

PROPRIETORS AND MANAGERS: STRUCTURE
AND TECHNIQUE IN LARGE BRITISH
ENTERPRISE 1890 TO 1939.

JOHN MICHAEL QUAIL

Submitted in accordance with the requirements for
the degree of PhD, The University of Leeds
School of Business and Economic Studies
January 1996

The candidate confirms that the work submitted is his own and
that appropriate credit has been given where reference has been
made to the work of others

Abstract.

The model of the managerial modern business enterprise set out by A D Chandler defines a specific organisational structure and specific techniques of corporate control which are presented as the most effective form of governance for large enterprise. It is generally accepted, however, that this form of governance remained largely unadopted by large UK enterprise before World War Two. This thesis offers an explanation based on the particular role and function of directors in UK firms.

Part One of the thesis examines the structure and control technique of large UK enterprise before World War One and the theory of the firm that underpinned them. It is shown that the favoured form of joint stock company structure, here called 'proprietary', was the consequence of the perceived role of company directors as shareholders' representatives rather than managers of the business. Much flowed from this. The legitimisation of directors powers through property rights impelled them to retain centralised control despite their customary part-time status. This restricted the growth of top management, fragmented management and business professions into narrow departmental structures and restricted the development of control techniques. Under these circumstances the development of firms of the Chandler type was unlikely.

Part Two of the thesis examines four case studies of large UK enterprise in the inter-war years: ICI, Unilever, the London Midland and Scottish Railway and Austin Motors. They have been selected because by sector, leadership or progressive repute they can be taken as representative of UK enterprises most likely to have evolved towards the Chandler model. It is shown, however, that the legacy of UK proprietary governance was powerful enough to prevent all four case studies - and by implication all UK enterprise - establishing the Chandler structure before World War Two.

CONTENTS

	Page
Introduction	
1) The Argument	1
2) The Chandler Thesis and its Critics	3
3) The Chandler Model	9

Part One Proprietors and Managers in Large UK Enterprise Before World War One

Chapter One: British Enterprise and the Failure to Build Managerial Hierarchies

1) Managerial Hierarchies and British Firms	22
2) Explaining Failure	26
(<i>Footnotes and References</i>)	31

Chapter Two: Structure and Technique in Large British Enterprise before World War One.

1) The Nature of Large Enterprise, from the late Nineteenth Century to World War One.	34
2) Structure and Technique on UK Railways: Part A, Structure.	35
3) Structure and Technique on UK Railways: Part B, Control Technique.	43
4) Structure and Technique in Large UK Banks.	51
5) Structure and Technique in Large Amalgamated Manufacturing Companies: Part A: the Steel, Shipbuilding, Armaments Conglomerates.	55
6) Part B: Textiles and Textile Finishing.	61
7) Part C: Miscellaneous.	68
8) Conclusion.	69
(<i>Footnotes and References</i>)	73

Chapter Three: The Proprietorial Theory of the Firm and its

Consequences.

1) Introduction.	85
2) The Proprietorial Theory of UK Firm Structure.	86
3) Divide and Rule: Keeping the Experts Under Control.	95
4) Summary and Conclusions.	106
(<i>Footnotes and References</i>)	108

Part Two
Structure and Technique in Large British Enterprise
in the Interwar Years

<u>Chapter Four: Introduction to Part Two.</u>	118
(<i>Footnotes and References</i>)	132

Chapter Five: Structure and Technique in the London Midland and Scottish Railway (LMS), 1923 - 1939.

1) Introduction.	139
2) Organisation.	142
3) Rationalisation and Mass Production.	153
4) Costing and Budgetary Control.	160
5) Summary and Conclusions.	170
(<i>Footnotes and References</i>)	172

Chapter Six: Imperial Chemical Industries (ICI)

1) Introduction.	187
2) ICI: Structure and Consequences	188
3) Costing and Financial Control	201
4) Technical and Commercial Development.	208
5) Summary and Conclusions.	213
(<i>Footnotes and References</i>)	216

Chapter Seven: The Austin Motor Company.

1) Introduction.	226
2) Organisation.	228
3) Costing and Budgetary Control	234
4) Leadership, the Market and Commercial Success at Austin	241
<i>(Footnotes and References)</i>	246
<u>Chapter Eight: Unilever with Special Reference to the Lever Soap Companies.</u>	
1) Introduction	257
2) The Organisational Framework.	258
3) Marketing, Rationalisation and the Organisation of the UK Soap Businesses.	268
4) Financial Organisation and Budgetary Control.	279
5) Summary and Conclusions.	286
<i>(Footnotes and References)</i>	289
Summary and Conclusions	304
Appendix I: UK Large Enterprises in 1905 - 1907.	318
Appendix II: Organisation Charts for four pre-World War One railways.	326
Bibliography.	331
List of Abbreviations.	341

LIST OF FIGURES

	Page:
Figure 1. The centralised, functionally departmentalised firm.	10
Figure 2. The divisionalised firm without line management.	11
Figure 3. The divisionalised firm with both functional and line management.	12
Figure 4. The extended divisionalised firm with top management functions grouped under Vice Presidents.	13
Figure 5. The structure of the London Midland and Scottish Railway (LMS) circa 1925.	144
Figure 6. The structure of the London and North Eastern Railway showing operating divisions.	146
Figure 7. The Vice Presidential structure of the LMS, 1927.	147
Figure 8. The Vice Presidential structure of the LMS, 1931.	149
Figure 9. A suggested British version of a Vice Presidential system from the <u>Railway Gazette</u> , 12 August 1921.	174
Figure 10. Chart from the <u>Economist</u> 19 January 1935 showing ICI subsidiaries	191
Figure 11. ICI reorganisation 1927.	193
Figure 12. ICI reorganisation 1929.	196
Figure 13. ICI reorganisation 1931.	197
Figure 14. Key to subsidiaries chart at Figure 10.	217
Figure 15. Austin Motors production departments organisation chart, 1935.	232
Figure 16. Unilever financial and accounting organisation 1932.	262
Figure 17. Unilever Special Committee meeting schedule 1931.	264

INTRODUCTION

1) The Argument

In his book The Visible Hand - The Managerial Revolution in American Business, A D Chandler describes how US business in the later nineteenth and early twentieth century began to internalise transactions previously co-ordinated by the market. This process was a demonstrably profitable response to rising demand for goods and services. But the conversion of market transactions into administrative processes required crucially that a managerial hierarchy was established within the firm in a form and with the skills to fully exploit the potential of the emerging mass producing, mass transporting and mass retailing business enterprise. That British enterprise did not generally build managerial hierarchies until after World War Two now seems to be the consensus view among business historians. (See Chapter One.) But the explanations which have been offered for this failure to build managerial hierarchies have not been entirely convincing. This thesis intends to show that an alternative explanation can be given, namely that in British joint stock companies business structure was a consequence of the distinctive role, interests and powers of the board of directors.

In UK joint stock companies, boards of directors were a representative committee of the owners and were seen as quite distinct from the managers whose job it was to carry out the directors' orders. In the US, as Chandler makes clear, any distinction between directors as owner's representatives and directors as the most senior tier of management seems to have been transcended without apparent struggle or difficulty. In the UK on the other hand the particular form adopted by the joint stock company institutionalised and built on the distinction between directors and managers. The evolved structure of the railways and the evolving structures of other large enterprise is described in Chapter Two for the period between 1890 and 1914. The explicit assumptions of that period on how a UK joint stock company should be organised, assumptions in many cases reflected in and reinforced by case law, are

considered in Chapter Three and the consequences of those assumptions for UK large business enterprise structure are explored.

The significant factor that emerges from this study of UK joint stock companies is that as shareholdings became dispersed and the directors tended to be less and less the holders of controlling percentages of shares, the distinctive role and powers of the directors remained unchanged. Thus as the separation of ownership and control proceeded the power of the managers did not grow and the management structures that Chandler traces in the US did not emerge in the UK. This intermediate - but not necessarily transitional - position between the joint stock company as effectively a large partnership with limited liability and the joint stock company as managerialist modern business enterprise I have called, for want of a better word "proprietary". "Proprietors" was the name given by the nineteenth century railway companies to their shareholders and the use of the word is designed to identify the legitimation of the directors' powers in their imputed role as representing the shareholders as shareholders themselves. In other words the directors were part owners supposedly representing all owners.

In the US, according to Chandler, the separation of ownership and control and the construction of an empowered managerial hierarchy were part of the same process. The British experience shows them to be separable. But it also suggests that the facts that proprietary structures were superseded and that the new managerial hierarchies in the US were of a quite specific form are connected. That is to say that the power of proprietors would be undermined by the adoption of a managerial form of organisation and that conversely a managerial structure could not emerge from a proprietary organisation organically - some decisive break would be necessary. The case studies in Part Two are designed to examine the extent to which the most "advanced" firms had moved from a proprietary to a Chandlerian form in the interwar years. The degree of approximation of the firm's structure to the Chandler type and the extent to which the new techniques necessary to run such a structure had been adopted are used as diagnostic tests. The conclusion reached is that no UK firm had become managerialist in Chandler's terms before 1939.

2) The Chandler Thesis and its Critics

The significance of this finding lies in its relevance to a wider debate which is not considered in the body of this thesis but which provides the context within which it should be placed: the debate on the relative decline of the UK economy and Chandler's contribution to that debate. For Chandler the pervasive failure of UK enterprises to build managerial hierarchies and the subsequent failure to build managerial hierarchies of a specific multi-divisional type is a key cause of the UK's wider decline. In his book Scale and Scope Chandler argues that as the Twentieth Century has proceeded relatively small numbers of very large companies have expanded their operations world wide to form global oligopolies. The companies that form these oligopolies were those that made an investment in technology, marketing and management structures within crucial and relatively narrow time frames. The technological and organisational efficiencies which these firms gained allowed them to capture large market shares and profits which enabled them to sustain competitive advantage by further investment in technical and human capital. Failure to make the right investment at the right time resulted in the loss of considerable first mover advantages and catching up became very difficult for rivals. In Chandler's view the failures of UK firms to invest in technology, marketing and management was systemic and the consequence was long term national economic decline.

Chandler is not without his critics. In general these critics do not question UK relative decline, the existence of global oligopolies or first mover advantages - though the extent and vulnerability of those advantages has been the subject of debate.(1) Criticisms have been made, however, in four broad areas. Chandler has been challenged on his account of the development of ^{US}UK corporations which has been seen as sanitised and eulogistic. Furthermore, his use of the developed form of the US corporation as the yardstick against which the corporations of other nations are to be measured has been considered "ethnocentric"(2) and thus of limited or no relevance.(3) This last criticism is linked to further criticisms of what is seen as an over-sharp dismissal of family as opposed to managerial businesses.(4) Finally, the importance of the link between corporate form and national competitiveness has been

questioned.(5) There is some justice in the details of all these criticisms. Overall, however, it will be argued that the broad picture presented by Chandler remains a robust and practical developmental model which is very relevant to a discussion of the tardy evolution of large UK corporations and the UK's relative economic decline. We will deal first with criticism of Chandler's account of the development of UK corporations and then with criticisms of the applicability of the resulting model to firms outside the US.

There is in Chandler's account of the development of US corporations an assumption that the structural and technical innovations they adopted were the consequence of a purely administrative logic operating within the firm. This assumption is open to doubt. The large corporation may have emerged for quite other reasons. It has been argued, for example, that the US corporations had to internalise more functions and services because the US economy was under-developed and could not provide these functions and services in the market.(6) It has also been argued that these corporations may have emerged as the organisational consequence of rent-seeking monopolies taking advantage of protective tariff barriers.(7) Similarly, it can be argued that Chandler's account of the development of the US corporation presents too orderly and rational a picture. It may be, as Chandler argues, that step by step administrative innovation allowed more functions and services to be internalised as their marginal cost fell below their cost in the market. On the other hand it may be more realistic to suggest that the reduction in cost of internalised functions was the result of desperate if innovative attempts to achieve control and cut costs in large amalgamated companies constructed for quite other monopolistic or vainglorious motives.(8) It has also been argued that the social consequences of these large corporations were not simply benign prosperity as Chandler seem to imply: there are long standing as well as more recent criticisms of bloody and dysfunctional interventions by large corporations in US society.(9)

None of these quite valid criticisms of Chandler's work, however, undermine the effectiveness of Chandler's developmental model of the firm. It does not matter how contingent, messy or unworthy the origins and development of the US

corporations may have been: the resultant creation of new management structures and the development of management techniques required to run them allowed the construction and control of business of unprecedented size and complexity. It does not matter whether structure followed strategy or vice versa.(10) Once certain US corporations had established their structures and control techniques within one market global expansion became a quantitative rather than a qualitative leap because the organisational innovations required for global expansion had already been established. But were the organisational forms developed by US corporations a yardstick against which firms in other national economies could be measured? In order to answer this question it is necessary to stress the place that organisational form has in Chandler's model of the development of the firm.

The importance of Chandler's work lies in his demonstration of the concrete and practical administrative requirements that permit the development of firms. The Visible Hand is essentially a history of the accretion of organisational structures and techniques for the purpose of allowing companies to prosper and grow, it is not a history of structure and technique *per se*. Understood in this way, therefore, the adoption of, say, the multi-divisional form or a system of budgetary control cannot be separated from the purposes for which it was adopted. No organisational form or technique is presented by Chandler as good in itself. As firms grow in size and complexity different organisational structures and techniques become optimal and firms cannot prosper and grow unless they use them. Some industrial sectors may produce firms which can grow to large size without needing the multi-divisional form to optimise commercial success.(11) Some firms may find themselves in national economies where it is possible to come to arrangements with other firms which avoid the complex internalisation of functions in a managerial hierarchy - for example, through market co-ordination as in Nineteenth Century Britain or by networking as in Twentieth Century Japan (see below). The crucial issue is, however, the use of the optimal available organisational structures and management techniques and the readiness to adopt new ones when organisational and commercial circumstances change. Unless the organisational form which a company adopts is understood in the context of commercial optimisation and adaptability then Chandler's essential point is

lost in either his criticism of personal or family management in UK firms or his endorsement of the multi-divisional firm.

In dealing with the family firm, Chandler shows little concern with questions of ownership except where it retards or encourages the optimisation of commercially effective management structures and techniques. Thus Chandler ignores the incomplete transitions of control from individuals or families to managers at large companies like Du Pont or General Motors.⁽¹²⁾ What is important about these companies for Chandler is that the dominant individuals or family did not prevent optimal profitable effectiveness in the business. This was the case even when it meant the dilution of individual or family control by adopting different management structures and promoting appropriately skilled outsiders to the highest management posts. In the long run, the result of this dilution was to pass control to managers but this was an effect rather than a cause of business success. Chandler's criticism of UK family firms (which is considered in more detail in Chapter One below) is not specifically that they were family owned but rather that in the UK this ownership prevented the firm from achieving maximum business success.

Similarly, the importance of the multi-divisional form of company structure is that in the period from 1890 to the 1940s it provided a solution to problems of controlling large complex firms and allowing them to prosper. It is not proposed as the most effective form of corporate governance in all circumstances. Adopted half-understood in a managerially under-developed organisation on the recommendation of management consultants (as, it is suggested, was the case with many UK firms in the 1960s) it is merely a fetish.⁽¹³⁾ To question generally the importance of the multi-divisional form because it has been inappropriately applied is to miss Chandler's point: the multi-divisional form is important as a means to a commercial end when a firm reaches a certain size or complexity and a necessity for firms taking part in global oligopolies. It is not an end in itself.

This discussion attempts to show the applicability of Chandler's developmental model to firms and economies outside the US. This is not necessarily

helped by Chandler himself. When Chandler compares the collective business histories of the US, the UK and Germany in Scale and Scope his approach is undoubtedly mediated by his earlier studies of US business. His “ethnocentrism” does not lie in the typology of firm structure or the details of administrative technique but in the primacy he gives to the growth of the stand-alone firm. For example, the development of large globally successful unitary firms through a protectionist route of inter-firm co-operation and state aid is deprecated as “co-operative capitalism” in the case of the German chemical firms. He clearly finds it difficult to give equal weight to different routes through different economic cultures to arrive at the status of multi-national, multi-divisional member of global oligopolies.(14) Nevertheless the test that Chandler applies to corporate development in the US in The Visible Hand - commercial success through the application of optimal organisation and technique - can properly be applied to other business cultures as can the emergence of national multi-divisional firms as precursors of global oligopolists. That the UK failed both these tests relative to other advanced economies now appears to be accepted (see Chapter One below). Some critics have argued however that this failure need not be closely connected to loss of international competitive advantage.

Kirby and Rose, for example, have said that “International competitive advantage is not determined solely, or even mainly, by the managerial structure of business”.(15) This is true in the sense that there are many factors which contribute to national competitiveness related in a complex way to each other. Michael Porter in his The Competitive Advantage of Nations(16) places “firm strategy, structure and rivalry” in an interacting web together with factor conditions, demand conditions, related and supporting industries, government - and chance. Positive reinforcement of these factors will increase national competitiveness but because they are interrelated the primacy of one cannot be asserted. On the other hand, the weakness of one factor - for example a general failure to adopt optimal management structures - will reduce national competitiveness. However, unless the factors can be quantified the extent to which any one will affect competitiveness will remain open to dispute. Porter does not attempt quantification and, indeed, it must be doubted whether it is possible. It would seem prudent, therefore, only to say that if management structure is

not the sole or even main determinant of international competitiveness it remains a very important one.

Porter, however, makes a further important point which raises the question once more of whether the Chandler model gives a true comparator for economies outside the US. Porter suggests that there are different optimum management structures for different industrial sectors. No one national economy displays dominance across all sectors which suggests that the interaction of the various factors affecting competitiveness in any national economy favours particular management structures. This point could be taken to support the extreme relativist argument of, say, Alford that all corporate structures are nation-specific and that there is no universal paradigm.(17)

There is no doubt that corporate structures do display strong national characteristics but a strongly relativist position ignores the separation of corporations from the national framework that takes place as they begin to compete on a global scale. If a company can remain largely within a national institutional web and trade largely undifferentiated products successfully internationally, then it can retain strong national characteristics. The narrower the scope of the firm, narrow scope ~~of~~ being a characteristic of the networked companies of Japan(18) or the flexible specialist companies of Italy(19), the more the firm can retain sparse, idiosyncratic and/or personal management structures because relationships of trust or cross-ownership with other firms provide services which otherwise have to be provided internally in a managerial hierarchy. However, once the firm begins to move outside national boundaries to produce in or for markedly different markets, to cope with different legal or institutional arrangements or to work in partnership with foreign firms or groups of foreign suppliers then decentralisation with concomitant control mechanisms becomes increasingly necessary. The consequence is that the multi-divisional company becomes the optimal organisational form.

It is significant that the work published in English so far on Japan and its distinct national commercial culture does not appear to have dealt in depth with the

managerial effects of the “hollowing out” of the Japanese economy in the 1980s as a consequence of the steady rise of the value of the yen. A great deal of manufacturing has been exported followed by increasingly complex arrangements with indigenous companies. The global strategy summed up in the phrase “think global, act local” which the largest Japanese corporations have adopted is, essentially, a summary of the multi-divisional firm. It is significant that a company like Sony with global markets and no historic network of related companies moved directly as it grew to the multi-divisional form without hesitation.(20) While Fruin, for example, emphasises continuity of the historic institutional context of Japanese business, other authors chronicle trends towards divisionalisation before 1980 which can only have accelerated since.(21) We may conclude, therefore, that the fact of great diversity in national commercial institutions and cultures does not prevent convergence in corporate form as companies become globally competitive. It is not necessary to assume one best developmental path to suggest that the multi-national, multi-divisional firm is the universal form at which the large companies making up the global commercial cultures aim. We may therefore conclude that it is a valid exercise in any commercial culture to enquire whether companies have adopted optimal managerial structures and to enquire to what extent this process has brought them to the construction of the multi-divisional company as a contribution to a wider enquiry into the economic rise and decline of nations.

3) The Chandler Model

Before we can use the existence or otherwise of a Chandlerian managerial hierarchy as a diagnostic test we must make explicit the key features of the Chandler model. The features of this model are in various locations in The Visible Hand and for convenience they will be summarised here. We have followed Chandler in tracing the evolution of this structure historically which allows some discussion of the way in which each step was a solution to particular organisational problems. The first business structure that emerged as a type (as opposed to contingent agglomerations or individually personalised structures) was that of the centralised functionally departmentalised firm shown at Figure 1.

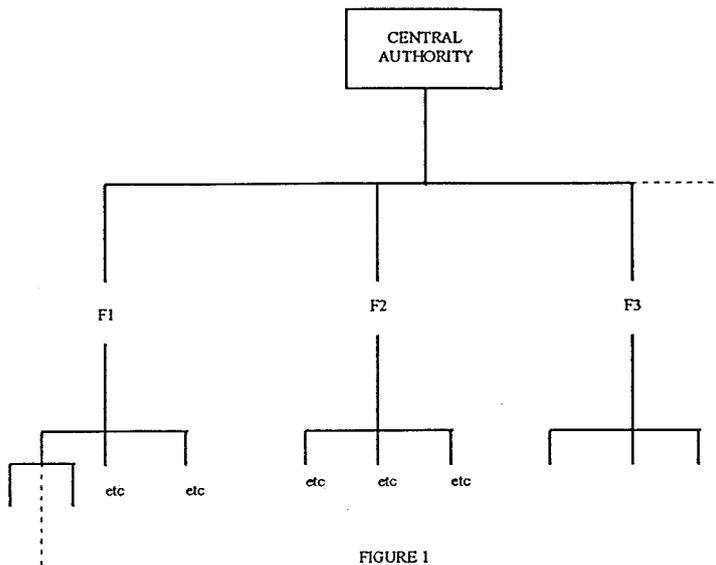


FIGURE 1

In this structure, the different functions (eg sales, purchasing, production) are shown as F1, F2, F3 . . . representing the different departmental heads at the top of their departmental hierarchies. At the top of this structure is shown a "central authority" which simply indicates at this stage that the functional heads are responsible to centralised authority. This structure was adopted by the early US railroads and was general in large US industrial companies by World War One.

Up to a certain size or complexity of firm such a structure was perfectly adequate. Beyond a certain point however, two broad sets of problems emerged. Firstly, as the number of functions grew or the relationship between them needed more complex controls, changes were forced on the central authority. We will deal with these a little later. Secondly, as the number of tiers in the organisation grew, lateral co-ordination between functions at lower levels was left unaccounted for. The only place where there was enough authority to resolve disputes was right at the top of the structure. An early response seems to have been to reduce the number of tiers by grouping the functions in divisions with functional officers in the divisions reporting to functional managers at HQ as shown at Figure 2(22).

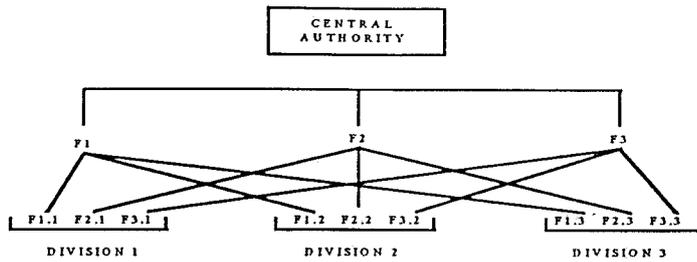


FIGURE 2

This structure is interesting because it demonstrates how the divisional structure evolved out of the departmental structure. But the structure shown at Figure 2 did not resolve the issue of co-ordination at divisional level. This problem was resolved by the structure shown at Figure 3. At first sight the only difference is that divisional managers have been appointed to ensure co-ordination between functions at divisional level (23). However, what is also different is the relationship between the functional managers at HQ and the functional officers in the divisions. Now the functional officers in the divisions take orders from the divisional managers. The functional officers are guided in technical matters relating to the functions by the relevant functional manager and report to them on technical issues. Technical guidance is enforced by the central authority through the divisional managers. In separating line management and functional management in this way the role of the functional managers at HQ changes. (Their relationship to functional officers in divisions is now shown as a dotted line.) No longer responsible for the line management of functional staff they form part of a new top management. This structure also changes the role of the central authority. In creating the divisional management it has delegated management authority and together with the HQ functional managers forms top management whose role became strategic planning, overall supervision and allocation of resources

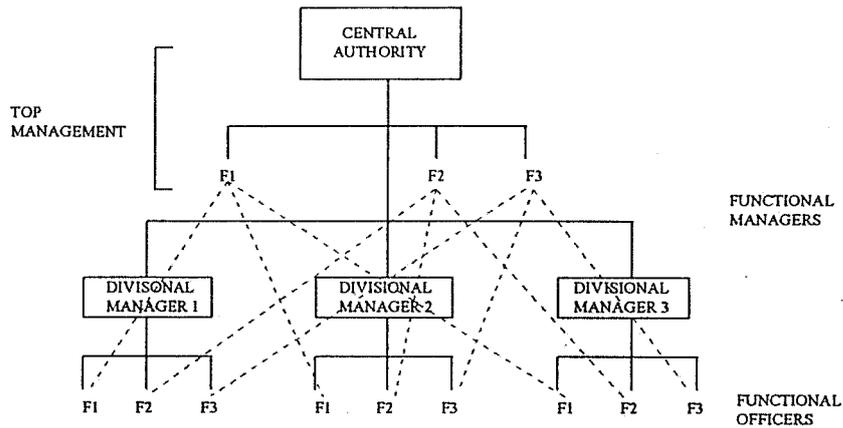


FIGURE 3

In the US the central authority was the President of the company. The role of president seems to have evolved from a position approximating to a UK part-time managing director into a full-time executive with considerable delegated board powers in the middle years of the nineteenth century.(24) It is difficult to see how a structure such as that shown at Figure 3 could have evolved without such an empowered chief executive officer. Without delegation from the board to the president there could be no further delegations to divisional managers. Without a strong head there could be no day to day arbitration between functional managers and between functional and divisional managers. It is inconceivable that such a role could be provided by a part-time board of directors or its committees. The existence of such a powerful chief executive officer would also appear necessary prior to the creation of a divisionalised structure - this was certainly the case in the US and it seems *a priori* unlikely that the divisional structure and the role of president should be invented at the same time. So while the centralised functionally departmentalised firm shown at Figure 1 could and did have a central authority of varying forms - management by boards or their committees, partnerships, single proprietors - it appears to have been normal US practice to delegate board powers to a chief executive officer in the centralised functionally departmentalised firm thus providing a necessary condition for the adoption of a divisionalised structure.

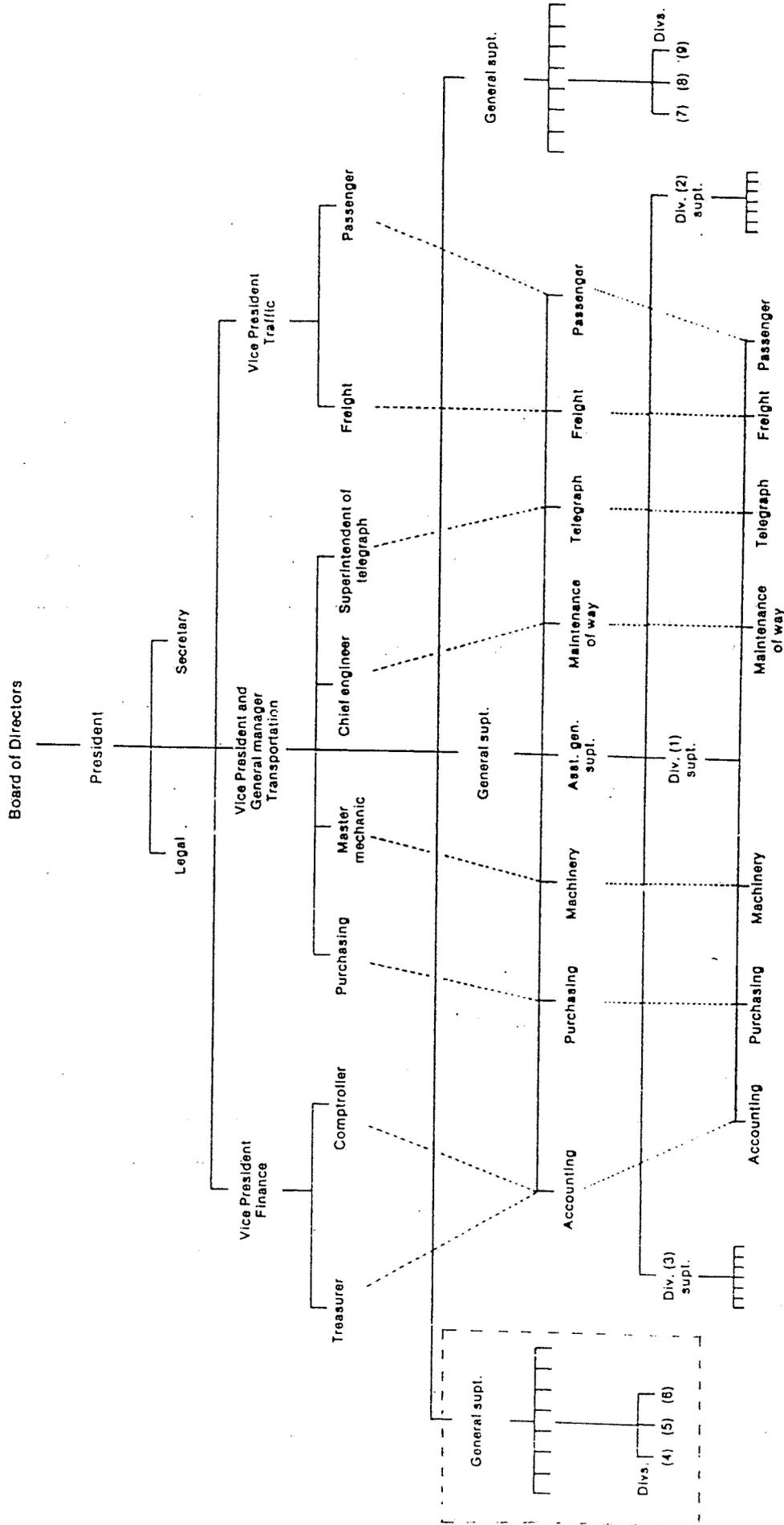


Figure 4. The extended divisionalized firm with top management functions grouped under Vice Presidents.

(Source: Chandler, *Viable Hand*)(4)

The divisionalised structure shown at Figure 3 was capable of greater expansion than the departmentalised firm in two ways. Firstly, the structure at Figure 3 could become a sub-unit within an organisation with a greater number of tiers. (Shown in box of dotted lines in Figure 4.) Secondly, as the number of functions grew top management could be extended by grouping functions under Vice Presidents. A divisionalised structure extended in both these ways is shown at Figure 4.

