

BRITISH NAVAL ARMAMENTS, CARTELS, AND DEFENCE PLANNING BETWEEN THE WORLD WARS

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Durant l'entre-deux-guerres, l'industrie britannique privée de l'armement naval comprenait une poignée de grandes entreprises. Leur relation avec l'Etat britannique est importante pour les historiens: en effet, le désarmement avait diminué la capacité de l'industrie à répondre aux besoins d'une expansion navale rapide, créant en retour des difficultés considérables pour les planificateurs de guerre. Cet article présente de nouvelles données sur la collusion des prix au sein des entreprises navales, et montre comment l'industrie privée a réagi aux défis du désarmement, avant de chercher à profiter du réarmement. Il met en évidence le fait que l'amirauté n'avait pas reçu, de la part du Cabinet et du Trésor, les moyens de préserver les capacités de l'industrie, et que, en conséquence, et malgré la conspiration pour le profit, la formation d'un cartel, actif de 1926 à 1941, a probablement sauvé les gouvernements de l'entre-deux-guerres de leurs propres erreurs.

In July 1936 as Britain's rearmament drive was gathering momentum, E.C. Jubb, the Admiralty's Director of Navy Contracts, remarked that his organisation's system of competitive tendering whereby specialised firms would be invited to secretly bid for the right to build a naval vessel was "one of the greatest safeguards against undue profits" in any branch of military procurement¹. Yet,

four years later, he was forced to request that directors at John Brown's shipyard near Glasgow "reconsider the amount quoted [for a 9 000 ton *Roberts*-class Monitor]...with a view to a very substantial reduction being made" when the Admiralty belatedly discovered that even the lowest bids were yielding unprecedented profits². As his organisation was beginning to realise, what had transpired

¹ 'Admiralty Contracts, Prevention of Profiteering' 17 July 1936, Templewood Papers, Cambridge University Library [Hereafter CUL], MS Templewood Part 9, File 5.

² Jubb to Piggot, 16 November 1940, Glasgow University Archives Service [Hereafter GUAS], UCS1/21/17.

across the preceding fifteen years was a prolonged and sophisticated price-collusion between warship builders. This collusion had completely circumvented competitive tendering during rearmament and raked in huge sums of money for some of Britain's largest armament businesses, firms which had been fighting for their very existence only a few years earlier.

Concurrent with the development of a warshipbuilding cartel was the growth in both size and influence of the British government's defence planning organisation, the Committee for Imperial Defence (CID). What had begun life as a single advisory body comprising a handful of individuals in 1902 from the Admiralty, Army (and later Royal Air Force) was by 1939 a gargantuan operation comprising dozens of subcommittees and several hundred staff meetings, on average, almost twice a day³. Within the CID was a sub-group devoted entirely to supply and procurement, known as the Principal Supply Officers Committee (PSOC). Dating from the mid-1920s, the PSOC had by 1935 grown to become the single most important force in the conceptualisation and organisation of all of British material defence needs, from boots to bombs and battleships. Nevertheless, the cartel persisted.

Despite a wealth of scholarship on the interwar period and rearmament policy, this is a relatively unknown and under-researched area. Valuable contributions to the areas of naval (and industrial) decline have been made and re-made in recent years, while themes of appeasement, rearmament and constraints on policy have been a topic of debate almost continuously since the 1930s⁴. Yet, studies of the behaviour of the armaments industry, and specifically how it reacted to matters of

disarmament and rearmament remain absent. One can speculate why this lacuna exists: rearmament and disarmament are often treated as separate entities emanating from top-level policymaking, so an examination of how (and why) industry responded to these changes is often an afterthought in studies of, among other things, the policies of interwar governments. By the same token, business history, military (or naval) history, and political history do not always neatly overlap; historians of war have tended to show little interest in the business decisions behind tank, fighter or warship production. Similarly, business historians are only superficially concerned with what these governments then did with the weapons bought.

Nevertheless, the political economy of armaments manufacture should interest business historians, for it sheds light on the pathways to success and failure for several of Britain's largest armament firms and helps our understanding of how and when businesses or businessmen could exert influence upon events ordinarily well outside their realm of influence. Naval armaments are a particularly good case to study in this regard: unlike makers of aircraft or tanks, naval manufacturers were large and well-established firms which either long predated World War I or grew rapidly during it. In 1939, naval weaponry remained amongst the most sophisticated and expensive technology on the planet. Indeed, one historian has characterised the technological capability for making a revolving battleship gun turret in World War I as about as rare as the ability to make spacecraft seventy years later; though the experience of the interwar years meant firms meeting this requirement actually became, if anything, rarer by 1939⁵.

³ F. A. Johnson, *Defence by Committee: The British Committee of Imperial Defence, 1885-1959*, Oxford, Oxford University Press, 1960, p. 221.

⁴ See, for example: W. Churchill, *The Second World War, Volume 1: The Gathering Storm*, London, Cassell, 1948.

⁵ C. Trebilcock, "Science, Technology and the Armaments Industry in the UK and Europe, With Special Reference to the Period 1880-1914", *Journal of European Economic History*, 22 (3), 1993, p. 569-570.

Secondly, though cartels were relatively common in the 1920s and 1930s, naval armaments stand alone. While many national governments of the time saw cartels as a way of eliminating excess competition and regulating the market (in terms of quality and price), for the reasons outlined below, warship building was an entirely different beast. In this case the British government had no knowledge of its existence, and politically the government was averse to ordering warships from foreign shipyards. Since technological barriers for entry to the warship sector for domestic shipyards were eye-wateringly high and no guarantees of orders from the Admiralty – especially during disarmament – existed, this ‘ring’ of shipbuilders could operate in a way that the coal, textile and even merchant shipbuilding industries could not⁶.

This article proceeds chronologically. Part I explains the experience of industry and the development of the CID until 1932, including the first attempts to assist industry. Part II explains the changes that occurred both in the political circumstances and the organisational structures between then and 1935. Part III then outlines the results of price fixing and the failure of effective supply planning during the period of rearmament between 1936 and the early years of the war itself, before Part IV makes some general conclusions about the nature of the cartel and its impact upon British defence preparation more generally.

1. THE EXPERIENCE OF INDUSTRY AND THE DEVELOPMENT OF THE CID UNTIL 1932

During the First World War, the British naval arms industry worked at full capacity to enlarge the Royal Naval fleet to record levels. The private yards (excluding Admiralty-owned Royal Dockyards) produced over 1,5 million tons of naval vessels between 1914 and 1919, equivalent to over 800 ships for the Admiralty⁷. Moreover, the expertise and facilities required to build or repair a warship vastly outstripped that of passenger or merchant vessels, leaving only fifteen⁸ or so capable of undertaking complex naval work. The pace of wartime construction was so great that most rapidly expanded their capacities, adding new berths, cranes, and yard space⁹. The need for efficiency meant industry developed an increasingly close relationship with the navy: staff moved between Admiralty and private work frequently, shared ideas, and built trust in each other¹⁰. Moreover, the Admiralty (and public) firmly believed that British built ships were the world’s best, and placed a great deal of faith in their relationship with the major naval firms, most of which were famous names in the industrial heartlands of Britain¹¹.

