also very usable examples of business history.

What do these continuing traditions tell us about the history instinct in business? The main factors were and are:

- *Commemorative* - the urge to mark a centenary or other anniversary, often as part of a range of events and publications. This has been the *raison d'être* of a high proportion of company history projects.

- *Public relations* - the urge to reinforce or endow the company with the prestige of a major institution. A board or executive committee may see a commissioned history (in Donald Coleman's words) *'sitting somewhere between prestige advertising and patronage of the arts'*.[xxvi] Imitation and competition is important here, where a company history becomes part of the kit for a corporation which wishes to portray the image of the long-standing, reputable institution. In some cases history projects grew into that role even if they had not started that way: histories have been deployed to defend or attack a company's reputation at crucial moments

such as takeover bids or (as at Standard Life) in the great debate over de-mutualisation.

- *Personal* - a high proportion of company histories in the modern period have been linked to the commitment of individual directors or managers. This was the seed for the Unilever project 50 years ago, when Lord Heyworth approached George Clark and then Charles Wilson. Heyworth believed that history is a catalyst, that his managers would learn from the careful, systematic study of the business past.[xxvii]

These factors have also come into the reckoning for history and archives in business in a much wider sense. I am not convinced that business history is the main reason why history and archives can survive and even flourish in the business environment. Certainly many company archives came into existence as part of history projects or in their aftermath - this was the case at HSBC, both in Hong Kong and at Midland Bank - and archivists sometimes forget their large debt to history projects. Yet business history has often *dissuaded* business from taking forward projects in history and archives. Donald Coleman, in his 'Uses and Abuses of Business History' lecture in 1986, was worried about the impression left by the 'great tomes' of modern business history:

'They are very largely unread by anyone except other business historians .... those to whom complimentary copies have been distributed will glance at the illustrations. In those very rare cases of histories dealing with very recent times, former members of the firm who have left in less than harmonious circumstances will look to see if there are any possible grounds for a libel action. Few businessmen from other companies will be in the least interested.'[xxviii]

This is not all. There is also the 'no-show' problem - the situation where a business publicly commissions a history and then fails to come up with the results. There are scores of such cases. Such projects come to grief for a variety of reasons, sometimes as a result of legal or libel difficulties, sudden changes in corporate fortunes (such as financial cuts or takeovers) but often

because there is a real problem about quality. All of these 'no-show' cases have damaged the chances of history and archives in other corners of the field.

In these ways business history is not always the most pressing argument in favour of history and archives in business. The reasons for interest and spending in this area are to be found instead in the *business* use of history and archives. To explain the growth of in-house company archives, we should look more at the practical, day-to-day use of archives in business. Most business archivists would agree that the number of enquiries from within the organisation outnumbers external enquiries (in our own case, by three or four to one). This internal use of history and archives includes:

- *Management information.* The business has an appetite for details of how long it has been in particular towns, cities and countries; how long it has had relationships with particular customers and competitors; how long it has provided certain services and with what results; how particular appointments came into being and how long X or Y served as chairman, chief manager, or remittance clerk; how the organisation coped with war, crisis, or taxation in certain overseas markets. These are not just questions of curiosity. They are usually posed as part of investigations of business issues, briefing notes for strategy teams, the press office, or for speeches and presentations.

- *Legal and statutory duties.* The modern corporation, as never before, is required to document its activities for regulators, tax authorities, and special commissions and government enquiries. History and archives come into play here, whether to produce the original licence for operating in an overseas market or to show a competition enquiry the levels of lending to small business 10, 15 or even 30 years ago.

- *'Discovery' work.* The modern company is required to answer claims or enquiries about the products or services which it has provided decades ago. We are in an 'age of culpability' or the 'culture of compensation', where it is not enough to ignore such enquiries or to plead the inadequacy of record-keeping. Jonathan Freedland, writing in the *Guardian* early in

1999, argued that *'we have arrived in a new zone of culpability: the era of corporate reckoning....For the world is demanding a new kind of accountability - one that includes the accountants'*.[xxix] This can mean involvement in legal proceedings to explain and authenticate the business procedures of long ago; or it can mean the sensitive but vital work of tracing the assets of victims of the twentieth century's calamities. In cases of this kind, the history and archives of the business are in action in a way which we could not have guessed at 20 or 25 years ago. This work overflows into media enquiries about corporate history, whether for the specialist business programmes or for local events and local interest.

- *Public relations and marketing.* The history and archives of the modern company are deployed, for example, in the use of early advertisements, film and video; the verification of brands and symbols; and the use of text and illustrations for marketing literature and magazines.

- *Management education.* This area was once seen as the great hope of business history. In the event business history is practically invisible in the business schools. Where it has taken root, the case-study approach (in which management teachers examine corporate events and scenarios in detail) has not always been very imaginative. Inside the corporate sector, however, history and archives play a much more active part - in induction training and publications and in contributions to management strategy courses. The level of interest and enthusiasm in this environment is much more promising, so that we should not give up the potential value of business history in management education as a lost cause.

- *Corporate identity and loyalty.* It is important that the 'sense of belonging' persists in many major corporations as well as small family firms. History and archives are harnessed to answer questions about former members of staff; about conditions of life and employment; and about recent or upcoming retirees. This aspect high on the list of the priorities of corporate archivists at modern giants like IBM and Microsoft. Deutsche Bank even have a pensioners' history society, which meets regularly to hear discussions on European banking history. At HSBC there is also a

strong history instinct. In particular, people who have served overseas, often hundreds or thousands of miles away from the next nearest branch of the business, develop exceptionally strong interest in their predecessors, contemporaries and successors in these posts - a camaraderie in which history and archives are given considerable care and affection.

These are some of the reasons why the modern business still has a good appetite for history and archives well beyond the discipline of business history. The examples offered here suggest that the history and archives of a business are in regular practical support of the imperatives of business rather than simply an ornament. Yet in almost all the companies which maintain corporate archives, there is also the recognition that the outside world has an interest. Some corporate archives are almost exclusively designed for external users, and the Rothschild archives (now a separate trust) are perhaps the most spectacular example.

The external use of business archives comprises historians with a wide variety of interests, in which business historians are only one part of the constituency. Users of the HSBC Group Archives include:

- *Political historians*, working on major figures such as Reginald McKenna, chairman of Midland for 25 years, or Sir Charles Addis of Hongkong Bank, one of the great sages of Anglo-Eastern relations in the early twentieth century.

- *Social historians* studying the workforce - pay, wealth, pensions, conditions of employment, gender issues, health, vital statistics, the rise of new professions, migration, sport and recreation.

- *Historical geographers*, looking at communications and the spatial development of markets.

- *Architectural historians* interested in the landscape of the City or in the cultural meaning of buildings at home and overseas.

- *Metropolitan historians*, notably in the example of David Kynaston four-volume history of the City of London.[xxx]

- *Local* or *regional historians* working on industries, markets and family networks. This category has become a heavy user of the records of banks and insurance companies, mainly because these businesses were and are assiduous in keeping records of their customers' fortunes and activities. This is an absolutely vital aspect of business archives, for these are records which can throw as much light on their customers and their milieu as on the fortunes of the business itself.

If historians of these different breeds wish to retain access to business records in this way, then it is important that business sees value in history and is prepared to make commitments to history projects or permanent archives. There is a more serious worry here, and that is that the voice of the historian is a small or silent voice. For historians are not only a minority of users: they are also a minority of external users. At HSBC Group Archives - which have been open for research since the 1940s - historians generate less than four per cent of the total enquiries which we receive and less than one sixth of all the external enquiries which we receive. That puts historians on the same level of demand as fine art specialists, family historians and direct media enquiries, only just ahead of groups such as collectors and students of design and branding. I should like to see that number go up for several reasons:

- history and archives in business need the broader perspective and balance which historians and researchers can bring simply by describing their research plans and by visiting and discussing their work.

- our visiting historians produce research and publications which are of genuine use to the business, providing a source of information, analysis and dialogue which it would be impossible to commission or order on tap.

- thirdly, historians' needs should be an important factor in decisions about the keeping of records. A business and its archivists need to be aware of the preoccupations and priorities of historians. Otherwise, the

preoccupations of other groups - family historians, the fine arts - may hold greater sway and affect the collecting policies of business archives.

- a final reason for welcoming an increase in user numbers is the need to dispel a long-standing myth. The plentiful articles on 'how to write business history' over the last 30 years have often closed with the thought that the subject would make real progress *'if only British companies would give access to their records'*. Many postgraduates read and believe such advice but it has now become misleading. The shortage or inaccessibility of sources, even very modern sources, is not the problem. If anything the position is quite the reverse, in that the large business collections in private and public hands are severely under-used.

In this lecture I have argued that history and archives in business have a long pedigree; that in recent years the tradition has been invigorated by a more purposeful role in support of the businesses which take their archives seriously; that the history and archives of business are valuable and unexpected sources for researchers in many different areas; and that it is in the interest of the wider community that the history instinct remains relatively strong and healthy in the business world. I am certain that this Council, as it enters its fifth decade, will play its usual enthusiastic part in maintaining and reinforcing that vital interest in business archives and business history.

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[i] I am grateful to delegates to the Council's Annual Conference in November 2000 for their comments on this paper and to members of the Senior Historians' Conference for their comments on an earlier version of the paper.

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The Admiralty and Hanna, Donald & Wilson Paisley, Scotland[i]

W Donald[ii]

The partnership of Hanna, Donald & Wilson was formed in 1851. At that time the Paisley firm of Reid & Hanna, who were canal boat builders, blacksmiths and gas engineers was facing a down turn in work due to a slump and the demise of the canal trade on which their boat building and repairing business depended. William Reid and Robert Hannah had their own engineering preferences and they agreed to dissolve their partnership and split the business. As a result William Reid carried on with the gas engineering, but his son James left to join the young engineers James Donald and Robert Wilson in business. Wilson was a former junior partner in Blackwood & Gordon, shipbuilders, who had just taken possession of the Abercorn Shipyard and Foundry vacated by Barr & McNab Shipbuilders near Sneddon Bridge, Paisley.

Robert Hanna senior seems to have confined his activities in this new venture to financial matters because of ill health and both his son and William Reid died shortly after the re-organization. Consequently it was as gas, general and civil engineers that the new Hanna, Donald & Wilson partnership commenced, operating out of premises in Smithfields. Such was the enterprise, energy and foresight of the partners that their progress was marked by the completion of a number of major civil engineering contracts. Contracts included Waverley market, Waverley bridge and Waverley station, all in Edinburgh; St Enoch station, Clyde Trust dock sheds, Kelvin bridge, Albert bridge, all in Glasgow, Stirling rail bridge, Carlisle engine sheds, Cumberland and Westmoreland railway and road bridges. In addition numerous complete gas works contracts at home and abroad were carried out as well as dock and shipyard plant, machinery, cranes, boilers and engines. They had also made and installed graving dock gates (caissons) in Japan, Hong Kong, Mexico, and Ireland as well as Scotland, which were built in the shipyard. They won orders from France, Spain, Italy, Austria, Holland, Saigon, Russia, Peru, Norway, Sweden, Greece, Canada, Egypt, Mexico, Dutch East Indies, Philippines, Australia, Burma, India, Singapore, Hong Kong, Japan, Brazil and Malta. One of their larger contracts was obtained in 1874-1875 for two floating docks, a steam

tug, plus steamer shore based repair shops, cargo and goods storage and coaling facilities plus the supporting administration, workmen and staff housing buildings at two sites near Batavia, these were completed in 1880. James Donald senior, his wife and one of his sons James junior, accompanied by their Scottish works personnel were on site for at least four years. The contract, valued at £187,000 in 1874 completed by a revised agreement in 1880, is of special historic interest in the early development and expansion of the steamship and commercial repair facilities in this area. The floating docks were patented by Hanna, Donald & Wilson.[iii]

Despite the volume of civil and mechanical engineering contracts the firm still found time and space in the Smithfield Works to build a hundred ton paddle steamer named the *Pioneer* and transport it to the Town Quay near Sneddon Bridge for launching and completion. The rapid increase in gas and civil engineering contracts, which included bridge building and warehouses roof construction for domestic and foreign customers, led to space problems. In 1865 the company left Smithfields and moved to the new Abbey Works, a former wood yard between Back and New Sneddon Streets, Paisley. The partners then bought the Abercorn Foundry previously owned by Blackwood & Gordon in North Croft, also nearby. Two years later in 1867, Robert Wilson bought the Abercorn Shipyard from Blackwood & Gordon who had moved down river to a larger yard. The yard was stripped and completely rebuilt. Over the next two years new plant and equipment was installed. Most vessels were built parallel to the narrow river Cart and launched broadside on. Finally in 1869 the keel was laid for the first vessel, a steam lighter named the *San Francisco*. The year before two small boats and a canal barge had been constructed in the neighbouring 'new' Atlas Works which had also been purchased. A marine boiler shop and machines for bolt making had been installed and a yard was available for storage of materials and trial assembly of sectional craft.

