The long drawn of death and grieving process of the British Shipbuilding Industry in perspective 1960 1980

A long term view

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INTRODUCTION

Eleven years ago Hugh Pemberton argued in *Public Administration* for the integration of the ' policy networks of Martin Rhodes with the social learning theories of Peter Hall (Pemberton, 2000, Hall 1993 and Rhodes, 1992, 1994, 1995 and 1997). Pemberton stated that the conventional 'Westminster' model is restricted in its ability to comprehend subtle administrative nuances and yet the policy network alternative of Rhodes is in itself restricted in its ability to deal with the typology and internal dynamics (Pemberton 2000, pp. 771-772). Pemberton therefore proposed to integrate the policy network model with the work of Hall on social learning a complex to developed a nuanced schema that would incorporate Rhodes network classifications with a the Hall model of change (Pemberton 2000, pp. 772-776, see also Rhodes, 1997 pp. 36-37, Hall, 1993 pp. 281-287). However, with the development of the varieties of capitalism literature and in particular the institutional complementarities proposed by Hall in the early part of century there is scope for further development of Pemberton's ideas beyond his Treasury centred view of the 'Keynesian Plus' period of economic policy in the early 1960s (Hall & Soskice, 2001, Howell, 2003, Morgan, 2005 and Hancke, Rhodes and Thatcher, 2007).

This paper will demonstrate the relevance of Pemberton's model to current debated using recent research into industrial policy under the Harold Wilson Labour government of 1964-1970 by focussing on the failure of the Shipbuilding Inquiry Committee and Shipbuilding Industry Board to prevent the collapse of the British shipbuilding industry. Whilst continuing to show the relevance of Pemberton this research provides a counterpoint to the Treasury centred view of Pemberton and illustrates that a compromise position between government and management, reminiscent of the Régulation School theories of Aglietta, Boyer and Lipietz, brought forward the decline of a strategic industry (see Aglietta, 1976/1997 Boyer & Saillard, 1995, Lipietz, 1987, 1992). Therefore, it is proposed that the model can be used to explain why an industrial or economic institution follows a particularly path when the course of action runs counter to prevailing orthodox and leads to a significant erosion of economic performance, which in many ways is another perspective on the institutional complementarities view (Howell, 2003). This will be illustrated by invoking the socio-economic context of decision making in the 1960s to demonstrate that a series of industrial interventions failed not because of poor institutional arrangements (Broadberry & Crafts, 1997) nor geriatric infrastructure (Elbaum & Lazonick, 1986) but because of a parochial and fractured policy making environment incapable of creating a solution to genuine ills. It will do this by referring to the failed investment and intervention in the Scott Lithgow and Harland and Wolff shipyards in Scotland and Northern Ireland, respectively. Consequently, this paper will invoke the Pemberton synthesis of the Rhodes and Hall models updated to reflect the development of institutional

complementarities after 2001 to show that successive governments in the United Kingdom were a cause of Britain's industrial decline aggravating the effects of foreign competition and an outdated factories with a series of misjudged interventions created at a time of intense government involvement in the British economy.

PEMBERTON, POLICY NETWORKS AND SOCIAL LEARNING: INTEGRATING VARIETIES OF CAPITALISM AND INSTITUTIONAL COMPLEMENTARIES

Pemberton advocates the use of 'policy networks' as a way of understanding the interactions as an alternative to traditional models of governance based on the 'Westminster System' (Pemberton, 2000, pp. 771-792. See also, Marsh & Rhodes, 1992, Rhodes, 1994, pp. 138 - 151, Rhodes, 1995), Rhodes, 1997 and Smith, 1998, pp. 45 – 72). This paper proposes that Pemberton's ideas provide a mechanism to analyse how the relationship between the state and interest groups shaped national policy under Labour in the 1960s. Pemberton argues that whilst the policy network model of Rhodes has had a modicum of success in defining five sets of networks that interact with one another both formally and informally; Policy Communities; Professional; Inter-Governmental; Producer; and Issue Networks. Rhodes' model, however, lacks an extensive typography and has been difficult to integrate with other such models dealing with the behaviour of policy makers. (Pemberton, 2000, pp. 772 – 774.) Pemberton proposes therefore that the Rhodes model of policy networks be integrated with work by Rosemary Taylor and Peter Hall on 'social learning', which categorised change on a series of levels. (Pemberton, 2000. pp. 774 - 776. See also, Hall & Taylor, 1996, pp. 936-957. Hall, 1989, Hall, , 1992, Hall, 1993, pp. 275 – 296 and Hall, 1997). To briefly summarise Hall's orders of change, first order change is the use of an existing instrument to bring about a policy change (interest rates for example). Second order change is when an existing or created function is executed either by an established or new body, transferring existing powers (interest rates from the government to the central bank) or creating new ones (environmental agencies in the 1970s and 80s). Finally, third order change is when a complete ideological paradigm shift occurs encompassing all state and non-state actors within society (Pemberton, 2000, p. 775). Consequently, the Rhodes model when modified by the Hall system would focus upon the rôle of the five policymaking networks but would make allowances for the orders of change that can occur. This demonstrates the shifting rôle of actors within the policy-making process of the Wilson government upon which industrial (and therefore shipbuilding) policy was made and reflects the development of the role of the state within the varieties of capitalism literature, not least the dynamic problem of state led coordination (Soskice, 2007, pp. 89 - 121)

Pemberton makes a number of observations concerning the policy-making environment in the 1950s and 1960s and how policy changed once Labour was elected in 1964 (Pemberton, 2000, pp. 784 – 788). Treasury economic policy in the 1950s was Keynesian in nature and reflecting the influence of Robert Hall in the Economic Section (Booth, 2001, pp. 283-313). Indeed, from the late 1950s onwards government introduced economic and industrial controls, the start of the so-called 'Keynesian Plus' era (Pemberton, 2002). However, Pemberton demonstrates that the previous

regime was a reflection of policy networks existing along an academia-Whitehall axis and that the evolution of state planning as a policy in the United Kingdom was part of a larger process (Pemberton, 2000, p. 785). The adoption of planning by the Conservatives in 1962 (which was preceded by the creation in 1957 of the Council for Prices, Productivity and Income - CPPI) was the result of a system of feedback between government and external bodies that is described in Hall's terms as a third order change in which the prevailing economic paradigm pursued by government shifted (Pemberton, 2000, p. 788). This paper also contends that in the context of the institutional complementaries view the government intervention must be seen as instrumental in creating a shipbuilding industry that was at odds with by the prevailing technical orthodoxy of its trade as well as out of sync with what the market demanded (Hall and Solkice, 2001).