The organisation shown at Figure 4 demonstrates the key features of the divisionalised structure. A unified managerial "spine" is given to the organisation by the hierarchy of line managers. The separation of line and functional management allowed the decentralisation of decision-making while ensuring consistent practice with a very large number of tiers which was, nevertheless, subject to both line and functional authority. An expanded top management was subjected to a form of "cabinet" control by the President and Vice Presidents. In the US the first full divisionalised structure was invented by the Pennsylvania Railroad in 1857 and was equivalent to the structure shown at Figure 3.(26) The expanded version shown at Figure 4 was typical of railroads organised divisionally in the 1870's and was the form adopted by the first divisionally organised manufacturing companies, Du Pont and General Motors, in the early 1920's.(27)

The establishment of this structural form allowed the control of organisations of unprecedented size. In order to control this structure, however, considerable attention to detail was required in many areas: information flows; the use of comparative data to judge performance of sections and divisions; delegations and authority levels; the balance of power between technical guidance (the dotted lines) and line authority; allocations of resources across divisions and so on. A self-consciousness about organisational structures and their utility and a concentration on control and control technique were a necessity. This was the more so because the divisionalised structure with its line management structure in addition to functional management was *a priori* more expensive than a departmentalised structure and therefore in facing competitors the divisional structure had to make efficiency gains to

more than cover their additional costs. Attention to control had also to take account of the sheer inertia of the larger organisations. These organisations had to be as responsive to the market as smaller ones, yet the task of manoeuvring was far greater. It is no accident therefore that the emergence of the divisional corporation in manufacturing also saw the emergence of a conscious technique to ensure reaction to market signals - the technique of budgetary control.

The key features of budgetary control are:

- i) the use of a budget to integrate activity across an organisation by setting targets based on anticipated sales derived from an assessment of future market conditions. Anticipated sales determine production volume and timing which in turn determines purchases of raw materials or machinery, staffing levels and thus financial requirements;
- ii) the use of budget targets to integrate activity down an organisation by breaking the targets down into divisional, departmental, sectional or even individual targets. To be carried through effectively this requires clear authority and responsibility levels through the organisation;
- iii) the use of targets to achieve control of the organisation by monitoring performance against target by department, section or individual in order that swift remedial action may be taken if targets are not met;
- iv) the ability of the organisation to respond in an ordered and timely way to changes in demand.

While budgetary control is a technique which can be used by small organisations it becomes more and more essential as production volume and organisational size increase. The inception of budgetary control is the beginning of business planning, the systematic attempt to achieve relative certainty of business conditions and response without which the great size of the new enterprises would be

a major liability. In the process control over the organisation is greatly increased. The twin themes of relative business certainty and internal control are exemplified by General Motors in 1920-1921. A loose agglomeration of acquired companies up to that point, a crisis of over-production and soaring inventories in a slump brought about both a restructuring in a divisional form and the system of budgetary control to regulate its activities through production and financial planning on the basis of predicted sales.(28) General Motors was not the first US company to install budgetary control (29) but it was, it appears, the first for whom it was a basic necessity for survival and prosperity. The example was infectious. In 1922 it could be said that "the firms are largely in the minority which have formally adopted budgetary control at the present time".(30) By 1926, however, "of all the many forces at work in American business today there is nothing so new, so arresting and so much in men's minds as Budgetary Control" (31) and in the opinion of a representative of the New York Banker's Trust "The results have been and continue to be marvellous...."(32)

It has to be emphasised however that budgetary control in large companies was not possible without certain pre-conditions which included clear organisation structures and levels of responsibility, sound costing systems, sound inventory systems and financial and other reporting mechanisms capable of regular and speedy delivery of information. In this sense budgetary control stands at the apex of the development of a number of control techniques and a number of experiments in corporate organisation. As a consequence, therefore, the existence or not of budgetary control is an important diagnostic test for the emergence of a Chandlerian modern business enterprise.

INTRODUCTION:

FOOTNOTES AND REFERENCES

- 1 See the debate between Leslie Hannah and A D Chandler on the "American Miracle", Business and Economic History, Vol 24, No 2, Winter 1995.
- 2) Barry Supple (ed) The Rise of Big Business, quoted in M W Kirby and M B Rose (eds) Business Enterprise in Modern Britain, London 1994, p166.
- 3) This argument is put forward strongly by B W E Alford in "Chandlerism, The New Orthodoxy ... ", Journal of European Economic History, Vol 23, No 3, Winter 1994.
- 4) "..... there is an emerging consensus among business historians that Britain's proprietary capitalists, at least until 1939, were a part of a European wide structure of family enterprise" Editor's introduction in Kirby and Rose, op cit, p15.
- 5) Alford op cit, Kirby and Rose, op cit, Supple op cit.
- 6) Leslie Hannah, "The American Miracle, 1975-1950, and After: A View in the European Mirror" loc as fn 1.
- 7) Alford op cit.

- 8) General Motors and Du Pont, the exemplars of the multi-divisional company in Chandler's account, both re-organised in the midst of commercial crisis following extensive acquisitions rather than as an orderly consequence of steady reductions in administrative costs. See Alfred P Sloan My Years with General Motors, pb edition, London 1986 and Charles W Cheape, Strictly Business - Walter Carpenter at Du Pont and General Motors, Baltimore and London, 1995.
- 9) See the modern sources discussed in Alford op cit. See also Matthew Josephson, The Robber Barons, New York, 1934 and Ida Tarbell, History of the Standard Oil Company, 2 vols, New York, 1904.
- 10) See the discussion by Alford of this issue: B W E Alford, "The Chandler Thesis - Some General Observations" in Leslie Hannah (ed) Management Strategy and Business Development, London, 1976.
- 11) See the remarks in the Conclusion to Kirby and Rose op cit, p165ff.
- 12) See works of Sloan and Cheape as fn 8 above.
- 13) See Kirby and Rose op cit, p1661ff.
- 14) Alford, 1994, passim.

- 15) Kirby and Rose, op cit, p17.
- 16) Michael Porter, The Competitive Advantage of Nations, London, 1990.
- 17) Alford, 1994: “What Chandler effectively offers is not a theory, in terms of scientific logic, but a typology. More accurately, three typologies, one for each of the United States, Great Britain and Germany But these typologies remain separate and limited in what they can tell us about business development more broadly and economic performance in general.” (Page 642)
- 18) W Mark Fruin, The Japanese Enterprise System, Oxford, 1992.
- 19) M J Piore and C F Sabel, The Second Industrial Divide, New York, 1984.
- 20) Fruin op cit, p185.
- 21) Yoshitaka Suzuki, Japanese Management Structures 1920-80, London, 1991;
Richard E Caves and Masu Uekusa, Industrial Organisation in Japan,
Brookings Institute, Washington DC, 1975.
- 22) See the description of the Baltimore and Ohio Railroad in the late 1840's in A
D Chandler's The Visible Hand, Cambridge Mass, 1977, p100.
- 23) See the account of the Pennsylvania Railroad in ibid p106.

- 24) Ibid p98.
- 25) Ibid p108. this is a simplified organisation diagram of an 1870's railroad. It will be noted that some of the functions at HQ are not repeated in the divisions. These include legal and secretarial work and some of the functions of the Treasurer and Comptroller. These are staff functions kept completely under HQ control.
- 26) As ibid (2).
- 27) See the organisation chart in The Visible Hand p458 which is too similar to that at Figure 4 to be worth reproducing.
- 28) Alfred P Sloan My Years with General Motors, Penguin Edn., London, 1986, Chapters 3 and 8.
- 29) Budgets were in use on some US railroads by 1881 though this is not the same thing as budgetary control. (Chandler ibid p186 and ibid footnote 114 p548.) According to E T Elbourne in The Marketing Problem - How it is being tackled in the USA, London, 1926, the pioneer US manufacturing companies for budgetary control systems were the Walworth Company and the Dennison Manufacturing Company. References to budgetary control systems can be found for US manufacturing companies as early as 1909 - see eg M W Mix "Planning Next Year's Business" in System of that year reprinted as "Measuring Aids, Quotas and Budgetary Control" in (ed) L C Marshall Business Administration, U of Chicago press, 1921.
- 30) J O McKinsey Budgetary Control, New York, 1922, p12.
- 31) Elbourne, Marketing Problem, p77.
- 32) F W Shibley quoted in ibid p86.

PART I

PROPRIETORS AND MANAGERS:

LARGE UK ENTERPRISE BEFORE WORLD WAR ONE

CHAPTER ONE

BRITISH ENTERPRISE AND THE FAILURE TO BUILD MANAGERIAL HIERARCHIES

1) Managerial Hierarchies and British Firms

For some time the work of Alfred Chandler has been central to any discussion of the development of British corporate structures despite the fact that he has only recently considered the subject in depth.⁽¹⁾ This has come about through Chandler's strongly schematic accounts of US developments which clearly invite "compare and contrast" exercises with other national economies. Chandler's emphasis has shifted somewhat over time. In his first major work Strategy and Structure (Cambridge Mass., 1962) his main theme is the emergence of a specific form of corporate administration, the multi-divisional structure. In The Visible Hand (Cambridge Mass., 1977) the emphasis is on the replacement of market mechanisms by corporate management as skilled co-ordination reduced the costs of large organisations below those of the market. In this book the emphasis is as much on the techniques and the professionalisation of management as it is about corporate structure and its evolution. The professional managerial hierarchy is presented as the *sine qua non* of an efficient response to the opportunities presented by new high volume technologies serving the new US mass markets.

In Scale and Scope (Cambridge Mass., 1990) these essential elements are retained but the emphasis shifts to entrepreneurship. In this comparative study of US, UK and German industrial development, relative success or failure is ascribed to the extent to which firms made a "three pronged investment" in new productive processes, in marketing and distribution, and in a management hierarchy. The use of the word "investment" is significant because it implies both that an entrepreneurial decision has to be made and that there are a range of options to choose between - including doing

nothing. This contrasts with an almost determinist model in the earlier works which considered the US example alone.(2)

The idea of choice has to be introduced for this comparative study because in the British case, at least, a determinist model will not do and neither will any simple evolutionary one. Chandler clearly shows that the choice whether or not to make the "three pronged investment" was put to British enterprise by available markets, by foreign example and by foreign competition - and partially or wholly declined. This was particularly the case in important areas of the Second Industrial Revolution like organic chemicals, non-ferrous metals, electrical engineering and light machinery.(3) At the heart of this entrepreneurial choice was a pervasive failure to build the extensive managerial hierarchies which these new industries required. The exceptions were few - the only enterprises to get Chandler's unreserved approval as modern business enterprises in the inter-war years are ICI and BP. The consequence of British failure to invest in the necessary physical and human capital was that the modern corporation only really emerged in the UK in the 1950's and 1960's. Chandler's explanation for this failure will be considered later.

Since the publication of The Visible Hand (and even before) it has not been possible to ignore the influence of Chandler's thinking on a discussion of the evolution of British business even when the implications of the Chandler model are resisted as they are by Leslie Hannah and others. Hannah's work combines assertions of progressive modernity in the UK corporation with modifications and caveats. Hannah states that in the UK in the 1920's "institutional changes - in business opinion, the capital market, government policy and management practices " caused a merger wave "and other developments in large corporations which marked the birth of the modern corporate economy in Britain" with a "settling down of this structure in the 1930's and 1940's".(4) Elsewhere, in conscious opposition to Chandler, Hannah says that while the multi-divisional corporation arrived relatively late in European business "other statistical indicators suggest that many of its characteristics became dominant in British economic life no later than 1930" and not after World War Two "where Chandler has placed it."(5)

Hannah's statistical indicators are the rate of merger, the size of merged firms, their relative market share and their market dominance over time.(6) The notable concentration of UK firms in the inter-war years that Hannah describes is indisputable. But Chandler's "three pronged investment" are neither a necessary condition or consequence of increased concentration or firm size. It is crucial to Hannah's argument that the new large merged firm adopted increasingly sophisticated management structures and techniques:

Management was the crucial factor in the realisation of economies of the type relating to relative efficiency of firm and market in integrating economic activities.(7)

He discusses fears expressed in the inter-war years that firms would grow to unmanageable sizes but says that where

management skills were highly developed it was realised that the managerial constraint on growth need not be a significant one at all. The important variable was management. The analysis of the means by which barriers to growth were pushed back, as the skills of companies in digesting acquisitions and managing larger extended organisations were evolved therefore offers an important key to the merger process and the internal development of the modern firm.(8)

But Hannah does not, in fact, demonstrate that skills in managing "larger extended organisations" grew in any general way. In his subsequent discussion of new office methods, professional associations, the recruitment of managers, accounting techniques etc, the key section in The Rise of the Corporate Economy which discusses the organisational techniques and professional skills actually deployed by inter-war British companies only gives one clear example, ICI.(9) Other firms suggested as possible examples are said to await a "definitive study on the lines of ... Chandler's classic description of the evolution of enterprise structure in the United States ...".(10) Other large firms of the period are shown to be decentralised "as much by default as by choice" with holding company structures, persisting private control of subsidiaries, persisting internal competition and "with minimal policy and financial controls being exercised from head office."(11) This loose structure might still give some benefits in controlling

markets and information pooling but he shows that failure to integrate brought slow growth and could also sometimes be disastrous - a particularly noticeable example being Vickers.(12)

Hannah, then, has overstated what was new in the inter-war economy. Chandler, having participated in conferences (13) with Hannah and familiar with the latter's arguments is, in effect systematically rebutting them in the British section of Scale and Scope. Hannah seems to have accepted now that Chandler's case is overwhelming. In his review of Scale and Scope Hannah wrote that at the core of British entrepreneurial failure (and he accepts that there has been such a failure) is the failure to

develop managerial hierarchies as deep, or (though this is stressed less) as well trained and professional as those in America (or in Germany). I find this convincing ... one cannot but come to this conclusion as one examines one weak firm after another ...(14)

The consequence of this acceptance means, however, that the "statistical indicators" of a rising corporate economy are much weakened as evidence. Once it is accepted that the organisational transformation from loose (if permanent) cartel to professionalised managerial hierarchy is the key stage in the development of a modern corporation out of a merger then the mere fact of merger is not enough.

With the effective withdrawal of Hannah no scholar appears to wish to claim great inter-war advances towards managerial corporations. As we have seen in the Introduction, Hannah's subsequent position now appears to be to question the importance of such findings rather than the facts of the case. Thus Chandler's account of the general (if not complete) failure of British enterprise to build managerial hierarchies in the inter-war years stands unchallenged. There may be problems with the use of this failure as a key cause of British economic decline or the ascription of this failure to a failure of entrepreneurship. These problems have been touched upon in the Introduction remain largely outside the concerns of this thesis. On the other hand, Chandler's explanation of the more particular reasons for the failure of British enterprise to develop modern

managerial hierarchies are very relevant. We shall proceed to consider them and some related ideas.

2) Explaining Failure

In Scale and Scope Chandler puts forward a general explanation of "Personal Capitalism" by which he means the persistence of the influence of founders or heirs in firms, ensuring federal structures and little power sharing with salaried managers who were in any case few in number. In turn this could happen because market pressures on British firms were not sufficiently strong to force change: the British market was compact (and therefore required no complex networks of branch plants) and growth was low (thus removing the pressures of rapid expansion) and the market was (legally) controllable by cartels. Loose amalgamations were able to control the market where cartels could not. Certain firms, for example, Imperial Tobacco, Cadbury-Fry, Pilkingtons, were able to prosper in loose structures under personal management. Others, however, became extremely vulnerable at times when they attempted to diversify (Vickers, Armstrong-Whitworth) or when new foreign products invaded the market (machine tools, electrical equipment). Nothing in the domestic market had prepared UK firms for such crises.

The linking of the persistence of family influence to firm structure or entrepreneurial failure is not a new idea.⁽¹⁵⁾ However, in linking "personally managed" firm structures to crises of adaptability to changing market circumstances, Chandler removes us from the kind of unprovable and ultimately tautological cultural explanations for British failure which have found favour with some writers.⁽¹⁶⁾ There are two points worth making here. The first is that continuing personal control by the "personal capitalist" is presented as an entrepreneurial choice rather than a defining imperative of capitalism itself. We shall return to this point below. The second point is that Chandler's treatment of adaptive failure relies overwhelmingly on secondary sources (mostly business histories) which by their very variation probably do not allow an analytic

approach. Chandler leaves us in no doubt that there was a great deal of personal management in British enterprise but adaptive failure remains a suggestive possibility rather than a rigorously analysed general process in Scale and Scope.

A fuller treatment of adaptive failure may be found in the "institutionalists" gathered in Elbaum and Lazonick's volume of essays by various contributors.(17) The editors say in their introduction:

"... the sources of British decline are multifaceted, but operate along common lines of historical causation. Britain was impeded from making a successful transition to mass production and corporate organisation in the twentieth century by an inflexible institutional legacy of atomistic economic organisation. One element impeding the adoption of mass production was market demand conditions. Amidst sluggish domestic growth and free international trade, British firms found it difficult to secure the requisite market outlets to justify mass production. But Britain also faced critical supply-side constraints with respect to industrial organisation, managerial and technical personnel, long-term finance and labour relations. By implication to break this causal chain and arrest the process of decline requires policy measures that operate on the demand and supply sides in a co-ordinated fashion.(18)

That is to say that the institutional features of the nineteenth century economy which had brought about spectacular economic success were now increasingly dysfunctional as other more corporate economies began to compete successfully. This institutional legacy meant that the British entrepreneur could not freely choose whether or not to make the three pronged investment. It was not [conservative] cultural values or entrepreneurial failure that was the prime cause of decline but "a matrix of rigid institutional structures that reinforced (conservative) values and obstructed individualistic as well as collective efforts at economic renovation".(19) The institutional log jam was so intense in certain areas of the economy - cotton, coal and steel, for example - that it was only breakable by massive coherent outside intervention either by finance capital or the state. The relative ineffectiveness of these two forces in the inter-war years may be accounted as yet another institutional rigidity.(20)

Elbaum and Lazonick's approach allows a richer etiology than Chandler's since the suggested causes for adaptive failure are structural rather than the supposed individual failings of the personal capitalist as entrepreneur. Chandler, it is true, offers structural explanations in that the British entrepreneur is described as acting within a market which allows him to act the way he did. Chandler may effectively blame the entrepreneur for the choices he made just as others may describe his actions as rational and profitable for the market within which he found himself.(21) Elbaum and Lazonick, however, appear to see the market not as permissive or given but constraining, composed of specific institutions and specific structures of commercial relationships that compelled particular responses. And in a similar way, the specific structures of state, education and capital market too (22) put limits on entrepreneurial activity.

Using Elbaum and Lazonick's approach it is possible to construct a convincing institutionalist account of the forces which led, say, to weakly integrated mergers, though they themselves do not attempt it. Not the least contributory factor would be an atomised and competitive economy which made mergers of many small firms necessary in the first place, none strong enough to dominate but most strong enough to veto within any merger. Another factor would be the structure of capital markets and the consequent emergence of the relatively lightweight UK company promoter as opposed to the investment banker Napoleons of the US type. The institutionalist approach is thus a useful counterweight to over-simple explanations of Britain's economic decline. Elbaum and Lazonick's emphasis on constrained choice and structural determinants of action allow complex explanations of the failure of the British firm and the British economy to become corporate.

Yet while institutional rigidity can explain why positive action is difficult it does not explain why there is little or no positive action. If the market allows firms to survive without effective managerial hierarchies then when the market changes and they become necessary should we not see desperate struggles to construct them? Institutional rigidities may have tended to prevent large scale merger - however, once it took place, faced with harsh market pressures on one side and available examples of more successful methods and structures on the other, we may ask why the personal capitalist's entrepreneurial choice was so often to do little or nothing even when the economic consequences were

disastrous. If the price of choosing "personal capitalism" was potential personal economic decline or extinction it would appear to make no capitalist economic sense at all.

The difficulties increase when we consider such organisations as the railways, the UK's largest enterprises. The personal capitalist was not an issue here. Large administrative structures had been established and tasks of unprecedented complexity were carried out over a range of integrated operations. Yet as we shall see, structures of governance were adopted on UK railways which fell well below the efficacy of those of US railroads and were held on to despite a clear awareness that profits were lower and control less. This clearly was an acceptable price to pay for the structure adopted which kept power in the hands of the qualifying share-holders who made up the board of directors.

We shall see that there were imperative interests at work which preserved certain dysfunctional structures and were prepared to bear the potentially high costs incurred. Ownership whether of the family or joint stock type balances the imputed capitalist economic goal of profit maximisation against the preservation of their power and status and values that preservation highly. Chandler makes it clear in The Visible Hand that the creation of modern corporate structures and managerial hierarchies in the US involved the loss of control of the firm by owners or non-executive directors. This was not a process which required a change of personnel necessarily - owners could and did become modern type managers in the US, the obvious example being Alfred P Sloan of General Motors. The point was that owners had to lose power as owners.(23) We can see therefore that different types of company structure may represent the best options for control by owners or managers. It is after all nearly tautological to say that a power structure is created in a form which best serves those who run it. Shifts in structure therefore represent shifts of power and will be supported or resisted for that reason. It should not surprise us that a loose structure that preserved the power of the former owners in a merger should be the preferred form of organisation or that railway directors preferred their welters of board committees to delegations to managers. (See Chapter 2, below.)

It may be, as Noble suggests (24), that the returns from handing over the running of the company to expert managers were so great in the US that this compensated many owners for the withdrawal to rentier status. Voluntary abdication of power was, then, available at a price. We can speculate on reasons why such developments did not occur in Britain - a less fluid business class in the UK? Lesser potential returns from a more turgid UK market? We have accepted in the Introduction that Chandler's account of the organic development of managerial hierarchy from US capitalist enterprise may be open to question from modern critics and also from an older school of US historiography.(25) However, such questions are outside the scope of this thesis.

Left alone the capitalist owner or joint stock director as much as the handloom weaver can be assumed to have a perfectly rational desire to preserve his independence and control his economic fate as far as possible, indifferent to macro-economic effects or the social good or even at the cost of a declining standard of living. It seems clear that the interests of ownership could only be extinguished by liberal compensation, by considerable force, or both. As we shall see, this point had not been reached in the UK before World War One.

CHAPTER ONE:

FOOTNOTES AND REFERENCES

- 1) A contribution by Chandler, "The Development of Modern Management Structures in the United States and Britain" was made to a collection of essays edited by Leslie Hannah (Management Strategy and Business Development, London 1975). Here points are made for the first time which are further developed in Scale and Scope.
- 2) For a critique of Chandler's functionalism and determinism see Steven Tolliday and Jonathan Zeitlin "Employers and Industrial Relations Between Theory and History" in Tolliday and Zeitlin (eds) The Power to Manage? Employers and Industrial Relations in Comparative-Historical Perspective, London 1992 pp4-5. There have also been criticisms of Chandler's lack of emphasis on entrepreneurialism and leadership and too much focus on the self-interested managerial bureaucracy. See Bruce R Scott, Professor of Business Administration at Harvard Business School quoted in Derek F Channon's Strategy and Structure of British Enterprise, London 1973, pp2-5.
- 3) A D Chandler Scale and Scope, Part III, Chapters 7 and 8.
- 4) L Hannah Rise of the Corporate Economy, 2nd revised edition, London 1983, p7.
- 5) L Hannah's "Visible and Visible Hands in Great Britain", in A D Chandler and Herman Daems (eds), Managerial Hierarchies, Cambridge Mass. and London 1980.
- 6) Ibid. See also L Hannah and J A Kay's Concentration in Modern Industry, London 1977.
- 7) Rise of the Corporate Economy, p71.

- 8) Ibid pp73-4.
- 9) Ibid pp84-89
- 10) Ibid p86.
- 11) Ibid
- 12) See L Hannah's "Strategy and Structure in the Manufacturing Sector" in L Hannah (ed) Management Strategy and Business Development.
- 13) Collections of papers were issued from at least two conferences where both were participants: Management Strategy and Business Development, (ed) L Hannah, London 1976 and Managerial Hierarchies (eds) Chandler and Daems, Cambridge Mass. and London 1980.
- 14) Business History Vol 33, No 2 (April 1991) p301.
- 15) See D S Landes "Technological Change and Development in Western Europe, 1750-1914" in Cambridge Economic History of Europe Vol VI, Cambridge 1965 pp 563-4. also P L Payne "Emergence of the Large Scale Company in Great Britain 1870-1914" in Economic History Review, 2nd Series, Vol XX No 3, Dec 1967. While Payne still relates family influence to firm structure he moderates his position on its relation to entrepreneurial failure in his Chapter IV "Industrial Entrepreneurship and Management in Great Britain" in Cambridge Economic History of Europe, Vol VII, Cambridge 1978.
- 16) Particularly Martin J Weiner English Culture and the Decline of the Industrial Spirit, Cambridge 1981. But see also D C Coleman: "no one single cause explains these various failings (of British firms) ... One theme however, seems to recur too frequently and too widely to be ignored ... it could perhaps be described as an attitude of mind antipathetic to building change into the system ..." in

"Failings and Achievements: some British Businesses, 1910-80" in Business History, Vol XXIX No 4, October 1987, p8.

- 17) Bernard Elbaum and William Lazonick (eds) The Decline of the British Economy, Oxford 1986.
- 18) Ibid, Editor's intro pp15, 16
- 19) See the contributions of Elbaum, Lazonick, Tolliday and Hall in ibid.
- 21) See for example D N McCloskey Economic Maturity and Entrepreneurial Decline, Cambridge Mass., 1973 and his contribution to D N McCloskey (ed) Essays on a Mature Economy, London 1971.
- 22) See W P Kennedy Industrial Structure, Capital Markets and the Origins of British Industrial Decline, Cambridge 1987.
- 23) Visible Hand, p451: "The men who engineered the merger, their close associates, and their families were unable to provide the large number of managers needed to operate the consolidated enterprise. As the early leaders in the enterprise retired they were replaced by salaried career managers." Also p10: "As family and financier, controlled enterprises grew in size and age they became managerial. Unless the owners or representatives of financial houses became full-time career managers with the enterprise themselves, they did not have the information, the line or the experience to play a dominant role in top level decisions ... Of necessity, they left current operations and future plans to the career administrators ..."
- 24) David F Noble, America by Design, New York 1979.
- 25) For example, Matthew Josephson The Robber Barons New York 1934 and Ida Tarbell History of the Standard Oil Company, 2 Vols, New York 1904.

CHAPTER TWO

STRUCTURE AND TECHNIQUE IN LARGE BRITISH ENTERPRISE BEFORE WORLD WAR ONE

1) The Nature of Large Enterprise, from the late Nineteenth Century Century to World War One

The nature of large enterprise in this period depends to a degree on the measures used to rank enterprises by size. Researchers have used three methods to derive lists of large enterprises: capitalisation(1), market value(2) and numbers employed(3). A further useful measure would be output but Census of Production data for individual firms has not been released(4). None of these methods may claim primacy and each complements the other. Capitalisation may not be an accurate measure of the value of assets employed: the problem of watered capital in the railways and the amalgamations of the late nineteenth and early twentieth century are well known(5). Market value on the other hand represents the stock market's view of the relative profitability of the use of assets and as long as due allowance is made for speculative booms or panics can indicate firms which have grown using retained profits. Rankings by numbers employed can indicate labour-intensive rather than capital intensive firms. Lists of large enterprises derived by these methods are given in Appendix I.

It should be noted, however, that none of these methods do anything more than generally indicate the possible complexity of the organisational tasks involved. To say that an enterprise is large may be to say no more than the quantity of operations are large without any necessity for qualitative change. As we have seen in Chapter I, "statistical indicators" can only indicate not predicate. The stage in the Chandler model where administrative tasks become so complex that an irreversible managerial

mutation takes place to cope with them can only be assessed at the level of the individual firm.

If we examine the lists at Appendix I it is immediately apparent that railways are overwhelmingly the biggest single category of large enterprise. In the rankings by market value the top ten are railways and railways make up 15 of the top 20 and 22 of the top 50 companies. If the rankings by capitalisation are used, the pre-eminence of railways is even more marked: the top 14 companies are railways with 16 of the top 20 and 31 of the top 50 companies. Employment figures have not been systematically gathered for railways but the available evidence indicates that on this measure too, the railways would be ahead.

For enterprises other than railways the lists for capitalisation and market value show one marked difference, namely the position of banks. In rankings by capitalisation there were no banks in the top 50 while rankings by market value show that ten of the top 50 companies were banks. The balance of the enterprises in both lists is largely made up of manufacturing companies. When the manufacturing companies ranked by the various measures are considered we can see from Appendix I that they are largely amalgamated firms. These may most conveniently be treated by sector as shown in Appendix I.

We can say, therefore, that large enterprise in the Edwardian period falls fairly neatly into three broad groups: railways, banks and amalgamated manufacturing firms, which we will deal with in that order.

2) Structure and Technique on UK Railways. Part A - Structure

As the single biggest category of large enterprise in our period the railways would require attention. The railways have further significance, however, for their place in Chandler's account of the rise of modern business corporations in the US: The Visible Hand describes the railroad companies as the first modern business enterprises. Chandler shows that at least some of the railroads developed both

structural and technical/administrative innovations that then flowed into other industries by adoption or by recruitment of skilled personnel. He demonstrates an almost apostolic succession leading from railroads through steel to Du Pont and General Motors, modern corporations in their finished form.

Thus the potential seminal role of UK railways is clear. If there was a general failure by UK enterprise to develop managerial hierarchies then we might expect that this failure would first become apparent on the railways and as a consequence inhibit developments elsewhere. Chandler is clear on the structural preconditions for innovation on some US railroads: managers were not subject to tight control by boards of directors and were able to create a top management without day to day functional or departmental responsibilities which as a consequence was able to manage the organisation strategically. Decentralised divisional structures carried out the day to day running of the railroads subject to statistical and accounting control from HQ.(6)

There was an element of creative voluntarism involved: the managers on some railroads did not innovate though they had the opportunity. Some railroad managers were prevented from innovating by boards of directors. Under these non-innovative circumstances the structure adopted was of functional departments whose chief officers reported to the President - a full time chief executive. Chandler describes this as "truncated top management" because the President was the sole top manager with no functional responsibilities.(7) As we shall see, the structure of UK railways did not even attain this level of generalist management.

The structure adopted by British railway has fairly obvious historical roots. The first railway like earlier joint stock companies had directors whose job, they assumed, was to manage the line directly.(8) For example:

In 1831 the Directors of the Liverpool and Manchester railway were solemnly deliberating such matters as the bad loading of an individual wagon, the dismissal of a clerk for drunkenness ... in short, endeavouring to conduct the day by day management of the line.(9)

This soon became impossible and the directors had to delegate tasks to paid officials but reserved as much power as they could to themselves. The consequence was that as functional officers were appointed as functions were split (for example by separating responsibilities for locomotive and carriage & wagon building) or increased (for example by ferry operation or hotels) committees of directors were set up to supervise each of the functions. Chief functional officers were generally appointed but no chief executive officer. As an American observer put it: All the main functional officers "were co-ordinate, and nobody short of the directorate, unskilled in railroad operation could harmonise their work on the interests of the whole company".⁽¹⁰⁾ That is to say all the chief officers were equal in status and independent. They had to mutually co-ordinate their work because no one chief officer had the power to coerce the others. Only the board had the power to tell chief officers what to do.

The situation did not stay entirely static. By about the end of the nineteenth century "by almost imperceptible steps, the authority of the general manager [had] been extended to cover nearly all phases of current or dynamic railway operation. Static railroad operation, or responsibility for design and general policy, still [rested] with the directors and their departmental heads."⁽¹¹⁾ That is to say that the general manager would oversee the running of trains and the services to the passengers and goods they carried. But the civil and mechanical engineers were responsible directly to the board for the production and repair of rolling stock and the building and repair of the permanent way. The solicitor and company secretary also reported to the board directly. The company secretary was responsible for financial matters (to which the general manager's writ did not run) and also, somewhat bizarrely, for hotels and refreshment rooms. The company secretary was a powerful figure "often nearly co-ordinate with the general manager".⁽¹²⁾ Thus the railways carried the marks of their early Nineteenth Century origins up to the First World War. The Chairman of the railway Shareholders Association could write in 1913

While the duties and responsibilities of railway managers have been growing year by year in numbers and in magnitude, the executive organisation has undergone no corresponding development. It remains very much on the primitive lines of its infancy. Its ideas, regulations and methods are often those of eighty years ago.(13)

The number of committees of the board could be large, with the various internal supervisory committees supplemented by joint committees with other railways. The sheer numbers of committees must raise questions as to the effectiveness of the system. The relatively modest North Eastern Railway (NER) had between six and seven functional supervisory committees.(14) The Midland Railway had ten to twelve supervisory committees and anywhere between 16 and 27 joint or representative committees.(15) The London and North Western Railway (LNWR) had fully 16 supervisory committees and 39 joint or representative committees.(16) (These break down into 13 "lines leased" bodies, 21 joint committees with other railways and 5 delegate bodies like the Clearing House.)