The Abercorn Shipyard was small and only capable of building up to 250ft overall, but rights over the adjacent quay gave extra space when necessary. Normal yard and engineering work practice was followed. The yard laid the keel and constructed the hull and superstructure while the supply of the

machinery, boilers, windlasses, derricks along with other fittings and trial trip procedures were an Abbey Works engineering responsibility. The Abercorn Foundry supplied all the castings, keel and stern frames, bollards, pipe fittings where applicable, cylinders, valves and propellers. The firm had patented its own propeller designs. At a later date the partners designed and patented two types of water tube boiler, one for steam launches and small commercial vessels and the other for larger ships. They had also patented an induced draught system which was successfully installed in the ex-Clyde paddle steamer *Lord of the Isles I* (1877-1904), which was operating on the river Thames in 1891.

Robert Hanna's death in 1879 and that of Robert Wilson in May could not have come at a worst time. In October 1878 the City of Glasgow Bank had collapsed leading to a recession in the west of Scotland of unprecedented severity. Uncertain of the future, Hanna's widow withdrew her husband's investment in the business. The loss of Robert Wilson from diabetes with his dedication, expertise and enthusiasm left a gap it was difficult to fill. James Donald, who had just returned from supervising the construction of floating docks and dockside installations in the Dutch East Indies, quickly took control and addressed two urgent problems. The first and most pressing was a cash shortage and the second the need to invest in new plant and equipment in the Abbey Works to handle the larger steel plates and sections which were replacing wrought iron. The first was resolved by negotiating a loan from their bankers, the Edinburgh-based British Linen Bank. The Works were re-organized, the latest long travelling overhead cranes installed and new updated plant and equipment purchased. Nothing was left to chance. The investment proved to be very successful and the bank loan was repaid by 1885.

By 1893 the company had completed 107 ships, tugs and barges, including two torpedo boats for the Admiralty, and had constructed and installed engines, boilers and cranes mounted on pontoons for other shipbuilders, as well as their own customers. They had successfully completed five second class torpedo boats for the Greek Navy, one of which was a converted high speed steam launch which was re-engined and re-boilered to give a speed of 17 knots. They had almost completed an order for 20 steel barges, all fitted

with windlasses (also an Hanna, Donald & Wilson product), and were about to start on their next contract, a 95ft tug boat for a Greek owner. In that year the firm had a full order book, experienced technical staff and foremen, a large drawing office and a skilled workforce. Relations with other yards were good, particularly those engaged with Admiralty contracts. The opportunity to build two destroyers for the British Admiralty was a welcome challenge well within the capabilities and capacity of the company.

The invention of the torpedo produced a wave of panic among the dominant naval nations, whose fleets still had a large number of heavily armed comparatively slow capital ships. They were not only faced with a design and development problem to provide small fast boats, from which the torpedoes could be launched, they had to consider how best to protect the capital and other ships from this new type of attack. One solution was the development of the torpedo boat destroyer. Initially some small fast lightly armed boats similar to the torpedo boat were tried, but they were too small for sea going duties with the fleet. Torpedo gunboats were designed and tested. They were armed with two 4-inch guns, one fore and one aft, some lighter armament and three fixed torpedo tubes. These first appeared about 1886. They could barely make 18 knots and although twenty-three were constructed, their protective rôle was short lived and they ended up carrying out duties in home waters such as fishery protection and acting as escorts.

The speeds of torpedo boats had by 1890 reached 22 knots and to meet this threat it was decided that destroyers had to be faster and more manoeuvrable. With the advances in boiler and machinery design and in materials, together with better naval architecture, orders were placed by the Admiralty for the first real torpedo boat destroyers. Individual firms produced their own designs and as long as these complied in general with the broad specification they were accepted. The first orders were placed in 1892 with Thornycroft, Laird and Yarrow for boats capable of 26 knots and to be 185ft x 19ft x 7ft, with 4000 IHP. They were not completed until June 1895. Almost all recorded speeds of over 27 knots with an average 4200 IHP. The next contracts to be issued in 1894 were for thirty-six larger 'A' class torpedo boat destroyer capable of 27 knots to be completed within 15 months.

In tendering Hanna, Donald & Wilson reviewed the technical specifications of such vessels which had already been delivered to the Admiralty. These were:

	Boiler type	Speed	Total Boiler Weight
H MS *Ferret*	water tube	27knots	65tons 5cwt
HMS *Lynx*	water tube	27knots	65tons 5cwt
HMS *Speedy*	water tube	20.25knots	72tons 15cwt
HMS *Daring*	water tube	27knots	55tons 15cwt
HMS *Decoy*	water tube	27knots	55tons 15cwt
HMS *Hornet*	water tube	27knots	53tons 10cwt
HMS *Havock*	Locomotive	26.2knots	53tons 10cwt
HMS No.88	locomotive	23knots	26tons
HMS No.89	locomotive	23knots	26tons
HMS No.90	B&W	23knots	24tons 5cwt
HMS No.91	water tube	23knots	34tons 10cwt
HMS No.92	water tube	23knots	34tons 10cwt
HMS No.93	water tube	23knots	26tons 1 0cwt
HMS No.94	locomotive	23knots	36tons 8cwt
HMS No.95	locomotive	23knots	36tons 8cwt
HMS No.96	locomotive	23knots	36tons 8cwt
HMS No.97	locomotive	23knots	29tons 10cwt

A contract for two 27 knot boats was awarded to Hanna, Donald & Wilson in 1894. According to reports, all vessels were to be powered by triple expansion engines of between 3177 and 4844 IHP, and achieved trial speeds of between 26 and 29 knots. They were to have a tonnage of between 250 and 300 tons, dimensions of 195ft to 200ft x 18ft 6ins to 20ft x 11ft 6ins to 13ft and armed with one 12-pounder and five 6-pounder guns and two deck mounted single tube torpedoes.

The contract with Hanna, Donald & Wilson was one of the earliest placed for the 1892-1893 updated 27 knot torpedo boat destroyers. Negotiations commenced in 1893 and tenders were submitted on 24 March 1894 and accepted for:

Two vessels of 236 tons displacement, 200ft x 19ft x 12ft 9ins, and fitted with locomotive type boilers, triple expansion engines of 3850 total IHP, twin screws and capable of 27 knots.

For the cost of:

Hulls masts superstructure etc.	£9800
Propelling machinery	£23619
Auxiliary machinery etc.	£1239
	£34,658 each vessel

Total cost of two vessels was £69,316, including trials and delivery. Completion was to be in twelve to thirteen months from date of contract.

Between 1894 and 1903, ledgers show Hanna, Donald & Wilson's work in the shipyard to be low, but the company's main activity continued in its many other engineering interests, in accordance with the original signed contract.

An indication of the financial strength and extent of work of larger contracts taken from the company ledgers during this period puts the destroyer contract into perspective. The values shown below are not the total value of any contract or works, but show the cost of work 'in hand' at the time of recording. The work 'in hand', being part of the annual accounts Hanna, Donald & Wilson financial year ended on 31st October.

1894 £27,110 Belfast Gas Works; North Berwick Gas Works; Continental Gas Works, Messina, Italy; Admiralty - torpedo boat destroyers; Messrs W Lester & Sons – tanks; Greenock Gas Company - plant and equipment.

1895 £29,870 Thomas Mitchell – tanks; Admiralty - torpedo boat destroyers; Belfast New Gas Works; Trinity House - navigation buoys; W Baird & Co - hydraulic mains; penstocks and fittings for Glasgow water supply (Loch Katrine contract).

1896 £43,393 Airdrie Iron Company - gasholder and plant; W Baird & Co - hydraulic mains water works supply; Glasgow water supply (Loch Katrine); Admiralty - boiler for supply vessel; Airdrie Iron Company - gas works; Motherwell Gas Company - gas works; Clyde Harbour Trusts - dry dock caisson; Humphries & Glasgow - pipes and tanks; Musselborough Gas Company - plant and pipe-work; Rothesay Gas Company - equipment and pipe-work; Captain Brinkman - engines and boiler.

1897 £14,250 Clyde Trust - dry dock caisson; Larkhall Gas Company - gas purification plant; D Colville & Co - C.I. columns, lattice girders and flooring and special span girders; Inverlieth Gas Company - gasholder and plant; Leith Harbour - ballast blocks; Plean Collier Company - gas plant mains, W Baird - water storage, mains valves.

1898 £12,945 L & W Railway - gasholder; Stirling Gas Company - plant and buildings; Paisley Electric Department - depot building steelworks and roofing, tanks etc.; Palmers Shipbuilding Company - 150ton floating sheer legs, crane and pontoon; Renfrew Gas Company - gasholder and plant; Crown Agents for the Colonies - two lighters; Glasgow & SW Railway - footbridges; Admiralty - re-boilering, torpedo boat destroyers.

1899 £13,275 Leith Harbour Commissioners - dock storage sheds, steel work and roofing; Steam yacht *Iris;* Continental Union Gas, Italy - gas plant and buildings; Paisley Gas Company - plant and pipe-work; Admiralty - re-boilering torpedo boat destroyers.

1900 £19,100 Glasgow Water Company - building steel work; Palmers Shipbuilding & Iron Company - boiler and steam winch for floating crane; Glasgow Tramways - train depot, including roof and water services; Lothian Coal Company - gas purifiers, condensers and pipe-work; Glasgow Gas Company - retort house and roof tank and service; Dumbarton Gas Company - hydraulic mains and tanks; Stirling Gas Company - gas condenser, pipe-work and fittings, gasholder; HM *McIntyre* - boilers; Glasgow Water Company - four pontoons for Loch Katrine; Barassie Bridge - major repairs.

Priority in construction was given to HMS *Fervent.* The keels of both boats were laid in April, but the *Fervent* was nearest to the river. The spring and winter of 1894-1895 were the coldest for years with sub-zero temperatures for many weeks. This led to delays in the delivery of materials and the extreme cold prevented construction in the open yard. Although work did not begin on the hulls until May 1894, the *Fervent* was launched at the end of November.

HMS *Fervent* and HMS *Zephyr* before the launch of the former into the river Cart, November 1894

Fitting out commenced immediately and she was ready for dockside trials in February 1895 well within the contracted time.

The trials revealed mechanical teething troubles in the over heating of the propeller shaft thrust blocks. Cracks were noticed in two crosshead pins on one of the engines and one of the main crankshaft bearings required re-bedding. These were quickly corrected but the main delay was due to a casting blow out on the HP cylinder of the port engine, which required the engine to be dismantled, the recasting of the failed component, refitting and testing. As a result the *Fervent* was not ready for sea trials until June 1895. In the meantime, HMS *Zephyr* had been launched and fitted out, ready to start dock trials in May. These, however, were delayed pending the result of the sea trials of HMS *Fervent* which revealed serious leaks in the copper water-jacketed fireboxes of the locomotive boilers. The leaks did not occur until after the speed trials were completed and power output and pressure had been reduced. A number of attempts were made to rectify the problem and on each occasion a speed trial was made to fully test the repair, but it became clear that there was no real solution. As the boilers had already passed all the required

statutory tests, a sample of the copper was cut out and sent for analysis. Hanna, Donald & Wilson were not alone in experiencing such problems, other builders faced similar difficulties.

On receiving the results Hanna, Donald & Wilson wrote to the Admiralty on the 25 March 1896, making the following points:

- At the time of tender, water tube boilers were still in the development and experimental stage and had given trouble, particularly tube-end leaks.
- Hanna Donald & Wilson had built and installed locomotive type boilers successfully for a number of years and the design was proven and reliable.
- The copper supplied for the fireboxes, though of great purity, had of late deteriorated in quality during manufacture. The tests showed it to be more open and coarser in the grain and unable to withstand the same stresses as before.