Pemberton considers this situation unique to the 1960s, as in other periods of British economic history major paradigm shifts are the subject of electoral competition. However, the 1964 Labour manifesto claimed to make a radical break with the methodologies of the previous thirteen years and the programme proposed by Labour at the general election went much further than had been previously been attempted (The Labour Party, 1964). Recent work undertaken by Pemberton on the rôle of taxation in determining Labour's programme after 1964 has demonstrated that decision making was not well defined nor easy to trace (Pemberton, 2006, pp. 423 – 440). This reflects a lack of collaboration between individuals, institutions and government and a refusal by some of these bodies to cooperate with one another (Pemberton, 2001, pp. 354 – 375). It is debatable whether industrial approaches using indicative planning similar to those in Scandinavia and France would have been possible because the lack of defined policymaking and fractious relationships between competing power centres (Pemberton, 2001', pp 374 – 375). Pemberton's attempts to define decision making processes separate but coexisting with the Westminster model cannot accurately trace policy making developments during the 1950s and 60s. Indeed, the dominant view states that Attlee government implemented economic controls, but this was mostly a perpetuation of wartime controls (Toye,2003, pp 185 - 236). The Labour Party manifesto for the General Election of July, 1945 pledged that the, '...whole of the national resources, in land, material and labour must be employed.' and proposed the nationalisation of what it termed the 'strategic industries' of coal, energy, iron and steel, and transport (The Labour Party, 1945, p 4). In addition to these measures, the government had a policy of increasing UK exports to generate foreign currency reserves (The Labour Party, 1945, p 7). Therefore, to create a holistic model as Pemberton advocates, an analysis of the rôle of the Attlee government in creating the economic framework for post-war British lends a greater understanding of the 1964 Wilson government, not least as many members served as ministers under Attlee.

Richard Toye, Neil Rollings, Jim Tomlinson, and Nick Tiratsoo have all explored the development of state intervention under Attlee, detailing its relationship with industry (Rollings, 1992, pp. 15-36, Tiratsoo, 1993, Toye, 2003). Toye's work provides a chronology of the development of planning ideology in the Labour Party from 1918 and examines the characteristics of the system put in place by Attlee (Toye, 2003, pp. 9-33). Highlighting the importance of the Keynes' *How to Pay for the War*, Toye demonstrated that the Labour Party was initially against further bureaucratic measures, but the continuation of wartime controls enabled the government to implement its aims, although whether this created a state planning system is debatable. Rather, the Labour government retained wartime controls as a response to the economic crises in the late 1940s. As the same crisis atmosphere (as well as the Bretton Woods agreement) prevented Attlee from implementing a system of planning controls, economic policy and practice in this period was constantly reacting to external events (Toye, 2003, pp. 227 - 229). Tiratsoo and Tomlinson have shown that the government was fully aware of the dire condition of Britain's industrial base, but lacked the powers to force improvements as the factory owners spurned expenditure on new capital equipment in favour of moderate success using existing machinery (Tiratsoo & Tomlinson, 1993, pp. 90 -110). This occurred against a background of American initiatives, loans and grants for the purposes of reconstruction and improving industrial performance and productivity (Tiratsoo and Tomlinson, 1993, pp. 64 - 89). Both authors point out that for management and employees of industrial enterprises, productivity and production was not directly related to day to day needs of management and employees; indeed the failure of government intervention in the 1940s was based in part on its failure to stress the importance of the process (Tiratsoo and Tomlinson, 1993, 153 – 170).

Neil Rollings provides a policy overview of the Conservative governments between 1951to the election of Labour in 1964 (Rollings, 1988, pp. 283 - 298, Rollings, 1994, pp. 183-205). Rollings has demonstrated that the broad use of the term 'Keynesian' to describe government fiscal and macro economic policy is mistaken and has argued that neither Labour nor the Conservatives in the period could be described as full-blooded Keynesians (Rollings, 1994, p 203). Indeed, whereas the Labour Party used direct economic controls and limited nationalisation, the Conservatives removed of subsidies, price controls and de-nationalised the steel industry (Rollings, 1994, pp. 195-202). However, this did not mean that Labour intervened and the Conservatives did not; there were budgetary controls, macro-economic fine-tuning and a flirtation with state planning with the creation of the National Economic Development Council (NEDC) in 1962, a body that remained in place until 1992 (Ringe & Rollings, 2000, pp. 331-353). The NEDC is of direct relevance to this

paper as it was heavily involved in laying the foundations for what became the Shipbuilding Inquiry Committee. The purpose of the council was to develop policies to encourage economic growth, a reflection of the rôle of indicative planning in the faster growing French economy at the time (reference). However, the body had few powers and reflected the institutional members, a continuation of the status quo ante rather than creating a corporatist body in the Eichengreen model (Ringe and Rollings, 2000, p. 348. See also, Eichengreen, 1986). This was a by-product of its birth; none of the constituent bodies entered into arrangements with the same intentions; the TUC did not want responsibility for government actions, ministers did not want powers removed to an outside body and the Treasury lacked initiative on fiscal matters. Therefore, the body launched in 1961 was weaker than envisioned (Ringe and Rollings, 2000, p. 338, p. 341, p. 344 and p. 347).

It is important to stress the retention of some economic controls by the Conservatives after 1951, including the nationalised industries. These were not the direct controls of Labour, rather, the Conservatives attempted liberalisation but retained an underlying belief in the rôle of the state; be it through macro adjustments or subsidies. Indeed, from 1961 the government flirted with centralised policy making that comprised of all the main economic actors, but differed from earlier Labour 'top-down' policies. This point is of vital importance when discussing the postwar government relationship with industry, which Tomlinson and Tiratsoo demonstrate had an active rôle in developing the economy in the 1950s and 60s (Tomlinson & Tiratsoo, 2002 and Tomlinson, 1997, pp 18 - 38. See also, Booth, 2000, pp. 827 – 847). Despite the Treasury's flirting with fiscal limits under Thorneycroft between 1957 and 1958, the Conservative party favoured state-led solutions to growing economic problems, covering employment, training, R & D and regional development (Tomlinson, 1997 pp. 19 - 26). However, Tomlinson points out that the Conservative party lacked coherence and could not understand the economic benefits of housing, healthcare and education. Consequently, due to the TUC, FBI and Whitehall creating institutional barriers and a lack of a coherent strategy, the economic agenda of the Conservative governments did not enlarging state participation as the Attlee governments had done (Tomlinson, 1997 p. 34).