The story of industrial co-operation on defence was fostered on a broader scale during the war with the Ministry of Munitions. This ministry, with David Lloyd George as its first head, was separate from the CID

⁶ J. Fear, “Cartels”, in G. Jones and J. Zeitlin (eds.), *Oxford Handbook of Business History*, Oxford, Oxford University Press, 2008, p. 273-277.

⁷ A. Slaven, *British Shipbuilding 1500-2010: A History*, Lancaster, Carnegie, 2013, p. 66.

⁸ In 1926, these firms – which all predated the war – were Vickers, Armstrong-Whitworth, Palmer, Hawthorn Leslie, Swan-Hunter (based in the North East of England); John Brown, Fairfield, Beardmore, Scott, Stephen, Yarrow (on the Clyde), Cammell Laird (of Birkenhead), White (East Cowes), and Thornycroft (Hampshire).

⁹ A. Slaven, *British Shipbuilding*, *op. cit.*, p. 67.

¹⁰ E. H. W. Tennyson D’Eyncourt, *A Shipbuilder’s Yarn: the Record of a Naval Constructor*, London, Hutchinson, 1948, p. 129-141.

¹¹ *Ibid.*

and hastily created to solve the shortage of explosive ammunition in 1915 (the so-called 'Shell Crisis'). It soon expanded its remit and worked closely with private industry to alleviate the bottlenecks in production. Indeed, Lloyd George was an enthusiastic advocate of a state-industry partnership. He remarked that the Ministry should be 'from first to last a business-man organisation', and that he intended to "utilis[e], as far as possible, the business brains of the community... some of them at my elbow... to advise, to counsel, to guide, to inform, to instruct, and to direct"¹². Within a matter of months he had appointed a number of senior industrialists (including the shipbuilder Sir James Lithgow) to leading roles in every department, undertaken construction of new shell factories, turned civilian production over to wartime material, and helped propel himself towards the office of Prime Minister, which he took up in 1916¹³. Perhaps not surprisingly though, the wartime ministry was found to be redundant in peacetime, and soon abolished.

It was one of Lloyd George's senior business figures, Lord Weir, who helped point the way forward in peace. Weir, whose engineering firm made pumps for warship engines, had first been appointed Director of Munitions in Scotland during World War I, was recalled to investigate the 'Supply of Munitions and Armaments in a Future War' in 1922, though his main task was to report on the potential amalgamation of services common to the Navy, Army and Air Force¹⁴. Weir's report argued against any centralised 'Ministry of Defence' and instead recommended a committee comprised of members from the Army, Navy and RAF

to coordinate supply¹⁵. Two later reports supported Weir's conclusions, and in 1924 Cabinet agreed to create the Principal Supply Officers' Committee (PSOC) within the CID which later became responsible for the task of identifying defensive deficiencies and then organising rearmament in the 1930s. Though comprising a membership of senior military technical experts, it retained only advisory powers: when production problems were identified, Cabinet had to authorise their rectification. This arrangement persisted across the interwar years.

Though the roots of industrial co-operation and the growth of supply planning bodies are in World War I, the background to the CID's collaboration with business leaders and the cartelisation of industry can be drawn directly to the period of disarmament following the Washington Naval Treaty of 1922. In the aftermath of war, political pressure to disarm – or at least avoid an expensive arms race with America – coupled with the possession of a large and young fleet left naval construction a low priority. Washington therefore set out strict tonnage limits for the world's major naval powers and imposed a ten-year 'holiday' on battleship construction, resulting in an almost overnight cancellation of millions of pounds of contracts¹⁶. Of course, naval shipbuilders had fully expected some tapering off of naval construction in peacetime. But while cyclical trends in demands for merchant and passenger ships were nothing new, the severity of the Washington restrictions surprised most. The naval budget was cut from £81m in 1921 to £56m the following year, and would not rise above £60m again

¹² D. Lloyd George, *War Memoirs*, Volume I, London, Odhams, 1933, p. 148-149.

¹³ *Ibid.*

¹⁴ 'Supply of Munitions etc.', memo by Maurice Hankey, Contracts Coordinating Committee, 28 January 1921, TNA, CAB15/20.

¹⁵ F. A. Johnson, *Defense by Committee*, *op. cit.*, p. 176.

¹⁶ L. Johnman and H. Murphy, *British Shipbuilding and the State*, Liverpool, Liverpool University Press, 2002, p. 19.

until 1935¹⁷. Moreover, following an initial ‘boom’ through replacing ships lost to the war and the re-opening of markets and trade routes, demand stagnated from 1921, leaving a worldwide oversupply of cargo tonnage that persisted throughout the decade¹⁸.

Thus, naval armaments manufacturers were forced to compete at increasingly cutthroat levels for contracts of any kind. A cargo ship priced at £250 000 in 1920 was on offer at less than £60 000 in 1926, leading to substantial losses on the rationale that this was better than no contract at all¹⁹. Some firms also responded by diversifying their portfolios: Beardmore turned over its engineering plant to diesel engines for trucks, experimented with aircraft, and moved into locomotive manufacture. However, while Cammell Laird’s work on rolling stock yielded positive results, Beardmore was amongst the first of the major naval firms to collapse in 1930.

Others fared little better in the 1920s. Armstrong-Whitworth and Vickers merged in 1927 to form Vickers-Armstrong, though in reality it was Vickers, the largest and most successful armaments manufacturer of its day, swallowing its rival on favourable terms. Still, at least it had a future. The Coventry Ordnance Works, an important manufacturer of naval guns, collapsed in 1925. By the end of 1929, shipbuilding unemployment was up ten-fold since 1919, to 40%²⁰. Despite this slimming down of the sector chronic overcapacity persisted into the 1930s. The extra warship berths allowed 1,8m tons of naval vessels to be launched between 1914 and 1919. In contrast, 1930 to 1934 saw

just 50 000 tons launched, or less than 3% of the wartime level. While the war was, of course, atypical of ‘normal’ levels of warship construction, disarmament was terrible by any standards for private manufacturers: tonnage launched was barely a quarter, even, of the previous low watermark in the 1890s²¹. Sir Alexander Kennedy, the Chairman of Fairfield shipbuilding company, summed up the mood of firms when he noted despondently in a speech: “...today private firms [find] themselves burdened with resources and equipment capable of meeting naval requirements far beyond any programme that might for some years to come – if not for ever – likely to be laid down”²².