Some locomotive boilers fitted in the other destroyers had failed probably for the same reasons.

Hanna, Donald & Wilson then suggested that since water tube boiler designs had improved, experienced suppliers should be asked to tender for the supply of boilers of approved type for HMS *Fervent* and HMS *Zephyr*.[iv]

The Admiralty finally replied one year and five months later by making an offer dated 31 August 1897 as follows:

- The existing boilers and fittings complete be removed, making good due to such removal.
- A rebate of £3936 each vessel be allowed for the boilers and fittings removed. The boilers and fittings when removed become the property of Hanna, Donald & Wilson.
- Hanna, Donald & Wilson obtain tenders for water tube boilers and submit full details including arrangement on board. The only types of water tube boilers acceptable were Thornycroft, Normand, Yarrow and Reed. The

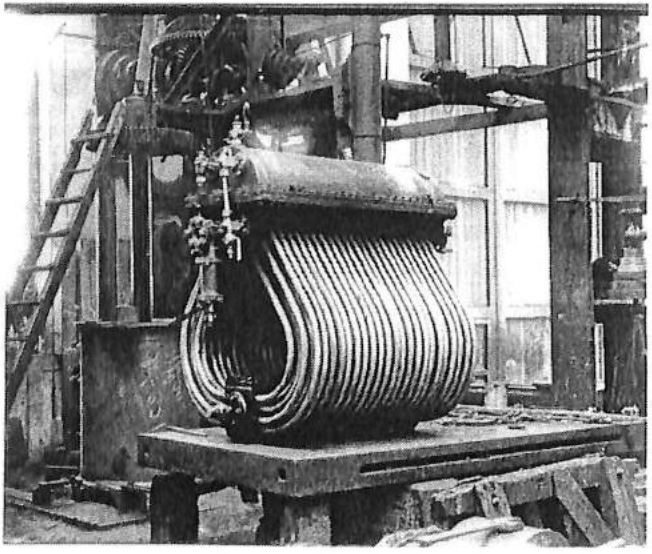
new boilers to be delivered within six months of Admiralty approval and work completed within three months after delivery. (The Normand boiler was of French design).

- The Admiralty would pay the tender price of the boiler in five instalments.
- Estimates for the removal and fitting of the boilers to be submitted for approval.
- The Admiralty to pay half the costs of the removal of the locomotive boilers etc. and the refitting with the water tube boilers etc.
- On completion, contract trials were to be carried out at the expense of Hanna, Donald & Wilson.
- Payment of balances outstanding on auxiliary machinery etc. would be made when the vessels were received by the inspecting officers.

Hanna, Donald & Wilson replied within three weeks on the 16 September 1897, accepting the proposals and requesting permission to tender for the water tube boilers themselves as they had their own patented design. This offer was refused by the Admiralty, which also stated in a letter dated 28 October 1897 that, in accordance with normal practice, they would required an investigation of the 'books' (accounts) of Hanna, Donald & Wilson. After discussions with the four approved makers of water tube boilers regarding heating surface and grate areas, rated outputs, adaptability and so on, tenders were obtained and submitted on 21 September 1897, with a recommendation that the tender for Reed boilers from Palmers Iron & Shipbuilding Co. of Newcastle be accepted. Their dimensions were 9608 sq ft heating surface and 209 sq grate area. Other tenders quoted smaller heating surfaces and grate areas of 9500 sq ft heating and 190 sq ft grate areas.

Five months later, on the 18 March 1898, the Admiralty returned to Hanna, Donald & Wilson five blank copies of the tendered boiler specification, asking Hanna, Donald & Wilson to send them to Palmers Shipbuilding & Iron Co. to have them made to agree with the one already forwarded to the Admiralty.

When Palmers returned the forms Hanna, Donald & Wilson, on re-reading the tender specification, noticed that this now differed from that originally sent to the Admiralty on 21 September the previous year. Hanna, Donald & Wilson wrote to the Admiralty on the 26 March 1898, pointing out that the changes noted in the returned specification showed that the heating surface had increased to 9936 sq. ft and the grate area was now 238.4 sq. ft, exceeding the weight of the boilers necessary for 27 knot boats. They protested that with these changes they could not be held responsible for any troubles or expenses, which could be caused by this extra weight. In addition there were a number of items, which, though not included in the specification, were required for the new installation, and would add to the extra weight and costs. Consequently they returned the forms to the Admiralty unsigned. (It is difficult to understand why the Admiralty chose to increase the size of the recommended water tube boilers to such a degree, after all Hanna, Donald & Wilson had consulted with the four designated suppliers and three had offered boilers of lighter construction than the recommended first Reed boilers.)



Water tube boiler

The Admiralty replied six weeks later on the 10 May to the effect that:

- They had not asked Palmers to increase the size of the boilers.
- They had no communication with Palmers except through Hanna, Donald & Wilson.
- The heating surface was not excessive compared with other 27 knot destroyers.
- They reminded Hanna, Donald & Wilson that they were the main contractor and their responsibilities under the original contract, including the supply of the boilers, remained in force.

Hanna, Donald & Wilson accepted the revisions by signing the revised specification, but stated, that while they acknowledged their full responsibility, they *'trusted their Lordships would take into their favourable consideration, the fact of the increased size and weight of the boilers as compared with the size and weight contemplated when water tube boilers were adopted and tendered for'*. Hanna, Donald & Wilson reminded their Lordships that a large number of drawings had still not been returned approved and the delay was holding back the work. They also awaited instructions for the steam separators, the compass platforms fan castings, cowls and fans.

At the time Hanna, Donald & Wilson were completely unaware of the fact that in January 1898, the Admiralty had called in and consulted J W Reed, the designer of the water tube boiler. As a result they had decided to increase the size of the boilers and to raise the pressure to 210 lbs per sq. inch. Hanna, Donald & Wilson were neither contacted nor consulted. In a further letter on 7 September 1898 in response to an expenses claim from Hanna, Donald & Wilson, the Admiralty agreed to pay one half of the costs of the insurance of the two vessels from August 1897 which was not altogether fair since the Admiralty were responsible for the delays from June 1896. However, the Admiralty now had knowledge of Hanna, Donald & Wilson financial situation following an inspection of the firm's books by the accountants, Price Waterhouse. This revealed that the firm was showing a comfortable profit on the contracts and that the Admiralty was well behind in their payments (see

page 35). The Admiralty now dragged its feet even more and continued delaying payments.

On the 16 June 1898 instructions were sent to Hanna, Donald & Wilson that the boiler working pressure on HMS *Fervent* was to be increased to 210 lbs per sq. inch and all pressure fittings etc. re-tested and approved. This instruction only applied to the *Fervent* and not to both vessels. This of course meant extra work which was not included in the agreement, but was carried out at no extra cost. HMS *Zephyr*'s boilers had still not been delivered by Palmers. Indeed these boilers did not arrive until the 4 August 1899 by which time the trials of HMS *Fervent* were underway. Instructions were then issued by the Admiralty but again time was lost through no fault of Hanna, Donald & Wilson as Palmers had taken approximately twelve months to complete their order for the eight boilers. Contrary to information given by some authors, the hulls were not lengthened to accommodate the new water tube boilers. A copy of the layout of the boilers survives showing the rib/frame numbers, which the boiler rooms occupied, and this clearly indicates that the bulkheads had not been moved and the overall number of rib/frames remained the same.

The trial trip results taken from the Admiralty files gave the following data:

Date of Trials 4 August 1899 HMS *Fervent*

Speed over the measured mile	27.476 knots
Speed over three hours	26.731 knots
Engine revolutions average	374 rpm
Average pressure - boiler	196 lbs per sq. inch
Average pressure - at engines	169 lbs per sq. inch
IHP - both engines - total	4085 IHP

It is interesting to note that the tender IHP was 3850 and there was a pressure drop between boilers and the engines of 27psi, which requires comment (see page 42).

The 12 hour trial carried out on 8 August, gave the following results:

Average speed	10.128 knots
Average engine revolutions	113.85 rpm
Average IHP	227.6 IHP
Average coal/IHP	1.81

Average consumption	4.75 per sq. ft grate area per hr
Knots per ton	53.6

Satisfactory

The Admiralty would have written to Hanna, Donald & Wilson following the failure to meet the required 27 knots on the three hour trial. However, there is no record of this letter or any other correspondence immediately after the trials. It would appear that Hanna, Donald & Wilson protested that the poor speed trial results were due to the excess weight of the boiler installation, which was not of their choosing. A letter from Hanna, Donald & Wilson dated 23 May 1890 in the Admiralty files defends their case and can be summarized as follows:

- The original boiler tender weight for the water tube boilers was 57 tons.
- Hanna, Donald & Wilson had learned later that Mr. J.W Reed[v] had previously had an interview at the Admiralty offices and agreed with Admiralty to increase considerably the boiler pressure, grate area and the heating surface areas. The specification was changed by the Admiralty in 1898. Hanna, Donald & Wilson were not asked their opinion but assumed the Admiralty with their greater experience knew better. The letters of Hanna, Donald & Wilson of 26 May and 14 June 1898 were written in ignorance of the actual substantially greater weight, and they claimed that they could not be held responsible for the adverse outcome.
- When the water tube boilers were delivered, the actual increase in weight was found to be 6 tons 19cwt, compared with the weight of 57 tons of the original tendered boiler and the 76 tons of the original locomotive boilers.
- In addition to this there was the weight of the following, which had not been allowed for by the Admiralty:

Total Addition

	Tons	Cwt
Additional fans and air trunking	1	12
Additional weir boiler water feed pumps	1	18
Additional weight of extra steam water separators		2

Additional weight of funnels and cowls		10
Additional weight of water tube boilers	6	19
Total	11 tons	1 cwt

- No account seemed to have been taken of the extra weight of pipe work, boiler seats, splitting up of the feed tanks and extra scantlings required by the overseers, all adding to the loads on a light displacement boat.

- In the case of HMS *Zephyr*, Hanna, Donald & Wilson stated that despite the late instruction to test all fittings for 210psi working pressure, they had the boat ready for trial and would be prepared to run the trials without prejudice at 200psi, providing at least 11 tons were deducted from the load to be carried (30 tons), to cover the extra weight of the boilers, pumps, fans, funnels etc., or, to run the boilers at 195psi free of all penalties for shortness of speed.

- Despite this, agreement to the trial conditions for HMS *Zephyr* was delayed and the trials were not carried out until 8 September 1899. When the trials took place it was with the approval of the Admiralty as to weight but with a working pressure of 210psi.

The trial data taken from the Admiralty trial trip data sheets were:

Speed over the measured mile	27.633 knots
3 hour speed trial	27.171 knots
Mean engine revolutions	365 rpm
IHP over three hour runs	3885 IHP
Mean IHP over 6 hour runs	4104 IHP
Average boiler pressure	205 lbs per sq. inch
Tender 11 - IP was 3850 IHP	

The following inter-departmental memo was noted in the Admiralty files:

From *J Ellis*
To: *S R Enidmo*
Ref: *SRE 26 Sept 1897*

Regarding 'Fervent' and 'Zephyr' re-boilering with Reed Boilers

Weight of locomotive boilers complete with water fittings, pipes etc in boiler rooms about 76 tons CGI on 53 bulkhead and about 7ft up from bottom of ship.

Reed boiler as above, about 68 tons CGI on 53 bulkheads and about 6ft up from bottom.[vi]

Sub note.

This gives an increase of CH of about 6 inches.

The date of this memo indicates that the Reed boilers referred to were the original water tube boilers submitted as Mr Reed was only called in for consultation in January 1898.

It should be noted that the weight of the boilers consists, as in the tender document weights, of everything associated with a boiler installation.

The final costs as set out in the data from the Admiralty files was:

	£	£
Original Tender Contract for two boats, cost price of November 1893	66,838	
Additional cost of boilers	14,200	
Additional cost of fans	1,240	
Additional cost of pumps	720	
Half labour costs for dismantling and re-erecting	5,000	
	87,998	
Less rebate on loco boilers and fitting etc from Hanna, Donald & Wilson	7,872	
	Total Two Vessels	80,12

However for some reason this final cost was not as calculated above but, was as shown below:

	£
New total for each ship	41,534
Final total for two vessels	£83,068

Somewhere £2,942 for auxiliary machinery had been added to the final cost of the two boats, against the tender price plus an unspecified addition of £464. Nevertheless authors and writers continue to quote £84,000 as the final cost.