The attendances of the various functional chief officers at the supervisory board committees is consistent with the fragmented "co-ordinate" management described above. We may take the LNWR as an example.(17) The Company Secretary attended finance related committees (and the Hotel and Medical committees) and the General Manager did not. The latter attended only those committees which concerned goods and traffic operating. These the Company Secretary did not attend unless there was a financial relevance (for example Cartage and Agency). The Chief Mechanical Engineer attended the Locomotive and Traffic Committees but the Secretary or other financial officers attended neither. The General Manager only attended the Traffic Committee of these two. None of the above attended the Permanent Way Committee which had civil engineers attending. The organisation charts which were published from time to time before World War 1 showing a managerial hierarchy culminating in the general manager were therefore misleading (see Appendix II). There was no empowered co-ordination below the level of the board whatever working arrangements were arrived between officials.

It is true that contemporaries saw the general manager as holding the highest status of the railway officers and this is confirmed by their pay which was also the highest.(18) A contemporary could argue for example that despite the lack of control by the general manager over civil or mechanical engineering activity or the financial aspects of the railway and

although the heads of departments engaged in these ... branches of administration are responsible to the board directly, not to him, their work is so intertwined with that of the traffic branch that their main operations are brought under his cognisance and their more important proposals receive his approval before being carried out. In this way he gains the connected comprehensive knowledge of the affairs and needs of the company ... which is necessary to him as chief adviser of its board ... (19)

This account suggests that the general manager might have the power to know what was going on and, *in extremis*, to veto proposals, but this power is strongly countered by the separate access to the board by chief officers of other departments and the rigidly separated nature of the departments - described by one railway chairman as "watertight".(20) Any assertion that there was a generally accepted right by the general manager or the traffic departments to dominate the other departments must also be called into doubt by accounts of long-running inter-departmental feuds.(21) In any case, the general manager was heavily burdened with his own duties with little time to interfere with other departments. An American observer wrote that the general manager "cannot do very much more than co-ordinate: he is doing work which would be performed on a large American road by at least three vice presidents and a general manager besides, consequently his scrutiny can only be general."(22) This was not so much, then, a case of truncated top management as of no top management.

Since there was no empowered co-ordination below the level of the board, the nature and scope of the control exercised by the boards of directors is central to an understanding of the way the railways were managed. As we shall see, in terms of expertise, decision making and method of control, board control was defective. The

expertise of the boards was severely limited. Apart from the occasional retired general manager (representing, as we have seen, a limited part of the business) railways boards were not drawn from people with practical knowledge of railways operation. Often they were landowners or customers watching out for narrow sectional interests. There was also a strong representation from peers and MPs recruited to protect the railways' interests in the legislature.

As one disgruntled London and Northwestern shareholder put it: "in the vast majority of cases they [railway directors] are elected for every other reason than because they have expert knowledge of railway business." This was true.(23)

Many directors' interest in their railways' affairs was desultory. However, it is said that for some director MPs in what was called "the efficient interest" it became the case that "the power and the responsibility developed into a career at least as important and vocational as that of being in Parliament."(24) This appears, however, to have been a career dedicated to the pursuit of railway interests in Parliament and politics generally, rather than applying themselves to the actual business of managing railways.

This can be seen in the time actually spent by directors in managing the railway and the nature of the decisions they were called upon to make. Board committees and the board itself generally met monthly. On the LNWR there was a strict timetable of meetings compressed into two days. Functional/departmental committees with slots of one or one and a half hours were run in parallel on the first day with the Finance Committee and full Board meeting on the second day.(25) On the evidence of the records of those meetings, the business conducted was overwhelmingly routine with a great emphasis on approving expenditure items down to tiny sums: lists of "debts and defalcations", approvals for repairs to fences, lists of all approved wage rises in all departments fill the books. These expenditures were in turn approved by the Board.(26) Apart from periodic directors' inspections in each of the LNWR's ten districts(27) this appeared to be the sum total of directoral oversight.

Inevitably the question must arise of where the power lay in such an apparently thinly controlled system. It might even be asked whether such a system would allow sufficient freedom to managers to innovate. It has, for example, been argued that by the 1900's "the increasingly complex technical matters with which railway directors had to deal put them largely in the hands of their general managers and other staff officers."(28) But surely this had been the case, if it was the case, from the beginning. From very early times the board had expert technical employees to advise them and if they were in the hands of their officials they would also have been in this situation from the beginning. It could be argued that UK railway allowed scope for intra-departmental willfulness, particularly on the part of chief mechanical engineers but this is to ignore the key element in the power relationship between board and officers: the experts might propose but the directors disposed. In a number of key ways the directors retained control: they controlled expenditure, they determined the management structure and in consequence they controlled the careers and aspirations of managers.

As we have seen, expenditure control was a central concern of the directors. This stemmed straightforwardly from the director's role as stewards of the shareholders' funds. The attitude of the directors was clearly stated by a general manager of the LNWR: "no expenditure whatever is incurred without the direct sanction of the Directors' expressed by a minute of some committee approved by the Board." (My underlining) In the case of capital expenditure the plan was not only approved by the board but signed by the Chairman and

that gentleman, who keeps a watchful guard over the Company's pursestrings, has to be convinced that the expenditure is not only desirable but actually unavoidable ... Thus the shareholders may rest perfectly easy in the assurance that their money is not dissipated ... (29)

Expenditure was indeed controlled through the use of board minutes. Surviving books of account show minute numbers against expenditure items which allowed straightforward audit trails.(30) It also prevented unauthorised expenditure and given the control of the finances by the company secretary, who also had charge

of the board minute books, showed the rationality behind the combination of these two functions. The consequence of this system was that any proposal for change that involved any expenditure would have to be taken to a parsimonious board to be picked over. A money-saving attitude expressed itself in positively trivial ways: for example, re-shuffling of staff on the retirement of top-of-scale staff were usually accompanied by the litany that it would "effect a saving to the Department of £x per year"(31) without the obvious rider that subsequent inevitable increases would bring this back up again. When the Midland Railway's general manager reorganised his Goods Department, his directors minuted no expectations of improved efficiency or more business only a request for "particulars of the extra costs involved".(32) Innovations that cost money were inevitably discouraged.

As well as controlling expenditure the board controlled the management structure, as we have seen, through reporting lines from functional departments to committees of the board. Careers were limited to single departments, and although some movement across the traffic departments did appear possible, promotion by seniority and the heavily regulated and rule-run nature of the work tended to limit aspiration. While changes could be effected in one department, albeit with difficulty, the departmental rigidity meant that change was well nigh impossible across the company as a whole. There was no chief executive officer able to make proposals for change and the board's function was essentially supervisory not innovatory. The Boards were not orientated towards change and were without difficulty able to prevent change initiated by others. On occasions it appeared that even when boards felt change was desirable they felt unable to do anything about it.

We may take as an example the furore caused by the appointment by the Great Eastern Railway of an American to the post of general manager in 1914. The Chairman justified the appointment on the following grounds;

It was a subject of great regret to him and to all chairmen that on the English railway system at the present time there was an acknowledged dearth of first-class men coming to the front capable of fulfilling the duties of general manager. But it was not confined to the office of the

general manager. There was a dearth of first rate men coming to the front for even the minor appointments in our great railways. He was sure that in these days of education there were as many able young men as there ever were in the ranks of the railway companies. Why did they not come to the front; all our railway systems were divided in what he would call water-tight compartments. The traffic, goods, engineering and other departments were kept so apart that as a rule there was very little interchange from one to another on the part of the young men employed. The inevitable effect of that was to remove on the part of these young men any incentive to new ideas and new methods.(33)

But the solution was in the hands of the Chairman and his Board! Yet the peculiar conservatism of the UK railways seems to have treated its structure as an immutable given fact. Even though the Great Eastern Chairman knew about methods used in the USA to develop management talent(34) it does not seem to have occurred to him that he and his Board might introduce these methods into their own railways.

3) **Structure and Technique on UK Railway, Part B: Control Technique**

As we have seen, a key element of Board control was the close supervision of expenditure approvals, enforced by an accounts department outside the control of the "spending" departments. An examination of railway minute books and reports to the Board does not reveal much else. There were studies of running expenses and coal utilisation by locomotives(35) and before the First World War there appear to have been attempts to introduce "scientific" methods into the engineering workshops.(36) (This will be subsumed under a discussion on costing on the LMS in a later section.)

Particularly noticeable is the failure of the railway to develop or adopt new techniques - particularly costing techniques - in the face of an apparent crisis of profitability in the 1901 trade depression. This brought about requests from at least one heavyweight shareholders' action group for improved methods and statistics.(37) More importantly, it brought about a series of articles from a prominent railway economist, Sir George Paish, published in book form as The British Railway Position in 1902. This demonstrated quite clearly that a system of close supervision of

expenditure approvals did not amount to close control of expenditure. Paish was able to show that profitability had declined over 20 years and that this was the result of increasing expenditure rather than declining income:

wages and other costs have risen during the past twenty years and ... until now British companies have been content to meet the advance in wages out of the profits arising from the additional traffic instead of increasing the efficiency of the dearer labour by a more skilful and more economical handling of the traffic.(38)

Paish was able to contrast this situation with the performance of US Railroads where considerable efficiency savings had been made. Paish proposed that performance data could be derived, and made available to a general manager in sufficient detail "that he can immediately ascertain on which portions of the system the greatest ability is displayed in handling the traffic economically. Thus he would be in a position to compliment or censure district superintendants, who should be held directly responsible for the economical handling of the traffic in their various districts."(39)

The implementation of Paish's proposed system could have allowed comparisons of performance over time and between companies. (The cost centres based on districts and district superintendants would probably be problematical since in a unitary system it would be difficult to disentangle the elements relating to the performance of single districts.) His system did not get under the surface into the details of railway operation in a way that could accurately identify cost elements for remedial action by managers. Essentially it was an instrument of general oversight, particularly for investors or the board. Proposals to include such statistics with the statutory railway returns were fiercely resisted by the companies and were not adopted.(40) Nevertheless, Paish's study laid bare the very limited nature of the available management information.

Paish's investigations into the economic performance of railways over time had relied on information supplied by LNWR officers. Thus, had they wished, the

railways could have derived their own time series of performance but there is no indication that they did so either publically or privately after Paish showed what was possible. The information available, however, to produce his proposed system of performance indicators - average receipts per passenger per mile and per ton of freight per mile, average train loads and car loads etc - was "not only ... absent from the published reports but is known not to exist."(41) And if the averaged data was absent even more so was the kind of detail which was necessary to make informed management decisions at operational level.

At the heart of the problem was the treatment of "aggregate expenses". The only costs that could be directly apportioned to passenger or freight traffic, for example, were repairs or renewals to carriages or wagons, compensations for passengers or goods and Government duty on passengers. That is to say that separate costs for passenger or goods traffic were only known in the case of those transactions which crossed the boundary of the general manager's departments. All that was known otherwise was the total costs of operation for all the departments under the general manager's control. In making up their accounts and statistical returns the railway companies apportioned these total costs on the astonishing principle of "dividing the aggregate expenses in proportion to the receipts for the respective classes of traffic."(42) This was more than "extremely crude" as Paish puts it, it defeated the whole object of allocating costs: to detect areas of inefficient working and reform them.

So while, say, the Chairman of the LNWR could publicly admit that Paish's criticisms were "ably drawn" and "perfectly true" and could state that the railways "were prevented by Parliament from making profit in any other way than by economising"(43) the railways had no means of knowing where economies should be made or how effective any initiative might be. So when detailed instructions were issued by the LNWR to staff in 1905 to increase the tonnage of freight per train, which was one of Paish's suggestions, the railways simply could not quantify any resulting benefits.(44)

The question must arise, though, whether it is realistic or fair to criticise the railways for not adopting techniques which might have been theoretically possible but which did not exist at the time in any useable form. As Bonavia puts it:

One danger besetting historians ... is that of criticising a failure to employ techniques that hardly existed, if at all ... Examples may be found in traffic costing and staff productivity. Perhaps one may argue that the science (or art) of traffic costing did not have to wait upon any scientific or technological breakthrough and so it could have been developed earlier. The fact is that nowhere in the world was it effectively practised - and this despite the efforts of the Interstate Commerce Commission in the USA.(45)

But, it can be argued, the failure to employ costing techniques was not a theoretical but a real practical failure to adopt known techniques. Detailed costing was carried out by US Railroads and was not unknown to UK railways. Gibb of the NER and Paish had done the rounds of US Railroads.(46) They were not alone, there were regular visits but as one jaundiced account has it these "holiday trips have generally been limited to high officials ... on a flying trip of two or three weeks, most of which may be spent in festivity and sight-seeing." UK railways were urged to take the US example seriously and send across technical people like "our railways accountants, the class who, next to engineers, have the best right to be consulted." The writer, the Chairman of the railways Shareholders' Association, went on

They will, we doubt not, be cordially received and have everything lucidly explained to them. They will see in the accountants office how minutely every item of revenue and expenditure is recorded, how carefully it is analysed and tabulated, and how the results are passed on to the heads of the respective departments. They will find passenger and freight train accounts distinguished from each other ... The final result ... is a profit and loss account for every train run. It may not be absolutely exact, but it is at least an honest approximation and for comparative purposes it has great value ... roads may differ ... in their classification of receipts and expenditure but there is a definite standard recognised and being worked up to. On our own railways there is no standard of any kind or even an approach to it.(47)

The writer's endorsement of US methods is perhaps over-enthusiastic. Work by US scholars has been critical of the managerial effectiveness and the technical accuracy of US railroad costing. Their argument is given in a footnote (48). For the purposes of a discussion of UK railways, however, it is clear from these scholars' work that even if they were flawed the costing methods deployed on US railroads before World War One gave average costs per passenger mile and per ton mile for distinct classes of traffic at a level of detail which allowed managerial decision making and monitoring. This was well in advance of UK practice.

This latter remark is perhaps not entirely true. One railway, the NER under its general manager Gibb, carried out traffic costing though admittedly on a limited scale.(49) These exercises showed, for example, wide variations in profitability in handling coal from different collieries. Costing techniques were also applied to particular lines and to particular classes of work, such as shunting. While the exercises did not long survive the departure of George Gibb in early 1906, they demonstrate that costing was a practical proposal before the First World War. All that was required was the will to do it. Given the pressures on profits and the perceived need to cut costs we may ask why there was no such will.

The most likely explanation is a combination of conservative inertia and an unwillingness to spend any more of the shareholders' money than appeared absolutely necessary. The collection of ton-mile statistics, for example, was opposed generally by the railway companies "as a costly and, for all but statistical specialists, a useless luxury."(50) It was said that "the cost of compiling them was ... excessive in comparison with the usefulness of the result to the officials of the line."(51) But even when an official of the line, Gibb of the NER, alone among general managers, asserted the usefulness of ton-mile statistics to him, their eventual publication was at the expense of running disputes with his board.(52) This was despite the fact that Gibb estimated before introducing them that "with proper organisation the cost should not be great" and that the results would effectively pay for them.(53)

But if resistance to ton-mile statistics was strong and general on the grounds of cost how much more likely was resistance to a system that gave "a profit and loss account for every train run". Ton mile statistics certainly required the separation of passenger and freight operation in the books and the apportionment of running expenses on the basis of sampling (for example track wear and tear by freight as opposed to passenger traffic). Nevertheless, it remained an essentially financial accounting exercise, performable within an existing accounting department. The more detailed systems of management accounting, however, would require radically increased information flows and analysis. Even here the practical means were to hand to process the data in the shape of the Hollerith machine.(54) The chief Accountant of the London and Southwestern Railway, for example, was using the Hollerith to build up the railway returns to Government before the First World War and the company also appears to have been using it to control stock inventory.(55) The way in which the Hollerith allowed punched cards to be "sorted, counted, added and recorded in every conceivable way"(56) was well suited to costing and similar machines were so used by , among others, Austin Motors in the inter-war years.

But a further explanation of the failure to adopt known and available control techniques lies in the structure of the companies, the knowledge and aspirations of managers and the question of the locus from which techniques could be initiated. Putting it simply: if the directors would not initiate them on the grounds of expense or because of amateurish ignorance, who could? The accounting sections of the railways were under the control of the Company Secretary and this could only reinforce an existing bias away from management accounting towards financial accounting with special reference to shareholders' business:

In the majority of cases those connected with [the Accounts Department] seem to take a pride in disassociating themselves from the practical side of the business, and express a lofty contempt for it and its methods. Their ideal, and their sole ideal, is too often to build up annual accounts for submission to shareholders in general meeting.(57)

General managers appear to have had no control over any accounting manpower and generally because of the departmentally restricted career path were overwhelmingly likely to be "track and train" men with expertise in operations rather than accounting. Even when, like Gibb, they came from other backgrounds (Gibb had been the NER Solicitor) their room for manoeuvre was small. And when they tried to increase their powers they were blocked by their boards.

In this way the themes of management power and management technique inter-connect. The case of Gibb is illuminating here. In 1905 Gibb tried without success to persuade his board to make him Managing Director of the NER. After his struggles over the publication of ton-mile statistics this was surely more than a request for "some kind of recognition for his long and exceptional service" as a recent historian of the NER puts it.(58) As managing director he would have the power to manage the whole company delegated to him by the board. This would have established a full time chief executive with the power to intervene in any part of the company's operations. It would have reduced the power of the board over him. He would have been in the position to institute sweeping reforms without having to constantly refer back to the board for permissions. Despite a consolation presentation of £5,000 and a formal minuted appreciation, Gibb left to run a London underground railways (at a much increased salary) in early 1906. He was, however, invited on to the NER board. It was not a position which could ensure that his remaining proteges' reforming zeal would be effective. He left the NER board in 1910.(59)

The production of more sophisticated control information was of little use if it could not be used effectively. It could not be used effectively if the organisation within which it became available would not allow organisational change or resource allocation decisions to be made on the basis of this information. In order for information to be used as a management tool there has to be a management in place able to use it: a unified power structure operating an agreed strategy. Gibb's victory in compiling and publishing ton-mile figures was undermined by his defeated attempt to change the NER structure in a way which would have allowed him to use them.

The pre-World War One railways demonstrate, then, that structural change was necessary before better control techniques could be introduced, structural change that integrated day to day management and radically reduced the power of the amateur part-time board. But without an external *force majeure* in the shape of predatory investment banking (as in the USA) or the state (as in Europe) the boards were immovable. UK financial institutions showed no signs of being prepared to attempt intervention and reorganisation in railway companies. The banks had no tradition of taking over and managing firms directly. The company promoters who in any case probably could not have raised the huge sums of money required were essentially short term speculators rather than long term investors. The UK state also showed little inclination to go further than certain forms of regulation: Parliament was quite prepared to legislate on the control of railway charges or employment practice but showed no signs of wishing to nationalise.

The shareholders, too, while hungry for dividends and jealously conscious of US efficiencies were also uneasily aware that their enfranchisement through their representatives on the board - however unsatisfactory - was threatened by US methods. As the Chairman of the Railway Shareholders' Association put it in a discussion of US and UK railways:

[In the UK there] are no Vice Presidents in charge of special departments - finance, stores, etc. Presumably their place is occupied by the Committees of Directors who do a large amount of departmental supervision. These may not be so expert as their American counterparts, and they may not have such a firm hold on all the administrative details, but on the other hand they are in much closer touch with the shareholders.

In American Railroading shareholders count for very little; often they are entirely ignored, and the utmost civility ever paid to them is to solicit their proxies for the annual meetings. British shareholders do see their Directors and Managers now and then, and it is their own fault if they get very little information out of them.(60)

So calls for managerialist change could not be particularly expected from that quarter. For pressure to mount for strong outside intervention a major crisis, either

financial or in the provision of services was required. There was no such crisis. Nor was it likely that any internal crisis of management control would force structural change: as Chandler has pointed out, it was perfectly possible to run railways without the voluntarist managerial mutations which occurred on certain US Railroads. The consequence was, however, that the UK railways were not a source of management expertise for the economy generally.

4) **Structure and Technique in Large British Banks**

British banking was transformed between the late 1870s and the four years after World War One when a "final frenzy" produced the "Big Five".(61) Stimulated by slump and a banking crisis in 1878 to diversify and increase deposits to reduce risk, expanding banks began to acquire others in mergers of ever-increasing size. As a smaller number of ever-larger competitors emerged their ambitions crystallised into the achievement of a national branch network and, where they were a country bank, to acquire a London base to carry out the lucrative trade of the City. As the banks grew their administrative structures had to cope with a greatly expanded volume of business and the associated problems of co-ordinating new specialist functions. We shall see that the administrative solutions to these problems were relatively straightforward, however. We shall also see that larger banks adopted similar policies in the use of board committees and the role of top managers.

Where banks did differ was in the degree to which autonomy was retained by the constituent firms making up an amalgamation. Three banks may be taken to represent the range of variation; the Midland, Barclays and Lloyds. The Midland was the most ruthless in suppressing the identity of acquired banks. The result was a business run from its London HQ with barely a trace of local autonomy.(62) Barclays stood at the other extreme. It was formed in 1896 in a defensive merger by 20 private banks who wanted the safety and other advantages of size without the loss of local autonomy. Barclays had a board of directors and an HQ in London but the individual amalgamating banks became "Local Head Offices" and their former partners became local directors. As Barclays expanded by further acquisitions it

distributed branch banks among existing Local Head Offices or created new ones. By 1926 there were 33 local head offices.(63) Lloyds Bank took a middle course between these extremes: the boards of the more prominent acquired banks continued as local committees whose influence, however important initially, was allowed to steadily decline over subsequent decades.(64)

The key commercial decisions that banks had to make were decisions on loans. If local autonomy was to mean anything, local boards had to keep control of these decisions.(65) If local autonomy was lost these decisions were centralised. Because of the directors insistence on keeping close control of these decisions, however, there were consequences both for the structure and roles of boards and managers. The limits to which branches could lend without reference to the board were relatively low: the Midland required board decisions on loans over £2,000 but others had limits as low as £300.(66) As a result the volume of work that the boards reserved to themselves was large and committees of directors had to be formed and meet frequently to cover it. Generally it was said that boards met weekly and held board committee meetings on three or four days a week.(67) This is confirmed by arrangements at the Midland: by 1900 it had five board committees and they and the board met weekly. (The process was to continue, six more board committees would be added by the 1930s.)(68) Barclays and Lloyds varied from this pattern only to the extent that these decisions were delegated geographically to local directors' committees rather than committees of the main board meeting centrally.

Because the commercial decision-making was largely reserved to the board and its committees the role of senior management was restricted to control of the administrative structure. At the top of the management structure the Midland, Lloyds and Barclays all had single chief executive officers as long as they were going through their dynamic periods of amalgamation and expansion. Edward Holden of the Midland also extraordinarily combined his chief executive function as managing director (from 1898) with that of Chairman (from 1908) until his death in 1919. The Midland's last major merger was in 1918.(69) Barclays kept a single general manager until a last major merger in 1918.(70) At Lloyds a single general manager

was in place until his retirement at the end of a series of three post-World War One takeovers between 1918 and 1923.(71)

Once this period of expansion ended, however, these banks did not keep single chief executives but relied instead on joint general managers. The Midland used its three existing ones. Barclays added a further three to its existing one. Lloyds appointed five, later reduced to three. The effects of these appointments was to emphasise the co-ordinating role of the board and its committees and to remove any empowered co-ordination below the level of the board. Thus as banks moved from what might be called the heroic to the organised phase, the boards moved to decisively weaken managerial power. It has to be said, however, that the consequence was no obvious weakening of operational control or commercial effectiveness. This may be because the methods of controlling operations were well established and the comfortable oligarchical position of the banks did not bring strong competitive pressure to bear.

Because of its strong centralising tendencies the Midland may have been a pioneer of standardised methods: by "the late 1890s, Midland branch managers worked to standardised regulations and procedures, continually updated by new instructions and circulars."(72) On the other hand the Institute of Bankers had been holding qualifying examinations from 1880 which included papers on the practice and law of banking which indicates a common body of professional knowledge.(73) Textbooks published before World War One also assume common practice across different banks.(74) Indeed, it is said that the later bank amalgamations could proceed smoothly because of common well-established routines: "... the acquisition of a new bank has simply resulted in the enlarging of operations transacted on well-defined lines."(75) As far as the control of branches from headquarters was concerned, use was made of two parallel hierarchies. The first hierarchy was line management running from the general manager through district superintendant to bank managers. The second hierarchy ensured compliance with set procedures through local inspectors to chief inspector to general manager. This was augmented in some cases by inspection of branch accountants' work by inspectors from the chief

accountants office at HQ.(76) Once established, this structure seems to have been capable of almost unlimited expansion. The routine nature of branch banking was eminently suited to standardised forms of reporting, none of which required any particular advance in technique to develop. Essentially, each branch bank sent in a trading account daily to head office which could readily be reconciled by inspectors by reference to branch balances held at HQ and cash in the tills at the branch.(77)

At least one contemporary identified the organisation of HQ functions as a more daunting task: "The most difficult problem ... is to relate and co-relate the work of the different departments. To overcome this difficulty necessitates elaborate machinery for the purposes of communication ..."(78) Unfortunately the available secondary sources do not allow any detailed analysis of the banks HQ management structures. Interesting questions must therefore remain unanswered including whether general managers controlled some of the special functions at HQ or whether there were independent Chief Accountants and the like, or whether senior officers attended committees and, if so, which ones.

There is much in our discussion of banks which echoes earlier points made about the railways, in particular the substitution of committees of the board for delegations to managers and fragmented top management structures. There are further echoes. At least one contemporary feared that the increasingly rigid bureaucracies would undermine the banks' ability to provide for management succession.(79) They also identified a decline in profitability after amalgamation. From 1874 to 1923 net profit as a percentage of "Total Working Resources" for English and Welsh joint stock banks declined from 1.88% to 0.57%.(80) The cause of this decline was identified as an increase in expenses which came from two sources: 1) the number of branches consequent upon competition and amalgamation and, 2) the increased costs of the "elaborate machinery for the purposes of communication." No attempt was made to quantify the contribution of each source, at least publicly.

In the event the banks simply passed on the increased expenses through reduced deposit and increased loan rates to customers. This course, not open to the

railways whose rates were fixed by government, was made easier by the oligopolistic position of the banks after the amalgamation wave. While a process of rationalisation and mechanisation was to proceed during the interwar years, it was slow and apparently without great urgency. Before World War One, while mechanical accounting methods were known, they do not seem to have been viewed with much enthusiasm.(81) It could be argued that a wholesale commitment to cost-cutting would have involved a decisive degree of delegation to full-time managers - it is a task which would be impossible for a part-time board, no matter how hard working, and was resisted for that reason. Yet the decline in bank profitability, while real, does not appear to have caused an outcry even comparable to that over the railways before World War One. From the lists at Appendix I we can calculate that the top 10 railways' shares stood at an average of only 92.6% of their face value, while the eight joint stock banks in our sample stood at 350% of their face value. The banks therefore do not seem to have been under any particular external pressure to change and the relative simplicity of their operations appears to have allowed growth through amalgamation to proceed without the kind of stress that might lead to radical managerial innovation.

5) **Structure and Technique in Large Amalgamated Manufacturing**

Companies:

Part A: the Steel, Shipbuilding, Armaments Conglomerates (Vickers Sons and Maxim, W G Armstrong Whitworth, John Brown)

Each of these firms by various mergers, acquisitions or partial acquisitions constructed themselves as shipbuilders and armaments suppliers in the last decade of the nineteenth and the first decade of the twentieth century.(82) They were all multi-plant, multi-process companies within which one might have expected great returns from efficient control. But while technical advances were made such as the specification of armour plate, the firms remained too loosely integrated and controlled to realise their potential advantages. This looseness of control manifested itself both as between the separate sites and the centre and within the sites themselves. The

companies could survive and prosper with this type of structure and control before World War I but were left dangerously exposed in the inter-war years.

Vickers(83) was established as a Sheffield steel firm for some 30 years before moving into armaments, which began with a minority shareholding in the Maxim Company in the 1880's. While Albert Vickers became Chairman, "effective managerial supervision remained with the ebullient and cantankerous Hiram Maxim and in no way could Vickers have been said to control the smaller company..."(84) Overall financial control of Maxim was purchased in 1897. It is not clear what changes, if any, were made to local management in the Maxim factories when Maxim sold out. A shipbuilding firm in Barrow was also purchased in 1897. In 1902 a half share of W. Beardmore of Glasgow was acquired but the management remained largely under the control of the Beardmore family. The Whitehead Company which managed torpedoes was subsequently jointly purchased with Armstrong Whitworth.

The relationship with Beardmore was particularly troublesome.(85) Vickers' substantial investment in Beardmore was not profitable, indeed the company was losing money, and for a while from 1906 to 1909 "Vickers had completely lost control of the [Beardmore] board."(86) By the imposition of a deputy managing director, some control over expenditure was achieved by 1910 - though William Beardmore still retained seniority as Chair and Managing Director. The wholly-owned acquired firms did not present this kind of proprietorial difficulty yet it appears that all the subsidiary companies were left much to their own devices until events forced them onto the main board's agenda. Inefficient working in the subsidiaries of Vickers remained unnoticed after the slump which followed the Boer War until a revival of demand and production delays brought it to the board's attention in 1909-1910. In 1910 the Board became aware of slow production and high costs at the ex-Maxim factory at Erith. This had to be dealt with by bringing-in outside consulting engineers rather than using the Erith management or a task force from Vickers itself. It is not at all clear that the exercise was a success. A committee of enquiry led by a board member promoted from the senior management of the Barrow shipyard itself found it in a sorry state in 1912, worked "in an indifferent and expensive manner with

inadequate facilities for rapid production".(87) Trebilcock judges that Vickers "moved rapidly to counter the deficiencies which the reconversion to high intensity work threw up"(88) but it seems just as possible to say that increased demand found them inefficient and unprepared not having used the period of slack work from 1903 to 1910 to control and cut costs and reorganise. Credit must be given, nevertheless, for an active response by the Board once it became aware of problems.

As far as one can judge from the available secondary sources then, the board did not manage its constituent parts in any detail, effectively delegating operations without corresponding return flows of management information or a centrally determined investment strategy. The institution in 1912 of detailed forecasts of capital investment from all branches of Vickers was clearly an attempt to control rising demands for investment but was nevertheless responsive rather than pro-active. The fallibility of a structure controlled in this way was demonstrated by the uncontrolled diversification and collapse of the firm immediately after World War One.(89) They were, nevertheless, an admired, feared and profitable firm before the War.