Nevertheless, governments showed little interest in assisting warshipbuilders. There was no public appetite in the aftermath of war for any increase in naval expenditure (which would in any case have contravened the Washington agreement). Even had such enthusiasm existed, Britain’s finances were in no fit state to divert funding to the fleet: a third of government spending in the decade to 1929 was swallowed by servicing the war debt alone. The Admiralty, for its part, had realised the potential gravity of the situation even before the Washington conference: The First Lord of the Admiralty, David Beatty, warned that “specially skilled labour, accustomed to special warship work, is being dispersed [and] the longer warship construction is put off, the more difficult it will be to find suitable labour”, while “the total cessation of [naval] construction would involve us in a serious deficiency of trained shipbuilding staff and mechanics” was the prediction of

¹⁷ B.R. Mitchell, *British Historical Statistics*, Cambridge, Cambridge University Press, 1988; R.P. Shay, *British Rearmament in the Thirties: Politics and Profits*, Princeton, Princeton University Press, 1977, p. 297.

¹⁸ L. Johnman and H. Murphy, *British Shipbuilding*, *op. cit.*, Table 3; A. Slaven, *British Shipbuilding*, *op. cit.*, p. 85.

¹⁹ A. Slaven, *British Shipbuilding* *op. cit.*, p. 72.

²⁰ L. Johnman and H. Murphy, *British Shipbuilding*, *op. cit.*, Table 3.

²¹ Derived from A. Slaven, *British Shipbuilding*, *op. cit.*, p. 63; L. Johnman and H. Murphy, *British Shipbuilding*, *op. cit.*, Table 5.

²² Sir Alexander Kennedy, speech at launch of *Taranaki*, *Glasgow Herald*, 12 December 1926.

Eustace Tennyson D'Eyncourt, the Director of Naval Construction from 1912 to 1924²³.

While overcapacity in berths and slipways was widespread, the same was not true for specialist facilities for guns and armour, though these were still at risk if a shipyard collapsed²⁴. Nevertheless, Admiralty-led schemes until 1926 to preserve plant and facilities were either rejected or heavily modified by the Treasury. The first in 1924 aimed to provide a steady stream of work within the terms of the Washington Treaty via an annual support fund of £5m paid for by an increase to the navy estimates. The Treasury revised it down to £1.5m and refused to renew it in later years²⁵. An attempt to guarantee loans to shipyards to allow the undertaking of contracts before payment lasted only a little longer, and was terminated in 1926²⁶. By this point the business position was acute; Coventry Ordnance Works had closed altogether; Beardmore, Scott and Yarrow had completely run out of profitable work, naval or otherwise, and Palmer fared little better²⁷. As such the Admiralty resorted to bending the rules without notifying the Treasury or CID. The Controller of the Navy, Ernle Chatfield, spearheaded an agreement in 1925 over armour which essentially agreed to pay a higher price for small orders – a subsidy via a cost premium – to keep idle plant operating. He went to great lengths to be secretive, coloured by the experience of two failed assistance schemes, and so only informed the PSOC of it in guarded terms once agreement had been reached with the manufacturers²⁸.

Indeed, when the Auditor-General found out the following year, the Treasury immediately protested, and after a payment of £60 000 was made despite no armour being ordered at all in 1929, the scheme collapsed²⁹.

Though the armour scheme lasted a little longer than the others (perhaps because it cost so little), Treasury control was clear. The famous 'Cruiser Crisis', where the Admiralty sought to exploit a loophole in the Washington agreement to increase the naval budget for new cruisers, once more brought the two sides into furious confrontation. It was only after threats of Admiralty resignations that the Prime Minister, Stanley Baldwin, sought a compromise of a modest increase in the naval budget (of £3m on top of the £55m agreed for 1925). This was however on condition of a reduction in overheads elsewhere, meaning the majority of work was placed in the idle Royal Dockyards, and mostly defeated the point of the exercise³⁰.

As a result, the years between 1926 and 1933 saw the naval armaments industry take the radical step of secretly clubbing together in the interests of self-preservation, a step which would underpin future co-operation and lead to widespread price-fixing at the Exchequer's expense. Essentially, a 'rota' whereby the major warship yards spread available orders, initially only for small destroyers, between the fifteen firms was devised. Commencing in 1926, this relatively simple step avoided the undesirable effects of cutthroat competition among

²³ G. A. H. Gordon, *British Sea Power and Procurement Between Wars: A Reappraisal of Rearmament*, Hong Kong, Naval Institute, 1988, p.76-77.

²⁴ M. M. Postan, *British War Production (History of the Second World War)*, London, HMSO, 1952, p. 48; G. A. H. Gordon, *British Sea Power*, *op. cit.*, p.86-87; 24th Meeting of the Supply Board, 11 October 1932, TNA, CAB 60/30.

²⁵ 'Minutes of Meeting of the Admiralty Board', paper 1813, 18th February 1924, TNA, ADM167/69.

²⁶ G. A. H. Gordon, *British Seapower*, *op. cit.*, p. 77.

²⁷ H. Peebles, *Warshipbuilding on the Clyde*, Edinburgh, John Donald, 1987, p. 111-112.

²⁸ '24th Meeting of the Principal Supply Officers Committee', PSO 24th Mtg., 25 February 1926, TNA, CAB60/2.

²⁹ G. A. H. Gordon, *British Seapower*, *op. cit.*, p. 84.

³⁰ F. E. McMurtie (ed.), *Jane's Fighting Ships of World War II*, London, Random House, 1997, p. 38-39.

member firms. Destroyer contracts had the advantage of being both relatively inexpensive and commonplace, even during disarmament, allowing for an even share to keep men employed and facilities in use. In addition, uniform designs across large classes meant that any price escalation would have been readily apparent to the Admiralty and Treasury, which perhaps explains why costs remained steady during the disarmament years³¹.

Any announcement that strictly competitive tendering, supposedly delivering best value to the taxpayer, had been abandoned would have been anathema to the Treasury and scuppered the whole scheme. As such, it remained private. The firms – known as the Warshipbuilders' Committee (WSBC) – enlisted the assistance of the Shipbuilding Employers' Federation (SEF) to coordinate meetings centrally and corresponded exclusively at the chairman or managing director level to minimise leaks³². The members met for the first time in February 1926. The SEF controller from 1923, former shipbuilder and industrialist John Barr, was to be responsible for the lines of communication between the WSBC yards – a position he held continuously (though occasionally deputised by Captain T.E. Crease, who eventually succeeded him) until 1937.

The WSBC was a powerful group, even in the context of the 1920s when its members were at their weakest. No other firms in Britain could meet the demands of constructing a complex warship or had any experience of Admiralty work. Furthermore, it was widely accepted that it was politically

impossible – given the precarious position but also world-leading reputation of British shipbuilding and the degree of technical secrecy involved – for the Admiralty to place an order abroad even if it was technically feasible or financially more prudent. Instead, the aim was to assist British firms in winning orders from foreign navies³³.

However, though secretive, the initial rota was unsophisticated. In its first guise it simply involved drawing names from a hat (Beardmore, Hawthorn Leslie, Palmers, Fairfield, Cammell Laird and Vickers were the first out). Nor did the profit margin involve much in the way of complex calculation – some 10% of the costs were to be added to the final bids³⁴. Though undoubtedly helpful, by the end of the decade this rota had outgrown its modest ambitions and was replaced with a much further reaching scheme. The reasons why closer cooperation occurred are not absolutely clear from surviving evidence, though the political situation in 1929 (with a broadly pacifist Labour government pledging to cut armaments spending back further) and the subsequent Wall Street crash stand as two of the most obvious threats to the industry. It is however clear that from this point the rota involved almost all kinds of ships (and parts thereof), and a much greater degree of price fixing.