However, the accounts and correspondence between the representatives of the Admiralty and those acting on behalf of Hanna, Donald & Wilson show the finances in a different light. First of all the contract price was not as stated above but as previously quoted (see page 26):

	£
Hulls	19,600
Machinery and boilers	47,238
Auxiliary machinery	2,478
Total	69,316

So the actual total cost to the Admiralty to alter and re-boiler the two boats was £13,752 or £6,876 each boat. A very reasonable result, bearing in mind that the purchase price of the eight new water tube boilers was £7,100 for each boat (total £14,200).

The firm's ledgers also show that on 19 December 1895 that £12,960 was still outstanding from the Admiralty on the contract. At that time both boats were completed and the *Fervent* was undergoing sea trials which revealed all the problems with the locomotive boilers. HMS *Zephyr* had completed dock trials, so stage payments were due. Further details from Hanna, Donald & Wilson ledgers show that the total costs expended by 31 October 1895 when the *Fervent* was away on trials and *Zephyr* completed, and instructions awaited were:

	£
Cost of hulls	14,973
Cost of machinery, boilers and other fitting out materials	25,665
Total	40,638

The quoted price of the hulls was £19,600, a profit contribution of £4,627 or 23 per cent. The potential overall credit balance due at the time was £28,678. Between 31 October 1895 and 5 March 1896, approximately £1,160 was spent on repairs and remedial work on the locomotive boilers on HMS *Fervent*, to no avail. Because of the concentration of effort on HMS *Fervent's* problems, HMS *Zephyr* having completed her dock trials successfully with only minor faults to correct and awaiting instructions had only minimal costs amounting to £310. Therefore expenditure at the time Hanna, Donald & Wilson reported the failure of the locomotive type boilers was £40,638, plus £ 1,160, plus £310, a total of £42,108 well below the contract price of £69,316. Bearing in mind the outlay required to install the replacement boilers and associated machinery, the £27,208 credit balance would have been more than adequate

and there was a further £1,317 credit from an accident insurance claim on one of the locomotive boilers, making the total available £28,525.

Following the agreement to re-boiler, these following additional costs were incurred by Hanna, Donald & Wilson:

	Balance of Account	
	Cost of HDW (£)	Admiralty Allowances
Rebate to Admiralty for locomotive Boilers and fittings per agreement £3936 x 2	7,872	
Cost of dismantling and removing locomotive boilers, fittings and refitting water tube boilers etc.	16,535	7,403
Full cost of 8 boiler feed pumps disallowed and disputed	608	308
Other charges disallowed	767	
maintenance and insurance costs on vessels during delay periods from 1897	4,139	2,069
Extra trials expenditure (estimated)	500	250
Penalty charge for slowness of Speed on H.M.S Fervent	250	250
Bank interest payable on capital	1500	620
	32,243	10,900
Credit of balance of main contract C/F Add final balance deduction offer by HD&W in order to get prompt payment of monies due	1,528	28525
To balance credit due from Admiralty	5,654	
TOTAL	39,425	39,425[vii]

The overall result of contract and re-boilering shows a credit balance of £5,654 or an overall profit of 8.15 per cent (the final payment should have been £7,171an overall profit of 10.5 per cent) but Hanna, Donald & Wilson were forced to accept a lower sum, two years later.

The Hanna, Donald & Wilson assessed profit within the original tender of £69,316 was 20 per cent or £13,850. This was a lower margin than had been

achieved on other contracts prior to 1895, but there was considerable labour unrest in the latter half of 1895-1900 and competition was hardening. The shipyard added 42.5 per cent to all labour costs, to cover overheads and profit. Hanna, Donald & Wilson were aware of the problems involving Admiralty contracts and had heard of the experiences of some shipbuilders. Indeed some of the major companies, such as Harland & Wolff of Belfast, refused to become involved in the Admiralty contracts for this reason. However, they had built boilers (Scotch marine), a large gas works at Woolwich Arsenal and at Sandhurst (military academy) and two torpedo boats and a great number of navigation buoys, so they may have felt that they had some experience of government procrastination. Nothing however, can have prepared them for the experience of this contract and they were finally forced to agree to a further reduction in their margin in 1902, in order to get payment of outstanding sums. The actual profit from the contract was £4,800 or a beggarly 6.92 per cent.

It would seem that there were errors and misunderstandings on both sides. The offer to re-boiler by the Admiralty was fair. Reports by their overseers seem also to be in keeping with the high standards with which they carried out their duties. The water tube boiler offered by Hanna, Donald & Wilson was a two drum type, designed and patented by William Donald and James Donald junior in 1892. Patent number 1889 and subsequently improved by them under the patent number 21687 granted in November 1894. Patent 21687 not only included a double-ended design but also had central rows of almost vertical tubes, dividing the fire grates. This almost anticipates the highly efficient divided furnace triple drum boilers and the prolific two drum integral furnace (IF) designs of future years.

The question of the Admiralty's decision to increase the size of the Reed water tube boiler above that specified in the original tender specification of September 1897, was the root cause of all the problems following the decision to re-boiler. The Admiralty, having accepted the Hanna, Donald & Wilson report on the cause of failure of the locomotive boilers, must have realised that the locomotive boilers were heavy compared with the equivalent steel boilers by 1896. The additional finance to re-boiler had to be justified no doubt. Had

they, therefore, been too concerned to provide a safety margin of boiler power against possible water tube boiler problems/speed failure and overlooked overall basic weight considerations?

The internal memo dated 26 September 1897 and ref. SRE 26 (quoted earlier), which significantly was the only internal memo on the contract file, provides the clue to this conundrum. The tender specification and contract details signed on 3 November 1893, as accepted, stated that the total weight of the boilers including fittings and water, also included the weight of the pumps, FD fans and engines (driving the fans), ducting, pipe work and ventilators, feed water tanks and contents, steam/water separators and funnel uptakes was to be the 76 tons 1cwt (the actual weight of water in the boilers was given as 17 tons). The equivalent total weight quoted in the Admiralty internal memo of 26 September 1897 for the original tendered water tube boilers, four per vessel was about 68 tons. Actually it was 67 tons 14cwt, which was 8 tons 7cwt less than the locomotive boilers (total weight).

Since the Admiralty revised water tube boiler specification called for larger boilers one might have expected the weight to be greater. The weight quoted by Hanna, Donald & Wilson in their letter of 23 May 1900 for these boilers when they were actually delivered however, was 63 tons 19cwt. This must have been the boiler 'as received' dry weight so the water content to working level must have been added that is 63 tons 19cwt plus 11 tons 1cwt, total 75 tons. This is only a ton lighter than the locomotive boiler's weight, but did not include all the other additional weights correctly listed by Hanna, Donald & Wilson in their letter, and other items not listed by them also not included in the calculations. It is curious that the Admiralty chose to increase the installed boiler room weight of the revised arrangement to almost the same as the original locomotive boiler installation. However, there was greater steam output from the larger surface areas of the water tube boilers and also lower water content.

At least the Admiralty had accepted the engine power potential provided in the Hanna, Donald & Wilson design as being more than adequate, despite the Admiralty's misgivings of the 3850 IHP quoted in the original Hanna, Donald

& Wilson tender and contract of October 1893. This in turn helps to explain the Admiralty's caution in the completion of trial tests, to meet the increased boiler pressure on HMS *Zephyr* to 210psi, and the delay in delivery of her boilers. Hanna, Donald & Wilson seem to have realized early in the trials that their 'loco' boilers were overweight because efforts were made to reduce the overall total boiler room weight by almost ½ ton to just above 75 tons 8cwt with the aim of gaining the extra part of a knot needed.

The frustration of Hanna, Donald & Wilson after all their consultations with the water tube boiler makers, as to the best size of boiler, together with the vital weight reduction, which was offered with the original tendered water tube boiler, is understandable and justifiable. Having proved that they were right in the end, to be denied proper and prompt payment, and forced to offer a reduced settlement in order to be paid, appear very unfair. From the Admiralty's point of view, there was an extra cost to justify and they were under great pressure to increase the size of the Navy and needed every boat. However, clearly the delays to complete, after the initial locomotive boiler failure, were due to the Admiralty and Palmers Shipbuilding & Iron Company far more than Hanna, Donald & Wilson.

Nevertheless there were other disagreements during the dock trials. Having decided in the main to leave Hanna, Donald & Wilson to their own devices, the Admiralty overseers now demanded changes to some of the fittings because they did not comply with the authorized range stipulated by the Admiralty. Among those required to be replaced were the steam/water separators and stop valves. The Admiralty were quite in order to demand these changes, but there were good reasons for the use of the fittings installed by Hanna, Donald & Wilson. These showed up clearly in the *Fervent*'s trial trip results, in the considerable drop in steam pressure between the boilers and engines, mentioned earlier. Locomotive boilers under maximum output were prone to produce 'wet' steam. The large water surface area and comparable small steam space and high velocity carrying water droplets required careful attention to steam flow. Attempts for more efficient steam collection by perforated tubes/troughs/baffles, all helped, but the problem was not entirely

eliminated and efficient separators remained the only answer at that time. Super-heaters were still to come. The trial result was as Hanna, Donald & Wilson had predicted and steam tests to prove dryness fraction should have been carried out. With the close event of the introduction of steam turbines, dryness of steam was imperative to prevent damage to the blades. Pressure drop was also caused by badly designed valves and pipe-fittings (bends/tees etc.) and Hanna, Donald & Wilson were allowed to keep the steam service from boilers to engine on HMS *Zephyr*. The lower pressure drop on that trial seems to have vindicated the decision.

The introduction of open-hearth steel production improved quality steels in the period 1880-1900 and led directly to the 'invention' of the water tube boiler. Early designs using large diameter tubes were installed in large vessels such as liners and cruisers, but the restrictive head heights below the main deck in destroyers ruled out early designs. Late in 1888 the position had changed and a better tube of high tensile steel became available, leading to an advance in boiler designs using small diameter tubing and smaller steam and water drums. There was a proliferation in numbers of designs and Hanna, Donald & Wilson joined in by producing their own designs, both of which were patented. There were many teething problems with the early water tube boilers in particular, leaks at tube ends. Early designs used copper ferrules to seal tubes to the steam and water drums, which proved unsatisfactory as design pressures increased. As the quality of steel improved the tube ends were expanded directly into the drums using expanding roller tools, sometime very difficult in small diameter water drums.

The great advantage of the water tube boiler was its adaptability in confined spaces and its much lower water content, reducing overall weight, increasing evaporation rates (steam production) and working pressures considerably. The progress made in water tube boiler designs and construction between 1892 and 1897 was quite remarkable. Working pressures above had risen from 180lbs per sq. inch to 250lbs per sq. inch and were to rise even higher with the event of turbines in 1901-1902. The continual advances in water tube boiler designs was almost entirely made possible by the new open-hearth steel production processes, which improved the quality of steel strength and ductibility.

Engineering journals were continually reporting on boiler patent applications for numerable designs. With the advent of Parson's steam turbine, dry steam was essential and the Admiralty was anxious to reduce weights in order to improve speed, firepower and manoeuvrability. Quickness in raising steam was also important and the water tube boiler's reduced water content provided an improvement.

Within five years the advance in design and efficiency plus the gradual change from coal to oil firing, improved and achieved many of the urgent requirements of the Navy. In 1893-1894 water tube boilers were still experimental and there were problems with scale and soot formations within the tubes causing overheating. Tube ends leaked and high velocity evaporation caused priming and wet steam. One can hardly imagine the life of the stokers handling and shoveling coal on a heaving floor in a hot ill lit stoke hold, no electric generators for lighting, smelly acetylene lamps, the danger of a furnace blow back and water level drop, coal and ash dust sprinkled with water on the floor, hot and sweaty. Although the 'A' class destroyer specification included electrical generators, to provide light and power, earlier small vessels had to rely upon oil or acetylene lamps for lighting. With hindsight the choice of locomotive boiler was wrong despite the improved heat transfer rate, with the copper fire boxes, the problems of which could not have been foreseen.