The Labour Party manifesto for the 1964 general 'A New Britain' promised to modernise Britain's industrial base using new technology. The Labour Party proposed to introduce goals for industry and a programme of industrial expansion (Labour Party, 1964, p. 1-5). Recent work by Tomlinson on Wilson's government illustrates many of the themes of this papers, in particular the use of a manufacturing policy to solve the United Kingdom's balance of trade deficit (Tomlinson, 2002). This demonstrates that Labour attempted planning, industrial intervention and state funding to fix low industrial investment and productivity, but failed after being unable to adjust to commercial reality and the continual economic crises (Tomlinson, 2004). For example, the Wilson government intended to use planning techniques and intervention to improve the productivity,

output and a 25% rise in GDP between 1965 and 1970 utilising the National Plan, a mixture of indicative and centralised planning created by George Brown, Minister of Economic Affairs (HMSO, 1965, Cmnd 2764). However, the actual growth rate was 21% because the plan had two major flaws from its conception; it demanded specific outcomes without providing any instructions and its five-year time frame was susceptible to changing circumstances and by the time of the devaluation of 1967, the plan was ignored by government and industry (Tomlinson, 2002, pp. 75 – 85). Nevertheless, despite this failure the rôle of regional planning by the Wilson government, became more central to economic life than either the DEA or the National Plan and should not be discounted. Indeed, the efforts to preserve and create new industries in the North East, Scotland and Wales had a profound effect on capital investment (See appendix tables 6 & 7, Tomlinson, 2002, pp. 85-89).

Productivity was a recurrent theme after 1945, particularly for the Wilson government, which intended to fix the low productivity rate of the United Kingdom . The solution was to expand technology use by modernising traditional industries and promoting newer ones such as computing. This symbiosis between the government's policy on modernisation and productivity with the consequence that plans for one had an effect on the other (Tomlinson, 2002, pp. 173-188). The institutional favoured by Wilson followed a two-strand approach, the all-encompassing ministry and a body mandated to perform specific tasks, the examples in this paper being the Ministry of Technology (Mintech) and the Shipbuilding Industry Board (SIB). These relationships were loosely defined and many had overlapping responsibilities or even overriding and marginalising one another (Tomlinson, 2002, pp. 101-112). Indeed, this made achieving the goal of bodies much harder and more often than not left the same industrial structure as before in place under a new corporate identity (Hague & Wilkinson, 1983). Although many schemes reflected best practice for a particular industry, the government's plans were constrained by intransigence from labour, management and the City and a lack of coordination, indeed cooperation between competing departments (Tomlinson, 2002, pp. 219-233).

The view that the Wilson government was a cause of the economic problems of the 1960s is contested by O'Hara, who disputes many Tomlinson's propositions (O'Hara, 2003 and O'Hara, 2005, pp. 1183 – 1195). O'Hara states that the 'stop-go' cycles of growth were a genuine concern, but that these were a global reality for all countries in the 1960s. O'Hara points out that in the case of Japan (dependent on imported resources and exported products), the swings from growth to recession were felt more than in the UK and the British government in the 1950s had some success in mitigating the effects of global peaks and troughs (O'Hara, 2006, p. 384). What is of importance is O'Hara's notion that a fascination with methods of scientific control replaced the previous commitment to nationalisation. Indeed, Wilson was influenced by the notion of 'technostructure'

put forward by J.K. Galbraith in which the interests of capital no longer mattered as modern corporations grew and evolved under the aegis of an impartial and scientific management class, which made 'atomistic' companies competing between themselves irrelevant (Galbraith, 2002 and Burnham, 1941). Therefore, the conversion to planning and central control by Labour in the early 1960s owes less to party ideology and more to the zeitgeist of the day. Nevertheless, the failure of planning and state control in this period is not attributed by O'Hara government initiatives, rather the Wilson's lack of comprehension of the global economy (O'Hara, 2006 pp. 386 – 391). Indeed, O'Hara and Tomlinson agree on economic constraints, changes in the terms of trade, the weakening US dollar and a commitment to the Sterling zone constraining Britain's economy (O'Hara, 2004, pp. 391 - 395 and Tomlinson, 2002 pp. 49-67). O'Hara states that productivity and GDP growth rose in the late 1960s faster than in any other period in British history and therefore that Wilson's governmen did not fail; rather it was constrained by the global economic context (O'Hara, 2004, p.397). This argument is persuasive; in his narrative of the international economy, the 1960s is full of predicaments followed by crisis combined with failed state led remedies.

Tomlinson and O'Hara's accounts are complemented by David Edgerton's work on the technology policies of the Wilson government (Edgerton, 1996, pp. 53-82 and Edgerton, 1996). This work is complemented Richard Coopey's articles from the early 1990s dealing with Wilson's 'White Heat of Technology' and therefore his work merits a brief mention (Coopey, 1991 pp. 115-127, Coopey, 1993a, pp 102-2 and Coopey, 1993b). Coopey focuses on the structure of Mintech, the split between research and industrial functions and how these developed under the aegis of Tony Benn as Minister for Technology from 1966, when Mintech started to absorb a number of other ministries, to 1970 when it had inherited many large industrial projects of unknown commercial potential, such as the Concorde airliner and the Advanced Gas Cooled Reactor (AGR). Coopey emphasises these projects as a causal factor in the failure of government industrial policy in the 1960s, within the context of an obsession with creating larger firms and industrial units to compete with those in the United States, even as developments in Japan and West Germany suggested that plants smaller than the 'American Standard' were coming to the fore Coopey, 1991, p. 123 – 127).

Continuing Coopey's themes, Edgerton promotes the notion that Mintech made matters worse for British industrial research and development (R&D) in the 1960s when compared to the previous decades. in Edgerton view, 'Great Britain was, without doubt, the scientific and technological powerhouse of Western Europe: research and development spending, whether industrially funded, or government funded, was significantly higher than in any capitalist country other than the USA' . However, whilst Labour increased civilian R&D, it cut expenditure on military programmes and the fall in military spending was much larger than the civilian gain (Edgerton, 1996, p. 53 - 65). There was a belief that state spending on technology and industry