This enhanced process worked in basically the same way until 1941. Upon receiving invitation from the Director of Navy Contracts, each firm wrote to Barr notifying him of the Admiralty's intention to place an order. To quote from a typical example, James Brown at Scott "begged to

³¹ Profits on the contracts remained low, in some cases, yards still made small losses. Fairfield, for instance, lost £1,375 on a destroyer order, while Brown in Clydebank lost almost £10,000 on a contract for two from the same class. H. Peebles, *Warshipbuilding, op. cit.*, p. 111.

³² Personal correspondence between members of the committee survives, but it was never officially mentioned at company level with other members of the board. See for example, the directors' minutes of Fairfield (Glasgow City Council Archives [hereafter GCC], UCS2/1/2), the directors' minutes of Vickers Armstrong (CUL, MS Vickers), and the directors' minutes of John Brown Clydebank (GUAS, UCS1/5/6).

³³ C. M. Bell, *The Royal Navy, Seapower and Strategy between the Wars*, London, Macmillan, 2000, p. 149-157.

³⁴ 'Meeting at Hotel Cecil – Hull and Machinery for Admiralty Contracts' 19 December 1926, GUAS, GD319 12/7/6.

advise the committee” that his company had “received the usual enquiry for the construction and completion in all respects of Hull and Machinery of one and each of the two destroyers for H.M. Navy”, detailed the deadline for Admiralty receipt of the tender, and the Admiralty’s instruction that it was strictly confidential³⁵. Barr (or Crease) collected such notifications together, occasionally writing to firms which had failed to send word to confirm that they had, in fact, been invited to tender³⁶. This allowed Barr to confirm that the tenders were being invited from all eligible firms, in other words ensuring the process was being run in the usual way, and to level the playing field by alerting yards to tenders not yet received, maximising the time available to prepare cost estimates. It also allowed the committee to reaffirm the belief that no yard was being excluded on a price or quality basis, and thus continue to design rotas for tenders at prices that would allow reasonable profits to be returned.

With tenders received, Barr’s next task was to ascertain which yards were interested in ‘winning’ the contract. In the disarmament years this included practically every firm able to undertake the order, while during rearmament increased merchant demand meant it was commonplace for several to notify Barr that they did not wish to be considered. The same process was followed: firms would notify Barr of their intent to bid, following which representatives from each would attend a meeting. Here, the most accurate cost figures available would be discussed openly so that the group knew, to the pound, what each firm believed it would cost them to produce the vessel required by the Admiralty³⁷. Such information was then compiled into lists and duly circulated, so that

each committee member had a written record of its own costs relative to those of others in the group. In rarer but not necessarily infrequent cases, particularly when meetings had been called at short notice and thus detailed estimates were not yet available, firms wrote to each other to provide costs. To give one example, in 1929 Sir Harold E. Yarrow, managing director of the shipbuilders of the same name, wrote to James Brown at Scott giving him a full and exact breakdown of their estimated costs for a destroyer leader, a destroyer, and a depot ship³⁸.

Rival businesses sharing information on prices in a period where there were very few orders to go round contained a great deal of risk. That they did so is testament to the effectiveness of the scheme, and the incentives to stay in. Any shipyard outside the group would have certainly faced significant challenges. Without knowing how low the ‘winning’ bid was, a competitor would have been forced to undercut rivals, and would in all likelihood have faced with the return to the cutthroat and loss-making bids in order to gain contracts. It is therefore not surprising that from the committee’s earliest days until well into the Second World War the membership remained remarkably stable.

When a firm did pose a threat to the stability of the cartel, the WSBC acted. In October 1930, the SEF were informed that Harland and Wolff (H&W) of Belfast were also being invited to tender for Admiralty contracts for an upcoming cruiser class, information that was immediately circulated³⁹. H&W, though not a frequent supplier to the Admiralty, did have some past naval experience with complex vessels during World War I, with the construction of the large cruiser *HMS Glorious*. Thus, it was

³⁵ For example, see Brown to Barr, 13 October 1933 or Brown to Crease, 18 November 1935, GUAS, GD319 12/7/6.

³⁶ Barr to Alexander, 6 December 1933, GUAS, GD319 12/7/6.

³⁷ ‘Estimates’, undated, GUAS, GD319 12/7/6.

³⁸ Letter from Yarrow to Brown, 28 January 1929, GUAS, GD319 12/7/6.

³⁹ Crease to Brown, 29 October 1930, GUAS: GD319 12/7/6.

one of the few ‘outsiders’ with facilities capable of handling such vessels⁴⁰. When the SEF notified James Brown, he argued for their inclusion within the group, noting “they [H&W] are not parties to the current arrangement and must be brought in somehow”⁴¹. Other members evidently agreed. Craven from Vickers and Batey from Hawthorn Leslie joined Crease and met the Chief Executive of Harland and Wolff, Frederick Rebbeck, on 12 November 1930 to put across their proposals for joining the rota, and “emphasised the necessity for discretion and absolute secrecy”⁴². H&W, clearly taken by the offer, agreed to the terms on the following day, and were formally admitted to the group at a meeting two weeks later. The entire process from notification to admission had taken less than a month.

Secrecy was also heightened around the same time. The firms took to giving each other codenames, though these were rudimentary and unlikely to pass any serious scrutiny. Stephen’s on the Clyde was coded as ‘CONE’ (meaning, one presumes, Clyde one), Scott as ‘CETU’, while others were grouped under similar letters and numbers for geographical locations⁴³. Nevertheless, the scheme was evidently working well, for profits returned to naval work – even during a time of scarce orders – long before other shipbuilding sectors. At Brown, compared with a loss on the two ‘Class’ destroyers, the two ‘F-Class’ contracts from four years later netted them an extra £87 000⁴⁴, a marked improvement from the situation from 1922–1928, where 23 orders in total netted the

company a combined loss of £211 000⁴⁵. At Fairfield, a single small loss of £1 375 on a naval machinery contract was an exception rather than the rule, compared with twelve out of fifteen merchant orders in the same period which failed to cover costs⁴⁶.

The effectiveness of price fixing in the period prior to rearmament is well illustrated with the bid to refit *HMS Warspite* with new machinery. As already noted, estimates were prepared in an entirely standard way; firms submitted to Barr what were ostensibly honest prices for fulfilling the contract. At the subsequent meeting, however, costs were openly shared with all interested parties. The estimates were then averaged out across all firms intending to bid, before a final price to be quoted was agreed upon (see table below). It is notable that the firm providing the lowest estimate, John Brown, was instructed to ‘lose’ the tender by entering a bid higher than Parsons, the eventual ‘winner’. Secondly, despite having organised which firm was to receive the contract, the others did not simply withdraw from the process, but instead submitted higher quotations to give a false impression of a genuine bid (indeed, in the handwritten notes at the side of the chart the term ‘add hundreds’ is present, presumably because the rounded figures might have aroused suspicion). The third point is that exactly 10% was added onto the mean of estimates, and rounded to the nearest hundred (the exact figure is £448 712), which was the amount quoted for the winning bid⁴⁷. Such averaging perhaps kept prices competitive: if it was simply a case of 10% being added

⁴⁰ I. Buxton and I. Johnston, *The Battleship Builders: Constructing and Arming British Capital Ships*, Annapolis (Md.), US Naval Institute Press, 2013, p. 84.