Hanna, Donald & Wilson original choice of locomotive boiler was probably made out of consideration for safety and space. The single funnel design boiler layout installation and potential output were excellent. They must have been aware of the increase in weight using copper instead of steel in the firebox design, due to the thickness of copper required to withstand heat and pressure. However, the greatly improved heat transfer rate using copper probably convinced them that the increased evaporation rate per sq. ft would more than balance the effect of the additional weight. Boiler water treatment was in its infancy in those days and constant tube and drum cleaning inside and out was an essential part of efficient use of fuel and water, as well as steam output. Locomotive boilers had a reduced steam space compared with

other fire tube boilers (for example Scotch marine boilers). This meant that at high steam production rate there could be water entrainment in the steam flow from the boiler outlet. But, scale and soot cleaning was much easier with a locomotive boiler than with a water tube boiler.

The following comparative data from the Hanna, Donald & Wilson files and Admiralty documentation may is of interest:

Boiler details	Locomotive	Water tube 1st Tender Specification	Water tube 2nd Tender Specification
Working pressure (psi)	185psi	185psi	210psi
Heating surface (sq ft)	6500 sq. ft	9608 sq. ft	9936 sq. ft
Equivalent IHP (based on 1.56 sq ft/IHP for Loco boilers and 2.41 for water tube boilers)	4166 IHP	3987 IHP	4123 IHP
Grate areas (sq ft)	165 sq. ft	209 sq. ft	239 sq. ft
Total weight in boiler rooms	76 tons	67 tons 14cwt	75 tons
Weight of water in boilers (included in above item)	17 tons	10 tons 14cwt	11 tons 1cwt
Number of stokeholds	2	2	2
Number of pumps	2	4	4
Number of fans and fan engines	2	4	4
Number of fresh water tanks	2	4	4
Number of steam/water separators	2	4	4
Number of funnels	1	4	4
Working space in front of furnace doors	9ft	unknown	10ft
Number of boilers	2	4	4
Length of each boiler from furnace door to rear casing	18ft 6ins (total 37ft)	unknown	9ft (total 36ft)

Note - There had to be an increase in air resistance due to the new number of funnels and ventilation cowls. The loss of the unique single funnel design was unfortunate. Single funnel destroyers did not appear until some 30 years later.

Figures quoted in an article on the development of torpedo boat destroyers published in the April 1905 issue of *The Steamship* gave lower steam outputs per sq ft, than was given in the foregoing data, these are given as *'output of the locomotive type boiler as 1hp per 1.35sq ft of heating surface as against a maximum of 2.58sq ft in a water tube boiler'*. Nevertheless, if either of these figures were used, it would indicate that the original locomotive boilers

installed by Hanna, Donald & Wilson were more than adequate in being able to produce, theoretically, 4815 IHP against the 3851 IHP of the installed water tube boilers, but over-sized and over weight. It is, perhaps, more realistic to use the result from HMS *Havock*'s trials. She was the first of the 27 knot torpedo boat destroyers (3200 IHP) built by Yarrow & Co in 1893-1894. Fitted with two locomotive type boilers, 5160 sq. ft, 53.5 tons, 1.56 sq. ft/IHP, 180ft long x 18ft 6ins breadth x 10ft 6ins depth, 240 ton displacement. She managed 26.2 knots and was accepted. Clearly Hanna, Donald & Wilson chose to use a similarly realistic figure in their design. There was no change made in the total length of 63ft 4ins occupied by the boilers. The original layout was set between frames 35 and 73 (20 inch pitch) and this was not altered for the revised boiler installation. The water tube boiler arrangement meant that furnace doors were opposite each other which gave, perhaps, tighter firing conditions for the stokers, but on the other hand the overall space of 20ft should have helped given good co-ordination by the stokers.

Trial Trip Details	Full Load HMS Fervent 4th August 1899	Reduced Load HMS Zephyr 8th September 1900
Boiler press	196lbs/sq inch	205lbs/sq inch
Press at engines	169lbs/sq inch (27lbs/sq inch press drop)	185lbs/sq inch (15lbs/sq inch press drop)
Average engine revs. 3 hour trial Measured mile	356 rpm	336 rpm
374 Revs/IHP	4085 IHP	3885 IHP
Speed 3 hours	26.73 1 knots	27.171knots
Measured mile	27.476knots	27.633knots
The original tender gave 185psi at boiler		
	170psi at engine (15psi pressure drop)	
	360 rpm	
	3850 IHP	

The reason for the delay of the trials of HMS *Zephyr* are unrecorded. The new boilers for HMS *Zephyr* were not delivered until August 1899 and trials should have been held within three to four months after that, subject to weather conditions, that is in December 1899. Most likely because 30 knot boats were being added to the fleet, the Admiralty was less interested in the completion of HMS *Zephyr*.

Incorrect statements have been made by various authors about Hanna, Donald & Wilson, which have been included in various records, books, documents and histories. Hugh Peebles in his book on *Warshipbuilding on the Clyde* stated: *'Like many of the Admiralty's contractors, the Clyde warshipbuilders had experienced the greatest difficulty in building destroyers. Hannah* (sic), *Donald & Wilson, a small Paisley firm which had successfully built torpedo boats for the Admiralty in 1879 and 1888, ruined itself in the attempt.'*[viii] Alec Ritchie claims the firm closed down in 1895.[ix] In response to such misrepresentations, it is worth recording:

Hanna, Donald & Wilson was formed in 1851. Robert Wilson was a partner for 28 years. Hardly a short time! Hanna, Donald & Wilson did not become insolvent and close in 1895 or in 1900. The company remained as Hanna, Donald & Wilson and the Abercorn Shipbuilding Company was part of the Hanna, Donald & Wilson organization. Over the period from 1893 to 1900, the average profit of the whole enterprise was £1096. The company had a bank overdraft on which the average interest was £76 per annum. In 1892 the net assets of the company were £17,062. This certainly does not give the impression of an incompetent bankrupt business forced to close in 1900.

Mr. James Donald the senior partner of Hanna, Donald & Wilson died in 1901, leaving the business with three partners, namely William Donald, James Donald junior and Robert Hanna Donald, his three sons. His fourth son John left the company earlier in 1894. James Donald junior died in 1906 on his return from completing a large contract to replace and build holders and plant for Belfast Gas Works. William, the eldest son was given the Abercorn Yard by Robert Wilson and took charge in 1878. His initial interests and responsibilities were for the marine activities of Hanna, Donald & Wilson and their yard, which was named 'The Abercorn Shipbuilding Company'. On death of his father in 1901, he became the senior partner of the company. All the brothers were made partners in Hanna, Donald & Wilson in 1881-1882.

The last ship from the Abercorn yard, No.119, the SS *Saaid*, was launched in 1913 and although the company continued to quote for the next 4 years, no large order was received and the yard was sold in 1920. Hanna, Donald &

Wilson finally closed in 1918, after the death of Robert, the younger brother and partner in 1917. They had been in business for 67 years. William Donald the final sole partner was 67 years old and he and James his eldest son, looking to the future, decided wisely to close the business down.

The company did not ruin itself in pursuance of the contract to build HMS *Fervent* and HMS *Zephyr*. On the contrary, they made a small profit on the contract. The record of this company proves that the work was well within their capabilities. The checking of the books was a reasonable Admiralty decision, as some other shipyards suffered severe financial problems with difficulties in completing Admiralty contracts. Based on HMS *Havock*, the design and choice of locomotive boiler was not the best choice in light of the rapid progress in water tube boiler design. With hindsight the size mid-construction was too heavy. The copper failure could not have been foreseen. The final boiler choice was an error in size and overall weight by the Admiralty. Hanna, Donald & Wilson's first choice of water tube boiler would have been correct. Most of the delays in building and completing the boats were caused by the Admiralty. Construction and alteration problems were not the result of inadequacies of Hanna, Donald & Wilson or the result of financial difficulties within the company. There is no record of the cause of delay by Palmers Shipbuilding & Iron Company in the manufacture and delivery of water tube boilers. But there was serious labour disruption during the late 1890's. There is no evidence of any record stating that the torpedo boat destroyers were rejected. The contract stated a speed failure clause. This penalty was withdrawn after the evidence of trial trip test with the reduced load on HMS *Zephyr*. When the facts are examined, there is no evidence to support that there were financial problems within Hanna, Donald & Wilson, nor that the boats once re-boilered and obtaining the contract speed of 27 knots, were accepted with great reluctance by the Admiralty. The hulls of either of the boats were not lengthened to accommodate the contract alterations to re-boiler. Alterations to the destroyers were relatively inexpensive and the company clearly absorbed a number of the extra costs. Other shipbuilders had problems in their dealings with the Admiralty. Comment has been made that the construction of the two torpedo boat

destroyers was beyond the capabilities of the company. The French Naval Authorities did not seem to be concerned when they approved the contract placed by the Claperede Shipbuilding Company for the prefabrication of the mid sections including upper works, of the boiler and engine rooms, seatings, tanks, casings, ventilators, funnels etc. of two torpedo gunboats, delivered for assembly at their yard in 1884-1885. The boats were the 430 ton *Saint Barbe* and the Salve. They were both *Bombe* Class Torpedo Gun Boats[x] launched in October 1885 and February 1886 respectively. It is interesting to note that they also had locomotive type boilers. The quoted trial speed of these boats was 18-19 knots. The Admiralty no doubt noted this as their order to Hanna, Donald & Wilson in 1887 for torpedo boat '101' required a speed of 21 knots for a much smaller boat of 135ft.

REFERENCES

- Hanna, Donald & Wilson tender and signed contract documents, letters and details from ledgers.
- Drawings and catalogues belonging to Hanna, Donald & Wilson.
- Miscellaneous technical data found in the files and records of Hanna, Donald & Wilson.
- Patent No. 21687 details of marine water tube boiler.
- Admiralty files of torpedo boat destroyers, 1892-1902 (27 knot and 30 knot) Greenwich Maritime Museum records.
- Lloyds Registers of Shipping held at Greenwich.
- Correspondence leading to the final settlement of the contract account held in Hanna, Donald & Wilson files, involving Wright Johnson Mackenzie and Roxbourgh solicitors for Hanna, Donald & Wilson and H W Carmichael and Price Waterhouse & Company for the Admiralty.

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[i] Information has been extracted from reports and articles by various naval historians on boats and ships built by Hanna, Donald & Wilson for the British Admiralty, the Greek Navy and from books on ship building and yards on the river Clyde, including that of Hanna, Donald & Wilson based on the river Cart, a tributary of the Clyde. However, in the particular case of the 27 knot torpedo boat destroyer contracts placed with Hanna, Donald & Wilson in 1894, the evidence contained in the company records on the building of these two early 27 knot torpedo boat destroyers differs considerably from the books and reports I had read (for example Hugh Peebles, *Warshipbuilding on the Clyde*, Edinburgh, 1987). So in 1989 I decided that further research was essential. The research proved to be of considerable interest to me and others who became involved. We were encouraged by support given by the staff of the Greenwich Maritime Museum Records Office and many others in our efforts to put straight the record of the history of this particular contract and provide a few basic facts about this remarkable small enterprising Scottish company. The author would like to thank the staff of Paisley Library, the James Watt Library in Greenock and many others, who have helped in his endeavours.

[ii] William Donald was educated at Dundee High School. He served an engineering apprenticeship with the Caledon Shipbuilding & Engineering Company, Dundee, Scotland. He later moved south and joined Babcock & Wilcox in their London Marine Boiler Project Department. He then moved to British Drughouses as Deputy Chief Engineer and finally to

James Clark & Eaton Limited as Group Chief Engineer. He is now retired. He holds in his possession the surviving records of his family business

[iii] W Donald, 'Drydock disaster: Hanna Donald & Wilson and the floating drydocks in Java, 1873-1879', *Scottish Industrial History*, Vol. 18, 1999.