Armstrong Whitworth had acquired a range of facilities in shipbuilding, steel and ordnance by 1900, rather earlier than Vickers, but on profit record Vickers were moving ahead of Armstrong Whitworth by about 1904-5.(90) The most likely cause of Armstrong Whitworth's decline was its control, from the late nineteenth century by a coterie dominated by the Chairman, Sir Andrew Noble and his two sons. Noble, unlike Vickers, resisted the importation of new blood even when this was essential to keep open the commercial channels between the firm and the UK government.(91) He clearly intended to treat the firm as personal or family property, demonstrated by his taking high undisclosed (and probably illegal) salaries (sic) out of the firm and the express intention to leave his sons in control on his death.(92) A group existed within the directorate opposed to Noble and with a modernising agenda but its leader, Lord Stuart Rendal, did not go onto the board until 1911 and died in 1913. His short period of influence and the subsequent effects of the War meant that "the reforms

engineered by Rendal never really took root and the management structure of the company remained largely unaltered".(93) The firm collapsed in 1927.

The consequence of Noble's hold over the company was a structure with all the branch autonomy of Vickers but without the responsiveness of its board. The reforms initiated by Rendal are significant both because they represent contemporary good practice and are indicators of what had been (and largely remained) missing in the company. Rendal made attempts to recruit new people with strong UK government and City connections to the board, both for commercial reasons and to weaken Noble's grip. He also made specific organisational proposals for the establishment of local directors and a Finance Committee.(94) The function of a local director was to act as the top manager of a constituent firm with the power of a managing director but without an actual place on the Board of Directors itself. Its effect was firstly to create a single focus of authority to control tendencies towards departmentalism within the subsidiary and, secondly, to co-ordinate subsidiaries by local directors meeting together on a local board.

The Finance Committee was established in December 1911.(95) It is significant that its draft remit was modified by the Board at the outset in two key ways. The committee retained the power to supervise capital expenditure, advise on the level of dividends and also monitor and advise on the financial effects on the parent company both of subsidiaries and working arrangements with other firms. As originally drafted by Rendal it would have had power over "Questions of Current Finance, especially the proper supervision of department expenditure and the monthly centralisation of all departments' financial affairs" and also "Matters of Account, such as costs, Plant and Materials, Work in Progress, Personal Accounts, etc." The final version approved by the board in January 1912, however, omitted supervision of departmental accounts and weakened the supervision of costs to "costs of important orders" and other matters of account to their effect on the balance sheets. The effects of these changes were to drop proposals which would have allowed central financial monitoring at a level of detail that would have allowed management target setting (eg on costs) or investment planning at the departmental level. What remained was a

more vague expenditure control, oversight of capital required and return on investment at the level of the subsidiary as a whole: financial rather than management accounting. Proposals for departmental profit and loss accounts appear to have foundered in 1913 - significantly the year of Rendal's last illness and death.(96) A system of six-monthly capital budgets was introduced in February 1912 but control does not appear to have been particularly tight: the Whitworth works at Openshaw, Manchester, was revealed to have committed £204,000 of capital expenditure in November 1913 without having formal authorisation from the board. They claimed "verbal authorisation" presumably from the Chairman, Sir Andrew Noble.(97) No reports on costs of any kind were received by the Finance Committee before World War One and a new remit for the Committee in June 1915 dropped any mention of them.

The local board proposed by Rendal in March 1910 was finally announced by Sir Andrew Noble at the AGM held in April 1912 with its function described as "to deal with departmental questions".(98) No minutes of the local Board survive. There are references to the "Works Board" in the Finance Committee minutes in 1913.(99) No references have been found thereafter indicating either the demise of the local board or its complete marginalisation.

Less is known about the structure of John Brown and Co but it would appear to have been considerably more balkanised than Vickers, owning a shipyard outright, a majority share in another steel firm and jointly owning the Coventry Ordnance Company with Cammell, Laird. Macrosty treats John Brown and Cammell, Laird as a "community of interests"(100) indicating a set of loose arrangements. Nevertheless, John Brown did have an established two-tier board structure in 1913, with a local Board of four.(101)

We have some insight into the costing techniques used in parts of Vickers and Armstrong Whitworth from a survey carried out for comparative purposes in 1902 as part of a study of the State Ordnance factories by the War Office.(102) This showed fairly wide variations in practice between the Vickers Erith and Sheffield plants and

both were less well developed than the Armstrong Whitworth works studied at Manchester. In one respect, however, all the works visited were consistent: a separation was made between the works management, largely the responsibility of the foremen, and "Works Accounts" who gathered cost data. Works Accounts controlled the time records kept and the ledgers into which issued stores were entered by storemen against an order number. (The implications of this separation will be considered further in Chapter 3.)

At Manchester, variable overhead charges for machinery were on a constant "depreciation per hour" basis; at Sheffield they were either calculated as a notional percentage of wages or by depreciation as at Manchester; at Erith they were not separated out at all. At Manchester the cost accounts showed the cost of any order or part of an order and while this was supposedly the case at Erith, if two identical orders came in close together costing became difficult because it was impossible to keep the two orders separate. (And, of course, the Erith costs would not show variable machine costs.) At Sheffield it was only possible to extract the costs of any order by going back to the primary data. Armstrong Whitworth's Manchester works stood out (by the end of World War One indeed it would be described as a "bright light" of scientific management(103)) but at the same time the finances of the Company's works at Elswick were being privately reported to Lord Randal as being in a badly disorganised state by the firm's accountant.(104) Randal's board resolution of March 1910 specifically called for "the best attainable accountant" to be appointed there.(105) Elswick, then, appeared to be going through a crisis.

We can only conclude that within the same firm fairly wide variations in practice and standards could be found at different sites within it. This is consistent with our earlier remarks about wide delegation to and lack of central control over subsidiaries. It also seems to confirm that management information did not flow back to the centre in any strong way; Vickers would have wished just as detailed cost information from Erith as from Sheffield as would Armstrong Whitworth from Manchester and Elswick if that had been the case. All this appears to flow from the view of these large firms of themselves as alliances of subsidiaries with co-ordination

and occasional coercion rather than management carried out by the board. Rendal's proposals would have tightened up and more closely managed the holding company structure. They would not, however, have even begun to create a coherent management hierarchy for the company.

6) **Structure and Technique in Large Amalgamated Manufacturing**

Companies:

Part B: Textile and Textile Finishing (J and P Coats, Calico Printers Association Fine Cotton Spinners and Doublers, Bleachers Association)

A wave of 18 amalgamations took place in this sector in the years from 1896 to 1900.(106) The effectiveness and organisational form of the resulting large company showed variations according to the number of constituent firms. The most profitable and tightly-organised was J and P Coats. The company was floated on the Stock Exchange in 1890 and by 1896 had acquired its 3 chief rivals in the production of sewing thread.(107) The board of the amalgamated firm always had a strong majority of Coats family members before World War One.(108) The company was strongly expansionary and by 1913 had factories in 14 countries and some 40 associated and subsidiary companies.(109) It was also remarkably closely controlled from the centre. Thread production methods and standards were kept to home quality in every factory. The company had "centralised policy-making for selling and the detailed surveillance and control of its execution" well before the flotation of 1890. First developed by O. E. Philippi as Coats' foreign sales manager for markets outside the UK and USA, they were applied to the Central Thread Agency which was set up in 1889 to sell jointly the thread of Coats and its chief rivals in the same markets. (The Agency acted as a kind of half-way house to the merger.) The selling policies and controls were then applied to all markets after the amalgamation of 1896.

As the company grew so did the power of O. E. Philippi until in the years after the amalgamation, in "all except manufacturing operations he became the main focus of decision-making, and increasingly decisions about manufacturing came to respond

to his suggestions and demands. Other directors, with the exception of the chairman ... were very specialised in their individual departments ..." (110) Philippi was "essentially a Chief Executive Officer". (111) He was clearly one of those rare figures in pre-1914 UK business, an individual without a large ownership stake to whom a board of directors ceded plenary powers. Perhaps the nearest equivalent would be Edward Holden of the Midland Bank.

As far as one is able to judge in the absence of a detailed business history (112) the company structure was essentially a personal one. There appears to have been a "flat" departmental structure with a) the home factories run by family or vendor directors/managers, b) foreign factories run by managers reporting to Philippi who, c) also held the reins of all the sales organisations which reported to him personally. It is nevertheless necessary to stress that Philippi remained one board member among many. The board was not ornamental and there were directors' committees for General Purposes, Works, Finance (113) and Development (114) Philippi could remain as influential as he was only so long as he retained the support of his board.

The control methods used at Coats again must wait until a full business history is published to be considered in detail. We are told that Philippi developed "detailed market analysis ... on the basis of regular, frequent and very detailed reports" from sales organisations both big and small. On the basis of these reports "detailed decisions were made, very largely by himself" on appropriate sales products, prices and stock levels down to the lowest level of the organisation. (115) On the other hand there were no cost accounting systems or systems of business planning that might pre-figure budgetary control. (116)

We may conclude therefore that J and P Coats may be considered best as an extremely well run personally managed firm before World War One. It relied on a working board and key individuals within it to manage the organisation directly, and the control systems it evolved were designed to serve that structure. It was highly vulnerable to the loss of those key individuals but meanwhile remained significantly more prosperous than its UK competitors.

Generally speaking, the structure adopted by the other textile amalgamations had to reconcile the apparently unquestioned principle that the management of the constituent firms remained in the hands of the ex-owners with the need for centrally organised consistency of practice and co-ordination. Since many of the amalgamations were a response to intense competition and the period also saw quite severe fluctuations in raw material prices, central control over buying and selling was essential. The allocation of production to individual factories, the concentration of production, the closing of inefficient plant and the gathering of cost data in a form which allowed such decisions to be made all clearly required a significant degree of central authority.

Central co-ordination was more difficult to achieve the larger the number of firms amalgamating and the larger the size of the board of directors. The Fine Cotton Spinners and Doublers (FCSD) was an amalgamation of 29 firms, the Bleachers Association 53 and the Calico Printers Association (CPA) 59. Generally, each firm would be represented on the board of directors although vendors could be bought-out completely or some firms could have multiple representatives. The FCSD had a board of 26 directors, the Bleachers Association 49 and the CPA fully 84.

From the beginning the FCSD adopted the expedient of delegating many matters to an "executive board" of seven meeting weekly co-ordinating the work of an unknown number of managing directors who were based centrally and whose job was to work directly with the vendor managers. But the vendor managers were also the directors of the amalgamation so they were being supervised by men they nominally controlled. It was Macrosty's opinion that the power in the organisation lay, on balance with the executive. But it was "always a delicate situation and depends for its possibility entirely on the personal qualities of the men concerned."(117) Even in the most successful amalgamation, then, the structure was as much the result of a shareholders democracy as of commercial imperatives.

The FCSD was also centrally co-ordinated through a central office composed of a statistical department "which enables a close comparison ... of the concerns doing the same class of work." There were also central departments for buying, selling, machinery and for "the ordinary secretarial and accounts work." (118) The central office, which was presumably under the day to day control of the managing directors also controlled selling prices.

The Bleachers Association initially had looser arrangements: the board delegated operational matters to two general managers while attempting to co-ordinate matters with "mass meetings of forty-nine directors" as Macrosty puts it. (119) Things clearly got out of hand and in 1904 the board delegated powers to a smaller executive body and restricted the powers of the general managers. The result would appear to be a structure close to that of the FCSD. Nothing appears available on the functions and responsibilities of the Bleachers Association central office, though there is circumstantial evidence that they were very similar to the FCSD. (120)

The CPA's early arrangements were similar to those of the Bleachers Association but of a larger scale - 84 directors co-ordinating 3 managing directors. Chaos ensued and the CPA were unable to resolve the matter internally. The directors and shareholders appointed a committee in 1902 to investigate and make proposals for re-organisation. (121)

The investigatory committee declared its aim to be to make the CPA "one concern consisting of a number of component parts, controlled by a central authority." The committee proposed - and the shareholders accepted - a three tier system. At the top was a board of 6 directors of whom three were outside directors. There was then an executive of three (the managing directors) and finally seven advisory committees drawn from the managements of constituent firms to deal with technical and policy matters ranging from production and its concentration to raw materials and marketing. For all their concern with central authority the committee emphasised the need for the consent of the governed. While they roundly asserted that any refusal by vendor managers to carry out the executive's orders would be a sacking offence they stressed

that "it is of the greatest importance ... that all instructions given by the Executive should be known to be the outcome of careful deliberation and of sound practical and up to date knowledge of the matters to which they refer. Unless this is the case such instructions would be carried out reluctantly ..."

The advisory committees were the means whereby consensus could be achieved. However, despite their title they had more than advisory powers: "it will be the duty of the Executive to carry the recommendations of the Advisory Committees into effect" said the Committee, though disputes between the executive and advisory committees could be adjudicated by the board. Executive members were to attend board meetings though they would have no vote and they were to share attendances at advisory committee meetings between them.

The effect of this structure was to multiply the functions covered in detail by the board by creating seven executives, understanding that word in the sense it was used by the FCSD or the Bleachers Association, where those latter organisations had one. Just as in the case of the railways and the banks, the desire by owners of equity to keep control of matters in detail resulted in a system of committees.

The investigatory committee also recommended that the central office functions should include a statistical department, centralised buying, selling and finance. They emphasised the importance of a business policy which emphasised cost reduction and efficient concentration of production rather than attempts at monopoly pricing. They also recommended the best practical use of skilled chemists and engineers and new technologies.

Interestingly, the investigatory committee considered the alternatives to its preferred solution of an extensive range of committees. The committee considered that it was "not reasonable to assume that two or three managing directors or a board of twelve or fifteen directors" could have the time or the range of expertise "to enable them to arrive at conclusions which could really be called their own." If the proposed structure were not adopted then the directors "would have to rely on the assistance of

permanent officials appointed by themselves and the casual help and advice given by others ..." (My underlining). As a result instructions would emanate from anonymous figures or those thought not to be "the most competent persons to advise and whose functions and responsibilities are not properly defined." These remarks appear to be applied to both the casual help and advice and permanent officials. There appears to be an in-built assumption that officials - ie managers - would not be "competent persons" or have "properly defined functions and responsibilities."

These assumptions can be read in the light of the investigatory committee's analysis of the CPA's troubled early years. Vendor managers had disputed instructions by managing directors in part because they were not regarded as "the most competent judge of every question that would arise ..." but, the committee goes on:

Even if they had been so regarded, it was well known that the time at their disposal was altogether insufficient to enable them to arrive at carefully considered decisions and that this compelled them to depute much of their work to permanent officials. This knowledge could not but increase the resistance both active and passive, to instructions emanating from head office ...

Yet the one area of the permanent official's work that is specifically mentioned is given a considerable measure of praise - the statistical department. The work was new to the officials who carried it out, but even if it were not "from the first ... done in such a perfect manner as to escape criticism

branch managers who formerly complained bitterly of the trouble, loss of time and expense caused by the imposition of extra clerical work and requests for detailed information which an imperfect system of book-keeping made it difficult to supply, are now satisfied that these statistics are not only

indispensable to the head office, but are exceedingly useful to the branches themselves for their own guidance. (My underlining)

This tends to make appeals to the alleged incompetence of officials look a little thin. There is clearly some degree of status-panic involved in the rejection of a structure that involved instructions being given to shareholding vendor managers by non-shareholding headquarters officials - a status-panic shared by the members of the investigatory committee. The managerial option was not acceptable.

We can conclude, therefore, that the amalgamations in textiles did produce improvements in costing, book-keeping and forms of statistical control and were the cause of some attention as to how these new large organisations were to be run. However, the resulting structures and techniques were, if occasionally with difficulty, controllable by the former owners, where necessary by a committee structure, and forced no shift of power to managers or specialists.

7) **Structure and Technique in Large Amalgamated Manufacturing Companies:**

Part C: Miscellaneous (Associated Portland Cement Manufacturers, United Alkali, Guest Keen and Nettlefold

Much more information is available for Associated Portland Cement Manufacturers (APCM) than for the other two firms.

APCM was formed by an amalgamation of 27 firms in 1900. Initially set up with a board of 40 ordinary directors and 16 managing directors, APCM managed without any apparent crisis to reduce the number so that by c.1906 Macrosty reports 19 ordinary directors and 14 managing directors. The board met monthly. The managing directors met in committee weekly and also variously formed finance and general purposes, works and sales committees. The works committee met weekly and had an executive of two, who, by 1903, together with some other members of the works committee formed a sub-committee (also meeting weekly) to consider questions of capital expenditure on construction and reconstruction. The sales committee was composed of those "who, before they joined us sold the cement of their respective firms." It is to be presumed that the managing directors had been owners of amalgamating firms. The committee structure as with the CPA served to provide a delicately balanced way of reconciling proprietorial claims with the needs of the organisation. As the chairman was to say: "there were many individual interests that had to be considered ..."(122)

APCM established a single central office and adopted a single system of accounts. Macrosty says that the "latter was a lengthy and complicated undertaking ... but without it there could not be obtained that ready access to statistics and that facility of comparison which are necessary to the control of a large business with many branches."(123) Cost data was evidently available(124) but there is no information on how this data was used in management decision-making. Efforts were made to find new markets for the combine's large output(125) but this seems

basically to have involved no more than the sales directors looking further afield. All in all, once the amalgamation had settled down the marketing and technical/managerial tasks were not complex.(126) We would not therefore expect (and nor do we find) radical innovations in organisational structure or control technique.

The United Alkali company was formed by an amalgamation of 48 firms in 1891. The company was weakened from the beginning by overcapitalisation and by its reliance on a technology that was becoming obsolescent. Interestingly, the way chosen out of its difficulties was innovative chemical products.(127) The management of the firm seems to have relied on a committee structure like other large amalgamated firms. No information is available in secondary sources on accounting or other control techniques.

Guest Keen and Nettlefold was formed in 1902 from three firms whose combination brought integration vertically from iron ore and coal mining through steel production to bolt and screw manufacturing. Though a single board of directors was formed for the amalgamation, before World War One each constituent firm retained its own offices and "individual companies [were] allowed to continue functioning almost as autonomous units."(128) Co-ordination between units and consideration of detail was the job of five committees with membership "limited to directors".(129) The company history is silent on organisational structures outwith the board and management accounting techniques, if any. However, the loose structure appears to indicate that no innovative techniques may be expected.

6. CONCLUSION

We have seen from our sample of pre-World War One enterprise some firms had simple integrated structures which could absorb similar organisations relatively easily to produce a larger version of the same structure. The brewery amalgamations were of this type. (See Appendix I)

Some amalgamating firms also attempted to control the expanded organisation using a single board of directors but the nature of the businesses meant that such a form of governance left the constituent parts barely integrated at all. Firms had merged or been acquired with no particular aim to achieve efficiency savings but rather to ensure raw materials or product outlets or market share or a comprehensive package of products for customers. As a consequence co-ordination between units was loose and intervention in constituent firms sporadic or non-existent. The armaments conglomerates were generally of this type. There was an attempt to increase co-ordination between production centres at John Brown through the use of an "outside board" and a similar arrangement was proposed at Armstrong Whitworth. A more able - or at least more interventionist - board at Vickers may have felt able to co-ordinate without such innovation. Imperial Tobacco was also a barely integrated amalgamation although in their case the constituent firms did not want to integrate and there was no commercial reason why they should (see Appendix I). In the case of the armaments firms, however, attempts to create an intermediary layer between the board and the productive units demonstrates a perception of a greater need for integration and tentative attempts to achieve it. We may note however that the innovation of the "outside board" did not even begin to construct the kind of HQ based generalist top management structure that Chandler describes in the US. The outside board kept the managers of productive units separate from discussions of overall strategy and vice versa. It also would appear to exclude production managers from information on financial performance (see Chapter Three). As there was no increase in scrutiny or management information, the effect was to increase co-ordination rather than control.

In the textile sector firms and the APCM co-ordination and consistency were commercially imperative. Here, despite the democratic tendencies among the vendor managers a number of key functions were centralised and a central office was set up gathering comparative statistical data based on unified accounting procedures. Powers were delegated to groups of general managers. But we have seen that when policy making and administration became complex the tendency was always to establish directors committees rather than build managerial hierarchies of officials

with discrete individual functional responsibilities. The committees, as the CPA investigatory committee made clear, were designed to avoid reliance on "salaried officials" without an equity stake in the company. At the heart of these structures then was a disjunction, a barrier between castes which acted as a prophylactic against the emergence of a unified managerial structure.

The use of directorial committees as a substitute for a professional top management is seen at its most fully developed in the banks and railways - particularly the railways. Taken together with the committee structures of the APCM and the textile sector firm they appear to present us with a common UK response by enterprises dealing with complexity. They do not look like transitional forms of control or steps in the direction of professional managerial hierarchies. Rather they look like an alternative to such a hierarchy, the favoured form of governance in a large complex UK firm.

This is not "personal capitalism" but the form its UK transcendence took. Personal capitalism undoubtedly affected the ease - or lack of it - with which amalgamations were achieved, the high premium placed on the loss of the owner's sovereignty and the final organisational form adopted by an amalgamation. But once that amalgamation was established it was not a personally capitalist organisation. The CPA investigatory committee, for example, were particularly scornful of the appeal to "individualism" by some of the less clubbable vendor managers. The performance of units whether they were branch lines, branch banks or inefficient factories all ultimately had to be judged by commercial performance, whatever the internal politics involved. There was an impersonal commercial logic which had to be followed if the firm was to prosper. The structural form adopted by large complex British enterprise was thus a consequence, or, in Elbaum and Lazonick's terms, an institutional legacy of personal capitalism. This structural form I have called proprietorial in that it is controlled collectively by holders of equity, the minimum holding of which was usually specified as large directors share qualifications, rather than by partners, owners or their heirs.

The problem with this was not that it necessarily caused firms to be badly run but rather that this particular form of governance imposed limits on the extent to which the firm could innovate, diversify in a controlled way or respond effectively to rapidly changing market conditions. At the same time because, almost by definition the structure was not good at producing skilled managerial human capital there was little or any skill transfer to other sectors and few managerial resources available when crisis forced structural change onto the agenda.

The point of entry if the structures of UK enterprises were to begin to move towards a Chandlerian managerial hierarchy was the appointment of a single chief executive officer with significant delegated powers. As we have seen, this proved a sticking point on the railways and was a temporary phenomenon in the banks. Other firms appear to have had a "co-ordinate" structure of joint managing directors or direct management by the board. As we shall see in Chapter Three, the reluctance to appoint single chief executive officers was conscious and the consequence of a distinct proprietorial theory of the organisation of the firm.

CHAPTER TWO

FOOTNOTES AND REFERENCES

- 1) As Table 1 in P L Payne, "Emergence of the Large-scale Company in Great Britain, 1870-1914" in Economic History Review, 2nd series, XX, 3, (Dec 1967), This list gives manufacturing companies only.
- 2) See Table 3 in Peter Wardley, "The Anatomy of Big Business: Aspects of Corporate Development in the Twentieth Century", Business History, Vol 33, No 2, April 1991.
- 3) Appendix I, Christine Shaw "The Large Manufacturing Employers of 1907", Business History, Vol 25. This list gives manufacturing companies only.
- 4) Ibid p 42 fn 3, where the primary data for the 1907 Census of production is discussed.
- 5) See eg H W Macrosty The Trust Movement in British Industry, London 1907, P L Payne "The Emergence of the Large Scale Company in Great Britain, Economic History Review, 2nd series, Vol XX, No 3, Dec 1967, for amalgamations. See eg Labour and Capital on the Railway, Labour Research Dept, London 1923, which uses Ackworth and others to claim that 38% of all Railway capital was "water"!
- 6) A D Chandler, The Visible Hand, Chapter 3.
- 7) Ibid pp 185-187.
- 8) See Barry Supple, Royal Exchange Assurance, Cambridge 1970, pages 68-70, 349-50. See also the Seventeenth and Eighteenth Century trading companies described in Ann M Carlos and Stephen Nichol~~as~~ "Giants of an Earlier

Capitalism, The Chartered Trading Companies as Modern Multinationals", ,
Business History Review, Vol 62, No 3, autumn 1988.

- 9) M R Bonavia The Economics of Transport, Cambridge 1936, p74.
- 10) Ray Morris Railroad Administration, New York and London, 1910, p125.
- 11) Ibid p126.
- 12) Ibid. Bonavia (loc cit) gives the example of the GWR where as a result of the particular development of the company secretary's function a general manager was not appointed until 1863. We may also note that the roles of senior officers at the LNWR show precedence to both solicitor and company secretary over the general manager up to 1903! (Roles of Directors and Principal Officers, PRO RAIL 410/1268).
- 13) W R Lawson British Railway, A Financial and Commercial Survey, London 1913, pp234-5.
- 14) PRO RAIL 527 index. No indication is given of joint and representative committees apart from one. No NER directors diaries have been found.
- 15) PRO RAIL 491 index and Directors Diaries PRO RAIL 491/1139/17 and PRO RAIL 491/1139/18. Samples from Board Minutes 1899-1905 (PRO RAIL 491/28) and 1917-1923 (PRO RAIL 491/31).
- 16) 1907 taken as sample year. See eg Board Minutes 15 Feb 1907, PRO RAIL 410/40. If anything, the numbers of outside bodies had dropped.
- 17) Attendances given in ms on Rolls of Directors and Principal Officers for 1883 and 1891-2, PRO RAIL 410/1268. See also for NER, PRO RAIL 527/288 for a similar pattern of attendances.

- 18) See eg PRO RAIL 410/1889 Gratuities on Retirement, which gives salaries at retirement.
- 19) H M Ross British Railway, their Organisation and Management, London 1904, p40.
- 20) Lord Claud Hamilton, Chairman of the Great Eastern Railway, Times, 14 Feb 1914.
- 21) See the examples in Jack Simmons The Railway in England and Wales, 1830-1914, Leicester 1978, pp248-9.
- 22) Ray Morris, op cit p127. See also the complaints of George Gibb of the NER in 1902 (in PRO RAIL 527/231) who says the General Manager does the work of a President and six vice Presidents on an American Railroad.
- 23) See the discussion in Geoffrey Alderman The Railway Interest, Leicester, 1973, pp26-8. The quote is from Railway News, 18 Feb 1905 in Alderman op cit p227.
- 24) Ibid p27
- 25) Taken from PRO RAIL 410/1268.
- 26) There is a representative example at PRO RAIL 410/345 LNWR General Finance Committee 1904-1909.
- 27) Sir George Findlay The Working and Management of an English Railway, London 1899, p 63.
- 28) Alderman, op cit, p227.

- 29) Sir G Findlay, op cit, pp61, 65.
- 30) The best example is from the LMS "New works authorised expenditure 1929-30", PRO RAIL 421/143
- 31) Extract from Permanent Way Committee, 17 Nov 1909 in PRO RAIL 410/74 Reports to the Board 1909-1911. See also PRO RAIL 410/1829 "Statement showing the reductions effected in the locomotive department salaries since the retirement of Mr G Whale, Mr Tandy and Mr Macrae".
- 32) Midland Railway Traffic Committee, 16 Oct 1902, PRO RAIL 491/163.
- 33) Times, 14 Feb 1914, p20. It is worth noting that the LNWR - possibly alone - operated a cadet scheme for promising public schoolboys which led to a fast track for promotion. See the evidence of Sir Frank Ree, Royal Commission on the Civil Service, 25 April, 1913, Questions 34,189 to 34,467.
- 34) Ibid.
- 35) See eg reports to LNWR Locomotive Committee in 1909 in PRO RAIL 410/74.
- 36) See Geoff Brown Sabotage, London 1977, pp155-6.
- 37) Cuttings from Daily Mail, 13 Dec 1902, in PRO RAIL 410/1829.
- 38) Sir George Paish The British Railway Position London 1902, p32.
- 39) Ibid p70.
- 40) See account of the Board of Trade committee 1904 in Lawson op cit p51-2

- 41) Introduction by G S Gibb to Paish op cit pii.
- 42) Paish op cit p53.
- 43) Ibid p58.
- 44) W R Lawson op cit p118 for details of LNWR loading instructions.
- 45) M R Bonavia Railway Policy Between the Wars, Manchester 1981, pp141-2.
- 46) Paish op cit Introduction pp5,6. R J Irving The North Eastern Railway Company 1870-1914, Leicester, 1976.
- 47) Lawson op cit p59.
- 48) Gregory ~~D~~^P Thompson has written a series of articles critical of the costing assumptions used by US railroads and the resulting poor managerial decision making. (“Misused product Costing in the American Railroad Industry. Southern Pacific Passenger Service between the Wars”, Business History Review, Vol 63 No 3, Autumn 1989. “Myth and Rationality in management decision making: the evolution of American railroad product costing, 1870-1970”, Journal of Transport History, 12, 1991. “How cost ignorance derailed the Pennsylvania Railroad’s efforts to save its passenger service, 1929-61”, Journal of Transport History, Third Series, Vol 16, No 2, September 1995.)

These articles by Thompson rely on a distinction advanced in the work of Johnson and Kaplan between cost accounting and product costing. (Their arguments may be found summarised in H T Johnson and R S Kaplan, Relevance Lost - The Rise and Fall of Management Accounting, Cambridge Mass., 1987.) Cost accounting is described as the process of deriving average cost per item from total costs while product costing is the process of deriving actual costs per item. Thompson argues that a strategy of cost cutting by the

use of progressively heavier and longer trains had become an increasingly unhelpful shibboleth, seriously misleading railroad managers in the inter-war years and beyond. Managers failed to use earlier product costing methods or to appreciate the implications of published work by Interstate Commerce Commission (ICC) economists.

The railroads appear to have been reluctant to establish accurate product costs as regulation increased from the late Nineteenth Century culminating in the control of rates by the ICC from 1907. They appear to have feared that the more accurately costs were known the more likely it was that the ICC and customers would demand price cuts with lower margins. Nevertheless, the railroads and the ICC appear to have been able to establish the cost of services by cost accounting methods to a level of detail far in excess of UK railways even if the pioneering work of some railroad managers was not as widely taken up as Chandler appears to suggest. See, for example, references to the work of Albert Fink in The Visible Hand, pp109-120.

- 49) PRO RAIL 527/1180.
- 50) Lawson op cit p52.
- 51) H M Ross op cit p104.
- 52) R J Irving Chapter 11
- 53) Gibb's introduction to Paish op cit p.vi.
- 54) According to W H G Armytage A Social History of Engineering London 1961, pp181-2, the Hollerith was in commercial production from 1896 onwards. It was specifically recommended for costing by L R Dicksee, Professor of Accounting at the LSE in his The Fundamentals of Manufacturing Costs published in 1917.

- 55) Allen T Newhook Railway Accounts and Finance, London 1914, pp20,22.
- 56) Ibid p20.
- 57) L R Dicksee, The Fundamentals of Manufacturing Costs, London 1917, p5.
- 58) R J Irving, op cit, p266.
- 59) Ibid, Chapter 11
- 60) W R Lawson, op cit, p238.
- 61) This is the phrase used by Joseph Sykes in his the Amalgamation Movement in British Banking 1825-1924, London, 1926.
- 62) A R Holmes and Edwin Green Midland - 150 Years of Banking Business, London 1986, Chapter 4.
- 63) P W Mathews and A W Tuke History of Barclays Bank Ltd, London 1926.
- 64) R S Sayers Lloyds Bank in the History of English Banking, Oxford 1957 and J R Winton Lloyds Bank 1918-1969, Oxford 1982.
- 65) Mathews and Tuke, op cit, pp8 and 9, J R Winton, op cit, p36.
- 66) Holmes and Green, op cit, p112, ff.
- 67) J F Davis Bank Organisation Management and Accounts, London 1910, p65.
- 68) Homes and Green, op cit, Chapter 4.