⁴¹ Crease to Brown, 29 October 1930, GUAS, GD319 12/7/6.

⁴² Crease to Brown, 14 November 1930, GUAS, GD319 12/7/6.

⁴³ ‘SECRET: Minutes of Private Arrangement made by letter concerning *Minespools 32*’. GUAS, GD319 12/7/6.

⁴⁴ A. Slaven, “A Shipyard in Depression: John Browns of Clydebank 1919–1938”, *Business History*, vol. 19, n° 2, July 1977, p. 198.

⁴⁵ *Ibid.*

⁴⁶ H. Peebles, *Warshipbuilding, op. cit.*, p. 110.

⁴⁷ ‘Machinery for HMS Warspite’, GUAS: GD319 12/7/6.

to the price of whichever firm was next in the rota, then the ‘winning’ bid could have been as high as £506 880 (if based on Cammell

Laird’s estimate), which may have appeared a suspiciously high price to the Admiralty or Treasury in the early 1930s.

Firm	Estimate	Price to be quoted
Parsons*	£405 000	£448 700
Brown	£387 600	£459 000
Scott	£406 300	£472 000
Cammell Laird	£460 800	£480 000
Wallsend*	£402 000	£467 000
Fairfield	£388 500	£463 000
Vickers	£408 000	£471 000
Hawthorn Leslie	£405 200	£465 000
Mean of estimates	£407 920	

*Engine manufacturer only

Source: Machinery for HMS ‘Warspite’ (Secret), GUAS, UGD GD319 12/7/5

The reasons for the success of this scheme are discussed further below. It suffices to say here that this scheme could only work because of two principles that industry believed would never be invalidated. First, while foreign buyers were welcome to buy British, the Admiralty would never go abroad and would always call on the same small group of firms whose capabilities formed an impenetrable barrier to entry for rivals. Second, trust between the Admiralty and Britain’s warshipbuilding firms had been developed during both the naval arms race with Germany and the Great War, and the Admiralty was therefore not in the habit of inspecting the financial accounts of firms. Finally, the experience of disarmament was one of isolation – but for *both* industry and the Admiralty. Admittedly, this was a case of industry going ‘underground’ for reasons of necessity, for it is not hard to imagine the Treasury’s likely reaction if the scheme was uncovered. Secrecy was the key to success.

2. THE CHANGES THAT OCCURRED BOTH IN THE POLITICAL CIRCUMSTANCES AND THE ORGANISATIONAL STRUCTURES BETWEEN 1932 AND 1935

Before 1931 the PSOC had been underworked by a government committed to disarmament in a world lacking in external threats. In September of that year, however, the Japanese invasion of Manchuria sparked a diplomatic incident which threatened British interests in the Far East. This brought questions of war preparedness and defensive deficiencies to the fore and transformed the role of the CID and its subordinates during peacetime. But, while the PSOC had developed its own relatively sophisticated set of committees, it still lacked the ability to remedy any industrial deficiencies identified without escalation to the executive body of

the CID and ultimately, Cabinet⁴⁸. Indeed, the secret nature of the PSOC's work meant that very few outside Whitehall even knew of its existence at all: formally approaching industry to discuss war preparations risked public alarm, as such it retained a low profile. For reasons outside the remit of this article, political and financial considerations around being seen to rearm – even if this was not strictly the same as preserving armaments manufacturing capacity – undermined the PSOC's efforts to assist industry, and thus the cartel remained the best method of providing security for the private naval manufacturers.

The PSOC did, however, utilise industrial expertise to inform their investigations, and it is here where the paths between industry and government crossed once more. The committee structure and getting approval from Cabinet meant progress which was often painfully slow. But, from late 1933, Lithgow, Weir, and the steelmaker Sir Arthur Balfour, all with shipbuilding and armament interests, were invited into the PSOC as an 'Advisory Panel of Industrialists', and had begun preparing secret reports on methods of speeding up armaments manufacture in an emergency in early 1934⁴⁹. Between that point and 1939, this trio of industrialists – and Weir in particular – would go on to do some extremely important work behind the scenes in organising and preparing British industry for war⁵⁰.

Again, the machinations of the various subcommittees and industrial involvement within them do not specifically concern this

account. The sum of their investigations was that British defensive capabilities had been seriously eroded since the Armistice, and what had ended the war as a large and young fleet with a huge defence industry was in 1934 old, obsolete, and short of both skills and modern facilities⁵¹. This said, Lithgow's involvement is certainly worthy of note, for since 1930 he had headed a parallel shipbuilding rationalisation body, the National Shipbuilder's Security (NSS) scheme⁵². Broadly speaking, the NSS sought to liquidate uncompetitive shipyards on a voluntary basis, thereby removing willing participants from the pool of available shipbuilding capacity. Backed by the Bank of England, Lithgow's scheme picked off shipyards one-by-one, purchasing entire companies (or the shipbuilding element of them), or, if that was impossible, sites and berths within the larger company. As an added measure to prevent the reactivation of facilities at the first sign of an improvement in the market, the NSS dismantled the great majority of what they purchased, and made it a condition of any future onwards sale that the land could not be used for shipbuilding for at least 40 years⁵³.

The NSS aimed to liquidate one third of capacity, though in such a way that it was spread evenly across the merchant, passenger and naval sectors. This was estimated at around 50 warship berths, and around 120 major merchant berths, equivalent to the elimination of 1,3m tons of annual capacity⁵⁴. Initially, progress was swift. Beardmore, once

⁴⁸ 'Organisation for the Coordination of War Supply', PSO(SB)570, February 1936, TNA, CAB60/15.

⁴⁹ Memorandum by Lord Weir, Sir James Lithgow and Sir Arthur Balfour', PSO 415, 20 February 1934, TNA, CAB60/14, p. 1.

⁵⁰ N. Forbes, "Democracy at a Disadvantage? British Rearmament, the Shadow Factory Scheme and the Coming of War 1936-40", *Jahrbuch für Wirtschaftsgeschichte*, vol. 55, n° 2, November 2014, p. 49-69.

⁵¹ N. H. Gibbs, *Grand Strategy, Volume 1: Rearmament Policy*, London, H.M.S.O., 1976, p. 80.

⁵² J. M. Reid, *James Lithgow Master of Work*, London, Hutchinson, 1964, p. 131; 'Deeds of Covenant, 1930', National Maritime Museum [NMM], NSS.

⁵³ 'Deeds of Covenant, 1930', National Maritime Museum [NMM], NSS.