should be moved into the civilian rather than military sector of the economy (which was one of the main tenets of the famous 'White Heat of Technology' speech) to improve Britain's industrial base and therefore balance of payments (Edgerton, 1996, pp. 55-58). However, a recurrent theme of Edgerton's work is the rôle of the state as an agent of technical change in British industry from the First World War up to the early 1970s. Indeed, he emphasises that the state played an important part in the development of new technologies, specifically the aviation and computer industries. The main contention, therefore, is that Britain had a much larger expenditure on defence procurement and development in the 1950s and 1960s compared to France, West Germany or Japan and this spending contributed to the economy by developing new civilian technologies (Edgerton, 1991). In a recent book Edgerton re-evaluates the notion that all encompassing ministries were a consequence of the Second World War and instead emphasises the creation of British research laboratories after the First War and the development of military industrial research. He also takes aim at the common perception that the Senior Civil Service was populated by classically trained generalists and demonstrates that the government-led research establishments were populated by highly trained scientific specialists (Edgerton, 2006). Edgerton therefore proposes a symbiotic relationship between departments such as the Ministry of Supply and Aviation and the wider economy in the 1950s, that was not understood by the Wilson government in 1964 (Edgerton, 1996, pp. 65-69). Defence spending was cut and although some money was channelled into civilian projects (such as Concorde), spending on civilian projects was nowhere near the same as the amount lost on military projects. Moreover, the UK had to purchase munitions from the United States despite efforts to develop a European defence infrastructure in response to those who lamented the American domination of high technology manufacture (Servan-Schreiber, 1968 and Layton, 1969). Edgerton's work is reinforced by John Agar, who also provides a counterpoint; Agar still promotes the idea of the civil service generalist at the heart of the bureaucracy, to whom Edgerton scientific specialist ultimately subordinate (Agar, 2003, pp. 45- 74, Agar, 2001 and Agar, 2008, pp. 567-600).

Edgerton's work is of importance not just to research on government intervention in defence R&D, but in the wider industrial economy. Edgerton promotes the idea of the 'misallocation model' to sum up the attitude of the Wilson government towards science and industry; Wilson believed that far too many resources were channelled into defence and pure scientific research to the detriment of overall economy. However, even with an increase in government civilian funding and the promotion of industrial projects by Mintech, there was no guarantee that this would boost economic performance. Edgerton sums by stating that whilst Wilson may have came to power using the rhetoric of Britain as a nation undergoing industrial and technological decline, the opposite was actually true. The United Kingdom was second only to the United States in research and development expenditure in 1960 and had a higher GDP than either West Germany or Japan.

However, by 1970 those nations out-produced the UK and also spent more money on R&D (Please see appendix table 6, Edgerton, 1996, pp. 76 – 82). This demonstrates that the image presented in 1964 of a technically backward United Kingdom is and was misleading and that the use of technology to arrest Britain's decline was not the panacea it promised to be. Consequently, this paper will show that it was not a deficit of intervention, planning and control along the lines of Pemberton's schema that caused the decline of British industry, but rather a series of mistaken investigations and interventions by institutions using flawed methodologies incapable of recognising the prevailing industrial orthodox and therefore institutional complementaries that the British economy needed to recognise and follow to arrest its relative and absolute decline.

The inspiration behind the Shipbuilding Inquiry Committee of 1964-66 came from shipbuilders, shipbuilding unions and influential economic and trade journals, who bemoaned the effect of Japanese competition on the industry. In the case of the first grouping, from the late 1950s shipbuilders and owners lobbied the government for assistance to alleviate the effects of foreign competition (See appendix data 1 & 2) table. The response by the Conservative government in 1961 was to initiate a one-year joint British Productivity Council, government and shipbuilding industry inquiry into construction methods and to provide cheap credit to subsidise merchant vessels built in British shipyards (Shipbuilding Conference, 1962 and Joint Industry Committee, 1961) This was to no avail, the productivity recommendations were never implemented and the Shipbuilding Credit Scheme only created a short lived order boom and the innate problems of the industry remained. After the election of the Labour party in 1964, the Shipbuilders and Repairers National Council lobbied the government to deal with the industry's malaise and the TUC made a similar approach on behalf of the shipbuilding unions based the fear of mass redundancies from competition and new methodologies (Johnman and Murphy, p. 145). The views of the individual unions and the TUC diverged, however, on the issue of new technology; the shop stewards being against the introduction of new methods but the TUC saw modernisation leading to greater output and employment (Johnman and Murphy, 2005, p. 145) . Finally, the print media since the 1950s was activity defending of British shipbuilding and was became influential in generating political interest in the industry. Whilst individual editorials demanded government action were of little direct influence, as a sum total the media debates concerning Britain's effectiveness as an industrial and technologically advanced nation were powerful in forming opinions (See *The Motorship*, April 1960, p. 2). Consequently, whilst the 1964 Labour Party Election manifesto made no mention of shipbuilding it did propose government led planning and control over industry and therefore the creation of a body such as the Shipbuilding Industry Board in response to institutional pressure was a logical step (Labour Party, 1964).

Within the two-year lifespan of the Shipbuilding Inquiry Committee between 1964-66, evidence suggests that a comprehensive dialogue did not take place between committee, shipbuilding or government and the preferred methodology was one of visits and submissions, whether solicited or otherwise . Moreover, the committee did not incorporate in its membership individuals from the shipbuilding industry, indeed, it's chair Reay Geddes was chair of the Dunlop Tyre Company (Hansard, 2nd February 1965, col. 277 and 12 February 1965, col. 139.). This was a different situation compared to the inquiries of the previous four years, which had involved the British Productivity Council, the British Shipbuilders Research Association, the Shipbuilding

Advisory Committee at the Ministry of Transport and the Department of Scientific and Industrial Research to name but a few (See, Department of Scientific and Industrial Research, 1960, London, Shipbuilding Advisory Committee, Ministry of Transport, 1960 and British Productivity Council, HMSO, 1960). Geddes focussed heavily on evidence from government departments at the expense of enquiring further into the affairs of the shipbuilding companies, particular as may had submitted scant evidence to the committee (TNA BT 186/20 IM/SBR/6 Ra, 'List of SIC/Evidence Papers'). Matters were not helped by the attitudes of the government economic departments, specifically the Department of Economic Affairs, the Ministry of Technology and the Treasury which saw shipbuilding as old fashioned and dirty (TNA EW27/82 memo dated 14th July 1965 from J.A Jukes, Deputy Director General, Economic Planning, DEA, to Mr, Wiggins, DEA, entitled, 'shipbuilding'). What is curious about the eventual report is that it discounted the creation of modern ship factories built around large 'building docks' as found in Japan and proposed the creation of larger groupings through mergers (Shipbuilding Inquiry Committee, pp. 89 - 92). The proposals superficially mirrored developments in other countries, particularly Japan, but did not address the core issues of redundant working techniques and obsolescent shipyards. Indeed, Geddes stated that ship factories as found in Japan were unnecessary, (despite the views of the Minister responsible for shipbuilding at the time of the committees inception, Roy Mason, who visited Japanese in 1964) yet the Japanese strategy was being adopted in the rest of Europe on both sides of the iron curtain (see Board of Trade, 1965 and Shipbuilding Inquiry Committee, 1966, Section 13). Mergers could reduce overheads and lower costs, but in 1966 the shipbuilding industry in the United Kingdom needed to change its production methods to reflect the prevalent orthodoxy elsewhere in the world and the Geddes report did not address this, indeed saw the entire subject it as an expensive and time consuming distraction (Shipbuilding Inquiry Committee, 1966, Section 13).