- 69) Ibid.
- 70) Mathews and Tuke, op cit.
- 71) J R Winton, op cit.
- 72) Homes and Green, op cit, p112.
- 73) See The First Fifty Years of the Institute of Bankers, published by the Institute, London 1929, particularly pp7-9 and the table at p18.
- 74) See eg J F Davis op cit.
- 75) Joseph Sykes, op cit, p181.
- 76) This account of banking administration is constructed from J F Davis, op cit, passim.
- 77) See J F Hewcock The Organisation and Management of a Branch Bank, London 1933 passim. This is a later work but appears to appeal to long standing practice and is consistent with the account in J F Davis, op cit, passim.
- 78) Sykes, op cit, p182.
- 79) Ibid.
- 80) Ibid, Chapter VII.
- 81) As we have already indicated, mechanisation of office procedures was an option that existed before World War One. J F Davis op cit has a rather meek discussion in Chapter IV "Filing systems and machines". For the slow

adoption of mechanical book-keeping see Holmes and Green op cit and J R Winton op cit passim.

- 82) See Macrosty op cit pp40-45 for the detailed history of acquisitions.
- 83) Information in this paragraph for Clive Trebilcock Vickers Brothers - Armaments and Enterprise 1854-1914, London 1977.
- 84) Ibid p37.
- 85) Information in this paragraph from Trebilcock op cit and J R Hume and M S Moss Beardmore - The History of a Scottish Industrial Giant, London 1927.
- 86) Hume and Moss op cit p89.
- 87) Trebilcock op cit p86.
- 88) Ibid, p84.
- 89) See L Hannah "Strategy and Structure in the Manufacturing Sector" in L Hannah (ed) Management Strategy and Business Development, London 1976.
- 90) See figures in Macrosty op cit pp41 and 43.
- 91) Letter from Lord Rendal to Faulkener, 21 January 1911, accession 31/6680, and Rendal to Whitehead, 14 November 1910, accession 31/6665 in Rendal Papers, Tyne and Wear Archives (TWA).
- 92) See Rendal papers accession 31/6627 re inheritance and 31/6636, 31/6638 and 31/6665 as a representative sample re salaries and other payments.
- 93) Introduction to Vickers Papers index, TWA.

- 94) TWA Rendal papers accession 31/6643. Board resolution 1 March 1910.
- 95) TWA Armstrong Whitworth Papers, Finance Committee Vol 1 (1911-1918).
all information in this paragraph from this source unless otherwise stated.
- 96) *ibid* 16 July 1913.
- 97) *Ibid* 21 November 1913.
- 98) TWA Armstrong Whitworth Papers. Press cutting in scrapbook accession 130/1488.
- 99) As fn 95, 14 May 1913 and 16 July 1913. It was the Works Board who were asking for departmental accounts to be replaced by a single profit and loss account for the whole subsidiary firm.
- 100) Macrosty *op cit* p46. See generally pp43-46.
- 101) Royal Commission on the Civil Service, 1913, Minutes of Evidence, Evidence of Mr E Middleton, John Brown Company Secretary, Question 34,108.
- 102) Appendix V to Organisation and Accounts of the Ordnance Factories (1902) at PRO WO 33/240.
- 103) Dwight T Farnham America vs Europe in Industry, London/New York 1921, Chapter XV. The reference to Openshaw is not specific but clear in the context of the book.
- 104) TWA Rendal Papers accession 31/6616. Letter Cruddas to Rendal.
- 105) TWA Rendal papers, 31/6665.

- 106) Macrosty op cit, Table p124.
- 107) Ibid p126.
- 108) In 1908 there were 9 Coats family directors, 3 from the acquired firms. In addition there were two outside directors from Coats flotation in 1890 and the Sales Director of Coats, O E Philippi and his son. By 1914 one Coats family member and one outside director had been lost and the balance had not changed. (Source Stock Exchange Year Book).
- 109) A Slaven, S Checkland (eds) Dictionary of Scottish Business Biography 1860-1980, Vol 1, entry for Archibald Coats.
- 110) Ibid, entry for Otto Ernst Philippi.
- 111) Professor Anthony Slaven, letter to J M Quail 2/2/94.
- 112) Mr J B K Hunter of Glasgow University has written a history of the company which has so far refused to allow it to be published (Slaven to Quail as fn (111)).
- 113) Ibid
- 114) As fn (110)
- 115) Ibid.
- 116) As fn (111)
- 117) Macrosty op cit p140.

- 118) Ibid p141.
- 119) Ibid p143.
- 120) The Bleachers Association, J & P Coats and Horrockses Crewdson and Co were represented on the CPA investigation committee which said in its report that the representatives of three successful amalgamations viewed a statistical department as essential. The committee also recommended centralisation of buying and finance and central control of expenditure. See fn (121).
- 121) The CPA investigation committee report is given in full in Macrosty op cit Appendix IV. References from this for subsequent treatment of CPA.
- 122) The account relies heavily on Macrosty op cit pp108-116 and P L Cook and R Cohen Effects of Mergers, London 1958, Section I.
- 123) Macrosty op cit p114.
- 124) See P L Cook and R Cohen op cit pp41 and 47.
- 125) Macrosty op cit p115.
- 126) P L Cook and R Cohen op cit p73.
- 127) Macrosty op cit p193. Also generally pp187-193.
- 128) Edgar Jones GKN Vol I, London 1987, p365.
- 129) Ibid p366.

CHAPTER THREE

THE PROPRIETORIAL THEORY OF THE FIRM AND ITS CONSEQUENCES

1) Introduction

The systems of ideas that lie behind common assumptions on what constitutes correct social action are rarely explicit. This is as true of company organisation as it is of any other sphere. Such assumptions are culturally formed and the systems of ideas behind them are implicit in conventions of behaviour and thought. Perhaps such systems can only become clear and explicit when they are in crisis and partially or wholly superseded. For example, the doctrine of *laissez-faire* "drew its sustenance from many different rivulets of thought and springs of feeling"(1) and was never blessed with a definitive canonical text. One of the clearest summaries of the doctrine was made by an author who declared it dead - J M Keynes in The End of Laissez-Faire.

It is not surprising therefore that there was no contemporary explicit summary of the system of ideas behind the organisation of the late Nineteenth Century/early Twentieth Century UK joint stock company. But this does not imply that there was no such system or that any such system was not coherent, though in order to demonstrate a coherent whole it is necessary to gather together partial expressions of an implicit system of ideas. The structure of companies was very much a matter of public concern and private dispute. In consequence statute and case law gave particular emphasis and clarity to certain aspects of what was considered the "right" way to run a company. The matter was also discussed in the specialist press on the occasion of changes in the law etc - for example, the first recognition of managing directors in the 1908 Companies Act. Practical handbooks for accountants and others give explanations of company structure

from their own partial viewpoint. The picture that emerges from these different sources shows considerable consistency.

2) The Proprietorial Theory of UK Firm Structure

The large firm by the end of the nineteenth and early twentieth century was in the vast majority of cases a joint stock company. The governing body of a joint stock company is a board of directors and it is with the ascribed role and powers of the board that we must start. Under the Companies Acts "management is almost always entrusted by the Articles [of Association] to the directors and they exercise all the powers for the conduct of the business possessed by the company"(2), (my underlining). The legal position of a director is one of trust rather than trusteeship. That is to say that their duties are not laid down in detail as are those for a trustee but are conditioned by the particulars of each situation: the specific Articles of Association, a general requirement to act with honesty and "some degree of both skill and diligence"(3) appropriate to the circumstances, and also the way in which it is agreed that tasks are to be distributed between directors and employees. The directors' duty of trust is to the shareholders to whom they must account for their stewardship "as commercial men managing a trading concern for the benefit of themselves and of all the other shareholders in it"(4). Thus the powers of directors were very great and their somewhat ambiguous responsibilities made criticism of their performance difficult without considerable knowledge of the particular circumstances of the firm.

The early assumption was that the large powers given to the directors would be balanced by the democratic rights of the shareholders as a whole exercised in general meetings. These included, as shown in Table A of the Companies Acts, the power to fill vacancies caused by the compulsory one-third annual retirement of directors, the power to fix the remuneration of directors and (after 1908) the power to end the appointment of a director to a manager's or managing director's post. This principle of democratic control by shareholders "was an implicit assumption of the law after 1862 and so continued as late as the Act of 1908"(5). In reality, however, the exercise of these powers was

undermined by changes in the nature both of shareholdings and shareholders. According to J B Jefferys from the 1880s onwards there was a tendency towards holdings of a decreasing individual size in any company in the hands of an increasing number of shareholders and "the interest of the shareholders was being concentrated on the rate of dividend and the market-ability of the shares. Direction and control was delegated to the Board of Directors..."(6). The re-election of retiring directors was rarely opposed. There was an increasing tendency among investors towards the actuarial approach of portfolio building which intrinsically tended away from attempts at active influence. Shareholder attendance at general meetings declined. The ability of shareholders to oppose a large joint stock board composed of directors possessed of substantial qualifying shareholdings was limited without organised joint action of which no evidence has been found.(7) As a result of these tendencies, control by the directors of a joint stock company was strong and became stronger as they increasingly became self-perpetuating oligarchies. Despite this decreasing shareholder control and increasing directorial autonomy, the theoretical justification for the large powers of boards of directors remained their role as a group of proprietors standing for the proprietors as a whole. This had a number of consequences for the way in which the job of director was perceived and carried out.

- i) While directors were expected to be stakeholders they were not expected to be expert, full-time or close supervisors of the business.
- ii) the division of roles between the directors and salaried managers was emphasised.
- iii) the appointment of chief executive officers was hedged with conditions and checks and balances.

As shareholders' representatives directors were expected to be significant financial stakeholders. In this respect practice was more insistant than the law. Table A required no share qualification in 1862 and from 1906 asked only that a director hold "at least one

share in the company" but it was normal practice to make appointments as a director conditional on substantial qualifying shareholdings. £1,000 (1993 equivalent £21,000) was not an uncommon sum.(8) It was current expert opinion that "one of the main elements of success" of a public company was "the presence upon the directorate, and the management, of men holding a substantial interest in the ordinary or unprotected stocks."(9) J B Jefferys quotes the Economist as urging shareholders to test the soundness of their investment by examining the share registers of their company to check that their directors were not selling shares.(10)

But if directors were expected to be stakeholders they were not expected to be experts. As we have seen, this was a complaint of nineteenth century railway shareholders. (See above p31) The Economist wrote in 1912: "... there is still a feeling that directorships call for no particular skill or knowledge and that anyone with a reasonable amount of application may fill a seat at a board with credit and responsibility."(11) The Accountant stated in 1930: "... directors of great commercial undertakings ... need have no qualifications save the ability to subscribe for the requisite number of shares as provided in the company's articles of association ..."(12) Indeed, there was even apparently hostility to the idea that experts be appointed to the board at all, as demonstrated by the statement of the Parliamentary Secretary of the Board of Trade in 1915:

the opinion of businessmen ... is that if you have an expert or two experts on a board of directors they practically command the situation ... and a number of businessmen prefer on that account to be able to take their counsel without having their counsellor a co-director when he would be practically in a position to give orders.(13)

The board of directors exercised its authority as a collective body at intermittent meetings. Directors were not expected (nor did they expect) to take any individual responsibility for management of parts of the business. Case law established that an individual director "is not bound to give continuous attention to the affairs of his company".(14) The consequence was that the role of director qua director was part-time. Prior to 1908 the implied disapproval of directors taking "any other office or place of

profit" in the company was apparently taken seriously: the articles "usually renders the office [of Director] vacant" under these circumstances according to a contemporary guide.(15) The law thus permitted and even encouraged a situation where boards were composed of people giving the minimum of time and attention that the law required. This minimum was not onerous.

Directors, then, were not expected to be full time, expert or exert close supervision. But if this was the case, who was to run the business? It was inevitable that tasks had to be delegated to full-time managers and there was nothing in law to stop this. The general principles we have outlined above were applicable to such delegations. A director was safe from the law if he could demonstrate that the delegation of tasks was "reasonable ... in the circumstances, and ... not inconsistent with any express provisions of the Articles of Association."(16) The oversight of such delegated tasks by directors was expected to be carried out with reasonable care compatible with the skills of the director but the honesty of managers could be assumed unless there was evidence to the contrary. Case law held that directors were not required to check the correctness of information given them by managers unless there were grounds for suspicion.(17) The law was at its most emphatic where oversight of payments was concerned (18) but no continuous oversight of managers was required, supervision being carried out by the intermittent meetings of the board or its properly constituted committees.

Potentially therefore there was no reason why delegations to management should not have been extensive. However, the praxis of the period demonstrated by the firms surveyed in Chapter Two and in the pronouncements of the period was generally considerably more restrictive. As a direct result of the board's ascribed role as shareholders' representative the roles of directors and managers were seen as sharply separated:

The constitution of a joint stock company is democratic and is composed of the shareholders who elect the administrative [ie the directors] who elect (sic) and supervise the executive [ie the managers]. If the latter two are mixed up there is no protection for the former and it is most essential that the distinction between administrative and executive should be jealously guarded.(19)

The directors were to establish general policy and the managers were to carry it out. As the Economist put it in 1912

... the common theory of a director is that he acts more or less like the head of a Government Department bringing a sound general knowledge of business to the conduct of a particular concern, taking the advice of permanent officials but deciding broad questions of policy for himself.(20)

Even for the post World War One advocate of scientific management, L Urwick, the separation of the duties of directors and managers along these lines was of key importance:

... it is of particular importance to define the activities which properly belong to a Board of Directors and those which form part of the duty of a Manager and are concerned with the executive control of the enterprise. One definition which has been suggested reads: "Administration is the function of industry concerned with the determination of the corporate policy, co-ordination of production, finance and distribution, the settlement of the compass of the organisation and the ultimate control of the executive." Over against this are set the duties of management. "Management is the function of industry concerned with the carrying out of policy within the limits set up by administration and the employment of the organisation for the particular objects set before it."(21)

Yet the theoretical separation of policy and execution had to deal with the practicalities of running a business. Delegation and co-ordination to an extent necessary to achieve commercial success could clearly be in tension with the part-time directors desire to keep control. As one might expect, the solutions to the problem varied between different firms and different sectors. Yet it should be noted that this tension and the organisational forms that it produced appears to have had a strongly prophylactic effect on the emergence of the Chandlerian managerial hierarchy. Thus it can be suggested that the various organisational forms are to be read as the consequence of proprietorial and commercial imperatives operating in tension rather than organisations potentially open and responsive to the opportunities available which might lead to Chandler's mass producing, mass transporting, mass retailing managerialism. This interpretation appears to be confirmed by the examples given above and those which follow.

One solution for the board was to appoint one or more of their number as managing directors with delegated powers. Managing directors had become established by the time of the large scale amalgamations of the late Nineteenth Century but they had no mention in statute until the Companies Act of 1908 allowed them in Table A. (This did not mean that previous managing directors had been illegal but that the articles of association of a company had to specifically allow their appointment.) By delegating power to one of their own the directors kept power within the board. In so doing, however, they raised immediate problems over the principle of directors' collective responsibility. A correspondent in the Economist in 1911 was prepared to accept such a position under restricted circumstances: if the managing director devoted more time to the business or "relieves gilded absentees of the burden of their duties", had special knowledge or is a retired "chief of the executive" rewarded for long service. But if "active service is required involving new risks or expenditure, or for which the other members of the board are responsible to the shareholders or extra pay or commission is involved then

the managing director may become a somewhat dangerous person. He may be a sort of mayor of the palace, in nominal subjection but actually holding the reins of government.(22)

We should note that the matters left to a managing director if he is prohibited from "new risks and expenditure" or matters for which shareholders may hold the board responsible are nothing but routine and technicalities. Another Economist correspondent wrote

... only in exceptional circumstances, and under restrictive conditions should the head of the executive be a director at all - least of all, a so-called managing director. The effort should be made to avoid confusion of function and this being done, we shall hear less of the paralysis of boards occasioned by the usurption of function by an officer of the executive in the administrative household.(23)

The emphasis is slightly different in each of these two points: in the first case the position of managing director is given to an existing director in the second case the "head of the executive" is given board powers. The fundamental point is, however, that in both cases the power to run a joint stock business is given to an individual. In the UK it is clear that such an action was seen as the overturning of the natural order of things, even an invitation to criminal acts. L R Dicksee, Professor of Accounting at the LSE, felt able to say in a text book for his students published in 1910:

... cases are by no means unknown in which very large powers have been vested in the Managing Director, but as a rule with no great measure of success. So far as this country is concerned, at all events, the cases in which the all-powerful Managing Director comes most to the front are when the company has failed under such circumstances as to involve a somewhat protracted enquiry on the part of the Official Receiver. Possibly for that reason we are inclined to look askance at anything approaching plenary powers being granted to any one individual ...(24)

Thus while large *de jure* or *de facto* delegations to a single managing director or even a single manager did take place (25) such delegations were seen by an apparently unchallenged majority as dangerous not least because they were a potential legal liability given the large powers and ultimate responsibility of the directors. (Cases were known where desultory directors were found liable for and consequently bankrupted by the activities of their managers.(26)) As a result, where managing directors were appointed by reputable firms, they were not allowed to be all-powerful but were constrained by oversight and checks and balances. As we have seen in Chapter 2, plural co-equal managing directors were appointed and/or were subjected to oversight by board or "advisory" committees. Even in such striking cases as that of Sir Edward Holden who became combined Chairman and Managing Director of the Midland Bank, the tenure was personal only. At his death not only was the combined role broken up but no single chief executive officer was appointed. Even when Holden held his "presidential" position he was more constrained than a US president through the system of board committees and was, it is said, "extremely reluctant to usurp the authority of his own board of directors".(27)

If delegations to managing directors were constrained this applied *a fortiori* to general managers who were not directors. As a result of the constraints placed on the managing director and the wide powers assumed by the board the scope allowed to salaried managers was narrow. The management writer John Lee compared UK and US practice in 1922. In the US, he says, ^{both} administrative and executive tasks are undertaken by the president and his general managers. However in the UK

where there is a differentiation between administrative and executive, the line [between policy and execution] is often drawn rather lower down than in America: that is to say, the manager becomes an immediate works manager rather than a principal executive officer, so that a managing director ... undertakes more executive functions than his American prototype. In some cases this is certainly overdone. That is to say the chief direction does not content itself with judging by managerial statistics or by summed results and afterwards with allowing the chief executive a considerable range of liberty of action, but he discusses questions of individual remuneration and of methods of work in detail in a way which must rob the executive of some authority and, indeed of some dignity, and what is more to be regretted, of some responsibility.(28)

Sometimes, indeed, it appears that the managing director, who like his fellow-directors could be part time, dispensed with a chief of the executive altogether in the way we have seen on the railways resulting in, for example,

a factory with sales manager, production manager, labour manager, chief technical engineer, finance manager, and education officer, all working quite separately and happily at their own specific tasks, without any executive co-ordination whatever by a general manager. There are, indeed, many factories in Great Britain attempting to work along these extraordinary lines, usually because the managing director is so incapable of delegating authority, and so busy with other preoccupations, that he imagines that the necessary co-ordination of the efforts of his various subordinates can be achieved at a weekly board meeting ...(29)

The author L Urwick claims that by the time of writing (1929) "The businesses which lack a full-time managing director or general manager in charge of the executive side of their work, grow steadily fewer."(30) He does not indicate the extent of the phenomenon or the rate of its decline in any numerical ways. We may argue, however,

that it is not the incapacity of the individual managing director which causes the lack of delegation but a general theory of the firm that made delegation difficult, even dangerous.

The discussion of UK corporate governance so far may be summarised as follows: the organisational principles which determined the structures of UK joint stock companies centralised power in a board of directors who were expected to be stakeholders but did not need to be expert or exert close or continuous supervision of managers. Delegations to managers were inevitable yet directors nervous of their liabilities and prerogatives were unwilling to delegate beyond the minimum. Boards would create directors committees rather than delegate to managers. Single chief executive officers were appointed from time to time but either temporarily or under constraints which made wider delegations to managers minimal. Though the capacity of the board to manage and co-ordinate the firm was limited by time spent on the task or possibly through lack of expertise, the grip of the board on the organisation was firm in its power to block initiatives or spending or to limit the power of managers to make decisions.(31)

We have also seen that boards of directors were largely unassailable and were possessed of wide powers and discretion but with few specific duties. Taken together with their part-time nature the way was open for an etiolated and ossified role which some observers found general in the 1920s. Take, for example, the well known passage from Britain's Industrial Future, whose authors included J M Keynes + Lyndall Urwick

A large part of our company system has grown up quite recently out of conditions in which the directors, or at any rate the governing group of the Board, were either themselves the proprietors of the concern or the direct and responsible representatives of the proprietors. We have carried on practices which would be reasonable and proper on such assumptions into conditions in which frequently these assumptions are not satisfied ... a director once appointed, though nominally requiring re-election every few years, considers himself entitled to the office for life ... a director would consider himself greatly aggrieved if he were to be dropped merely because he was elderly, useless or without special qualifications for the work ... Since the duties are indefinite and the privileges agreeable, the way is open to various kinds of jobbery. The pay is often high in relation to the work done; though for directors who take their duties and responsibilities seriously, it may be too low. Some individuals hold dozens of directorships. A director on resigning frequently expects to be

(of situation of conditions + Co.)

succeeded by his son. A directorship is, therefore, too often considered as a pleasant semi-sinecure and a desirable vested interest for the loss of which compensation is expected as a matter of course. Directorships are, in fact, the "pocket boroughs" of the present day.(32)

There appears to have been a fairly widespread sense of decadence in the 1920s: a reviewer in the magazine Business Organisation and Management could remark in 1928 that "A cynic recently declared that half the company directors neglect their duties and the other half haven't the remotest idea what they are ..."(33) Abuse of the director's position was possible because the UK system of corporate governance made it an easy position to abuse. It is not a part of the argument of this thesis, however, that such abuse was the cause of the pervasive UK failure to build management hierarchies in its enterprises. Even if the system of governance worked to its highest potential, a system which separated policy and execution in the way it did, reserving the powers of co-ordination and management of the enterprise as a whole to a part-time board, no matter how expert or dedicated that board might be, would not build top management and would constrain any general management that reported to it.

There were also effects on organisations at levels below the top tiers of management. As this discussion and the example of the railways and others in Chapter Two have shown that there was a tendency to separate technical functions into watertight departments. We shall now see that this prevented the development of general management skills within the lower ranks of the enterprise. This was particularly the consequence of the separation of engineering and accountancy. As a consequence these professions were kept as repositories of relatively narrow technical skills and not permitted to develop their full managerial potential.

3) Divide and Rule: Keeping the Experts Under Control

If management's task is merely the slavish execution of a policy decided elsewhere, the selection of managers was simply a matter only of observing "those who obey, to discover by some means of elimination those few who are the most efficient in their obedience"(34) as one Chairman was to put it. However, in the event of any

extensive management structures developing to integrate and co-ordinate new large-scale firms there were really only two groups of people who were part prepared for the role: engineers and accountants.(35) Both, in varying degrees, routinely managed men and processes and gathered numerical data as a means to that management. It is undoubtedly the case that in the UK both professions needed to add considerably to the scope of their work before they became full-blown Chandlerian managers but both possessed key component skills. The roles assigned to engineers and accountants within UK firms are important, therefore, because they demonstrate how competent the professionals were to take on any expanded role and how ready their employers were to let them do so.

In the USA the engineer had the key role in the development of the new corporate management. David Noble has shown that modern management hierarchies emerged when engineers were given the power to apply engineering principles to the business enterprise as a whole: "Modern management was ... not simply the creation of engineers; it was the product of engineers functioning as managers." Because engineers were "the first people in industry to apply systematically the intellectual methods of science to questions of business management ... the literature of the management movement between 1880 and 1910 is found exclusively in engineering journals ..."(36) The pioneers of modern management on the US railroads were all trained civil engineers(37) and thus can claim both the creation of modern divisional corporate structures, cost accounting and the first use of the budget. The further development of cost accounting seems to have been the preserve of mechanical engineers in the US.(38) Accountants appear to have played a lesser role but nevertheless an important one in developing the higher financial controls for large firms and developing the theory of budgetary control.(39) But it was the engineer in the US from whom evolved the ideal type of the general manager:

The rise of the engineer as an organiser and manager has been a natural evolution covering the last half century. The concern of industry has advanced from isolated tools and processes to an organic conception of production and service as a whole, in which pure mechanics could not be segregated from financial, legal, marketing and personnel problems, so that the engineers in his planning, is dealing quite as often with money and men as with material and machines.(40)

The role of the engineer and the accountant within the UK enterprise was narrow. We will take the engineer first. The training of the engineer was narrow in two senses. It was purely technical and based in systems of apprenticeship/pupillage. In the 1880s external training was opposed by employers on the grounds that trade secrets would be revealed.(41) The Civil and Mechanical Engineers were opposed to qualifying examination at this time, too.(42) These obstacles to a more broadly based training lifted only slowly. College studies slowly gained a higher profile. The mechanical engineers instituted their first qualifying examinations in 1913. But neither college education nor qualifying exams included any organisation, management or cost accounting matters.(43)

The apprentice/pupillage training of the engineer was circumscribed by the engineers role in production:

In this country the opinion has prevailed that in [technically based] industries the problems which present themselves fall under two separable, distinct and independant heads viz the "technical" and the "administrative" ... engineers are supposed to deal especially with the former.

Every other "financial, commercial or administrative problem" was outside the engineer's sphere.(44) It would appear that the engineer as such was excluded from many aspects of production such as labour hire and fire, job sequencing, progress control and quality control which were the foremen's respnsibility. Rate-fixing and cost accounting were carried out by specialist clerks.(45) This left the engineer with the drawing board and the machines.

There was a natural career progression for the engineer into works management.(46) Engineers were not prepared for management by their training which did not include administrative matters or labour management: "the art of managing men ... is usually regarded ... by Capital as a sort of customary by-product of technical ability", as one observer put it, to be learned, like engineering, on the job.(47) By the end of World War One it was clear that engineers were aware that professional narrowness had weakened their ability to manage.(48) The war had revealed a generally low level of

management ability: an engineer whose war-time duties had taken him to many factories was to say

... the weak spot throughout these factories has been the works management and the business side in general. It is painful sometimes to see how little ability the management has shown. I think one could hardly have found a direction in which our education is more lacking than in that of getting what is, after all, only common sense into our engineers.(49)

It is important to stress that a significant number of engineers were able to seize on the opportunities provided by the war to put into practice that for which private study and in some cases US experience had prepared them.(50) The impetus from within the engineers themselves for an integrated approach to production including process planning and control, costing, works layout and labour organisation found its expression in the formation of the Institution of Production Engineers in 1921 but it was small and grew slowly: the Institution had 140 members in 1925, 10 years later it had 1,200.(51)

The explanation for the slow growth of an expanded role for the engineer - an expanded role which seems to have been unquestioned in the USA - must lie with the external conditions laid upon them by the employers. In particular engineers and works management generally were excluded from access to cost data. Costs and cost systems were regarded by manufacturers as trade secrets.(52) A textile accounting book advised its readers that "the stock and cost books hereinafter described may be kept by the overlookers or managers of departments, or, if secrecy is desired may be written up in the counting house from returns made by them. The prices and cost calculations may, if preferred, be entered in cipher."(53) A leader in an engineering magazine in 1893 spoke of the "rigid precautions adopted by manufacturing engineers to confine all knowledge of the costs department to the staff of clerks engaged in the work [which] renders it impossible for the young engineer to learn anything of the system during his apprenticeship."(54) A chemical engineer employed by the Ministry of Munitions wrote in 1918; "... until comparatively recently ... it was customary at many plants to keep the chemists in complete ignorance not only of the costs at these plants but also even of the efficiencies."(55)

The separation of costing information from the managers of production was quite deliberate. Two well-regarded books on management are explicit on the matter. J. Slater Lewis in The Commercial Organisation of Factories (1896) has an organisation chart which shows costing staff reporting to the general manager rather than the works manager. E.T. Elbourne in his Factory Administration and Accounts (1914) has the works accountant responsible primarily to the financial manager who in turn is responsible to the board rather than the general manager. Sir Herbert Austin, speaking to the Cost and Works Accountants in 1920 made it clear that the cost accountant was the managing director's policeman.(56)

Before World War One engineers appear generally to have accepted their narrow role. Some may even have gloried in it. Commenting on his fellow engineers lack of commercial attitude, a local chairman of the electrical engineers said in 1917, "It is more charitable to ourselves to say that engineers have been absorbed and engrossed by the "mechanical" interest in engineering to the neglect of its "business" requirements than to say that we have ignored and looked askance at anything so ordinary as commercialism ..."(57) Another could say "Thirty years ago I had a contemptuous feeling for anything connected with the commercial side of engineering ..." and could describe a distinct general tendency to despise commercial work.(58) The existence of such attitudes could only reinforce and prolong the retardation of the process of turning engineers into managers.

If accountants were to become managers they too had to overcome the restrictions imposed by a narrow professional role. Accountancy as a profession grew first as a result of insolvency work and then through the audit of company accounts.(59) Both these roles were external to the day to day running of the firm and were not the consequence of demands from owners for their services. Both roles were the result of legislation largely inspired, it appears, by the principle of providing shareholders with sufficient information to ensure control and/or the prevention of fraud. Accountants' insolvency work waxed and waned with the provisions of the Bankruptcies Acts. Their audit work grew from the mid-nineteenth century under various provisions that brought compulsory audit to an

expanding number of enterprises. The culmination of the process was the 1900 Companies Act which made the audit of all registered public companies compulsory. A by-product of the process appears to have been the widespread introduction of double entry book-keeping necessary to prepare accounts in an auditable form to firms whose accounting was primitive. It also appears outside accountants often prepared the accounts and audited them, the in-house skills of the firms remaining relatively unsophisticated.(60)

This "outside" status of accountants with their focus on financial accounting determined the training and professional mind-set of accountants. Management accounting, the use of accounting to aid management decision making, to appraise processes and monitor performance against expectations, was not considered part of an accountant's training.(61) As with engineers the method of training was by pupillage as an articled clerk though the Institute of Chartered Accountants of England and Wales (ICAEW) did have qualifying examinations from an early date. This ensured that a syllabus of study was covered but it largely excluded management accounting.

By the turn of the century increasing numbers of qualified accountant's clerks were taking up positions as accountants and secretaries "to companies and other commercial concerns".(62) The scope of these appointments was limited and appears to have been the consequence of bringing the preparation of accounts in an auditable form in-house. Generally, the attitude of business to accountants and accountancy was grudging. L.R. Dicksee, Professor of Accounting at the LSE wrote in 1915:

... in general, a knowledge of accounts is not considered any part of the necessary education of a business officer, who accordingly is often quite ignorant of the uses that accountants have for him. On the contrary he is usually obsessed with the fixed idea that accounts are a necessary evil, that money spent on them is a sheer waste.(63)

But if their employers were grudging, the accountants employed by them were, according to Dicksee, quite content with a narrow role consistent with their training and the orientation of their profession:

In too many cases the Accounts Department of a manufacturing business is entirely out of touch with practical requirements. Not infrequently it seems to glory in its isolation. In the majority of cases those connected with it seem to take a pride in dissociating themselves from the practical side of the business, and express a lofty contempt for it and its methods. Their ideal, and their sole ideal, is too often to build up annual accounts for submission to shareholders in general meeting ...(64)

The picture presented, then, is of a specific niche for financial accountants within the firm created by external legislative and possibly shareholder pressure. It may be that the isolation of this niche was emphasised by the hostility to interference of manufacturing departments. A text book on accounting for textile manufacturers introduced a section on "Mill or Factory and Warehouse Books" in the following way:

We are now to explore a region usually regarded by the skilled book-keeper as terra incognita and where, moreover, he would esteem himself wholly as a trespasser ... In many manufacturing concerns the mill books consist almost entirely of rough and ready records of the overlookers or heads of departments, who write down only what is absolutely essential for the purpose of their supervision and not infrequently sturdily oppose any increase to this branch of their duties ...(65)

L R Dicksee describes the hostile attitude of managers to financial accountability on the grounds that "departmental accounts were invented for the sole purpose of embarrassing heads of department and getting them into trouble with their chiefs."(66) A common attitude among manufacturing departments to cost accountants was that they were spies.(67) Ultimately, however, the reason why financial accountants employed by manufacturing firms did not become involved in management accounting can only be that they were not required to do so by their employer.