[iv] The Admiralty records hold full research sheets detailing 17 torpedo boats and torpedo boat destroyers built in 1892-1893, their year of the tender. Seven had locomotive boilers, one a Babcock & Wilcox WIF type and the remainder water tube boilers of various types. The boiler pressures in all locomotive boilers did not exceed 180psi. The earlier boats with water tube boilers had pressures of, 1 at 175psi, 2 at 180psi and the later boats with water tube boilers all at 210lbs per sq. inch. HMS *Speedy* was one of the earlier boats with a water tube boiler. She was 230ft overall and was completed in 1892-1893, a twin-screw boat, she recorded 20.25 knots on 4500 IHP. She had 8 boilers of total weight of 110 tons. The others were all smaller boats, four of 27-knots and the rest 23-knots, all between 140ft and 195ft. Nevertheless, by the year 1896 the Admiralty had issued a new specification requiring torpedo boat destroyers to be of 30-knots, 220ft plus with the same restrictions and penalties. HMS *Osprey*, built in 1897 was 210ft overall and achieved 30.427 knots on trials with 6.412 IHP at 250lbs per sq. inch boiler pressure.

[v] Mr. J W Reed was not only the designer of the boiler but was also a director of Palmers Shipbuilding & Iron Company Ltd, the successful tender. He was called to the Admiralty for discussions on his tender specification in January 1898.

[vi] It should be noted that the weight of boilers consist (as in the tender document weights) of the boilers fittings as well as pumps, flans, tanks, trunking, funnels etc, everything associated with a boiler installation, including castings, boiler seats, pipe work, water etc.

[vii] The cost of the water tube boilers is not included as the Admiralty paid the quoted price in full.

[viii] Peebles, Loc. Cit.

[ix] L A Ritchie, *The Shipbuilding Industry – A guide to historical records*, Manchester, 1992, p. 96.

[x] The *Bombe* Class had three light raking masts, originally with a fore and aft rig, and a single raking funnel aft of the foremast. The bow was slightly ram-shaped with an overhanging stern and the sides curved in to a narrow upper deck. The CT had 0.5in plating and the 3-pdrs were mounted forward and aft and in sponsons on either beam, with the torpedo tubes in sponsons further aft. *Dragonne* was fitted for experiments with howitzers in 1896. The boilers in this class gave great trouble and led to delay in completion. Eventually *Bombe*, *Dague*, *Lance*, *Sainte-Barbe* and *Salve* had four Guyot du Temple boilers, *Fleche* four Lagrafel d'Allest boilers, although *Couleuvrine* and *Dragonne* retained four locomotive boilers.

BOMBE class torpedo gunboats

Displacement	396t (Couleuvrine) to 430t (Saint-Barbe)
Dimensions	194ft 3in pp x 19ft 7in x 10ft 5in max (59.20 x 5.97 x 3.17m)
Machinery	2 x shaft VC, 4 loco boilers, 18001HP = 18-19kts. Coal 108t max
Armament	2 x 3pdr, 5 x 1 pdr revolvers (soon changed to 4 x 3pdr, 3 x 1pdr revolvers), 2 x 14in TT aw
Complement	70

Name	Builder	Laid Down	Launched	Completed	Fate
BOMBE	F C de la Mediterranee	Nov 1883	Apr 1885	Oct 1887	Stricken191
COULEUVRINE	F C de la Mediterranee	1883	June 1885	1887	Stricken 191
DAGUE	F C de la Mediterranee	June 1884	June 1885	1888	Stricken 190
DRAGONNE	F C de la Mediterranee	Oct 1884	Aug 1885	1888	Stricken 191
FLECHE	F C de la Mediterranee	Oct 1884	Nov 1885	1888	Stricken 191
LANCE	F C de la Mediterranee	Dec 1884	Apr 1886	1890	Stricken 191
SAINTE-BARBE	Claparède	Oct 1885	Oct 1885	1890	Stricken 191
SALVE	Claparède	1884	Feb 1886	1890	Stricken 190

* Midsections of both ships (boiler and engine room sections) prefabricated and shipped by Hanna, Donald & Wilson (material lists held).

Industrial Closure in the West of Scotland 1950-1959: Cue for Local Action?

Neil Earnshaw

Between 1939 and 1945, the workforce of West of Scotland industries increased to meet the demands of war production, especially in chemicals, metal manufacture, engineering, shipbuilding and transport communications. Rolls Royce Ltd established a large light engineering works at Hillington for the manufacture of aero-engines. Blackburn Aircraft Ltd had a large factory at Dumbarton to build flying boats, while Scottish Aviation Ltd established at Greenock and Prestwick. Manufacturing companies which set up in the area included Hoover Ltd at Cambuslang, Philip's Lamps Ltd at Hamilton, and Magnetic and Electric Alloys Ltd at Burnbank, all three being in north Lanarkshire. In spite of heavy enemy bombing on Clydebank, the west of Scotland suffered little damage to industrial plant or premises during the war.[i]

The aftermath of hostilities is not always predictable. Although the war itself brought industrial prosperity to the west of Scotland, its outcome was not all that had been hoped for by many people. Within fifteen years, some long established companies had closed down completely, while several had been absorbed into others and were no longer recognisable. The reasons were varied and many, and not always connected with economic circumstance.

It is this early post-war period which is the concern of this article. An attempt will be made to determine the extent of industrial decline in this period by paying specific attention to industrial closure and the reasons for failure. The effects of closure will be examined to ascertain whether efforts were made to combat this. The resultant conclusion will determine the outcome.

The immediate post-war period resulted in manufacturing boom as industrial and domestic markets, both at home and abroad, demanded replacement capital and consumer goods denied them during the war.[ii] But the excesses of war production in terms of both raw material sources and overworked machinery and plant created operational difficulties for certain industries, most notably coal mining. This, coupled with the financial problems created by the difficulties of the Sterling Area in re-establishing itself after the war, in spite

of American loans or, perhaps, because of them - for they had to be repaid in some way or other, - had an adverse effect on other industries. The predictable difficulties lay with nationalisation and the rundown of Government establishments after the war. The imponderables affected those industries at the mercy of Government policies brought in to combat economic disruption.

In the aftermath of war, the gradual reduction of armament manufacture was inevitable. Whilst private firms were able to revert to peace-time products, Government manufacturing establishments had no mandate to do this. Consequently, production was run down and finally terminated. Large labour intensive Royal Ordnance factories (ROF) were closed at Irvine in Ayrshire and at Dalmuir in Dunbartonshire in the late 1950s, the latter factory being partly taken over by the Renfrew engineering company Babcock & Wilcox. Other establishments to close included a Ministry of Supply factory near Kilmarnock and a military vehicle and tank repair workshop outside Paisley, whilst a large workshop of the Royal Electrical and Mechanical Engineers at Lanark was reduced in status to a depot. In 1952, the Royal Naval Torpedo Factory at Greenock ceased production and transferred across the river to Alexandria in Dunbartonshire, although the Torpedo Experimental Establishment survived until 1959.[iii]

After 1945, the new Labour Government set about nationalising much of Britain's major industry. Inevitably, reorganisation resulted in a weeding out process whereby duplication, obsolescence and uneconomic companies were eliminated, much to the disgruntlement of the workforce, who had thought Government ownership the remedy to all labour unrest. Many collieries, most of which were almost worked out, continued on a tentative existence prior to nationalisation. These were subject to early closure thereafter. In the period 1948-50 three Shotts collieries were closed down, Hillhouserigg, Fortissat and Baton. In the following ten years, further pits in the locality closed also. At least twenty-five Lanarkshire pits closed in the period 1945-9, including the area of Douglas in South Lanarkshire, where mining was the only employment outwith agriculture. Other major Lanarkshire closures took place around

Blantyre, Hamilton and Carluke, where it was no longer economical to work the coal. In fact, almost the whole of the Scottish coalfield was running at a loss at that time.[iv] Nationalisation brought other closures. The British Road Services maintenance repair depot at Symington in Lanarkshire closed down early in 1952. A long established railway workshop at Kilmamock was closed down under British Railways' centralisation policy, while British European Airways' maintenance base at Renfrew was transferred to London in 1956 amid widespread national protest.[v]

The major problem facing heavy industry was the shortage of steel and steel scrap, only available on allocation under Government licence throughout the United Kingdom. As Scotland depended so heavily upon it for the survival of a staple industry, many industrialists felt that the nation was not getting its fair share. Several furnaces closed during this period in both Lanarkshire and Ayrshire, resulting in difficulties in other industries due to lack of supplies. Dundyvan steelworks at Coatbridge closed temporarily in 1950, but re-opened only to produce semi-finished steel until such times as the industry returned to normal. The Coatbridge Tin Plate Company was forced to close in 1951 due to a combination of scarcity of tin plate supplies, which were being exported to the Argentine, and uneconomical production methods in the face of highly competitive modernised rolling mills. Within the Clydebridge complex, a melting shop and cogging shop closed in the same year, 1951, signalling the start of a continuous rundown of a giant of the heavy metal industry. Wm Beardmore's special steels factory at Linwood, near Paisley, which had been built in 1940 solely for the manufacture of shell casings, was reprieved from closure in 1951 by the outbreak of the Korean War, and did not close until 1957[vi]. In all probability, it was the shadow of these hostilities that delayed the closure of other military manufacturing establishments. Two private firms, Shotts Ironworks and Dixon's Ltd, Glasgow, were forced to close, the former in the early post-war period and the latter at the end of the 1950s, both due to failing demand. The Shotts company had done much work for the local coal mining industry, and when collieries in the district closed down, the ironworks was unable to find sufficient business elsewhere to remain viable. Another major closure was that of the Coltness Ironworks at Newmains in 1954.

Whilst Lanarkshire industry was severely depressed by the decline of its coal and heavy industries, Renfrewshire was beginning to feel the effects of textile recession. The reason for this is much more complex than the mere exhaustion of primary materials and the shortage of secondary ones, and demands an attempt at explanation. It originated from Government policies aimed at stemming the decline of sterling reserves, which the Chancellor of the Exchequer, R A Butler, felt had to be prevented at all costs to protect the entire Sterling Area. Regrettably, from the British viewpoint, the Australian economy was so weakened that that country felt forced to break import arrangements made at the Commonwealth Finance Ministers' Conference in January 1952 by imposing import restrictions on UK goods. The British textile industry was an immediate victim of this policy, particularly the English county of Lancashire, where cotton manufacturing had long been the staple industry. In the space of just five years, the Lancashire cotton industry had gone from boom to slump, with twelve mills in the town of Oldham alone closed down. *The Economist* newspaper estimated that Britain would lose £100 million of textile export trade in 1953, equivalent to one quarter of the estimated total. Two other factors contributed. One was the establishment of India's own textile industry using her own raw cotton, and the other was the Yoshida-Dulles agreement, whereby former British markets in Africa and Pakistan were taken over by Japan, enabling that country to trade with America, to the economic cost of the United Kingdom. Moreover, Britain was unable to sell textiles to the Canadian market because of heavy import tariffs there, and unable to buy raw cotton from the USA because of a shortage of dollars. The British Government placed restrictions on the import of modern textile machinery from Switzerland and the USA and on specialised American yarns. These policies restricted textile manufacture. In spite of material supply difficulties, a concentration of labour was formed in heavy industry to increase exports of capital goods at the expense of consumer goods in order to establish a payments balance.[vii] The textile industry suffered so much at this time that it has never recovered.

Such a policy explains the closures that occurred in Renfrewshire. One firm, HB Norton Ltd, which had established a branch factory in 1947 in Greenock, a

Development Area, under Government direction, was continuously thwarted in its attempts to obtain large factory premises by not being granted the necessary approval to do so, and not being able to obtain a licence for new machinery from non-sterling areas. It closed its small factory in 1951 and returned to Leicester.[viii] In the same year, several mills in the Paisley district of the county were in difficulties, and soon weavers', dyers' and bleachers' businesses were closing down. John McNab & Co Ltd, a long established bleaching and dyeing firm in the village of Howwood closed, but its demise was due to the fall in demand for window holland, as this type of window blind passed out of fashion. D McFarlane & Sons Ltd, a Paisley dyeworks firm and a branch of the British Cotton and Wool Dyers' Association Ltd, closed in 1956 after being in operation for fifty years. Less than a year later, Adam Hamilton & Son closed their Blackland Mill Dyeworks in Paisley after almost a hundred years' existence. The firm was amalgamated to the Bradford Dyers Association. The linen thread manufacturers Finlayson, Bousfield & Co Ltd, Johnstone, were forced to close their premises in 1958 due to the recession. These were among the larger firms in the industry in Renfrewshire.[ix] At times within this period, various departments within J & P Coats Ltd, sewing thread manufacturers, were on short time. This was by far the largest textile employer in the district, if not in the whole of the UK, at that time.