Creating a defining model for the Shipbuilding Inquiry Committee is difficult; the body has proven itself to be both enigmatic and distant in its dealings with the shipbuilding industry and government. However, the institution reflected the views and opinions of its chair and membership and the policy proposals reflect this. Therefore, this paper proposes that the Geddes Committee did not reflect either the wider views of government or the views of management and labour within the industry but the collective, personal responses of committee members to the paper submissions and industrial visits. Therefore, the complex model of policy formation advocated by Pemberton accurately reflects this situation and whilst institutional complementaries can describe investment decisions in an industry such as Japanese shipbuilding based upon the relationship between energy consumption and transportation, it falls sort of the mark in describing British industrial policy during the 1960s. This is not to discount the value of external relationships between the committee and its members with the government or shipyards, but the evidence available does not point to a

complex set of relationships nor a contextual understanding of the shipping industry in the mid 1960s. However, this is not the case of the committee's offspring, the Shipbuilding Industry Board, which found itself at the nexus of relationships between government and the shipbuilding industry. The Board did not have the powers to impose programmes of action on the industry and it was dependent on negotiations with shipbuilders to decide upon a plan of action, a situation exacerbated by the provisions of the Geddes report that proposed limited modernisation and mergers without any details on how to do so.

The best example of how this complicated and hindered the ability of the Board to assist the shipbuilding industry can be seen in its five year relationship with the Scott Lithgow in Scotland between 1966 and 1971, where the process of negotiation over funding took four years to complete in the face of intransigence and undefined plans by the shipyard. Indeed, the management of Scott Lithgow in the form of chief executive, Ross Belch and board chairman, Sir William Lithgow were never completely open or honest in meetings with the Board and preferred a nebulous strategy with a variety of outcomes to gain the maximum about of money from the Board (TNA FV 37/21 'Note of Meeting on 17th April 1968 at SIB re Scott/Lithgow project', undated, p. 2). However, regardless of the amount of funding allocated to the shipyard for merger and modernisation it was never able to compete with Japanese shipyards nor produce the vessels it promised, mainly because the end result of the Boards funding and intervention was a shipyard very similar to that which had gone before (for the best account, see TNA FV 37/21 Letter dated 25th April 1968 from B.Barker, SIB to C.H. Bayliss, Ministry of Technology). As a result of this, the Board quickly diverged from its remit to follow the guidance of the Geddes to the letter. Indeed, the Board initially followed the guidance of the report to such an extent that it refused to consider a proposed scheme in 1967 by John Brown in Glasgow to build a Japanese style shipyard capable of producing vessels of over 500,000 tons deadweight and instead forced a merger with other local shipyards to create Upper Clyde Shipbuilders, a company that went bankrupt in 1972 (Johnston, 2000, pp. 102). However, by 1968 the Board questioned the Geddes report to such an extent that it supported an identical proposal at Harland and Wolff in Belfast. ('Was Geddes Wrong?' *The Motorship*, December 1970, p. 394). In the case of the Northern Irish shipyard, the situation was compounded by the devolved administration in Belfast and the burgeoning sectarian strife between Protestant and Catholics in the statelet and therefore, the additional political dimension unique to Belfast allowed the Board to consider solutions explicitly bared by the Geddes Committee (TNA T334/76 letter dated 15th September 1967 from V.I. Chapman, Assistant Secretary, Industries and Manufactures Department, Board of Trade to L. Pliatzky, HM Treasury. See also TNA T334/76 submission to Minister of Technology, Anthony Wedgwood Benn by C.H. Bayliss dated 21st September 1967). Therefore, the Board changed over the course of its existence as it developed cognisance of the shipbuilding

industry increased. This is tempered, however, by another development; from 1967 Whitehall departments and central government became increasingly involved in the affairs of the Board. Consequently, the process of the Geddes Report and the creation of the Shipbuilding Industry Board represented a typical example of Hall's Second Order change, the fact that over the lifecycle of the Board the institution evolved from its original mandate and represents in itself a process of institutional change in relation to changing perceptions along the lines of the institutional complementaries view (Hall, P. 'Policy Paradigms, social learning and the state: the case of economic policy making in Britain', Comparative Politics , (April 1993) pp. 275 – 296, Hall and Solkice, 2001).

When setting up the Shipbuilding Industry Board the Labour government did not intend to involve either the Ministry of Technology or other Whitehall ministries (the Treasury in particular) directly in the decision making process and ministers were only required to rubber stamp the funding applications at the final stage of development. However, once the Board started to evolve from the provisions of the Geddes Report and shipyards disputed the very nature Geddes plan, then civil servants from other departments and government ministers became heavily involved in the policy process (TNA FV 37/21, SIB Board Minutes, dated 31st December 1968). This had a two primary causes, the first being the efforts to restrict government expenditure as a result of the 1967 Sterling crisis and second the recommendation by Geddes that all military construction be focussed in a maximum of three shipyards. Subsidiary causes for the political involvement can also be found in the sheer inertia at Scott Lithgow and the political situation of Harland and Wolff in Northern Ireland. In the first instance, the Treasury objected to funding without comprehensive justification for expenditure and acted to restrict the amount of finance being handed out by the Board. In the second instance, shipyards that had previously received strong orders from the Admiralty but were now excluded from doing so disputed this fact with ministers and local politicians who would campaign for orders to be reinstated (Edgerton, *Warfare State*, pp. 191 -269).

This paper demonstrates that the synthesis of Rhodes and Hall is valid and in the case of the interactions between the Shipbuilding Industry Board, shipyard management and government creating a clear set of negotiations can be seen between bodies in the Rhodean policy network that created orders of change in the fashion of Hall. This paper has shown that an additional dimension needs to be included to truly make sense of what happened with British shipbuilding in the 1960s and advocates the inclusion of the institutional complementaries approach from the varieties of capitalism literature. Firstly. the Shipbuilding Inquiry Committee under Reay Geddes to all extents and purposes existed outside the established policy community that concerned itself with the shipbuilding industry and recommended a course of action at odds with the prevailing orthodoxy found in competitor nations , contradiction the institutional complementaries view and reinforcing

the Régulation School. Secondly, along the same lines the situation at Scott Lithgow also appears to be disconnected from a wider policymaking body and was solely concerned with the narrow views of a small clique of senior managers. However, these could be seen as examples which prove the rule, particularly in the case of Harland and Wolff which was at the centre of a vast and traditional set of institutions working within a policy network to help the shipyard adapt to changing circumstances. These negotiations may have developed a common ground between the different groups long enough to create plans for government intervention, but in both cases this was not necessarily the correct course for the industry.