This did not mean, however, that UK firms did not apply some kind of accounting to manufacturing. But in contrast to US practice, UK firms kept costing - the basis or starting point of management accounting - organisationally separate from both the production and financial accounting departments. The origins of this separation appear to be the two main uses to which costing was put, namely estimating and a particular form of supervision. John Mann, an early UK costing expert and practitioner, described

estimating as the original purpose of costing.(68) Given the commercial sensitivity of prices and profit margins it is not surprising that the principals of firms would wish to restrict access to the information. The second use of costing was, as John Mann put it, "the basis of any supervision and criticism of the details of management."(69) His meaning is made clear in a monograph he co-authored where a system of cost accounts are recommended "to finally present the broad facts which the directors should have before them while permitting close scrutiny of all details."(70) The point of the exercise was to "throw up items of excessive or over-average cost and thereafter point the way to inquiries as to the cause whether unavoidable or due to carelessness, inefficiency, waste ..." (71) this use of costing, as an instrument of control of the directoral "administrative" over the managerial "executive" could not easily be delegated to the financial accountants without creating a *de facto* top management.

The result was that in British manufacturing (it would appear uniquely) costing was put in a separate department. These departments were staffed by specialist clerks whose low pay(72) is indicative of the relative level of skill required. When World War One brought costing to a new and greater prominence, some cost accountants were emboldened to attempt to professionalise this niche between engineering and financial accounting. The result was the Institute of Cost and Works Accountants (ICWA) founded in 1919. The ICWA was concerned from the beginning that membership should indicate competence and qualifying examinations were established for those not already in some fairly senior cost accounting position.(73) It may be taken as an indication of the relatively small number of positions of that kind or the relatively low demand for their services that ICWA membership was small and rose slowly (526 members in 1923, 1,172 in 1939) and always represented a very small percentage (circa three percent) of the "costing and estimating clerks" employed in industry.(74)

There appears to be general agreement by informed observers before World War One that costing in UK manufacturing might be fairly widespread but generally had not developed beyond the most basic level. A.H. Church, a pioneer in the development of cost accounting said in 1900, "the majority of firms of any size have some sort of cost method which enables them to tell how much labour and what value of material have

been expended on any particular job. Between this elementary stage and the next there is a very wide gap which is bridged over by comparatively few firms ..." (75) In 1917 L.R. Dicksee said "In many cases what are called "Cost Accounts" are calculations, made at arbitrary intervals - when specially called for - estimating or guessing the cost of some article or service ... In other cases, where something called "Cost Accounts" is continually compiled, I have found, upon enquiry that it is a record as to cost of labour only, or (still more rarely) a record of the cost of labour and materials ... the whole question of overhead charges ... being disregarded ..." (76) Mark Webster Jenkinson said in 1907 "Many books have been published on the subject - many excellent books; many lectures have recently been given ... many hours of study have been devoted to the matter by competent men: yet at the present day but few of the manufacturers who have any efficient costing system in operation." (77) We may note the variation in emphasis between these writers, but the common diagnosis is clear. The scope of most UK manufacturing costing was limited and unskilled.

However for the tasks of estimating or general supervision it was not absolutely necessary to do much more if the tasks are carried out at a minimal level. Estimating need not take account of overhead charges if machinery was heavily depreciated and the commercial environment is heavily competitive - all that is required is the knowledge that at the price obtainable some contribution will be made to overheads - or even to profits - over and above the cost of labour and material. Similarly if the ambitions of directoral supervision were no more than to compare department with department (78) or departmental performance from quarter to quarter (79) to detect anomalies in the broad facts laid before them, then inspection did not need to be more than cursory.

That the inspection could be cursory is confirmed by the observation of an accountant who visited "scores" of firms during World War One that, leaving aside those firms whose cost findings were "practically useless", even when firms had "quite passable methods ... many directors and executives made little or no use of the individual results; never troubled to compare them; and, in not a few cases, the works management pooh-poohed the costing as sheer nonsense." (80) Such a situation only really makes sense if

the purpose of costing as an independent check on production is understood. As a result, the position of the cost accountant could be less than comfortable:

... with regard to the majority of cost accountants in this country ... you will find that the cost accountant is debarred on the one side from knowledge of the financial accounts and on the other side from a proper knowledge of works processes and works organisations. The result is, you will find, the works and cost accountant has put up a certain set of figures, and he is slammed on one side by the works and on the other by the Board of Directors, so that between the two the majority of cost accountants do not know whether they are standing on their heads or their heels.(81)

Indeed one cost accountant suggested in 1923 that the system was deliberately adversarial: "The old manager's axiom was "Divide and Rule". It was a very safe game to play in those days to always pit one department against another. ..." (82) There was certainly encouragement to keep the various finance roles separate. An English disciple of the US "efficiency engineer" Harrington Emerson could write in 1919:

An accountant should be kept in his place ... accounting is a definite job which has to do with records only, and not with methods, loans, operations, policies or management ... Accounting has on one side of it costing and on the other financing but there is a "twilight zone" between accounting and costing and also between accounting and finance and consequently the accountant sometimes gets out of his place and meddles with costing and finance, sometimes to the extent of monopolising all three jobs. This ... is a very serious matter as the average accountant is quite unfit to handle costs or finance. Make your accountant stick to his Ledger; hire a special clerk for Costings and consult your banker on Finance.(83)

There is clear evidence, then that the engineering and accounting professionals employed by UK manufacturers were organised in a way that kept them separate, with jobs that were narrow in scope and at times adversarial. It seems clear that this was the consequence of the "proprietary theory of the firm" we considered in the previous section of this chapter. In the particular case of management accounting there is a good case for seeing the uses to which it was put and the manner in which it was carried out as the result of a desire for commercial secrecy and a particular proprietary form of supervision. But we can also suggest that there is a strong resemblance between the

narrow scope and compartmentalised role of professionals and the water-tight departments of the railways that we considered in Chapter Two. The common factor is the proprietorial desire to reserve to the board the co-ordinating and other top management functions rather than delegate them to managers. Such structural constraints not only limited the role of managers and limited the potential managerial role of the professionals but limited the ability of organisations to both produce innovative management techniques and to produce managers.

4) Summary and Conclusions

We can see from our discussion in this chapter that the structures of the firms surveyed in Chapter Two were not historically contingent but were a clear consequence of a theoretical model of how firms should be managed. Particularly important results flowed from the prescribed split between the roles of managers and directors. Because control of the enterprise as a whole was reserved to the Board there was next to no development of top management, functional departments were rigidly separated and the scope of the technical professional's work was narrow. For the longer term the part-time role of the directors limited their scope to manage creatively and set limits to the scale of enterprises which could be managed under this form of organisation. As a worst case, the almost unassailable power of the directors combined with bad or desultory management on their part produced an almost irreversible decline of the firm.

We have suggested that the various structures actually adopted by large UK enterprise before World War One were the product of a tension between the proprietorial requirement that the firm be controlled by the directors and a commercial necessity to delegate to managers. This explains why, for example, when the perceived commercial necessity of delegations diminished, power would be resumed by the board. It means that delegations to managers at this time were not the start of a Chandlerian progress towards the managerialist enterprise. In particular we have noted how the appointment of chief executive officers was frustrated or hedged around with checks and balances when they were made. The appointment of a chief executive officer with extensive delegated powers was the starting point for the kinds of US corporate structures outlined in the introduction to this thesis. UK enterprise was not yet becoming corporate.

Furthermore, left undisturbed by further diversification or amalgamation the structure of firms surveyed in Chapter Two remained remarkably unchanged for many years. Graham Turner in his Business in Britain published in 1969 describes numbers of large companies which were essentially the same post World War Two as they were pre World War One, notably J and P Coats, English Sewing Cotton, Calico Printers Association, GKN and brewing companies generally. We may conclude, therefore, that

the proprietorial form of governance was not a transitional, shortlived form as long as the complexity or scale of the management task was within the capacity of the structure to cope with it. But how easy would it be for companies to transcend the pervasive proprietorial *Weltanschauung* if they chose the path of diversification and expansion in the interwar years? At some stage the process would test the limits of the proprietorial form to breaking point. Some companies reached breaking point and, like Vickers, simply broke. But what of the others? The transcendence or otherwise of the limits of the proprietorial firm is the subject of part two of this thesis.

- 1) J M Keynes The End of Laissez Faire, London 1926, p5.
- 2) H Goitein Company Law, London 1949, p142. See generally pp131-169 for subsequent paragraphs unless otherwise stated. Cases used as illustrations are all pre-1929. Direct quotes are referenced.
- 3) Ibid p160.
- 4) Ibid p158.
- 5) Ibid p v.
- 6) J B Jefferys Business organisation in Great Britain 1856-1914 PhD thesis. University of London 1938, p409. Also generally Part III Chapter IV.
- 7) The Stock Exchange Year Book for 1908 shows shareholding qualification for directors of the top 50 companies to be between £1,000 and £4,000 for railways, £1,000 and £8,000 for industrial companies and £5,000 and £10,000 for banks.

See the interesting discussion in John Scott Capitalist Property and Financial Power, Brighton 1986, Chapter 4 and Chapter 5, on the size of shareholdings necessary to achieve control in joint stock companies with large number of shareholdings. He suggests that if the top twenty shareholders hold 16% of the shares their control is secure. P Sargent Florence has suggested that in certain circumstances a 6% shareholding may be sufficient - see Scott, op cit pp56-7. While the Railway Shareholders Association and the pressure group of 1902 sought to influence policy by publicity there is no evidence that attempts were made to build majority voting blocks of shareholders, though the minimum collective holdings of the board were well below 6% of the total shares.

- 8) See share qualifications at footnote 7 above. Equivalent figure for 1993 calculated from indices in B R Mitchell British Historical Statistics Cambridge 1988 and Annual Abstract of Statistics HMSO 1995.
- 9) D Crane Sir Robert Perks, Bart, MP - The Story of his Life, London 1909 p63. Perks had been involved in companies, he said, with aggregate capital of more than £150 million.
- 10) J B Jefferys op cit pp402-3.
- 11) Economist July 20, 1912, p110.
- 12) Accountant September 13, 1930, article "Director's Qualifications".
- 13) Quoted in W J Reader ICI : A History, Vol 1, London 1970, pp270-1.
- 14) Goitein op cit p161.
- 15) Herbert W Jordan ABC Guide to the Companies Acts 1862 to 1907, London 1908, p31.
- 16) Goitein op cit p159-160.
- 17) See for example the case In re National Bank of Wales Ltd, *ibid* pp161-2.
- 18) See the important Marzetti case of 1880 where a director of a firm in liquidation was held liable to repay money wrongly paid out on the basis of deceitful assurances by other directors. It was held that he should have known from the circumstances that the payment was wrongful. See Goitein op cit p165.
- 19) Economist, May 27, 1911, Letter from Mr Reg. Murray.

- 20) Economist, July 20, 1912, p10.
- 21) L Urwick The Meaning of Rationalisation, London 1929, pp115, 116. The quote is from O Sheldon The Philosophy of Management, London 1924, p32.
- 22) As footnote 19.
- 23) Economist, June 3, 1911, Letter from Mr Herbert Hill.
- 24) L R Dicksee Business Organisation, London 1910, p49.
- 25) See the quotation in J B Jefferys op cit p424: "... every company is in a sense a one man company, that is to say is controlled by a ruling spirit. Directors are mostly dummies and shareholders mere dividend drawers ..." E Morrison Law Quarterly Review No XLII, 1895, p186.
- 26) See the case of the Law Car and General Insurance Co in the Economist, July 20, 1912, p110.
- 27) A R Holmes and Edwin Green Midland - 150 years of Banking business, London 1986, p108.
- 28) John Lee "Industrial Structure VII. The Value of Comparisons" in Business Organisation and Management Vol 6, No 4, July 1922.
- 29) L Urwick The Meaning of Rationalisation, London 1929, p137-8. It is presumed that the "weekly board meeting" referred to is some kind of management committee.
- 30) Ibid.

- 31) See the discussion on railways above p32. See also J S Jeans, Secretary of the British Iron Trade Association in 1902:

... the average English director - the typical member of the board - is mainly a commercial man and he looks with suspicion upon all proposals founded upon the expenditure of large sums of money [unaware of the] problems of keeping up to date and distrustful of managers who are "expensive".

quoted by D L Burns The Economic History of Steelmaking, Cambridge 1940, p256.

- 32) Britain's Industrial Future being the Report of the Liberal Industrial Inquiry, London 1928, pp89-90. The committee and its sub-committees included such industrial notables as B S Rowntree, L Cadbury, C G Renold and Sir Josiah Stamp as well as other experts such as J M Keynes and L Urwick.
- 33) Business Organisation and Management, Vol XVII No 5, February 1928. Review of Colesworthy and Morris Practical Directorship.
- 34) Sir Gibert C Vyle, Chairman of W T Avery "Selecting and Training Managers for Business under todays conditions", System, August 1928.
- 35) This is the view of L Urwick and E F L Brech, The Making of Scientific Management Vol II Management in British Industry, London 1946.
- 36) David F Noble America by Design, Oxford 1979, (pb edn) p263.
- 37) A Chandler The Visible Hand, p95.
- 38) See Solomon's historical introduction to David Solomons (ed) Studies in Costing, London 1952.

- 39) See Chandler The Visible Hand for the work of Donaldson Brown at Du Pont. J O McKinsey was a certified public accountant and the author of the first full text on budgetary control.
- 40) William Wickenden writing in 1929 quoted in Noble op cit p320.
- 41) W H G Armytage Social History of Engineering, London 1969 pp235-6.
- 42) R H Parsons History of the Institution of Mechanical Engineers, London 1947, p34 - the grounds for opposition appear to stem from the idea that it was a practical, not a theoretical, profession.
- 43) See the comments of Sir Frank Gill and Prof Goodman in Chapter VIII of Urwick and Brech op cit and the exam papers detailed in Parsons op cit at p47.
- 44) W A J O'Meara "The Future of the Engineer - His Education and Training" reported in E T Elbourne The Costing Problem, London 1919, p123.
- 45) This picture emerges vividly from the pages of J E Powell, The Output Problem, London 1920. See also letter from D W Myers in Engineering Production Vol I, No 4, April 4, 1920, p165 on progress clerks.
- 46) See the entry for Engineers in Duncan Cross Choosing a Career, London 1908, p158 ff.
- 47) Sir Lynden Macassey quoted in O Sheldon The Philosophy of Management, p71.
- 48) See eg the interesting discussion in Manchester of a reading of W A J O'Meara's paper (as footnote 44) to local electrical engineers in Journal of the Institution of Electrical Engineers (JIEE), Vol 57, No 280, March 1919.

- 49) Ibid Contribution of P M Baker.
- 50) See the interesting series of biographies of "British Organisation of Production" in Engineering Production, Vol III, No 14, (6 Jan 1921) ff.
- 51) President's speech in November 1935, Proceedings of Institution of Production Engineers, Vol XV, No 1, January 1936. The mechanical engineers alone had a membership of 12,000 in 1935. (Parsons op cit p81).
- 52) Anne Loft Coming Into the Light, London 1990, p8.
- 53) G P Norton Textile Manufacturers Book-keeping, 3rd Edn, London 1894, p246.
- 54) The Engineer quoted Urwick and Brech, op cit, p118.
- 55) Second Report on Costs and Efficiencies for H M Factories, Ministry of Munitions, London 1918.
- 56) Sir Herbert Austin "The General Value of Cost Control", The Accountant, June 19, 1920, p721. He was later to pooh pooh the idea that he had ever said such a thing. See the Cost Accountant, Vol 4 No 12 (May 1925) p420.
- 57) Yorkshire Local Section Chair, W Long, J I E E, Vol 56, No 269, December 1917.
- 58) A S E Ackerman, J I E E, Vol 57, No 280, March 1919. In discussion of O'Meara's paper as footnote 44.
- 59) See Chapter 2 of Edgar Jones Accountancy and the British Economy 1840-1980, London 1981, for the next paragraph.
- 60) "A great part of the work of practicing accountants in those days [the 1890s and early 1900s] was introducing double-entry systems. It commonly fell to auditors

to balance the books and prepare the annual accounts". F R M de Paula quoted in *ibid* p54. Josiah Stamp also recalled the primitive state of company accounting in this period from his early days as a tax inspector. See his "Accounting in 1965" in Some Economic Factors in Modern Life, London 1929.

- 61) See L R Dicksee's analysis of the examination papers for the ICAEW in his Fundamentals of Manufacturing Costs, London 1917, pp5,6.
- 62) R A Withy How to become a Qualified Accountant, London 1906, quoted in E Jones *op cit*, p116.
- 63) L R Dicksee, Business Methods and the War, Cambridge 1915, p19.
- 64) L R Dicksee, Fundamentals of Manufacturing Costs, London 1917, p5.
- 65) G P Norton *loc cit*.
- 66) L R Dicksee (1915) *op cit* p19.
- 67) See eg the contributions of Mr Morley-Mower and H Mensforth at the 1922 Costing Conference, Cost Accountant, Vol 1, No 10, March 1922, pp191,183 respectively.
- 68) John Mann in the Encyclopaedia of Accounting, 1904, quoted in Solomons (ed) *op cit* p20.
- 69) Evidence of Sir John Mann, Coal Industry (Sankey) Commission, Minutes of Evidence, Vol II, q24,195, May 29 1919.
- 70) J Mann and H G Judd Colliery Accounts, London 1909, p50.
- 71) J Mann, Sankey Commission *loc cit*.

- 72) See Anne Loft op cit p10 quoting an accountant writing in 1904 and the comments of the Chairman of a discussion on "Costing in Relation to Selling" at the "Conference on Scientific Costing" in June 1919. (Accountant LXI No 2328).
- 73) See Anne Loft op cit Chapter Three. Some less competent people may have smuggled themselves in in the early years.
- 74) ICWA membership lists 1923 and 1939 and Anne Loft op cit pp111-112.
- 75) A H Church quoted in Solomons (ed) op cit.
- 76) L R Dicksee (1917) op cit, p4. He states that coal and iron firms generally have good costing : these remarks apply to manufacturing.
- 77) Mark Webster Jenkinson Cost Accounts for Small Manufacturers, London 1907, p4. He was later to hold the position of Controller of Factory Audit and Costs at the Ministry of Munitions and ^{went onto have} a successful business career in the inter-war years.
- 78) As Mann and Judd suggested, see Colliery Accounts, p49.
- 79) This was the basis of the cost accounting control at the Sheffield works of Vickers in PRO WO 33/240.
- 80) E Miles Taylor "Costing as a Sign Post to Efficiency", Business Organisation and Management, No 1, October 1919.
- 81) Mr Morley Mower, Cost Accountant, Vol 1, No 10, March 1922, p191.
- 82) Robert Stelling "What Good Management Involves" Cost Accountant, Vol 3, No 5, October 1923.

- 83) H Casson writing in Efficiency magazine, quoted in the Accountant, March 1, 1919, p1.

PART TWO

**STRUCTURE AND TECHNIQUE IN LARGE BRITISH
ENTERPRISE IN THE INTERWAR YEARS**

CHAPTER FOUR

INTRODUCTION TO PART TWO

The discussion in Chapter One demonstrated that it was now generally accepted that there had been a pervasive failure by large UK companies to build managerial hierarchies before World War Two. In Chapter Three it was proposed that a major reason was the particular role ascribed to the directors of joint stock companies and the consequent subordination and fragmentation of professional management. In Part Two an attempt will be made to establish the extent to which the more developed large UK enterprises were able to move towards the Chandlerian modern business enterprise in the interwar years. In contrast to the survey of enterprise structure and practice carried out in Part One for the pre-World War One years, Part Two is largely composed of four case studies. A survey approach is appropriate for Part One because the considerable reliance on secondary sources that a survey requires does not affect crucial areas of interpretation. Pre-World War One UK companies were not, nor have they been claimed to be, managerial in the Chandler sense. However, there have been claims that some companies achieved the status of Chandlerian modern business enterprise in the interwar years.⁽¹⁾ These claims have been made on the basis of the business histories of these companies but these histories do not deal with corporate structure and control technique in sufficient detail to allow a clear comparison with the Chandler model. In order to make a clear comparison it is necessary to deal with the primary sources. This approach in turn has constraints placed upon it by the limited space available and a sampling approach becomes inevitable.

The case studies selected are the London Midland and Scottish Railway (LMS), Austin Motors, ICI and Unilever. These case studies have been selected because they display particularly noticeable characteristics of size, leadership, sector

or progressive reputation in the context of the general development in large UK enterprise in the interwar years.

The London Midland and Scottish Railway was a huge company in terms both of capitalisation and number of employees. From late 1927 it was run by Josiah Stamp holding the combined position of Chairman and Chief Executive. This overturned the longstanding objections to a single chief of a British railway. Stamp himself was well read in the literature of management and accountancy and had experience in both the private and public sectors at senior level. To all appearances, in opportunity, ability and power to act he was in an exceptional position to transform a traditional industry.

Austin Motors was the second largest motor manufacturer in the UK in 1939. The motor industry is a key element of the "second industrial revolution" requiring advances in, and integration of mass production and marketing. Austin Motors had probably the most advanced budgetary control system of any large firm in the UK in the interwar years. In addition, after a financial crisis in the early 1920s, the firm's creditors imposed full time directors for production and finance on the owner, Herbert Austin. Thus unlike, say, Morris Motors, Austin Motors was a firm with a partly achieved managerial takeover.

ICI by sector, size and repute(2) was one of the most important, if not the most important result of the interwar merger movement. It amalgamated a large part of the British chemical industry which it ruthlessly rationalised. It has been put forward as the first truly multi-divisional structure in the UK. Unilever is less feted as a pioneer of corporate structures but possessed a budgetary control system and was a pioneer in marketing. In its rationalisation of half of the UK soap industry it had to balance economies of production and selling against the goodwill of the consumer to a far greater extent than any of the other three case studies.

As summarised here, the achievements of these firms are more modest than the US enterprises described by Chandler. Nevertheless, the UK companies selected

must be seen against a general background of large UK enterprises which were resistant to change. UK enterprises had suffered considerable disruption in World War One which had, nevertheless, been accompanied by useful lessons in mass production, costing and new organisational structures. The interwar years brought further political and economic changes; slumps of great severity, a world of rising tariff walls and increased international competition, the growth of the industries of the "second industrial revolution" and a government prepared to tolerate widespread anti-competitive practices. This is the general picture that emerges from the now extensive literature on UK business history and the general surveys of it, particularly Chandler's Scale and Scope.⁽³⁾ These studies find that companies did grow by amalgamation in the interwar years but their structures were generally loose holding companies. Very few attempted to control their large structures by constructing a denser and more integrated management structure. A rather larger minority of companies appear to have achieved a new mastery of large scale production. The literature does not, however, appear to sufficiently emphasise the lessons of the war or the availability of new techniques - and to a lesser extent new structures - to large UK enterprise in the interwar years.

World War One broke in on the enterprises we have described in Part I with considerable violence. For reasons of space it is not possible here to give a detailed account of the changes the War brought. In broad outline the huge intervention by government, particularly through the Ministry of Munitions⁽⁴⁾, brought firstly the imposition of costing systems on private industry and demonstrated a hitherto unknown sophistication in the way they were used. Secondly, as the Ministry rapidly grew into what was effectively an industrial conglomerate of unprecedented size, it evolved a divisionalised structure with line and functional management close to the Chandlerian pattern. Thirdly, the managerial scope allowed to accountants and engineers was much increased and demonstrated that the technical/administrative skills necessary to service complex managerial hierarchies were capable of being produced in short order if the demand was there.⁽⁵⁾ Fourthly, the example of the Ministry was available to private industry through the 90 or so prominent businessmen who were brought onto the Ministry staff and the large numbers of

accountants and engineers who were also involved. On the face of it, then, the impact of the experience of the war on British enterprise should have been considerable.

Direct influence from the Ministry on private industry is however almost impossible to discern once the war ended in terms of radical changes in organisational form or widespread improvements in control technique. At the war's end "the magnificent services and experience represented by various wartime departments of supply gave place after the Armistice to an almost indecent haste in returning to an isolated and aggressive individualism."(6) Under these circumstances, of course, the relevance of war experience could be thought to end with the war.

The experience of the war does seem, however, to have had an influence of a more indirect kind. Private industry realised the potential for greater production flows and larger firms. Manufacturers who were prepared to learn could say at the war's end "We had learned the art of mass production ... The war had clearly shown how ... a million articles can be produced cheaper and of a higher quality than can a thousand similar articles by ordinary processes."(7) C G Renold of the Hans Renold Company later wrote that in World War One the company "learned the technique of mass production and quality control".(8) The explosives companies admitted without prompting that Ministry of Munitions' rationalisation and the way it shared information and staff "has had a striking effect on the output, quality and costs."(9) McGowan of Nobels was to say that their war experience - the experience of Ministry control - had shown "that it is possible more scientifically to handle our factories than ever before."(10)

Care is needed, however, in assessing the extent to which possible courses of action became reality. The Board of Trade Report on the Engineering Trades after the War published in 1918(11) based on a survey of larger firms made clear the crucial role of the State as "chief customer as well as controller of the works" in improved methods and in standardising, co-ordinating and concentrating production.(12) The report was unsure what the outcome would be when that controlling hand was removed but noted that there were no practical industry-based

initiatives to preserve these benefits. It was noted that the machines imported for war production would be of little peacetime use. It was also noted that widespread changes in production methods were unlikely because "remodelling of works under present conditions does not seem generally possible while the energy and capital are lacking to adopt the American system of scrapping old works in favour of a total reconstruction on the most modern lines.(13)

The limited effect of war production on peacetime methods is confirmed by a survey of British manufacturing by a US writer just after the war. In a tour that appears to have been aimed at the larger, or more progressive, plants (eg Hans Renold, Metropolitan Vickers, Lever Bros.) he finds that the US practices of progressive machining and "progressive assembly with the chain conveyor" were restricted to a minority, even of his selected firms.(14) The use of systems of executive control using cost and other statistical data (for example on inventory, production levels) was confined "principally to a few bright lights".(15) Any general interest in costing aroused by the war proved evanescent. Two official reports, one published in 1918, the other in 1929, have a remarkably similar tone and content: the best firms had good costing systems, the majority had bad systems or no systems.(16) We have an indicator of the very slow rate of change: the Institute of Cost and Works Accountants was founded in 1919, by 1930 it had less than 800 members, by 1939 less than 1,200.(17) Initiatives in the immediate post war period to raise the profile of costing in the main financial accounting bodies faded away.(18) The simplest and most obvious explanation appears to be that there was little demand for costing services at a professional or middle management level.

Nevertheless, in what appears to be a relatively small minority of firms a sense of technical/financial mastery appears to have been achieved in the interwar years. Firms such as Hans Renold or Critalls which we have already touched on and Austin Motors and the workshops of the LMS were able to combine flow production with financial and statistical control. In these cases the firms involved were able to draw the lessons of their war experience and apply them.

The relation between the size of the firm and the use of new methods had been emphasised by the 1918 Committee on Commercial and Industrial Policy After the War and its constituent committees.(19) It was generally urged that manufacturers "should be encouraged to work together in larger units, either by amalgamation or by joint working, by pooling of resources and by specialising production."(20) The intention was therefore that amalgamations should provide the resources to build production units able to take advantage of mass production. Whether or not the process was helped by this benign official attitude, there was a spectacular amalgamation boom in the 1920s.(21) It is not at all clear, however, that large production units and investment in new technology were the intention or the result. The war experience of strengthened cartels built through the trade associations prompted by the government for ease of negotiation had probably encouraged closer working.(22) The Ministry of Munitions had also provided a form of experimental cohabitation for

officers of ... companies seeing for themselves, as members of government control boards, the advantages of consolidation. One such director of a large steel company told me for an hour of his experience as head of such a board and it was quite evident that many industrial Bourbons had learned something and that many lone wolves had been taught co-operation.(23)

A major motive for combination was undoubtedly the desire for monopoly or near monopoly in an increasingly protected market.(24) That the amalgamation movement did not result in larger units of production may be seen from figures provided by Hannah which show that there was no increase in the proportion of production from large plants between 1924 and 1935.(25)

That there were no particularly new organisational problems thrown up by these amalgamations - indicating neither Chandlerian problems of increased production flows or radically increased integration of amalgamating firms - may be inferred from the lack of public discussion of this type of issue. There was a medium for such discussion in the shape of business journals such as System (retitled Business from March 1928) and Business Organisation and Management. Both magazines

have a great deal of material on works, departmental or office organisation for retail and manufacturing companies during the 1920s and 1930s but very little on the structure of the firm seen as a whole and nothing on the structures of the new large amalgamated firms. There was no use of the ready-made sources of material in the USA.(26) No reviews of the structure of the Ministry of Munitions appeared in the business magazines or in such journals as Public Administration.

The most obvious explanation of this silence on the problems of large scale organisation is their lack of relevance to the contributors who were largely businessmen or consultants. In turn this lack of perceived relevance appears to stem from the structures actually adopted by large enterprise and the perceptions of those in power. Lyndall Urwick, one of the few Englishmen to wrestle with the problems of large scale enterprise and a successful consultant wrote that where large companies were the result of one man's enterprise "the corporate form served only to expand and disguise a control which was, essentially, individual. Such a rule does not lean towards principles of administration."(27) Where amalgamations of firms were involved they generally began "with an arrangement for financial unity which leaves the question of executive unity shrouded in the mists of convenient obscurity.

The word convenient is not too strong. The writer once ventured to suggest to a partner in a leading firm of chartered accountants who have been responsible for many mergers, that any financial grouping which was unaccompanied at its inception by clear and logical arrangements for the organisation and administration of the new combine, was doomed to a period of futility and disaster. His reply was a full admission of the diagnosis, accompanied by the caveat that it is, in practice, quite impossible to discuss organisation in advance if most mergers are to go through at all. A vague understanding about the distribution of directorships on the new board is the most that can be undertaken. Once the directors of the merging companies start talking about their own and their relations' executive positions, the odds against the negotiations proving successful are very heavy.

Thus at the outset there was "a refusal to contemplate the problems of organisation and administration which mergers present ..."(28) But as Urwick makes clear elsewhere, these problems of organisation and administration depend for their

severity on the extent to which merged firms are integrated.(29) Close integration was not greatly pursued in UK mergers, the same preference being shown for the holding company form in the interwar years as before World War One.(30) Thus the preservation of proprietorial prerogatives avoided creating conditions under which detailed consideration would have to be given to the structures proper to integrated large scale enterprise.