Another victim of Government policy was sugar refining at Greenock, this brought on by a miscalculation in the extent of demand when sugar rationing was eventually withdrawn. The Government arranged contracts for the supply of refined sugar from Eastern Europe and of white sugar from Formosa (Taiwan) to meet an anticipated demand which did not materialise, with the result that the surplus available from these import contracts competed for the home market to the detriment of British refineries. The Glebe Sugar Refining Company at Greenock was a constant sufferer from this fluctuating state of affairs, closing its doors and then re-opening them on several occasions.[x]

Specific districts within the west of Scotland had a long history of producing quality wooden furniture fashioned by craftsmen. Production had been

severely disrupted during the war years, and post-war demand could not be met from available timber supplies. There thus developed an alternative quality of utility furniture made from inferior timbers and compressed substitutes. As householders accepted the newer form of furniture, the craftsman-made product suffered, badly affecting quality furniture manufacture at Beith in Ayrshire and at nearby Lochwinnoch. The Jearifield Works at Beith was forced to close in 1956.[xi] A side effect of this decreased demand for quality furniture was that several manufacturing and retailing family businesses in Glasgow apparently sold out to Great Universal Stores and, within a few months, closed down - a case of a major organisation buying out to prevent competition.[xii]

Two further examples of closure after take over were at Claude Alexander's clothing factory in Glasgow, and at the wagon manufacturing works of Hurst, Nelson & Co Ltd at Motherwell. Both were successful businesses. The former was purchased by Price Ltd, which held on to forty-odd retail outfitters shops in Scotland after closing the Scottish factory[xiii]. The latter suffered a set-back when the nationalised British Railways converted from the use of wooden freight wagons to steel ones. Hurst, Nelson's management sold out to north of England competitors who were only too glad to obtain the Motherwell firm's lucrative contracts and contacts abroad, as well as the financial reserves that had been built up over the years.

Instead of modernising the Motherwell works, which a more astute Hurst, Nelson management might have done, the new organisation moved the company lock, stock and barrel to its own works at Horbury near Wakefield.[xiv]

The immediate impact of closure on the workforce was that they were either transferred to other companies or localities within a group, such as happened in the coal industry, or that they were thrown out of work. Sometimes, this latter course was only temporary, especially where companies reduced to a four day week because of the shortage of orders or raw materials. More often, it became more permanent. Comparable unemployment figures for the under named towns give an indication of general trends during the decade.

	Jan 1952	Jan 1958	Jan 1959
Clydebank	516	845	1824
Glasgow	20881	17375	28580
Greenock	2918	2 538	2838
Motherwell	2389	1869	4029
Paisley	1230	1 151	2477
Totals	27934	23778	39748
All Scotland	70000	72969	116510

Source:*Ministry of Labour Gazette*, Vol LX 1952 and L 1958

It will be seen from the foregoing statistics that unemployment in the whole of Scotland rose by sixty percent between January 1958 and January 1959, whilst the difference between the 1952 figure and that of 1958 was just three percent. In the west of Scotland towns indicated, unemployment dropped by fifteen percent from 1952, but increased by seventy percent between 1958 and 1959.

Reaction came in a number of ways. At first, rumour of pending closure brought shop steward action to prevent it. After a spate of closures, there followed trade union concern to prevent further shut downs, together with town council reaction on behalf of their communities as a whole. Political parties at a local level were also vigilant to the situation. Many local meetings were held, local and national conferences called, special committees set up, delegations appointed, protests made and resolutions formed. Some individual town provosts proved themselves capable men, as did trade unionists and MPs, the latter pushing their particular constituent's case for all their worth in the House of Commons. Church ministers were not without sympathy or influence. As the situation worsened, reaction intensified and the outcry was loudly chronicled in local newspapers.

There was thus much concern about the changing economic fortunes of the west of Scotland, most of which was in decline. Reaction was greatest in the

heavy industry and mining districts of Lanarkshire, where there was much experience of a fluctuating economy. Workers waited with trepidation to see what would happen next.

Scotland was not without experience of closure caused by the downswing of the economic pendulum. During the worst recessions of the inter-war period, when a quarter of the industrial population was out of work, attempts had been made to redress the balance by setting up the Scottish Development Council, principally to attract light industry. From 1934 onwards, Scotland - as well as other areas of the UK - was designated as requiring Government assistance under the Special Areas (Development and Improvement) Act, to be followed two years later by the formation of a Scottish Economic Committee, which in turn led to the initiative to form the Industrial Estates Company at Hillington in 1937. After the war, the Distribution of Industry Act 1945 empowered the Treasury to make grants or loans to industrial undertakings in Development Areas. The provisions of this were extended in 1958 to include areas of high unemployment outwith Development Areas. The Scottish Council (Development and Industry), established in 1946, was a non-political body supported by voluntary funds from sources within its membership of representatives from all walks of Scottish public and economic life.[xv] This organisation played a vital role in assisting local authorities in revitalising their industrial communities which had been scarred by closure.

Outwith these organisations which were involved in solving an overall national problem, local authorities responded to their own declining economies as and when the impact became severe. Lanarkshire was first to act, followed by individual towns on a chronologically progressive basis. Most set up some form of industrial sub-committee whereby efforts were made to offset closure by attracting new industry and creating employment for the increasing numbers out of work. The provosts of Greenock and Irvine played leading roles in revitalising local industry after the closure of government factories in their town, for they both felt that their town councils would have to act on their own initiative to bring this about.[xvi] The immediate result, and one encouraged by the Scottish Council (Development and

Industry), was that all town councils drew up lists of vacant factories and mill premises which could be utilised by light industry immediately, even on a temporary basis until newer and more suitable factory buildings were made available. Amongst these premises were a former church hall at Law used as a drill hall during the war and thereafter converted into a small factory which remained in operation until 1952, Thomson's vacant Maudslie jam works, also at Law, a former miners' hostel at Forth, and the entire buildings and workshops of the former ROF site at Irvine.[xvii] There were many others.

Councils busied themselves preparing brochures and other promotional material - Shotts held a local exhibition - for the sole purpose of convincing industrialists of the attractions of setting up business in their respective areas. This was not without drawbacks, for occasionally much time and money was spent on tentative enquiries from companies which appeared to have little intention of finalising details.[xviii] Nonetheless, such was their consternation that council committees felt that they had to pursue all avenues in order to bring new firms to their towns. Hamilton Town Council had much correspondence extending beyond twelve months before finding arrangements for the English company Jig Borers Ltd of St Albans to set up in Hamilton. In this case, negotiations almost broke down irreversibly when it was realised that a new electrical sub-station would have to be erected by the South of Scotland Electricity Board, and unless the Council could guarantee that there would be other new factory owners who would share the cost, the electricity authority insisted that Jig Borers Ltd would be responsible for the total cost of installation and not just part, as had been the Council's original interpretation. Fortunately, other factories were built, but the Council's problems did not end there, for key workers employed by Jig Borers left their employment after only a few weeks, while continuing to live in key workers' council housing provided under regulations of the 1945 Distribution of Industry Act. This prompted the Council to introduce clauses in its contract negotiations with prospective new companies, to the effect that key workers must remain in the firm's employ for a set period or relinquish their council house tenancy.[xix]

Other companies were anxious to establish themselves in Lanarkshire but encountered problems which proved unassailable. One such was Jacquesil Fabrics Ltd, a Lancashire firm which wished to open a small branch factory at Shotts, where there was already a textile factory which experienced difficulty in attracting suitably experienced labour in 1950. As there were no suitable buildings available, for Shotts had been a mining town and not a manufacturing one, Jacquesil was offered possible alternative premises at Carfin naval store, at a former Co-operative Society hall at Clelland, and at a disused mill at Larkhall. All were unsuitable. By the time two possible sites were available in Shotts, twelve months had elapsed from Jacquesil's first enquiry, and the firm had obtained premises elsewhere and could not take advantage of the premises offered.[xx]

Lanarkshire County Council's Planning Department was particularly active in surveying any site on which factory premises might be erected. Regular planning meetings were held, at which available sites were added to the lists of Vacant Sites, and unsuitable ones, after being surveyed, were deleted. In 1954, the Planning Officer was enquiring whether land already listed for housing in eleven areas might be partially used for industry in the following twenty years. Four years later, he was able to point out that, since the Central Industrial Area Part Development Plan was prepared in 1953, one eighth of the aggregate land available at that time for industrial development had been used for that purpose. Moreover, a total of 125 acres had been acquired by the following large companies: Caterpillar Tractor Co Ltd, and Ranco Ltd, both at Tannochside; Cerebos (Salt) Ltd, at Chapelhall; and Belmos Ltd, which moved onto the former railway station site at Bothwell. Many of the sites investigated by the planning authorities were surplus to farm requirements, such as the proposed industrial site at Carluke in 1954, which formed part of five neighbouring farms.[xxi]

Other councils acted in a similar fashion. At Greenock, the former Caird's shipyard was acquired and the land used to build two large factories by Scottish Industrial Estates Ltd. Earlier in 1950, negotiations were well in hand for the American company International Business Machines Corporation to

establish a factory in Greenock's Kip Valley, which it eventually did. For a time, the company occupied factory premises in the Battery Park area of Gourock, adjacent to the torpedo factory. Greenock's response was evident in two ways other than in providing alternative new factories to replace ailing industry. Firstly, the town council played a prominent part in ensuring that the shipyards remained open by negotiating directly with Government for adequate steel supplies in 1953 during a time of shortage.[xxii] Secondly, by 1958, when Greenock had a total of 1386 men unemployed, over one hundred of the town's workmen - both skilled and unskilled - were employed at the nearby Hunterston power station. Many more were thus available should they be required. A disadvantage to the town was that much of the work was highly skilled and suitable labour had to be drawn from England.[xxiii]

After the closure of the Royal Ordnance factory Irvine, the town council entered into negotiations with the Government for the purchase of the workshop premises with the sole intention of maintaining them in a serviceable condition for sale to prospective manufacturers at a later date. Several local firms leased these premises from the town and, by the end of the decade, larger firms intimated their interest in building new factories on the Royal Ordnance factory site. One which did move in was the American materials handling firm Hyster Ltd, the successful outcome of early town council policy of advertising the industrial possibilities of Irvine in foreign publications and also of maintaining close links with the American Consul in Glasgow. The town also entered into negotiations with Glasgow to take some of the city's over spill population, as did other local authorities. However, only Irvine had the foresight to do it on the proviso that industry came as well, for the town did not wish the increased population to add to unemployment.[xxiv] Other north Ayrshire towns were prominent in attracting industry, for some of their townspeople were out of work because of the Irvine closure. Dumbarton, Clydebank, Paisley and smaller Renfrewshire towns were not so severely hit at this time, although there was concern in Johnstone about the closures in rural textile work in its district.[xxv]

Apart from the foregoing efforts by individual town councils to attract new companies to their own districts, these councils were also actively engaged in assisting each other in trying to persuade Government to locate large scale industry within their counties for the mutual benefit of all. Such projects included a coal distillation plant in Lanarkshire, a steel strip mill for Stirlingshire which eventually came to Motherwell, and not Grangemouth,[xxvi] and a graving dock for Greenock.[xxvii]

A final response to the many efforts to offset industrial closure and its consequences on the skilled workforce of the west of Scotland was the endeavour made to equip the youth of the morrow with new skills. Plans mere put in hand for the immediate building of technical colleges. For a time, it was suggested that the Royal Navy Torpedo Factory, Greenock be adapted for such use. Paisley Technical College was upgraded and Youth Committees were established, not only within Scottish Trades Union Congress (STUC) jurisdiction but also by concerned local councils and church presbyteries. There was the added concern that in future young people could only be offered jobs below their capabilities, because the skills previously required had gone with closure. It was also felt that the introduction of automation would not help the situation. It remained to be seen whether the proposed new colleges could introduce technical innovation that would overcome this.