CONCLUSIONS

This paper has illustrated the continued relevance of the Pemberton model that proposed a synthesis of Rhodean policy network and the Hall social learning theory by using it to illustrate the role of the state as a cause of industrial decline in the 1960s within the context of the Institutional Complementaries view. It is argued that under the guidance of the Shipbuilding Industry Board, the UK government agreed a series of publicly funded interventions to modernise that did not represent the best practice and prevailing orthodoxy found in more productive shipyards overseas, thereby creating an industry out of sync with the market it was supposed to serve. Moreover, these interventions represented little more than a series of Régulation School compromise positions agreed over the course of months sometimes years, between the divergent wishes and views of government and shipbuilding companies. Therefore, the web of individuals and institutions involved in British shipbuilding during the 1960s is a perfect resource with which to explain and illustrate how the policy networks function by integration with social learning. However, there is an additional element that must be taken into account; the level of change which resulted from this policy activity and whether or not it constituted the best solution for the industry. This is a point of vital importance when dealing with the decline of British manufacturing after 1960 and as such the study of the Shipbuilding Inquiry Committee and the Shipbuilding Industry Board has created an important new strand to the thinking on relative and absolute industrial decline.

As demonstrated, the Shipbuilding Industry Board attempted to engage with shipbuilders to the full extent of its powers, but the industry itself was unwilling to allow the Board to pursue the full extent of its remit and therefore sought negotiation and compromise. However, whilst shipyards were unprepared to allow the Board full reign, they could not ignore the potential for lucrative grants and low interest loans. Consequently, the decision making process from the start, whilst following the Board's mandate (which was not allowed to act without a shipyard's consent), was compromised by a number of conflicting viewpoints held by a number of major actors within the process (Johnman & Murphy, *British Shipbuilding*, pp. 200 -201). Nevertheless this was to be expected, the entire process leading up to the creation of the Board from the initial murmurings about the fate of British shipbuilding in the early 1960s to the creation of the Shipbuilding Inquiry Committee under Reay Geddes was intertwined with the desires of a number of different actors from wide ranging backgrounds. However, whilst a policy network was in place to bring about an order of change, the question remains whether the change brought about was correct for the industry or whether it was the only compromise possible between management and government.

Therefore, this paper rests upon the interaction of a series of institutions at the centre of British industrial and economic policy in the 1960s. In reaction to both a perceived and genuine weakening

of the United Kingdom's status as an economic power, caused in part by genuine relative decline in the face of competitor nations creating a heightened obsession with national decline amongst the establishment, an incremental increase in government control over the economy took place. The Conservative from 1957 onwards with the creation of the British Productivity Council aimed to bring management, government and labour into a series of informal bodies to decide the economic goals for the economy, the National Economic Development Council being the prominent example. However, these bodies depended largely on the goodwill of participants and lacked the authority to impose solutions on industry. As the reviews into shipbuilding by the Conservatives in the early 1960s demonstrated, the correct course of action could be recommended but without some form of central guidance this was to little, or no, avail.With the election in 1964 of the Wilson Labour government a fully fledged system of state planning and guidance for industry was implemented, but this still replied upon the agreement of the parties involved as despite having an enthusiasm for scientific planning and control, the government shied away from mandatory schemes and preferred a system of consultation (Tomlinson, 2002). This paper has shown how an excess of inquiry, a lack of compulsion and a surplus of negotiation produced outcomes unsuitable to the industry during the 1960s and early 1970s. The relationship between shipbuilders, ship-owners, government, trade unions and, in a wider sense, the media left a distinct mark on the schemes implemented by the Shipbuilding Industry Board and is reminiscent of the three institutionalisms theory of Hall and Taylor (Hall, P.A.& Taylor, R.C.R, Political Science and the Three New Institutionalisms, Political Studies, 44(5), 1996, pp. 936-957).

However, there are certain ambiguities in the Hall and Taylor model and so the Pemberton synthesis can be used to to better understand the situation in the 1960s. First, the Geddes Committee interviewed and took evidence from interested parties, but those parties were not central to the shipbuilding process and the committee's decisions appeared to reflect the views of its chair. The Geddes Report proposed a limited modernisation of obsolete equipment in British shipyards and yet discounted highly productive practices found in Japan, which was to the industry"s cost. Second, the creation of the Shipbuilding Industry Board represented a second order change as per the Hall model and that a policy network existed between the board, shipyards, unions and government, but this cannot explain how the decisions of the board took the form they eventually did. Effectively the Board 'learnt on the job' and changed its views as it evolved over time and that protracted negotiations with shipyards diluted the measures of the board to such an extent that with a decade the industry was all but removed from the British industrial environment.Indeed the shipyard managers within the Board's policy network preferred to bid for lucrative and safe Royal Naval contracts and commercial contracts subsidised by central government rather than compete in the open market (ohnman and Murphy, Deja Vu all Over Again, p. 236-237). The demonstrates the

seclusion of shipyard management from wider influence and the distorted commercial environment created by the preference for military orders and increasing reliance on government aid. This has been demonstrated by the extended processes of consultation under the aegis of the first Wilson Labour government, from the public inquiries of its early years to the negotiations with companies concerning state aid from 1966 onwards, restricted efforts at introducing modern working practices and equipment into British shipyards and created a policy network that restricted the ability of the industry to adapt to a changing market for its goods. The Shipbuilding Industry Board institutionalised many of the industry's problems and as demonstrated by the case of Scott Lithgow the verbatim imposition of the Geddes report on to the shipbuilding industry by the Wilson government actively sped up the decline of the industry. Indeed, the case of Harland and Wolff showed that the government did move away from the provisions of the Geddes report, but even then the eventual outcome rested upon negotiations between a small group of individuals and as such represented not the best plan of action for any particular shipyard, but only a compromise position between different points of view. In short, the British shipbuilding industry became increasingly out of sync with shipping in the 1960s and was unable to take advantage or exploit what should have been a natural market for its products.