Yet interestingly Urwick suggests that a kind of organisational time-bomb was ticking away and that failure to resolve the problems faced by large organisations would effectively lead to crisis. In a loose company structure following amalgamation "there are obvious possibilities of economy in concentrating the production of certain articles in the most efficient works, in eliminating transport costs, and in creating comparative records of efficiency. But when such obvious economies have been realised there remains a network of questions, upon which depend in the long run the efficient conduct of the combination considered as a unity."(31) Such areas as buying, selling, advertising, research, the balance between economy of operation and commercial success all these require "the most detailed analysis." The problems could not be solved by simply centralising planning and control. The large size of the new organisations made some decentralisation of authority necessary though this had to be achieved without loss of the central power required to co-ordinate the organisation. Central authority was also required to ensure consistency in the increasing number of technical functions and this ran counter to the need to decentralise. Achieving an optimum solution was therefore a complex problem.

This ...is the problem which faces all enterprises of any size under modern conditions. They must decentralise executive responsibility; formal authority must be given in large measure to those responsible for subsidiary units of organisation. On the other hand the growth of scientific knowledge in the past half century and its application to every facet of social life has increased enormously the degree of specialisation necessary to the effective conduct of any enterprise. The proper use of such specialised knowledge is essential to efficiency. But this postulates the introduction of a degree of technical authority which runs directly counter to the tendency to decentralise executive responsibility and complicates co-ordination.(32)

Thus the combined issues of optimal decentralisation and the correct balance of authority between line management and specialist functions required conscious clarity of thought. If the issues were not clarified and dealt with "the failures in co-ordination" which result "will present themselves as a series of isolated difficulties to be dealt with empirically."⁽³³⁾ Results might be achieved "somehow or another, though with greater effort and at increased costs."⁽³⁴⁾ It is implicit in Urwick's interwar writings that UK enterprises would have to face these problems either consciously or not and overcome them whatever the cost. But Urwick's approach is ultimately to state the problems rather than suggest how they may be overcome. In his published writings he does not deal with particular cases, makes no reference to US material or corporate experience and does not conceptualise problems of large organisations in a way which helps find solutions. In particular the model of the divisionalised organisation with combined line and functional management which had emerged in the US finds no place in his work. The only mention of such a structure in the interwar years appears to be a single fragment by Oliver Sheldon.⁽³⁵⁾ The conclusion one is driven to is that the structure of firms was not felt to be a pressing issue as far as most enterprises were concerned. Management writings on the issue could see potential problems but had little influence on UK enterprise.

If there appears to be a general failure to build large integrated managerial hierarchies in the interwar years it is not surprising that the technique evolved to control such complex structures - the technique of budgetary control - was not widely adopted. Budgetary control is a general term used for methods which attempt to direct the activity of an organisation by predicting income and planning expenditure and comparing actual periodic results with them. Variation between prediction and out-turn is used as an investigatory tool which results in modifications to either the budget or the actions of the organisation. In one sense, of course, this can be subsumed under the heading of entrepreneurship: the astute judgement of opportunity and risk. However, the point comes in the life of a growing enterprise when this judgement must attempt to become a science: quantified in its predictions

and out-turns and standardised in its accounting methods, procedures and periodicity. The process must become explicit in this way because it has become collective and subject to a managerial division of labour.

It is important to stress that the production of a budget does not mean that a system of budgetary control has been introduced. A budget can be little more than a list of permissions to spend. For budgetary control the budget has to be used in a feed-back loop in which prediction and out-turn are continually examined to find ways of achieving greater certainty of outcome. The process not only brings about attempts to improve techniques of prediction but also focusses attention on information flows and the performance of different parts of the organisation. Budgetary control therefore is both a planning technique and an instrument for integrating and driving organisations.

In this discussion we shall only consider revenue budgets.(36) Revenue budgets deal with sales and the breakdown of these sales by product and their costs of production and cost of sales. The evolution of the revenue budget into a system of budgetary control seems to have a simple logic. In its simplest form the revenue budget sets spending limits as a result of predictions of future sales. A second stage comes when future sales are seen as a target to be met within set resources. The third stage comes when target-setting is matched to the structure of the firm and assigns responsibility for meeting targets to departments, sections and, if necessary, individuals. Only the second and third stages can properly be called systems of budgetary control since only when targets are set can the feed-back loop of prediction and out-turn be established. Each of these three stages gives progressively wider opportunities for delegations. The first stage effectively gives batches of permissions to spend, rather than each being given individually. The second stage, the budget as target, had the potential to allow managers a more pro-active role in the achievement of goals within given resources without supervision of the process. The introduction of the flexible budget(37) allowed further delegation since it showed variable expense limits as sales varied.

However, it was only at the third stage - where budget targets were consciously linked to the organisational structure - that the full organisational potential of the budget system could be realised. In these circumstances, budgets could be built up from information supplied by different parts of the organisation acting as cost or profit centres, centrally assessed and restructured then passed back to the cost or profit centres as targets. The responsibility for the accuracy of the information supplied and for meeting their targets rested with clearly identifiable section managers. This combination of delegation and responsibility allowed an extensive cascade of progressively sub-divided delegations and responsibilities down through the organisation as a whole. This was the practical solution to the problem of delegation without abnegation and imposed no theoretical upper limit on the size of the firm to which it was applied.

Before such a system could be introduced certain pre-conditions had to be met: it was essential that the organisation had a top management capable of understanding, installing and using such a system. Second, the organisation had to have sufficient clarity of structure for it to be possible to sensibly apportion responsibilities down an established hierarchy. Thirdly, the information on past performance (eg costs, margins) had to be sufficiently accurate and detailed to allow meaningful targets to be established for the future. Fourth the staff and other resources necessary to gather data of actual performance had to be found. We may say that given what has been written so far it would be likely that there were but few UK enterprises which met these pre-conditions. But as with other questions of organisation and technique examples were not wanting, had UK enterprise wished to study them.

The first text on budgetary control was published by the American J O McKinsey in 1922.(38) He appears to have been the first to make the explicit link between the delegation of tasks and the use of the budget to make sure the tasks were being carried out. McKinsey was not, however, the inventor of the budget. Revenue budgets (predictions of income and expenditure) were in use on some US railroads by 1881.(39) W H Lever had already evolved a form of trading budget when he was working at the Wigan branch of his father's business in the 1880s. He

was to use elaborated versions of this system in his own business as it grew.(40) (No other example of the use of budgets has been found in the UK prior to World War One.) By the early twenties, budgets do, however, appear to have been an established feature in the better managed US firms.(41) The first published article in the UK on the subject appears to be in August 1921 advocating a version of the flexible budget.(42)

The first publicised UK budgetary control system was that of Austin Motors. More detail on the development of this system will be given below.(43) Significantly, the Austin and Lever systems predated the publication of J O McKinsey's book which can be accounted a major source of later UK initiatives.(44) Austin's system was established in time for it to be set out in a series of articles in the Cost Accountant between September 1922 and February 1923.(45) The second post World War One budgetary control system appears to be that of the Hans Renold Company which was evolved between 1925 and 1928.(46) It is possible that the Renold system was more or less contemporaneous with that of Standard Telephone and Cable Ltd whose budget officer published a series of articles between December 1931 and February 1932 based on his experience there.(47) He claimed that "several firms in the electrical and "newer" industries - particularly those with transatlantic connections - have adopted the budget plan with considerable success."(48) The Institute of Cost and Works Accountants (ICWA) published material in its journal the Cost Accountant some of it from US sources.(49) The ICWA's Cost Conferences in 1925 and 1930 were devoted to budgetary control. There were thus practical examples and published texts available on a wide enough scale to enable UK enterprise to take advantage had it wished.

An indicative, though by no means complete survey of contemporary budget practice was made through the Management Research Groups and presented to the Sixth International Congress for Scientific Management held in London in 1935.(50) Because the subjects were drawn from the Management Research Groups there was a real sense that they represented a self-consciously "progressive" group. On the other hand significant sectors and firms were omitted.(51) Twelve firms from different

sectors were considered.(52) All the firms surveyed claimed they were gaining benefits from the use of budgets. In half the firms, however, the advantages claimed were not really to do with the use of budgets but incidental improvements in management accounting or expenditure control or increased co-ordination.(53) In the other half of the sample the use of a budget had introduced a feedback loop allowing faster response and greater control. Here we may say that some form of budgetary control had been established. Only in two firms, which appear to be Dunlop and Austin Motors, were budget targets linked to individual manager's performance, though no mention is made of systems of delegations of responsibility. In the opinion of the maker of the survey, only two firms, which appear to be Rowntrees and Austin Motors, were going "a long way towards full exploitation of the underlying theories" of budgetary control.(54) For a self-selected group of progressive firms this is not impressive.

We may conclude from our survey that World War One had only a limited effect on UK enterprise. The war undoubtedly encouraged a wave of amalgamations but these were not accompanied by widespread qualitative changes in production technique, financial control or corporate structure. A small minority of firms mastered the combined financial and technical control problems of mass production. A small minority of firms adopted some form of budgetary control. There was almost no interest at all in the general questions of large scale corporate structure. This modest picture provides the context for our four case studies. The elements of corporate development we have considered in our survey - corporate structure, financial control and, to a lesser extent, mass production - are of varying significance for each of the case study firms. For some of them mass production had important implications, for others it did not. For some corporate structure was an important issue for others it appears to have been irrelevant. The various elements involved in the development of each firm in the interwar years are therefore accordingly given an appropriate greater or lesser emphasis. In all cases, however, the assumed comparator is the ideal type of the Chandlerian corporation with its overlaid line and functional structure and its system of budgetary control. In other words, the different

routes taken by these four large UK companies are significant insofar as they bring the firms more or less close to the Chandlerian corporate form.

- 1) Chandler puts forward ICI and BP as modern business centerprise in Scale and Scope. Hannah suggests Turner and Newall in The Rise of the Corporate Economy.
- 2) See the remarks of A D Chandler in Scale and Scope, p358. Also Corelli Barnett Audit of War, London 1986, p181.
- 3) See also the special issue of Business History on "Enterprise Management and Innovation in British Business". Vol 29, No 4, October 1987.
- 4) History of the Ministry of Munitions, 12 Vols, HMSO, 1922, passim for references in this paragraph.
- 5) This is contrary to the view expressed by Robert R Locke in The End of Practical Man, Greenwich Conneticut and London, 1984, where it is argued that UK business was constrained by the lack of specialist administrative manpower.
- 6) L Urwick, The Meaning of Rationalisation, London 1929, p131.
- 7) Mr and Mrs F H Critall Fifty Years of Work and Play, London 1934, pp108-9. (This was the Critall who pioneered metal windows.) See also Dwight T Farnham America vs Europe in Industry, London and New York 1921, Chapters V and VIII.
- 8) C G Renold Joint Consultation Over Thirty Years, London 1950, p14.
- 9) Quoted in W J Reader ICI - A History, Vol I, Oxford 1970, p312.

- 10) Ibid p380
- 11) Cd 9073.
- 12) Ibid p10.
- 13) Ibid
- 14) Farnham op cit pp205-6.
- 15) Ibid Chapter XV. The "bright lights" referred to are Hans Renold, Moreland and Impey, Cadburys, Metropolitan Vickers, "certain Armstrong and Whitworth plants", the Spirella Company.
- 16) BoT Report on the Engineering Trades Cd 9073, 1918: "the essential value of a careful system of costing has not yet received from many houses the attention it demands" p11.

The (Balfour) Committee on Industry and Trade, Final Report, Cmnd 3282, 1929 "although the position is undoubtedly improving, it is by no means satisfactory, even in some of our largest and most important industries" quoted Anne Loft op cit p51.
- 17) Anne Loft op cit p156 for 1930 figures, 1939 ICWA Year Book for 1939 figures. There were ten times as many Chartered Accountants in 1939, leaving aside other financial accounting bodies. No author, The History of the Institute of Chartered Accountants, London, 1965, graph p177.
- 18) Anne Loft op cit, p43.
- 19) Cd 9035.

- 20) Ibid Summary of report of Engineering Trades Committee para 176, p37. Similar conclusions were arrived at by the Iron and Steel and Textile Trades Committees.
- 21) See eg L Hannah Rise of the Corporate Economy, London 1976, Chapter 7, particularly pp90-95.
- 22) See the survey of the material gathered by the Standing Committee on Trusts in J M Rees, Trusts in British Industry, London 1922.
- 23) Farnham op cit p57.
- 24) See the discussion in L Hannah as footnote 21 pp139-142.
- 25) Ibid. The suggestion by Hannah that the rise in the proportion of production from big plants between 1935 and 1951 may be seen as a delayed result of amalgamation simply seems unproveable given the large distortions caused by World War Two.
- 26) For example the magazine Management and Administration founded in 1921 of which Chandler says "During the 1920s many of the leading experts on corporate management as well as managers of major corporations contributed to this journal". Notable were the contributions of many senior executives of General Motors in 1924 explaining "in detail the organisational control and accounting procedures they had devised". The Visible Hand p466. Business was to publish articles by John J Raskob "Management policies that built General Motors" (October 1928) and Alfred P Sloan "What I have found in management" (June 1930) but both are general "popular" pieces.
- 27) L Urwick "Promotion in Industry" Public Administration, April 1927, p189.

- 28) L Urwick Executive Decentralisation with Functional Co-ordination" Public Administration, october 1935, p354.
- 29) See the discussion in L Urwick The Meaning of Rationalisation, London 1929, particularly Chapter VII, "The Field of Management".
- 30) L Hannah Rise of the Corporate Economy, p86.
A D Chandler Scale and Scope, p5-6.
- 31) L Urwick The Meaning of Rationalisation, p133.
- 32) L Urwick, as footnote 28, p353.
- 33) Ibid p355.
- 34) Ibid p356.
- 35) Oliver Sheldon "Industrial Structure VI Organisational Form and Management Policy" in Business Organisation and Management, Vol 6, No 3 (June 1922). The structure shown by Sheldon does not appear to be based on actual examples but to be an application of F W Taylor's ideas on functional foremanship to a larger organisation. The ideas in this article do not appear in his Philosophy of Management.
- 36) Capital budgets are the considered allocation of scarce resources within the firm on the basis of quantified investment appraisal. Clearly capital and revenue budgets are connected: for example, investment decisions must take account of expected trading volumes while volumes and costs can be affected by capital investment. The separation is a pragmatic one probably largely conditioned by the processes involved: revenue budgets start with predictions of sales then work back through production to purchasing budgets. Capital budgetting decisions involve the mobilisation of capital and need director level

sanction at an earlier stage. Capital budgeting does not seem to have been approached in a scientific spirit until well after World War Two though a number of the mathematical tools had been long available. (See R H Parker, Management Accounting - an historical perspective, London 1969, Chapter 3. However, of the still evolving theory in Michael Bromwich The Economics of Capital Budgeting, Penguin 1976.)

- 37) D Solomons describes the origin of the flexible budget as an article by the American Henry Hess in 1903 - see extract in D Solomons (ed) Studies in Costing, London 1952, pp48,49. It was developed by J H Williams of the USA in an article in 1922 and published as an "authoritative statement" as The Flexible Budget (New York 1934). (See biographical details in L Urwick's Golden Book of Management, London 1956, pp169-171.
- 38) Budgetary Control New York 1922. McKinsey was the founder of the firm of management consultants McKinsey and Co in 1925. (See biography in L Urwick's Golden Book of Management)
- 39) A D Chandler The Visible Hand, p186 and footnote p548.
- 40) Andrew H Knox Coming Clean, London 1976, pp70,71. Also see below Chapter 8.
- 41) J O McKinsey op cit p12: "the firms are largely in the minority which have formally adopted budgetary control at the present time".
- 42) H W Allingham MIMechE, MASME, "Costing During a Period of Trade Depression" Cost Accountant, Vol 1, No 3, August 1921. Allingham had worked for Hans Renold before World War One and had US experience.
- 43) See Chapter 7.

- 44) Urwick says that the 1931 Geneva "International Conference on Budgetary Control" was "permeated" by McKinsey's "thought and ... influence". Golden Book of Management, p268. It was from this conference that the initiative came to the Management Research Groups which led to Dunkerley's survey at the 1935 Scientific Management Conference.
- 45) Cost Accountant Vol 2 No 4 (September 1922) to Vol 2 No 9 (February 1923).
- 46) Sir Charles Renold Joint Consultation Over Thirty Years, London 1950, p4. Note however that R O Herford, a production manager at Renolds was attempting to plan ahead for his department using a 3 month budget in 1921. (Interview Engineering Production, Feb 24, 1921.) This seems to imply that a company wide system was applied as a solution to already partially solved problems. The extent of McKinsey's influence vs home grown initiatives cannot be known.
- 47) Published in 1932 in book form as A W Willsmore Business Budgets and Budgetary Control, London 1932, etc. Refers to articles 1931-32 at ppix and x. STC was a subsidiary of Western Electric until 1925 and of ITT thereafter. The company history of STC indicates that the business style of ITT's boss Col. Behn was not of the budgetary control type. It is likely that the budget predated him but the history is silent on the matter. (Peter Young Power of Speech, London 1983 particularly Chapters 6 and 7.)
- 48) Willsmore op cit, p8.
- 49) Notably articles by Bruère and Lazarus "Applying Budget Systems to Railways" Cost Accountant, Vol 5, No 2, July 1925 and J O McKinsey "Relation of Budgetary Control to Cost Accounting", Cost Accountant, Vol 5, No 4, September 1925.

- 50) The Management Research Groups were founded in 1926 by B S Rowntree. (See biography in The Golden Book of Management) I am not aware that any comprehensive account of their work has been published. The aim of these groups was to discuss management matters but their work was apparently hampered by lack of resources and the difficulty caused by "the idea that frank discussion of managerial and administrative methods involves the disclosure of valuable business secrets". (L Urwick Meaning of Rationalisation, p145.)
- 51) Noticeably the firms with "transatlantic connections" mentioned by Willsmore, the chemical (including soap) industry and the oil industry.
- 52) They were Confectionary, Hosiery, Light Motor Vehicles, Heavy Motor Vehicles, Boots and Shoes, Musical Instruments, Patent Medicines, Steel, Glass, Light Engineering, Heavy Engineering and Rubber.
- 53) These cases were in Heavy Engineering, Patent Medicines, Hosiery, Heavy Motor Vehicles, Glass and Light Engineering.
- 54) Sixth International Congress for Scientific Management, Manufacturing Section Papers, London 1935, p30. The maker of the survey was Roland Dunkerly a Manchester cost accountant who came from Hans Renold where he worked as cost accountant to become Comptroller of the United Steel Companies in 1928. By the time of the Congress he was Director and General Manager, Quilt Manufacturers Ltd.

CHAPTER FIVE

STRUCTURE AND TECHNIQUE IN THE LONDON MIDLAND AND SCOTTISH RAILWAY, 1923 - 1939

1) Introduction

After World War One a decision was made by the UK government to amalgamate the railway companies into four large groups which were, as far as possible, to be non-competing. This decision represented a sea-change in government attitudes towards commercial competition and was encouraged by the experience of co-ordinated action during the war.(1) Of the four groups created in 1923 under the Railways Act of 1921, the London Midland and Scottish Railway Company (LMS) was the largest. In fact, it was "much the largest non-Government business in the United Kingdom" and bigger than any US corporation "with the possible exception of one commercial concern." And, according to one railway historian, the LMS at its inception was also "loosely knit, inefficient in many respects and not far from being a tottering tower"(2) Added to the internal problems of the LMS the railways generally faced increasing competition from road transport, ending the railway's previous effective monopoly of inland transport.

Competition from road transport was severe. The total volume of goods transported by all methods grew in the interwar years. One estimate shows that in order to keep pace with this increase in volume the tonnage carried by rail would have to have increased by 27% from 1924 to 1935. In fact, tonnage fell by 25%, indicating that by 1935 approximately 50% of the tonnage that could be carried by rail had moved to the roads.(3) The immediate and obvious reasons for the switch were the greater flexibility of road transport and lower rates. Nevertheless, there was scope for the railways to mitigate the effects of road competition. Considerably more than

marginal improvements were possible in such areas as transshipment and integrated road and rail services. Rates were somewhat more problematical since they were governed by legislation and regulation. They were published which allowed road hauliers, who were not similarly regulated, to compete by setting rates marginally below those of the railways. Legislation also enshrined principles which skewed railway rates illogically to favour road transport for large consignments and full loads and favour rail for small quantities of packaged goods. Compared, however, with the rigid regulation of US railroads by the Interstate Commerce Commission (ICC)(4), UK railways did have some leeway for changing charges and for making special negotiated rates with large customers specifically to meet road competition. Legislation was also changed to meet some of the railway's grievances. While legislation capped the railways' total gross profits this did not make improvements in profitability a zero sum game: in the interwar years the railways never achieved more than 80% of the allowed amount. Overall, then, it was possible to answer road competition and increase profitability by cutting costs, by quasi-political pressure on the rates structure and improved services and marketing. But such an approach required a considerable knowledge of costs and a strategic approach which could identify those areas of activity which promised the best returns.

Cost awareness and a strategic commercial approach were not traditionally associated with the railways but the new and unfamiliar competitive environment made adaptations essential and increased the potential for radical organisational change. It put a premium on a new type of business leadership able to operate in the political as well as the strategic and marketing sphere. The LMS appeared to have found this new type of leadership with the recruitment of Josiah Stamp, first as chief executive then in the dual role of chairman and chief executive. Stamp was at that time in the UK perhaps uniquely qualified for a radical pioneering top management role. Josiah Stamp spent the first 20 years of his working life at the Inland Revenue rising rapidly up the career ladder from boy clerk to senior management. He also took an external Economics degree at the LSE between 1908 and 1911, following this with a DSc which was to be published as British Incomes and Property in 1916. During World War One he was the architect of the Excess Profits Duty - the first time

companies, as opposed to individuals, had been subjected to a form of income tax. His activities in connection with the Duty brought him to the attention of industrialists which led, in 1919, to his recruitment as Company Secretary to Nobel Industries Ltd, an amalgamation of explosives companies.(5)

By the time of this appointment Stamp had acquired skills in taxation, company finance, statistics, and financial and cost accounting - the latter skill developed through work on the Excess Profits Duty which relied on assessments of costs. Stamp's grasp of finance quickly profited Nobels and he was appointed a director with considerable responsibility for financial matters. In this role he demonstrated further financial skills producing the first set of consolidated accounts for the amalgamation - described as pioneering work.(6) With an accountant as co-author, he published Business Statistics and Financial Statements in 1924 demonstrating his grasp of systems of financial oversight of business. Stamp's work at Nobels also brought him privileged knowledge of US management methods and structures through that company's cartel arrangements with Du Pont and its investments in General Motors.(7) Stamp's published articles show that he understood the practical problems involved in amalgamations and rationalisation and could offer broad strategic solutions.(8) He understood, for example, the key importance of costing, of inventory and production control through budgets, the use of "varying demand against price" data for marketing and the use of scientific research. And he also understood the need for management structures capable of using this information effectively.(9) It does not seem too much to say that when Stamp arrived at the LMS he had the potential to be a philosopher king not only in his new company but for any UK movement for modern management methods.

Yet, once he became "virtual dictator"(10) of the LMS from October 1927, Stamp does not seem to have pursued a particularly radical course. Both organisationally and technically his innovations were generally modest. The inception of one area of radical innovation, the application of mass production methods to rolling stock manufacture and repair, predated his arrival. His one major contribution was the application of costing to that manufacture and repair. Because

of the structure adopted by the LMS, Stamp was the sole source for radical change across the company as a whole as opposed to groups of departments, yet he showed a lack of focus and urgency once the early years were passed. In 1927 Stamp declared that his first tasks were to "devise a form of organisation"(11) and to "realise some of the economies of amalgamation in an earnest endeavour to justify some of the glibly given and blithely estimated promises of politicians."(12) Once the organisation was in place and sufficient economies were achieved, it appears that he set himself and the company no further goals.

This cannot be unconnected with Stamp's wide outside interests which, if anything, appear to have widened with his LMS appointment. Following a fallow period from 1924 - 29, Stamp published 12 books on a range of financial, taxation and social topics between 1929 and 1939 plus at least 14 further substantial lectures and articles.(13) In 1929 he was a director of the Bank of England, President of the Abbey Road Building Society, a member of the German Reparations Committee, Vice President, Joint Honorary Secretary and Editor for the Royal Statistical Society, General Treasurer of the British Association, member of the council of "half a dozen societies", Governor of three colleges and two schools(14) and in 1930 he was made a member of the government Economic Advisory Council.(15) However much the conservative traditions of the railways may have conspired to blunt the radical potential of Stamp's appointment, it seems clear that Stamp did not apply his undoubted skills and energy to the LMS in the single-minded way that, say, Alfred P Sloan or Pierre Du Pont applied themselves to their businesses.

2) Organisation

The changes in structure on UK railways following amalgamation were the subject of intense interest in the technical books and journals in the inter-war years. This interest, seen from 60 or so years later, seems out of proportion to the actual changes made and must be accounted for by the shock of even minor change in a very traditional industry. Changes to the LMS organisation came in three broad stages. The first stage between 1923 and 1926 was a period of what have been called "sterile

struggles" between the factions representing the former companies making up the

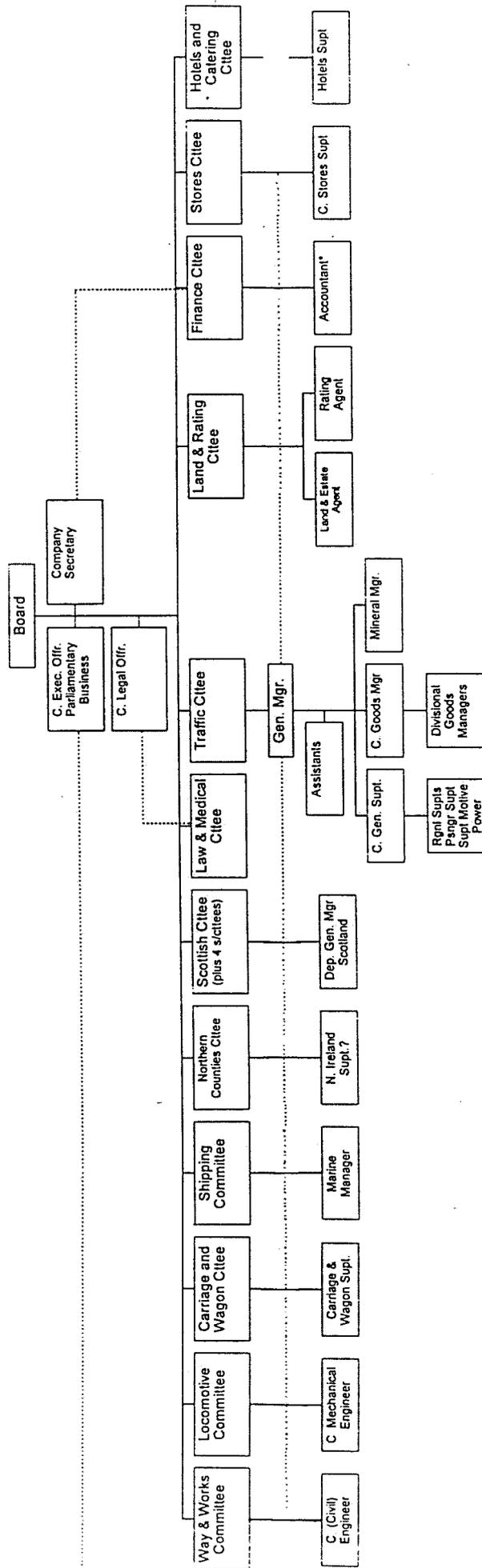


Figure 5. The structure of the London Midland and Scottish Railway (LMS) circa 1925.

amalgamated body with limited changes in structure.(16) The second stage, from 1927 to 1931 saw a new organisational structure introduced by Stamp reach its settled overall form. The third stage from 1931 to 1939 produced some minor departmental rearrangements.