⁵⁴ A. Slaven, *British Shipbuilding, op. cit.*, p. 98-101. Passenger berths were a mixture of the two: ocean-going liners were primarily constructed in warship berths, with smaller vessels in merchant berths.

the fourth biggest shipbuilder in Britain and one of only two major naval gun-mounting sites in the country, was the first sale to Lithgow's scheme. Two of Palmer's naval yards, one of Vickers-Armstrong's, and Fairfield followed by 1935, thereby slimming down the sector. After this point, however, the sale of warship yards stopped entirely. Indeed, by the time the scheme had finished in 1938, only 37 of the desired 50 warship berths had been sold – despite a meeting with warship builders to entice them to sell⁵⁵ – while 179 berths, equivalent to 1.1m tons or 40% of capacity, had been removed from the merchant pool⁵⁶.

Space does not allow for a thorough investigation of the NSS or Lithgow's policies. However, one can already see the inherent contradictions on at least two levels here. One is that the PSOC's investigations into defensive deficiencies ran counter to Lithgow's scheme to eradicate capacity, even if those yards were struggling badly with a lack of naval orders. Perhaps recognising this, from 1934 Lithgow's policy shifted notably; naval yard purchases stopped, and those already sold were mothballed rather than liquidated. Lithgow himself even ended up owning the remnants of Beardmore and Fairfield in what could, and arguably should, be thought of as something akin to insider trading on secret government information.

Secondly, the yards themselves were reluctant to sell-up as readily as their merchant counterparts, despite the position in the early 1930s being, if anything, worse for naval builders. This should not have been the case. Firms involved in the manufacture of cargo vessels were likely to have a diverse customer base and smaller overheads than those which derived a large proportion of their income from naval contracts⁵⁷.

One explanation for this imbalance is the existence and operation of the cartel. As a mechanism for avoiding cutthroat competition and for raising prices, the committee allowed the warship sector more scope to mitigate the impact of market forces in a way that smaller merchant builders could not. Had a similar scheme existed within British merchant shipbuilding, clients could simply have gone abroad to purchase ships instead. Moreover, the long-term nature of disarmament had led the naval manufacturers to create and develop structures to deal with excessive competition some years before the onset of the global economic crisis, and while they could compete for merchant work, the reverse was not true for merchant builders. One could therefore argue that the WSBC's success in raising the price floor for the relatively few naval orders acted as a disincentive for its members to sell to the NSS, given that typical prices offered under the scheme were just half the pre-war value of a firm⁵⁸.

In sum, there was no coherent State response to the problems of industry during disarmament. The Treasury (and Cabinet) viewed assistance in narrow terms: the way to preserve technology and skills was by ordering warships, which neither was prepared to do. Allowing the PSOC to investigate defensive deficiencies after Manchuria effectively kicked the question into the long grass: the subcommittees fretted and consulted and reported, but short of stopping the NSS before it could make a persuasive case to buy naval yards, it could achieve little to remedy deficiencies before 1935. Amidst this lack of coherence, and with each operating under veils of secrecy, the response of the naval arms industry was to persist with its cartel, and to secure increased profit margins when circumstances allowed.

⁵⁵ 'Meeting of Warship and Liner Builders', 23 February 1933, NMM, NSS.

⁵⁶ A. Slaven, *British Shipbuilding, op. cit.*, Table 4.9.

⁵⁷ *Ibid.*, Table 4.7.

⁵⁸ 'Minutes of Meeting', 31 July 1930, NMM, NSS.

3. THE RESULTS OF PRICE FIXING AND THE FAILURE OF EFFECTIVE SUPPLY PLANNING DURING THE PERIOD OF REARMAMENT BETWEEN 1936 AND THE EARLY YEARS OF THE WAR

For the navy, rearmament was a relatively late phenomenon in Britain. The restrictions of the Washington Treaty were updated twice, in London, in 1930 and 1935. These finally expired on 31 December 1936, though new orders were placed during the year in anticipation of the treaty expiring, with construction beginning 1 January 1937. In so doing, the naval budget for 1936-1937 was raised to £81m, before reaching £102m and then £132m in the following two years⁵⁹. Given that the average budget from 1922-1935 had been less than £55m, much of which was reserved for overheads and staff costs, this served as a very significant boost to construction⁶⁰.

The pressures of such a late rearmament did, however, cause undesirable side effects. Industry was not fully equipped to deal with a large upturn in demand, especially in the notorious bottleneck areas around skilled labour, armour plate, and gun making⁶¹. As a result, industry, concerned that rearmament would be a short phenomenon, needed financial incentives from the Treasury to expand facilities. Lithgow, for instance, had assumed control of Beardmore, and the Admiralty desired that it should double

its capacity for armour plate to 9 000 tons. In addition, the howitzer plant and steel foundries were re-opened, all at a cost to the Treasury of £143 580 by the end of 1936⁶². Moreover, Lithgow rejected the Treasury's stipulation that if it met the cost of expanding Beardmore, the new plant could only be used for government work. He demanded, and received, permission to use it for any orders Beardmore was able to secure⁶³. There was a similar situation at John Brown; here it was Admiralty who pushed through similar terms for the expansion of the Atlas armour works, again paid for by the Treasury⁶⁴. After being denied funding for so long, money was being thrown at the problem at almost the last minute.

The increased frequency of orders nevertheless allowed for the Warshipbuilders Committee to look much further forward when planning their expanded rotas. In the case of the 1936 agreement for destroyers, it is worth quoting the first four clauses in full:

1. The Rota shall be continued until completion of the round that is in progress on 31st March, 1940.
2. During the four years ending 31st March, 1940, Denny, Thornycroft, White and Yarrow shall all receive orders for an average of two destroyers per annum, either British or First-Class foreign, and they undertake to accept such foreign orders if required to do so by the Rota arrangements.
3. Vickers-Armstrong, Cammell Laird and John Brown will each forfeit their next turn in the Rota, following their Argentine orders.

⁵⁹ R.P. Shay, *British Rearmament in the Thirties*, *op. cit.*, p. 297.

⁶⁰ Derived from R.P. Shay, *British Rearmament in the Thirties*, *op. cit.*, p. 297, and B.R. Mitchell, *British Historical Statistics*, *op. cit.*

⁶¹ 'Minutes of 36th Meeting of DPR', DPR/36th Mtg, 18 March 1937, TNA, CAB4/27.

⁶² J. Hume and M. Moss, *Beardmore: The History of a Scottish Industrial Giant*, London, Heinemann, 1979, p. 238.

⁶³ 'Conditions for the extension of armour plant', December 1936, GUAS: UGD 100/1/16.

⁶⁴ A. Grant, *Steel and Ships: The History of John Brown's*, London, Michael Joseph, 1950, p. 85.

4. The current enquiry will be left for Denny, Thornycroft, White and Yarrow to deal with as they mutually arrange, and any order obtained will not be included in the Rota arrangement. The remaining firms will refrain from any further competition on this enquiry⁶⁵.