Appendix Data Tables

Appendix Table 1

Total Annual Shipping Production 1963 -1981 by Country

Country	Total Output (Gross Tonnes)	Percentage
UK	19165	5.92
France	14347	4.43
West Germany	24558	7.58
Japan	172371	53.23
Norway	10984	3.39
Sweden	27014	8.34
Belgium	1257	0.39
Denmark	3880	1.20
Ireland	115	0.04
Italy	4263	1.32
Netherlands	2791	0.86
Poland	3585	1.11
Spain	7351	2.27
USA	5606	1.73
Yugoslavia	2547	0.79
Other	23976	7.40
TOTAL	**323810**	**100.00**

Source: *Lloyds Register of Shipping: Annual Report.* (London: Lloyds, 1950-1981 and *Fairplay International*, London: Fairplay, 1970-1980)

Appendix Table 2

Total Oil Tanker Production 1963 -1981 by Country

Country	Total Output (Gross Tonnes)	Percentage of Total
UK	6876	35.88
France	10000	69.70
West Germany	9598	39.08
Japan	84265	48.89
Norway	6110	55.63
Sweden	18213	67.42
Belgium	305	24.26
Denmark	2068	53.30
Ireland	0	0.00
Italy	1669	39.15
Netherlands	1504	53.89
Poland	445	12.41
Spain	4335	58.97
USA	4295	76.61
Yugoslavia	1110	43.58
Other	782	3.26
TOTAL	**151575**	**46.81**

Source: *Lloyds Register of Shipping: Annual Report.* (London: Lloyds, 1950-1981 and *Fairplay International*, London: Fairplay, 1970-1980)

Appendix Table 3

Correlation between the increase of oil output in selected Middle East nations* and the increase in shipping output, 1963-1981

	Total	Index	Total	Index
1963	322257	100	6256	100
1964	360457	112	7281	116
1965	396182	123	9415	150
1966	441617	137	10740	172
1967	475593	148	11757	188
1968	534604	166	12944	207
1969	588897	183	14354	229
1970	682277	212	15639	250
1971	800476	248	18135	290
1972	887524	275	19289	308
1973	1042319	323	22084	353
1974	1073356	333	16909	270
1975	959643	298	34143	546
1976	1094608	340	34398	550
1977	1090695	338	27953	447
1978	996534	309	18195	291
1979	1075288	334	14289	228
1980	904807	281	13100	209
1981	773890	240	16929	271

Correlation	**0.75**

* Iran, Iraq, Kuwait, Qatar, Saudi Arabia, UAE, Oman and Bahrain
Source: *OPEC Member Country Profiles* 1980-90 (Vienna: OPEC)

Appendix Table 4

UK Energy Consumption by Type by Percentage

	Coal	Petroleum	Gas	Nuclear	Hydro	
1948	90.8	8.8	0.0	0.0	0.4	
1950	89.8	9.8	0.0	0.0	0.4	
1960	74.3	24.7	0.0	0.3	0.6	
1966	58.7	37.5	0.4	2.6	0.8	
1970	46.6	44.6	5.3	2.8	0.7	
1971	42.1	45.7	8.7	3.0	0.5	
1972	36.2	48.0	12.1	3.1	0.5	
1973	37.6	46.5	12.5	2.8	0.6	
1974	34.9	45.2	15.7	3.6	0.6	
1975	36.9	42.0	17.0	3.4	0.6	

Source: *Energy Balances of OECD Countries,* 1980 – 2010 (IEA, Paris)

Appendix Table 5

Japanese Energy Consumption by Percentage

	Petroleum	Coal	Hydro	Others
1933	8	69	12	11
1948	5	60	21	14
1966	60	26	11	3
1975	72	18	6	4

Japanese Energy Growth

	Energy Consumption 1933 = 100		
1933	100		
1948	100		
1966	500		
1975	1000		

Source: *IAEA Yearbook* 1974 – 1990 (International Atomic Energy Agency, Vienna)

Appendix Table 6

Crude Oil Prices (average) 1950 - 1979

	Price US$ 2002 Per Barrel	% change
1950	17.84	n/a
1951	16.67	-6.56
1952	16.36	-1.86
1953	17.2	5.13
1954	17.71	2.97
1955	17.71	0.00
1956	17.57	-0.79
1957	18.84	7.23
1958	17.84	-5.31
1959	17.07	-4.32
1960	16.67	-2.34
1961	16.56	-0.66
1962	16.45	-0.66
1963	16.18	-1.64
1964	15.92	-1.61
1965	15.56	-2.26
1966	15.23	-2.12
1967	14.98	-1.64
1968	14.47	-3.40
1969	14.42	-0.35
1970	14.04	-2.64
1971	14.34	2.14
1972	13.89	-3.14
1973	15.01	8.06
1974	23.87	59.03
1975	24.42	2.30
1976	24.66	0.98
1977	24.23	-1.74
1978	23.65	-2.39
1979	29.83	26.13

Source: WRTG Economics, http://www.wtrg.com/prices.htm

Appendix Table 6

Annual Industrial Growth Rate (percentages)					
	UK	**Japan**	**FDR**	**USA**	**France**
1950	3.83	20.51	23.68	13.51	10.08
1951	2.86	40.43	17.14	9.33	13.33
1952	-1.39	7.58	9.76	2.44	0.00
1953	5.63	21.13	6.67	7.14	1.96
1954	5.33	9.30	12.50	-3.33	9.62
1955	5.06	6.38	16.67	10.34	12.28
1956	0.00	23.08	7.94	7.29	7.81
1957	2.41	18.75	4.41	-0.97	8.70
1958	-1.18	0.00	2.82	-1.96	2.67
1959	4.76	21.05	8.22	7.00	1.30
1960	7.95	21.74	11.39	1.87	8.97
1961	1.05	21.43	5.68	3.67	5.88
1962	1.04	5.88	4.30	8.85	5.56
1963	3.09	11.11	3.09	6.50	5.26
1964	8.00	17.50	10.00	9.16	7.00
1965	3.70	4.26	5.45	10.49	1.87
1966	0.89	12.24	0.86	6.33	6.42
1967	0.88	20.00	-2.56	2.38	2.59
1968	5.26	15.15	9.65	6.98	3.36
1969	2.50	15.79	12.80	5.98	10.57
1970	0.81	13.64	6.38	-1.03	6.62
1971	0.81	3.00	2.00	6.22	6.90
1972	1.60	6.80	3.92	3.90	5.16
1973	8.66	15.45	6.92	11.74	7.36
1974	-1.45	-3.94	-1.76	2.94	2.29
1975	-5.15	-11.11	-5.39	-4.49	-6.70
1976	3.10	11.11	8.23	5.98	8.38
1977	5.26	5.00	0.58	3.23	1.10
1978	2.14	5.95	2.91	4.30	2.19
1979	4.20	7.87	4.52	6.37	4.28
Mean Ave	**2.69**	**11.95**	**6.04**	**4.78**	**5.27**

Source: *United Nations Statistical Yearbook,* Department of Economic and Social Affairs, Statistics Division (United Nations Statistical Office, New York, 1946-1980)

Appendix Table 7

Annual Growth in GNP (percentage)