Thus, the pattern of closure which was emerging in the period 1950 to 1959 can be clearly defined by industrial classification and geographical location. Government establishments were closing in all four counties of the west of Scotland. Nationalised industry's rationalisation policies brought closure in Ayrshire, Renfrewshire and also in Lanarkshire, where colliery closure was most severely felt and where also heavy industry suffered severe depression. Renfrewshire was affected by textile closure. The outcome was a stiff rise in unemployment, particularly towards the end of the decade. Concern at these trends was shown by many interested parties at both national and local level, the latter feeling that they had to act unilaterally to protect the workpeople of their own localities as, if the matter was left solely to national organisations and government, selectivity might arise. Town councils became particularly

vigilant, special committees being formed to deal with the problem, and being spurred on by worsening unemployment statistics and social distress as workers' families readjusted to lowering real incomes. With the passing of the old skilled craft trades, new skills would have to be learned and trade unions, educationalists, industrialists and councils at local level became actively engaged in promoting this. The 'boom' years of wartime production may have brought complacency, but unemployment caused by industrial closure in the 1950s was certainly the cue for local action thereafter. Of this, there would appear to be little doubt.

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[i] Abercrombie P & Matthew R H 1949 The Clyde Valley Regional Plan 1946, p68

[ii] Checkland S G 1981 (2nd Enlarged Ed) *The Upas Tree*: Glasgow 1875-1975 and after1975-1980, p46.

[iii] *Industry and Employment in Scotland, and Scottish Roads Report 1957*, Vol XXIV, p939 (23) col 119, CMND 384, 1958. *'Greenock Telegraph'* newspaper, 16 January 1951 and 17 August 1957.

[iv] Heughan H E 1953 Pit Closures at Shotts and the Migration of Miners (*Monograph No 1 of the University of Edinburgh Social Sciences Research Centre*), p39. National Coal Board Annual Report and Accounts 1949-59.

[v] *'Glasgow Herald'* newspaper, 17 April 1952. Royal Burgh of Renfrew, Town Council Minutes, 14 December 1953,18 April 1955.

[vi] Hume J R and Moss M 1979 *Beardmore's, the History of a Scottish Industrial Giant*, p351

[vii] Hansard, House of Commons Debates, Vol 497 col 2054-56, 17 March 1952 and Vol 498 col 413-789, 26 March 1952. Lynch W G P 1969 *Balance of Payments Crises UK 1945-65* (University of Strathclyde, PhD Thesis, Department of Economics), p 181, 187, 219

[viii] *'Greenock Telegraph'* newspaper, 8 November 1951 9. *'Paisley & Renfrewshire Gazette'*, 12 April 1951, 20 September 1952, 4 October 1952, 3 March 1956, 26 January 1957, 20 June 1958. *'Glasgow Herald'*, 23 September 1952.

[ix] *'Paisley & Renfrewshire Gazette'* 12 April 1951, 20 September 1952, 4 October 1952, 3 March 1953, 26 January 1957, 20 June 1958. *'Glasgow Herald'* 23 September 1952

[x] Scottish Trades Union Congress 1953, Annual Report, p82. Corporation of Greenock, Town Council Minutes (Planning and Trade Development Committee), 30 November 1953.

[xi] Kilbirnie District Council Minutes (Beith Local Committee), 20 March 1956.

[xii] *'Glasgow Herald'* newspaper, 15 January 1952, 19 March 1952.

[xiii] *'Glasgow Herald'* newspaper, 1 February 1952. *'Motherwell Times'* newspaper, 13 February1959, 20 February 1959, 6 March 1959.

[xiv] Price J H 1960 Hurst Nelson Cars (or the Great Tram and Mangle Factory), paper presented to the London area of the Light Railway Transport League, 27 July 1960.

[xv] *'Ministry of Labour Gazette'* 1958, Vol 66, p 294. *'The Scottish Industrial Estates' handbook 1953*, pp 30-33 & 95-96.

[xvi] *'Greenock Telegraph'* newspaper 19 February 1958. *'Ardrossan and Saltcoats Herald'* newspaper 4 October 1957.

[xvii] Strathclyde Regional Archives (SRA) file C01/13/1/53. Lanarkshire County Council Minutes (Development of Industry Committee) 9 December 1954 p65, 8 March 1955 p725. Irvine Town Council Minutes (industrial Development Sub Committee), 12 March 1958; (Town Council) 29 July 1958.

[xviii] SRA file B-HA-4/TP/26A (with reference to and including original correspondence with Oscar D Nelson Esq, president of Butler Mfg Co, Kansas City, Missouri, USA).

[xix] Ibid., file B-HA-4/SP/5/C - specific original correspondence.

[xx] Ibid., file C01/13/1/53.

[xxi] Ibid., ibid., and file C01/13/1/58.

[xxii] Greenock Town Council Minutes (General Purposes Committee) April 1950, August 1950, May 1954.
[xxiii] *'Greenock Telegraph'* newspaper, 19 February 1958.
[xxiv] Irvine Town Council Minutes, seventeen references in 1950. Ibid., special meeting, 28 March 1958.
[xxv] Johnstone Town Council Minutes, January 1953, February 1959.
[xxvi] The Town Councils of Hamilton and Airdrie as well as that of the County Council of Lanark held several meetings in 1950 to discuss the Coal Distillation Plant. These councils, along with several others, including Clydebank and Greenock, considered proposals for the Strip Mill in 1957 and 1958.
[xxvii] *Greenock Telegraph'* newspaper 13 September 1957. Hansard 6 February 1957, Vol 564, col 451, and 19 March 1957, Vol 566, col 198.

Reviews

Homebuilders: Mactaggart & Mickel and the Scottish Housebuilding Industry

(RCAHMS, 1999)

Miles Glendinning and Diane Watters (eds)

Weighing in at nearly 3lbs, this paperback is a heavyweight history in more ways than one. It is the first fruit of a Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) project, funded by Scottish-based builders Mactaggart & Mickel, to form a company archive and research its history. A variety of authors have contributed, to produce in Part 1 a history of Mactaggart & Mickel and in Part 2 a history of the Scottish housebuilding industry over the past two hundred years. To complete the study, the editors have included a guide to the company's archive; transcripts of interviews with former officials and company employees involved in housebuilding in Scotland; and a variety of Scottish housebuilding statistics and useful bibliographical and other reference information. The book is lavishly illustrated throughout, with black and white photographs, drawings and maps.

The story of the company by Diane Watters is written almost entirely from materials held in the company archive. It provides a narrative history of 'Mac & Mick' from the company's perspective, although it would have been interesting to have a clearer idea of how outsiders viewed the company's activities. There are some statements that hint that she might occasionally succumb to the temptation of presenting company tradition and hearsay as fact.

For example, the author offers the opinion (on page 22) that Sir Robert McAlpine & Sons would have been an inappropriate choice as contractors for Glasgow Corporation's Mosspark housing estate in 1921. She justifies this by saying that the firm had '*moved its headquarters and the focus of its operations to England and its experience of garden suburb building was not extensive.*' Yet McAlpine retained a busy and important Scottish office in Clydebank, which in 1921 won a substantial housebuilding contract at Shotts

from Lanarkshire County Council. McAlpine's experience of housebuilding included large estates in Hamilton and Motherwell during the 1870s and the 'Holy City' tenement housing suburb (including the 'garden city' development known as the Better Land) above Clydebank during the early 1900s. By 1921, the firm was also at work building many millions of pounds worth of houses for London County Council, Manchester Corporation and many other local authorities on the outskirts of cities all over England.

Other examples include the bald statement that during the 1970s *'the Scottish economy was restructured from a social democratic to a capitalist form'* (p164). And there is an attempt to demonstrate the resilience of family-led management (p153) by pointing to the failure of the Lawrence Group. The Lawrence story, culminating as it did in *'third generation failure'*, could surely be held up as a prime example of the dangers, rather than the advantages, of adhering to family-led management.

The story of housebuilding in Scotland is comprehensively told, by authors Richard Rodger, Annette O'Carroll (with a marked bias towards developments in Edinburgh), Miles Glendinning, and Kenneth Gibb. Richard Rodgers charts the progress of Scottish housebuilding 1800-1914, a period he has written about at length in the past. It is a comprehensive piece of work, although it is a disappointment that he is still content to ascribe the crisis in the industry during the mid-late 1870s largely to the failure of the City of Glasgow Bank. The graph of builders' failures he presents suggests that the problem had become serious long before 1878. And to criticise the nineteenth century's housebuilders for failing to undertake market research projects, as he does on p199, seems harsh. It is easy enough to criticise entrepreneurs from the safe vantage of one's computer workstation, more than a century after events. Yet even twentieth century housebuilders, with far more economic statistics and forecasts at their fingertips, have been known to make a pig's ear of predicting market demand!

It is a shame that this book about homebuilders has virtually nothing to say about the skills, the working conditions and the experiences of foremen, brickies, scaffies and others who actually erected Scotland's houses.

However, it offers a useful chronicle of the activities of one of Scotland's leading firms of housebuilders, and a comprehensive history of housebuilding in the country in modern times. It will be a mine of facts and information for researchers for many years to come.

Iain Russell

Only the Best Will Do: The Eddie Stobart Story
(Belfast, 1998 *pp. 20)*

Noel Davidson

Although this book is a biography of a north of England borderer from Cumbria, his transport company plies part of its trade throughout the south of Scotland to and from its depots in Carlisle and Glasgow. Eddie Stobart, a self-made man with a remarkable ability to seize a chance to climb further up the business ladder, attributes his success to the unstinting faith of himself and his wife in their Christian beliefs. Whilst the book concentrates on this aspect of the man, it does give an insight into his working life, and it is upon this that the review will focus.

Born to a farming life and left to play a major role there when his mother died at an early age in 1942, young Eddie augmented the household income by mowing hay in farmers' fields in the early hours before school, then finishing the job after 4 o'clock, often working late into the evening - and, whilst he was engaged at his lessons, he left his two shire mowing horses grazing in the school field! Two years later, he sold his hen houses to raise the money to buy a threshing business in the days before combined harvesters were in use. Having prospered and expanded his business operation into spreading basic slag fertiliser, Eddie Stobart contracted to local agricultural merchants before landing a major franchise with Imperial Chemical Industries. This required larger premises, finance, transport and increased staff, all of which were under his personal supervision. When the ICI contract ended, he utilised his increased vehicle stock by transporting and storing pallet loads of empty cans for Metal Box Ltd, which had manufacturing units at both Carlisle and Glasgow. Eventually, transportation became the major business, using an ever-expanding network of motorways.

By 1998, the company was the largest road haulier in Britain, with seventeen of its own depots, Glasgow being the furthest north. Eddie himself had retired, but his sons and daughter held working directorships, a well-tried method ensuring success, particularly in the tricky sphere of load management involving 700 vehicles and 1200 trailers. The company now employs some 2000 staff, of whom 1 100 are drivers.

Eddie Stobart stuck to specific principles all his working life, based on the tenet that only the best would do, and relied on his reputation and the recommendation of others to achieve an ever increasing order book, even at times when he did not have the resources to carry out the work immediately. In the early days, such was Eddie Stobart's reputation for doing a good job that farmers would await their turn to have the mowing or fertiliser spreading done by him or his firm. More recently, competition is keen and companies cannot wait, but Eddie Stobart Ltd secures the work because the company has the transport resources and the ability to get the job done and done well.

The book is written with a churchgoing theme throughout, and for a popular readership. Whilst highlighting Stobart's local philanthropy, it in no way aggrandises it. In many respects, Stobart was a flag bearer whose standards many of today's successful businesses might bear in mind. The book, itself, is well worth the read.

Neil Earnshaw

About the BAC of Scotland

The Business Archives Council of Scotland (BACS) was established in 1960 as an independent archive body concerned with the active preservation of Scottish business records. It is a registered charity funded by donations from Scottish businesses and a grant-in-aid from the National Archives of Scotland.

The Council deals specifically with the preservation of Scottish business records, broadly defined to include professional bodies and associations, and the promotion of their study. Scotland has a rich industrial past and, over the past two centuries has produced some of the finest engineers, shipbuilders and inventors the world has seen.

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The Council employs one full-time Surveying Officer who operates from the office of the University of Glasgow Archive Services. The Surveying Officer contacts companies in order to locate records of a historical nature. Once found the records are sorted, listed and advice offered to ensure the records' preservation, be it on the company's premises or in a public repository.

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