Thus, firms were to receive more classes of certain types of ship than others, relative to their size, capacity and areas of expertise. The builders that specialised in smaller vessels (listed in clause two) would receive more orders to compensate for the firms listed in clause three likely receiving the orders for the much larger battleships. Perhaps most importantly, the clauses in the rota suggest complete and unchallenged authority in the decisions of the committee. With the exception of a provision in certain circumstances (usually if one yard was unusually busy) for firms to swap contracts with each other, the rota was centrally decided, final and non-negotiable.

The committee's other great strength appears to have been its ability to procure information from the Admiralty on future orders. Barr, in a document pertaining to tenders for capital ships, reported to all tendering firms that:

It is understood that it is not the desire of the Admiralty that they [Harland and Wolff] should build capital ships... According to the latest confidential information, the programme of capital ships, aircraft carriers, cruisers and destroyers to be placed between now and March 1940 is as follows...⁶⁶

The list then went on to detail, by year, how many ships and of what class and type the Admiralty would order. While the name of the source was not revealed, Barr knew, for example, that there would be five 8 000 ton and two 5 000 ton cruisers in 1937-1938, and there would be nine *Tribal*-class and nine 'I-class' destroyers the following year⁶⁷. The document also had an "assumption" that the Royal Dockyards would not build capital ships or aircraft carriers, but would build some of the cruisers, which allowed them to "attempt to draw up an allocation of work"⁶⁸. To have this level of detail, even accounting for the more regular orders that were placed from 1936, shows a well-developed system of collecting intelligence from the Admiralty and using it to share contracts between the member firms. Once more, the behaviour of the Admiralty and the WSBC in the war itself (see below), where the former clamped down on profiteering while the latter desperately tried to cover its tracks, suggests strongly that this was a one-way relationship.

The spate of new contracts awarded in 1937 and 1938 allowed the WSBC to close in on full capacity for the first time in over fifteen years⁶⁹. Illustrative of the nature of private shipbuilding was that demand for naval ships was supplemented by a rebound in global trade. The new merchant orders created meant prosperity returned as quickly as it had disappeared in 1922. Demand for material (in particular armoured steel) and skilled labour rocketed, causing both wages and prices to rise by anything up to 15%⁷⁰. This was more than passed on to the Admiralty. While the price of a typical tramp steamer increased by around 15% (broadly

⁶⁵ 'Destroyer Rota Arrangements – SECRET', 9 October 1936, GUAS, GD319 12/7/6.

⁶⁶ 'Points for Discussion at a Meeting of Firms Capable of Building Capital Ships', 18 September 1936, GUAS, GD319 12/7/6.

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ H. Peebles, *Warshipbuilding*, *op. cit.*, p. 148.

⁷⁰ 'Memorandum on conditions now existing in the shipbuilding industry', Shipbuilding Conference Confidential Report, December 1938, GUAS, UCS 1/9/79.

in line with cost and overhead increases) in 1937, profit margins on Admiralty work doubled to more than 30%⁷¹. This was three times higher than the typical margins on naval contracts before 1936, which themselves were still far better than merchant orders in the same years, or the losses incurred on Admiralty contracts before the formation of the WSBC.

It was not until the war itself that this practice was finally eradicated. Despite the National Government's outward commitment to prevent profiteering, the systems in place were woefully inefficient in 1939. The National Defence Contribution – a 5% tax on all profits – barely dented margins on Admiralty vessels, while the later Armaments Profits Duty – a 60% tax – was only in use for four months in 1939 before being replaced⁷². During this time, the Admiralty satisfied itself with crude price comparisons on Royal Dockyard-built ships as a check for value. However, since these maintained staff and facilities even in the absence of work, they were always far more expensive. As such, for the entire period from 1926 until 1940, the WSBC was not effectively audited by the Admiralty or Treasury.

The earliest indication that the Admiralty intended to investigate profiteering was in November 1940, with E.C. Jubb querying the overhead charges at John Brown's Glasgow yard. Brown claimed that the "disturbance of work owing to the necessity of transferring workman to emergency work [i.e. war contracts]" necessitated extra charges in the tender. The Admiralty believed that owing to Brown's "current large output" and high levels of staff, the 40% increase in overheads should have been much lower⁷³. By

the following February, it had written to all WSBC firms noting that in light of the "very considerable expenditure of public money now being incurred on the building of warships" the firms would have an accountant visit to undertake investigations into the costs of construction⁷⁴. This was the point when scrutinising contracts became far more robust.

The WSBC's communication structure meant its members were frequently able to keep abreast of developments. In April 1941, J. A. Milne of White wrote to Crease to circulate to the details of the Admiralty accountant's visit to White's yard. He outlined the contracts which were being investigated, the duration of his stay, and the files he requested to see. Milne noted the accountant "confined himself to asking for half a dozen invoices...[and], finding a satisfactory system of internal check in operation, made no detailed investigation of the figures in the Cost Ledger". Tellingly, he then reported that as the "cost and financial accounts reconciled" then it was "probable that the fact that this was possible had some influence in his decision to make no detailed investigation of the actual costs" and that "he made no enquiry into the selling price or make up of the tender". Finally, Milne expressed his concern over the Admiralty finding out about the WSBC's 'special fund' which the members had been adding to the last peacetime orders to assist merchant builders or to help win foreign warship work, totalling £1500 per ship on the contracts the accountant had seen. Milne believed that if the "special fund were disclosed... and the Admiralty asked for explanations, the Shipbuilding Employers' Federation should furnish a general statement on the subject,

⁷¹ H. Peebles, *Warshipbuilding*, *op. cit.*, p. 140-142.

⁷² N. Rollings, "Whitehall and the Control of Prices and Profits in a Major War, 1919-39", *Historical Journal*, 44 (II), June 2001, p. 530-531.

⁷³ See Jubb's quotation above.

⁷⁴ 'Admiralty Contracts' 17 July 1936, CUL, MS Templewood Part 9 File 5.

rather than leave the individual Warship Group firms to evolve the explanations⁷⁵. In other words, Milne knew he had a lot to hide, and knew White was fortunate the Admiralty accountant had failed to uncover the true nature of its dealings.

The visit evoked panicked responses from the other firms. Crease had understood that the investigations would not involve ships started during peacetime, but now feared these would be treated as war profits and the results would “have a very disturbing effect throughout the Admiralty”. Moreover, he believed that “there is very little chance that knowledge of the results would be confined to the Admiralty” and as such believed that they would “come before the Select Committee on National Expenditure and thus to the Treasury and Parliament⁷⁶. His chief concern was “whether any action can be taken by the firms to improve the situation as it now exists” and “for firms, where necessary, to amend their tenders in the light of experience that has now been gained of their costs under war conditions⁷⁷. He therefore raised the idea of offering some form of rebate to the Admiralty – probably the clearest sign yet of guilt – though this was rejected by member firms on the grounds that such a scheme “may be construed as being done solely due to the results ascertained from the cost investigation⁷⁸.”