	Japan	UK	FDR	USA	France
1950	16.94	3.7	n/a	10.71	15.77
1951	22.27	3.00	11.89	7.29	12.45
1952	10.94	7.14	11.01	3.56	13.51
1953	10.32	6.26	6.36	4.24	2.76
1954	9.23	4.27	6.15	-0.63	4.73
1955	7.69	5.45	11.16	6.60	4.70
1956	8.35	4.43	5.87	1.90	7.21
1957	9.36	2.45	4.72	1.81	-11.03
1958	1.61	1.72	4.54	-1.03	11.16
1959	9.89	4.05	7.11	6.78	-7.50
1960	15.40	4.44	9.00	2.44	6.74
1961	18.15	6.45	17.92	2.49	7.12
1962	11.15	2.95	7.21	5.77	9.43
1963	11.70	5.28	4.78	4.35	9.95
1964	13.37	6.25	7.56	5.04	8.29
1965	8.93	6.24	6.54	6.27	5.45
1966	11.21	1.75	3.26	6.06	4.82
1967	11.88	2.37	-1.65	2.44	4.31
1968	12.47	-13.00	4.13	4.66	3.65
1969	11.11	0.28	7.60	2.80	3.65
1970	10.78	4.55	13.87	0.14	-0.55
1971	7.29	9.93	9.31	3.14	5.87
1972	20.56	8.92	12.87	5.17	15.21
1973	22.26	7.26	21.31	5.90	18.22
1974	1.76	1.40	1.01	-0.76	-3.13
1975	-0.76	9.63	0.00	-0.80	14.36
1976	6.42	-8.41	0.89	5.26	-2.15
1977	13.62	2.38	8.19	4.65	2.44
1978	24.13	15.46	14.06	5.38	15.55
1979	-4.73	15.01	8.40	13.10	9.66
Mean Av	**11.11**	**4.39**	**7.76**	**4.16**	**6.42**

Source: *United Nations Statistical Yearbook*, Department of Economic and Social Affairs, Statistics Division (United Nations Statistical Office, New York, 1946-1980)

Appendix Table 8

Comparative productivity of selected Japanese supertanker constructing shipyards compared to Harland and Wolff and Scott Lithgow in the United Kingdom, 1964

Yard	Employees	Dwt Launched	No of Ships	dwt ton per employee
Aioi	4240	770,000	11	182
Sasebo	2100	290,000	6	138
Nagasaki	5370	770,000	12	143
Tsurumi	2500	274,000	11	110
Kobe	4160	201,000	5	48
Harland & Wolff	11681	123,000	4	11
Scott Lithgow*	17700	95000	6	5.4

Source: Board of Trade. *Japanese Shipyards: A report on the visit of the Minister of State (Shipping) in January 1965*, p. 24 and *Lloyds List* (1964). *This is the combined output of the separate Scotts and Lithgows shipyards, prior to merger.

Appendix Table 9

Percentage share of world export market for shipping, 1948 – 1960

	UK	Japan	West Germany	Sweden	France	Netherlands	Others (incl. USA & USSR)
1948-1950	35%	2%	0%	18%	0%	6%	38%
1951-1955	22%	11%	15%	13%	2%	9%	29%
1956-1960	7%	32%	21%	12%	6%	6%	17%

Source: Johnman & Murphy, British *Shipbuilding*, p. 103.

Appendix Table 10

The difference in growth rates between the UK and World shipbuilding output in gross tons, 1947 to 1963

Year	World	UK	Difference in % Growth Rates	UK as % of the world
1947	100	100	0%	57
1948	110	100	-10	51
1949	148	108	-30	41
1950	167	108	-19	38
1951	171	108	-5	37
1952	210	108	-38	30
1953	243	108	-33	26
1954	252	117	-1	27
1955	252	117	0	28
1956	319	108	-75	21
1957	405	117	-77	17
1958	443	117	-38	15
1959	414	108	20	16
1960	400	108	14	16
1961	376	108	24	15
1962	395	92	-36	13

Source: Lloyds Register of Shipping and Johnman & Murphy, British *Shipbuilding*, p. 101.

Appendix Table 11

Harland and Wolff, Profit and Loss, Vessels Built and Gross tonnage, 1960 – 1980

Year	Number of Vessels	Gross Registered Tonnes (x 000)	Work force	Fixed Assets (£ x 000)	Net Profit (£ x 000)	Profit/ Loss per Gross ton (£)	Profit/Loss per employee (£)
1960	9	50	n/a	8,799	**210**	n/a	**n/a**
1961	14	50	n/a	9,347	**140**	280.00	**n/a**
1962	8	48	12,582	9,950	**123**	256.25	**9.78**
1963	7	85	11,372	10,030	**144**	169.41	**12.66**
1964	4	90	11,681	7,848	**-327**	-363.33	**-27.99**
1965	2	70	13,019	7,434	**-1,932**	-2760.00	**-148.40**
1966	5	80	11,454	6,633	**-4,146**	-5182.50	**-361.97**
1967	3	55	10,049	6,134	**-1,156**	-2101.82	**-115.04**
1968	5	244	9,007	8,652	**-755**	-309.43	**-83.82**
1969	1	58	9,274	11,308	**-8,330**	-14362.07	**-898.21**
1970	4	196	10,007	13,482	**-302**	-154.08	**-30.18**
1971	3	240	9,129	13,172	**-182**	-75.83	**-19.94**
1972	3	190	9,950	14,211	**-513**	-270.00	**-51.56**
1973	2	195	9,996	19,713	**-33,012**	-16929.23	**-3302.52**
1974	2	200	9,947	26,524	**-16,711**	-8355.50	**-1680.00**
1975	2	226	9,657	32,610	**-4,884**	-2161.06	**-505.75**
1976	3	220	9,236	33,424	**2,591**	1177.73	**280.53**
1977	2	230	8,706	32,039	**-1,907**	-829.13	**-219.04**
1978	1	70	8,212	30,469	**-25,452**	-36360.00	**-3099.37**
1979	3	143	7,542	28,335	**-43,296**	-30276.92	**-5740.65**
1980	4	357	7,370	25,612	**-31,997**	-8962.75	**-4341.52**
Total	**52**	**528**			**-6944**		**-52.58**

Source: '*British Shipbuilding 1972'*, A report to the Department of Trade and Industry by Booz-Allen & Hamilton BV, Cmnd 4942, HMSO, London, Chapter 17 'Finance and Accounting' pp 174- 186, Lloyds Register of Shipping 1960-1973, Lloyds, London and Moss, M & Hume, J.R. (1986) *'Shipbuilders to the World: 125 Years of Harland and Wolff, Belfast 1861 - 1986*' (Belfast: The Blackstaff Press).

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