Cammell Laird’s suggestion was to open up the books of all ships going back to Washington to the Admiralty, with the hope being that the lower profits – and indeed losses – in the 1920s and early 1930s would offset the later gains made in rearmament⁷⁹.

Its chairman noted that the average profit on all ships since 1922 was a much more modest 12,5 %, particularly because of losses incurred on earlier orders⁸⁰. This time Crease rejected the idea believing such an invitation for the period since 1923 would include amongst other things all the arrangements for pools [rotas], which persisted in the case of smaller ships, all the arrangements for the *York*-class cruisers in 1937, and the business with the purchase of the Dalmuir rights in 1934 and 1935. The possibility that any of these matters might be disclosed as the result of carrying back the investigations would give me great uneasiness, and the result might well be to increase our present difficulties⁸¹.

As a result, while it was believed that a scheme to get the Admiralty to investigate ships that yielded lower profits was desirable, this was not the way to go about it.

In October, the Admiralty – while not threatening to go to parliament (presumably through the embarrassment it would also cause itself) – did ask for more detail of how costs were calculated, and provided notifications to firms for the ships they proposed to investigate. Here, the committee attempted to push the Admiralty towards ships with lower profit yields. In the case of Harland and Wolff, the aircraft carrier *Formidable* was selected, and Crease asked other firms whether any benefit would result from investigation of *Illustrious*, *Victorious* or *Indomitable* [the other three ships of the same class in other yards] which are also available. It must be observed that the Admiralty stated that we must not select or nominate individual ships.

⁷⁵ Milne to Crease, 5 April 1941, GUAS, UCS1/21/17.

⁷⁶ Crease to ‘All Warship Group Firms’, 18 August 1941, GUAS, UCS1/21/18.

⁷⁷ *Ibid.*

⁷⁸ Piggot Notes, 20 August 1941, GUAS, UCS1/21/18.

⁷⁹ Johnston to Crease, 11 September 1941, GUAS, UCS1/21/18.

⁸⁰ Crease to Committee, 17 September 1941, GUAS, UCS1/21/18.

⁸¹ Johnston to Crease, 11 September 1941.

We could therefore only ask that another carrier be investigated⁸².

This was clearly linked to Crease's earlier suggestions and underscores the WSBC's fear of the Admiralty's reaction if it uncovered abnormally high results. The same was true for the *Hunt*-class destroyers. Crease believed that "we might ask for the 3rd and 4th groups to be investigated" for these "would show considerably reduced profits". He noted that with profits of 35,4% and 33,7% respectively, "none of [the first and second] group figures are very helpful to our case". In an update the following week, he reported that he "gathered the results on *Formidable* will not cause embarrassment, but I am doubtful about the other items"⁸³. In sum, that it took a major war with substantially tightened rules to uncover systematic overcharging is a damning indictment of both the duplicity in the industry and the Admiralty's faith in its system.

By the end of the following year the Admiralty had got a much firmer grip on prices. In 1942 Swan Hunter won a contract for a floating dock valued at £150 000, and had the cost investigated. They were offered a 6% profit – a vastly reduced sum – to which Swan Hunter protested and asked for 10%. The final settlement was 7%⁸⁴. Writing to John Brown, Swan Hunter's chairman noted despondently that "it was rather a struggle, and I am afraid you may not be able to get any settlement at a higher figure, especially in light of their present attitude"⁸⁵. There never was any parliamentary enquiry that forced a rebate for the profits generated in the war, nor was there a full enquiry into tendering going back throughout the years of disarmament. While this was probably some consolation

to private industry, it was nevertheless clear that the era of the cartel was over.

CONCLUSION

We will probably never know the full extent of this cartel's work, primarily because so little survives. Intriguingly, a large portion of what remains is badly fire damaged, and contains evidence of correspondence and paper-trails with other yards of which no trace now exists. Despite this, we can still question why the Admiralty failed to notice a scheme like this sooner. It retained the right to inspect the financial records of the firms, after all. In practice however they trusted both the firms and their own tendering processes, and thus did not take up this option at any point during 1926-1940. Moreover, while the CID had convened a 'contracts coordinating committee' that existed "to secure economy and eliminate the forcing up of prices by competition" since the 1920s, it was concerned about precisely the opposite effect, (namely a war causing inter-service rivalry for resources and thus industry selling to the highest bidder), and as such was not an effective check on WSBC tenders⁸⁶. In short, none of the systems in place offered adequate safeguards against profiteering.

The reasons for the cartel's formation and continued existence owed as much to the politics of the CID and National Government as it did with slack Admiralty practices⁸⁷. Before rearmament, the failure to adequately assist the naval arms industry forced firms to collude. Once rearmament began there was a desire within the CID and the Treasury to

⁸² Crease to 'All Warship Group Firms', 13 October 1941, GUAS, UCS1/21/18.

⁸³ *Ibid.*

⁸⁴ Swan to Piggot, 23rd September 1942, GUAS, UCS1/21/18.

⁸⁵ *Ibid.*

⁸⁶ N. Rollings, "Whitehall and the Control", *art. cit.*, p. 524.

⁸⁷ 'Admiralty Contracts, Prevention of Profiteering', Templewood Papers, 17 July 1936.

maintain the ‘status quo’ as much as possible. Anything that unduly upset or hindered progress was feared and both emphasised the importance of the full and willing cooperation of industry⁸⁸. As such, any unduly close scrutiny or control was rejected outright, while the Government informed the public that “to put difficulties in the way of industrial enterprise is to place on its shoulders a great responsibility”⁸⁹. In short, the lack of progress and denial of funds before 1935 coupled with the worsening international situation thereafter convinced policymakers that making more obstacles for the rearmament drive – which they believed still had to be delicately balanced between security needs and the normal business activity of the country – was to be avoided at all costs. It was the combination of these factors with excessive Admiralty trust in industry that allowed the WSBC to continue for so long.

This said, one can conclude by suggesting this cartel may even have been good for rearmament. For one can readily imagine an alternative timeline: racing to the bottom

with cutthroat competition, the 1920s eradicated all but the strongest two or three naval armament manufacturers in Britain. Perhaps Vickers-Armstrong would have survived, but not much besides. The bottlenecks in labour would only have worsened; the spreading round of orders allowed more employees around the country to gain at least some experience of naval work, rather than a small number having a great deal. Similarly, steel and guns at Beardmore, facilities at Fairfield and elsewhere, would have certainly disappeared entirely. Instead, they were saved through a combination of a cartel which raised the price ‘floor’ to guarantee profits, Lithgow, and the PSOC’s foresight in changing a liquidation policy into one of mothballing and preservation. While the costs of extra profits against the spending in subsidies and assistance that were rejected in the 1920s are impossible to calculate, it is nevertheless ironic that the Warshipbuilders’ Committee saved the government from itself before rearmament, and that it got its money from the Treasury one way or another.

⁸⁸ N. Rollings, “Whitehall and the Control”, *art. cit.*, p.532.

⁸⁹ G. Peden, *British Rearmament and the Treasury, 1932-1939*, Edinburgh, Scottish Academic Press, 1979, p. 83.