In the first period the LMS constructed a much enlarged version of the pre-amalgamation departmental structure. There were a series of chief departmental officers who, under the leadership of the General Manager, reported to 18 committees of the board.(17) By the 1920s the power of general managers appears to have grown over the engineering sections compared to the pre-war position, but the separate access of chief functional officers to board committees still remained a significant dilution of that power. (See the discussion in Chapter 2.) In any case the sheer scale of the new organisation and the pressures brought on by power struggles after the amalgamation made the exercise of that power rather difficult. An organisation chart of the LMS in this first phase, has been constructed from various sources and is shown at Figure 5(18)

When Josiah Stamp arrived on 1 January 1926 a general manager remained in post and Stamp appears to have spent some months examining the questions of organisation and financial control. He is said to have visited America and to have brought back the idea of a structure using Vice Presidents from a study of the US railroads.(20) This may or may not be the case: suggestions for an anglicised Vice Presidential structure appeared in an organisation chart published in the Railway Gazette in 1921.(21) Stamp's proposals were, in fact, closer to these suggestions than to any US line and functional divisionalised structure. These proposals took as a starting point the almost impossible task set for any single chief executive of an organisation like the LMS. As Stamp put it: "No one man could possibly undertake the work. The solution was found in the appointment of four Vice Presidents, each responsible for a section in which he is an expert."(22) The structure simply involved the splitting of the general managers job among the Vice Presidents: "Each Vice President will take the place of the General Manager in relation to a group of departments, representing them on the [Executive] Committee."(23) The sitting

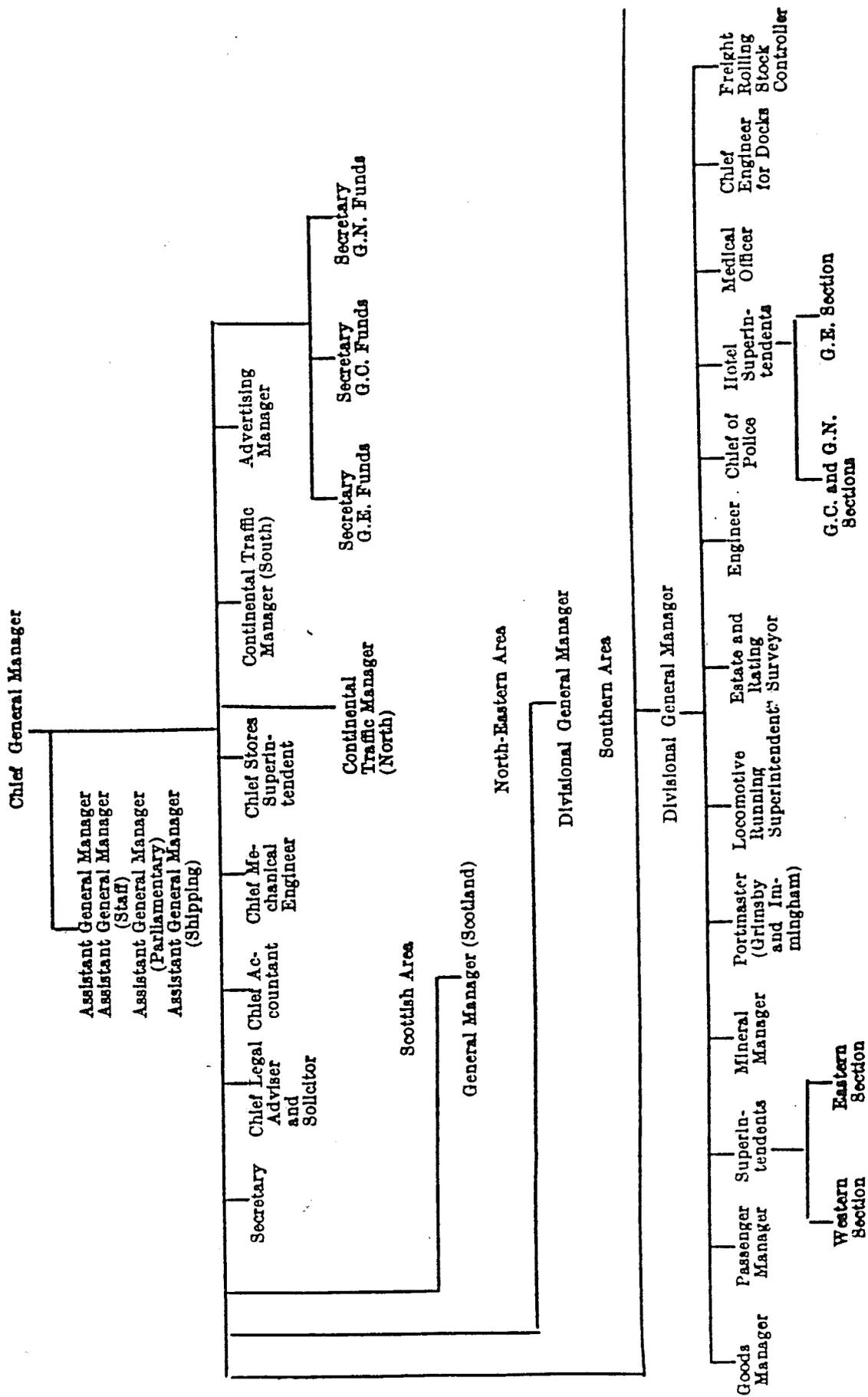


Figure 6. The structure of the London and North Eastern Railway

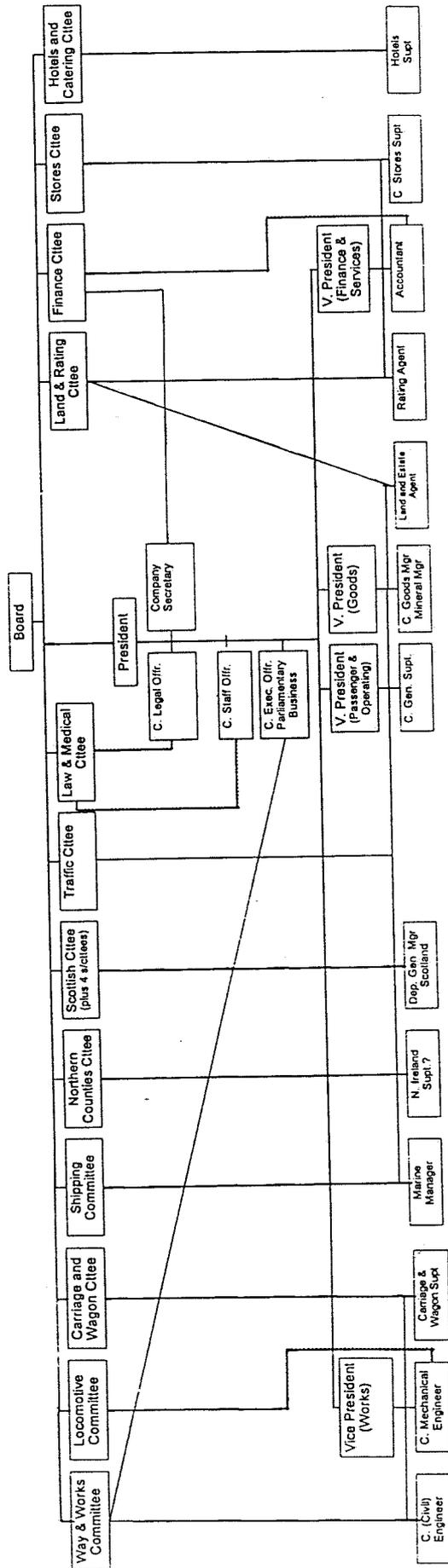


Figure 7. The Vice Presidential structure of the LMS, 1927.

general manager retired and the new structure commenced on 1 January 1927. (Faced with a similar problem of overload on the general manager the London and North Eastern Railway (LNER) created a divisional structure with three divisional general managers reporting to a chief general manager. See Figure 6.)(24)

The areas of responsibility covered by the four LMS Vice Presidents were accounting and service departments, works and ancillary undertakings and two Vice Presidents covering traffic operating and commercial undertakings.(25) Another source describes these two latter officers as covering Operation and Goods, respectively.(26) That being so, examination of Figure 7 will show that the Vice Presidents' groupings did not involve any internal rearrangements of departments. The directors' departmental committees also continued as before. The new structure has been reconstructed at Figure 7.

In 1931 the number of Vice Presidents was reduced to three and the engineer E J H Lemon was placed in charge of both Traffic (also responsible for passenger work) and Goods departments. Some moves had already been made to decentralise commercial activities to bring them closer to customers.(27) Under Lemon this was taken further; the posts of Chief Goods Manager and Chief General Superintendent were abolished, passenger and goods commercial activities were run from 20 centres by Area Commercial Officers reporting to a Chief Commercial Manager while a centralised control structure for traffic operating and station working was set up under a Chief Operating Manager.(28) Treated by the Railway Gazette as something of a radical innovation this separation of commercial activity from traffic operating had been introduced on the North Eastern Railway by Sir George Gibb in 1902. In fact, the control of passenger services by the Superintendent of the Line - the officer responsible for traffic operations - had been considered anomalous by the Chairman of the Railway Shareholders' Association before World War One.(29) Nevertheless the separation of the marketing function gave the opportunity to professionalise it and add certain staff functions which would contribute towards business planning. However, while business development was pursued, no initiatives in such areas as business

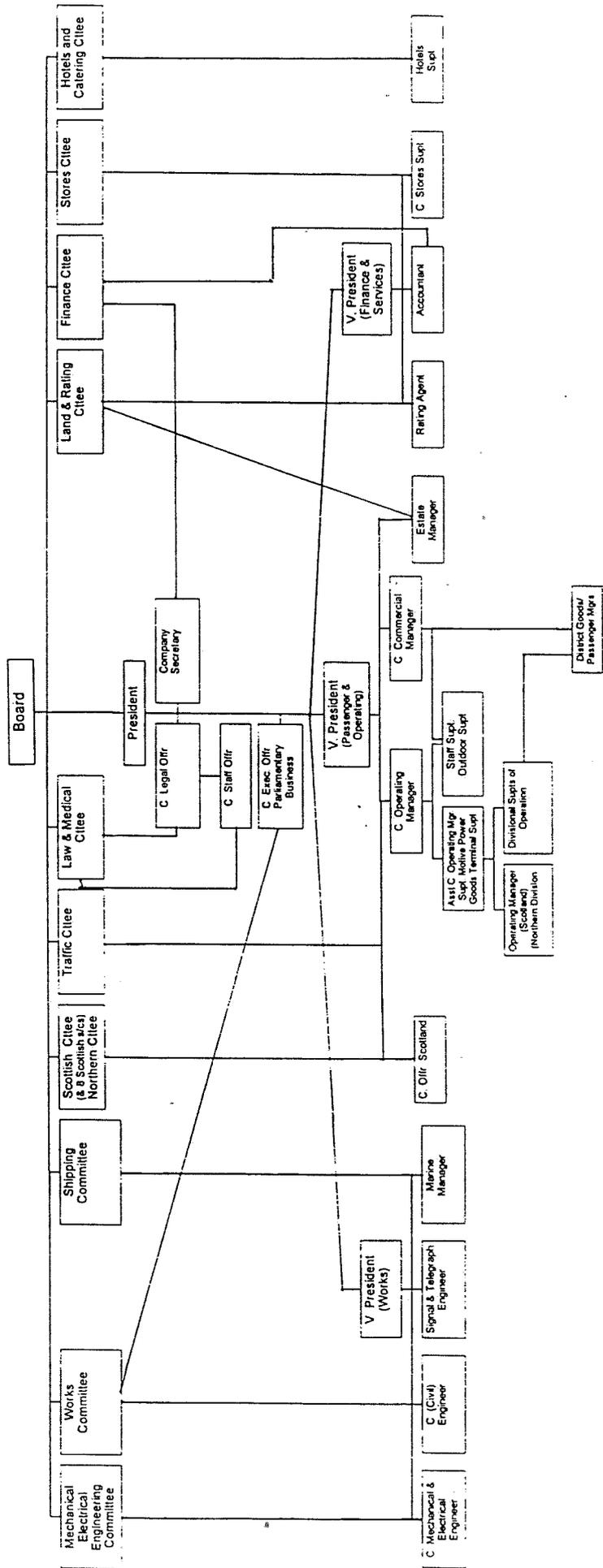


Figure 8. The Vice Presidential structure of the LMS, 1931.

forecasting seem to have been undertaken (see below). The new structure of 1931 is shown at Figure 8.

These structures show that the LMS remained a departmental structure, the effect of the changes being only that the departments were grouped under the supervision of Vice Presidents. The Vice Presidents are not completely top managers in the sense that Chandler uses the term: managers without day to day functional and line responsibilities. On one hand, they are without such responsibilities in relation, say, to the oversight of the relatively autonomous engineering functions under the Vice President for Works and Ancillary Undertakings. On the other hand, however, the Vice President for Traffic Operating and Commercial is the only officer who can routinely resolve problems arising between the operating and selling sections under him. But every Vice President had some line management responsibilities thrust on them because disputes between officers in different Vice Presidents' jurisdictions could only be resolved at Vice Presidential level. Examples are problems arising between cost accountants and engineers or the traditionally stormy relationships between mechanical engineers and locomotive superintendents. The only full-time manager without line responsibilities was the President. In Chandler's terms the LMS had established "truncated top management".

This situation was inevitable in a departmental structure. The various departments lay alongside each other and co-ordination between one departmental hierarchy and another could only finally be enforced at the top. Only in a decentralised divisional structure where functional management overlaid a line management structure was it possible to delegate line and functional co-ordination to lower tiers of the organisation as we have seen from the example of US railroads.⁽³⁰⁾ It is worth noting that the LNER divisional structure shown at Figure 6 puts traffic and some other functions in divisions but it is a simple decentralisation without a management structure for the decentralised functions overlaying the line structure for traffic. It would thus have taken some kind of combination of LMS and LNER structure for UK railways in the inter-war years to have begun to approach

divisionalised US railroad structures. There is no evidence that Josiah Stamp ever contemplated such a depth of management.

We can also see from the charts that the board did not simply connect with the management structure through the single figure of the President but had pervasive contact through committees of the board. Certain officers, the Company Secretary, the Legal Advisor and the Chief Executive for New Works and Parliamentary Business were not grouped under a Vice President. Prior to 1927 their responsibility was solely to the board but this independence was over-ridden to some extent by their inclusion in the Executive and the subordination to the President that this implied. However, these officers still had independent access to the board through committees and the Secretary to the board ex officio. The directors' committees also cut across the authority of the Vice Presidents in a number of ways. Functional officers who were in a tier below and responsible to Vice Presidents reported directly to "their" board committee. Thus a strong element of dual control existed despite the use of a formula that officers reported to board committees "with [the Vice President's] approval".(31) The directors' committees also covered separate areas within one Vice President's area of responsibility. For example the Vice President for Works and Ancillary Undertakings was responsible for locomotives, carriages and wagons, civil engineering and shipping. Each of these activities was covered by a separate board committee. There was a degree of committee concentration - the Locomotive and Electrical Committee combined with the Carriage and Wagon Committee in 1931 - but the shipping and civil engineering committees still continued their separate existence.(32) On the other hand, one board committee covered parts of two separate vice Presidents' jurisdiction: the Land and Rating Committee which was attended by the Land and Estate Agent (reporting to Vice President for Traffic) and the Rating Agent (reporting to the Vice President for Finance). We may finally note that the hotels business of the LMS was only connected to the organisation through a board committee. It was as if the board completely disregarded the Vice Presidential system though it was not possible for the Vice Presidents to ignore the board committees.

Furthermore, whether deliberately or not, there was a certain imprecision about the role of the President with respect to the board. The President and Vice Presidents of US railroads were executive directors. The LMS Vice Presidents were functional general managers with a status equivalent to that of the previous single general manager. As such, they could not also expect to be board members according to the traditions of the UK railways. The President's position however was new. Was it to be part of the "collective general manager" as it might be put, or was the position to be the equivalent of a UK managing director or a fully empowered leader of the business on the US model?

In practice, the answer was never clearly given. Once Stamp had passed what was essentially a period of probation⁽³³⁾ the LMS proceeded to take steps to lift the prohibition on directors holding any "office or position of trust or profit" in the company's articles of association. This required an Act of Parliament which was presented as a Bill in November 1926 and received Royal Assent in June 1927.⁽³⁴⁾ But the sole use made of this new power was to appoint Stamp both a director and Chairman from November 1, 1927.⁽³⁵⁾ As Chairman and chief executive combined Stamp's powers were wide but the issue of the powers of an executive director vis a vis the rest of the board were sidestepped: railway chairmen had always been powerful figures and the power that Stamp exerted could fall under that traditional authority. There was no discussion in the board minutes of the constitutional position of the President either at the time of Stamp's appointment or in 1941 after Stamp's death in an air raid when the roles of President and Chairman were separated. By this time the uncertainties of the war followed by a nationalising Labour Government rather reduced the longer term importance of the issue.

It is not possible to describe in detail how the Executive Committee worked in practice. The minutes of these meetings have not survived apart from odd copies. A general picture can, however, be derived from Stamp's biography and the recollections of former LMS officers.⁽³⁶⁾ Once the Vice Presidents had been reduced to three in 1931 the personnel did not change and a routine became established. Stamp appears to have relied heavily on the Vice Presidents to manage

the areas for which they were responsible and appears to have seen his role as one of co-ordinating chairman. He was seen as a remote figure by his staff and was not seen as a source of radical initiatives once the Executive Committee had reached its final form in 1931: "It would be impossible to separate and isolate his contribution from that of his colleagues."(37) Stamp it would appear declined to make full use of the power his position gave him.

In summary then, we can say that the LMS made few changes to traditional UK railway structures. There may have been some shift of power from directors to managers but suggestions that the directors were merely a token presence for the benefit of the shareholders were mistaken.(38) The directors remained, as they had always been, embedded in the company power structure through the system of board committees. There were some technical changes to the management structure but no development of top management beyond Stamp's appointment and no development of a line and functional structure. The separation of the marketing function did not lead to a marketing-led business planning or budgetary control system as we shall see. All these factors were related. The directoral committees pre-empted the formation of a more dense top management without which complex management tools which would integrate the company as a whole could not be properly developed. As a result innovations tended to be departmental and their lessons applied slowly if at all to other areas of the business. This can be seen in the case of the innovations in the mass production techniques used in the production and repair of rolling stock.

3) **Rationalisation and Mass Production**(39)

After amalgamation in 1923 the LMS possessed a great duplication of rolling stock production and repair shops. These were matched by a great variety of items produced - for example there were 393 different types of locomotive.(40) The response to this situation was radically innovative, applying methods learned during the war and developed prior to amalgamation by the Midland Railway to the greater volumes required by the new amalgamation.

World War One brought mass production techniques to the attention of UK railway mechanical engineers. Considered as engineering manufacturers alone, the UK railways were among the largest.(41) Inevitably they were directed into war production.(42) In the process all the major companies appear to have had some experience of high precision, high volume repetition work on shell production. Generally, however, the railways appear to have been used as jobbing shops providing a wide range of products: an official record in 1920 "gives no more than a list of the separate items of work undertaken yet the said list of items extended to no fewer than 121 quarto pages"(43) Thus the companies were exposed to mass production techniques and could learn from them if they wished but it was a relatively small part of their war contribution and was not applied to production for railway use. A writer in the Railway Engineer in 1920 summed up the situation as follows;

One of the lessons learned from the war is that very great possibilities exist of accurately working to standard dimensions and given limits for component parts. There is undoubtedly a future for development in interchangeable and repetition production with the standard locomotive looming

But he concluded that this required considerable work and the current situation remained unsatisfactory.(44) Nevertheless, some railways had learned the lessons of the war and had started on the path towards mass production.

The first steps on UK railways towards mass production for peace time use appear to have been taken by the South Eastern and Chatham Railway who had achieved full interchangeability of parts and assembly using jigs in wagon building some time in 1919.(45) They were followed rapidly by the Midland Railway (later a constituent part of the LMS).(46) The carriage and wagon works were reorganised between May 1918 and December 1919.(47) In August 1919, the Chief Carriage and Wagon Superintendent, R W Reid, was sent to the US by his directors to study railroad methods "of construction, repair and administration".(48) He introduced a system where automatic machinery, repetition work, interchangeable parts and jigs

were combined with assembly of whole wagons by specialist gangs. The assembly was not yet progressive. As a consequence of the new methods with no increase in manning levels, it would appear(49), between December 1919 and January 1921 they were able to increase production from 50 per week to 159 per week.(50) Thereafter, production fell away as a result of the collapse of the post World War One boom, though the methods pioneered for wagons were being applied to a new standard type of carriage by April 1922.(51)

When the LMS amalgamation took place, Reid was appointed Carriage and Wagon Superintendent for the new business. The need to rationalise the large number of carriage and wagon production facilities, the increasing internal demand because of poor state of wagons in Scotland and external demand because of increasing coal-field activity were conducive to a further move into mass production.(52) At the ex-London and North Western Railway carriage and wagon shops at Wolverton the next logical steps were taken, probably in 1923-4.(53) Here the assembly of carriages and wagons was made progressive. That is to say that the layouts for both sub-assembly and final assembly were designed to follow the sequence of operations with the minimum of handling. There was an assembly "line" in that the first assembly operation was the placing of underframe on bogies and thereafter the vehicles were rolled along on their wheels from operation to operation.

In order for this system to work the control of the process had to be more intense. Previously, if there was a shortage of any component, it was possible to stockpile part assembled vehicles up to the point at which the component was needed.

Under the new system of progressive construction it is, however, impossible to do this, and with very few exceptions a shortage of any one part holds up the whole of the line. In order, therefore, to make absolutely certain that the manufactured parts are always ready and on hand, and further, that there is a sufficiency of raw material and parts in all stages of completion following up some form of stocktaking is necessary, and this stocktaking must be kept up to date from day to day, and even hour to hour.(54)

The consequence was that control of all the processes of manufacture: individual components, sub-assemblies and final assembly, was centralised in a Progress Office which had both a planning and supervisory function. With the introduction of flow production under the control of a central office, the decisive step into mass production was taken. In December 1924, E J H Lemon, who had been the Derby carriage and wagon works manager was moved to become Divisional Carriage and Wagon Superintendent at Newton Heath and Earlestown where the progressive system was introduced during 1925-6 to wagon building and carriage repairing.(55) Here a further control over the process was added by the use of timed intervals for sets of operations. Thus the progressive system had now removed shop floor control from both job process and job speed.(56) The use of the progressive system also put a premium on standardised production on each assembly line and Reid established a policy of concentrating production of each type at specific sites: "at Earlestown the Company would produce mineral wagons; at Derby general merchandise wagons ... he was of the opinion that by specialising in this manner the Company could afford to put down a specialist layout with a view to obtaining a greater output at a reduced cost."(57)

The effect of these innovations seems to have been rapidly felt. The savings from concentration of production and closing works for carriage and wagon building were given as £40,000 per annum in October 1926, when the process was far from complete.(58) Neither concentration nor works closure would have been possible without the increased production that the progressive system achieved from a reduced number of shops. The lesson cannot have been lost on Josiah Stamp. When the appointments of Vice Presidents was made in late 1926 Reid was made Vice President for Works and Ancilliary Undertakings and thus responsible for all the Company's mechanical engineering. The methods pioneered by Reid and Lemon were now applied to the LMS locomotive works.(59)

The progressive system of engine repairs was introduced at Crewe in 1927 and at Derby in 1928.(60) The key features of the carriage and wagon innovations were preserved and added to. A central office recorded and controlled the movement of all

locomotives scheduled for or under repair. Regular inspection of working locomotives was made at set intervals and the condition of component parts noted. This allowed accurate scheduling of repairs and the stocking of adequate numbers of new or reconditioned parts, particularly the expensive and time consuming boilers. On stripping the engine parts were examined by specialist inspectors against centrally determined standards to assess retention, renewal or repairs. Repair work was given a standard time on a component by component bases which was used to schedule the repairs process, set stock levels and cost the repairs carried out. (See next section.) The re-assembly of locomotives was carried out on a master schedule with timed stages which set the scheduled times for the arrival of repaired or renewed components. The engines were passed through a series of workstations where gangs carried out specific tasks.(61)

As was the case with the carriage and wagon shops, flow production in the final assembly led back to flow production of components. This was applied first to locomotive boilers as part of the 1927 reorganisation at Crewe and by 1931 at Derby.(62) By January 1935 as a direct result of the speed-up of locomotive repairs, axle-box repair had also been reorganised on a line system.(63) By 1932 the accumulated lessons learned had been applied to a new layout at the Derby Carriage and Wagon Works.(64)

The application of the methods described in the preceding paragraphs was not only radical in the context of UK railways but placed the LMS at the cutting edge internationally in the application of mass production techniques. At a meeting of the Institute of Transport in 1930, Josiah Stamp remarked that he had discussed mass production at the LMS works with a visiting party of US manufacturers "who had been carrying out these processes in America on a wide scale" their verdict was, he said, that "the best principles which America could suggest had been carried as far or further in those [LMS] works than anywhere else they had seen in Europe." Another speaker quoted Henry Dennison, a pioneer of scientific management in the US(65), as saying that "he had travelled throughout America and Europe in connection with an investigation into the question of workshop organisation and

management and he put the LMS carriage shops at Derby at the head of the list of well organised works."(66)

A general trawl of the Railway Engineer and the Railway Gazette in the inter-war years give no indication that private rolling stock manufacturers or the other amalgamated companies had achieved anything like the advances of the LMS.

The savings brought about by the "progressive system" were substantial. We have seen those for carriage and wagon shops earlier. For the locomotives, it had been normal practice to have some 10% of a company's stock under repair at any one time. After the progressive system was introduced the figure fell to 3-4%.(67) The time locomotives spent in the workshops fell steadily. Different sources give different figures but by 1932 it was some fifth - even an eighth - of the time previously taken.(68) An early estimate of the savings arising from the progressive system at Crewe alone was £50,000 per annum and this was largely made up of interest on the capital which would otherwise have to be spent on locomotives required while others were under repair.(69) No account was taken of savings due to closures resulting in staff dismissals or interest on capital for works no longer required as a result of the new system. The savings on locomotive department staff before 1931 (when slump conditions begin to distort the picture) and savings on now un-necessary works at Crewe alone indicate savings of £484,000 per annum, some 11% of locomotive renewal costs in 1930.(70) The rationalisation process may be said to be complete by about 1932 and as a result further savings of some 15% over 1930 costs would be made by 1935/6 on both locomotives and carriages and wagons.(71) The progressive system was therefore a triumph both of efficiency and economy and an internationally recognised example of scientific management.

In 1931 with the rationalisation programme almost completed E J H Lemon was appointed Vice President not for Works but for Railway Traffic Operating and Commercial. The appointment of an engineer to run the Traffic departments was a considerable innovation.(72) We may assume that the intention was that the innovations with which Lemon had been closely involved on the mechanical

engineering side of the company would now be applied to the operating side of the company. And indeed under Lemon there was a systematic engineering approach to running sheds (where coaling, removal of ash and light repairs took place) to signalling and the layout of goods yards. His approach to organisation was also clear, demonstrated by the separation between operating and commercial activities. However, the tools which would have made rationalisation of traffic operations possible - costing of operations, costing of alternatives leading to a strategy of cost reduction - were denied him. Accounting (including cost accounting) was separated from both Works and Operations under a Vice President for Finance who was hostile to the concept of costing operations in the Traffic departments. The consequence was that the solutions that were applied to operations problems remained engineering rather than managerial solutions because there was insufficient financial information. That is to say, the principles applied were those of rationality, order and ergonomics rather than financial efficiency.

All the evidence appears to show that this approach was insufficient to ensure efficient operation. The global indicator of efficiency in the traffic department was man-power levels, the great majority of the LMS's near quarter of a million staff being employed in these departments. The reductions in manpower numbers in the slump were sharp, large numbers of them from the workshops.(73) As conditions eased in the middle 1930s, manpower numbers increased until, in 1937, they were almost back at 1930 levels.(74) Since the reduction in workshop costs was absolute between 1930 and 1938 (see footnote 71) this appears to indicate that operational staff numbers grew as jobs were lost in the workshops. No explanation is offered in the Economist LMS supplement in 1938, though the rise in numbers is noted.(75) Significantly the ratio of expenditure to receipts barely changed from 1924 to 1937.(76) For all the saying that any one scheme might show in a board report and for all the savings in the workshops, the overall indicator of efficiency showed that, just as with Paish's study of the pre-World War One railways, as traffic increased so did costs. We will examine the issues of costing and financial planning more closely in the next section.

4) Costing And Budgetary Control

Before World War One, costing systems on UK railways were applied only to the manufacturing workshops. Here the systems allowed the costs of jobs to be picked out from the books but the system was essentially supervisory rather than a systematic guide to management decision making.(77) It has not been possible to establish precisely what effect the War had on railway costing practice. We can assume, however, that as large manufacturers involved in war production they would have dealt with "cost plus" contracts, Excess Profit Duty and possible also Ministry of Munitions cost returns. But as we have seen in the case of mass production, it seems safest to assume that costing of a more sophisticated type was brought to the railway companies' attention but not forced on them particularly as far as normal railway activity was concerned.

The coverage of costing in railway journals between the end of the war and the amalgamations was limited but does give us some indications of what was considered best practice. The Railway Engineer, for example, gave an account of the Midland Railway costing system set up in connection with its new methods of manufacturing carriages and wagons at Derby.(78) This system used tight inventory control to give accurate material and scrap costs, labour costs were taken from piece-work tickets and these prime costs were compiled on master job cards to give costs for each component by order number. However, no indication is given of how (or whether) these individual component costs were built up into costs for sub-assembly and final assembly. Furthermore, works overheads were charged to components as a simple percentage of labour costs. This made it almost impossible to quantify the costs and benefits of various layouts, processes and machines. The Midland system therefore left an unexplored gap between the prime costs of components and global figures for the Carriage and Wagon Department that the accountant might gather. Costing in this way did not allow the assessment of the efficiency of systems.

The consequences of this may be seen after amalgamation in discussions in the LMS Carriage and Wagon Committee of the financial consequences of the new

mass production techniques. In June 1926 a discussion of how performance could be measured looked at numbers of staff employed and average output per head. But different kinds of items were being produced and it was not possible to differentiate the labour input into each item. Furthermore, it was not possible to differentiate between work on repairs and new stock or to separate out any effects of variations in material prices.(79) Similarly, in a discussion in March 1928, the only measure of improved performance put forward by R W Reid is a large reduction of carriage and wagon staff as compared with 1913 without reference to output levels or capital investment.(80)

Josiah Stamp was to introduce far more accurate measures of efficiency. In 1926 with no obvious organisational role because the General Manager was still in post, Stamp appears to have busied himself with questions of financial control in the largest areas of capital expense. This led to the establishment of an unprecedentedly complex system of cost records for locomotives which recorded the mileage, coal consumption, minor and major repairs for each of the more than 10,000 locomotives used by the LMS. This system was imposed despite "abundant" arguments against it, among them that it "could at best only be used for managerial criticism as distinct from shop working" and "the detailed clerkage would interfere with workshop production and organisation". W V Wood, who was responsible for the implementation of the system, comments that these objections were not really to the new system but to "past costing methods which had been developed largely for accounting reasons".(81) That is to say that in previous systems imposed on manufacturing departments the purpose had been recording and auditing costs rather than helping the manufacturing managers make decisions. (We may also add that the accounting systems set up by the Midland engineers at Derby did not have the sophistication to do this either.)

The new system, introduced in January 1927 was, as Stamp put it "a novel dissection of locomotive outlay to enable the various types of locomotives to be brought to the common focus of cost compared with value or performance.The main object of the data was to provide a financial guide to design problems."(82)

(At amalgamation the LMS ran over 300 different types of locomotives and guidance was clearly needed on which to keep, which to scrap and which features to retain in future designs.) Stamp reported that the outlay on the system had been recovered by 1931 as a simple consequence of the attention focussed on "the costs of repairing particular locomotive parts." (83) As a result of the data built up by 1931 they were able to set the optimum repair life of components and by using limit gauges were able to standardise "scrap or repair" decisions when engines were stripped down. (84) At an early stage, therefore, engineering decisions were modified by information on cost in use. Any opposition from the engineers rapidly fell away and requests were made for greater details for specific items. (85) Information was provided quickly to managers through the use of Hollerith and other accounting machines. The system was extended to bring "an identical method of unit costing of manufactures to all departments" and "works costs committees" were set up to consider cost results and manufacturing methods. (86) It seems clear that the new costing system was regarded by directors, managers and outside observers alike as an unqualified success.

Yet the costing system was accompanied by an administrative division of labour which presented no obstacles in manufacturing but which had significant implications for wider applications of management accounting. Specifically, all accounting, including cost accounting, was placed under the Chief Accountant and he, in turn came under the Vice President for Finance. In the manufacturing units any problems with the separation of powers was readily overcome with the cost accountants providing a responsive service to the engineers. But the wider application of costing within the LMS relied on the will and the expertise in the sole hands of the Vice President for Finance. If Stamp did not insist, as he had in the case of locomotive costing, the matter rested with W V Wood, first Controller of Costs and Statistics, later Vice President for Finance.

Wood was hostile to attempts to cost the traffic functions of railways. It was his opinion that the exercise was futile because even in such broadly defined categories as passenger and freight working, while "certain expenditure can be allocated with reasonable accuracy

by far the greater part of railway expenditure is incurred without reference to any one class of traffic and the amount attributable to each class is not ascertainable. Many elaborate formulae have been devised to make such divisions but apart from a few basic figures, they consist of a series of arbitrary assumptions which produce figures of no definite value."(87)

He goes on to say that even "if it were possible to obtain actual figures for the current expenditure in connection with the movement of particular traffics, there still remains to be found the factor of service of capital expenditure in respect of such traffics before the cost is ascertained."(88) That is to say that either the interest on the cost of the capital equipment being used or alternatively the depreciation must be brought into the cost calculation "and the difficulties are increased, if an impossibility can be rendered more impossible."(89) But even if all this could be done "the question will still remain whether any practical use can be made of the figures obtained

Costs are, of course, compiled by every railway company, particularly as regards units of maintenance and manufacture of materials and rolling stock, but these services are not transportation operations and the ordinary commercial methods are applicable to them.(90)

This is a fairly comprehensive denunciation. There are two key arguments. The first is that any system of allocation of the high fixed costs is arbitrary and therefore useless. The second is that interest on capital employed or depreciation has to be included in costs and that this is difficult. The first argument is answered by not allocating fixed costs and by treating the surplus of revenue over variable cost as a contribution towards fixed costs, the maximisation of this contribution being the goal of the business. This approach, known as "marginal costing", considered as a self-conscious school was only to emerge fully in the 1930s.(91) But the origins of this school lay in a long standing recognition of precisely the difficulties that W V Wood raised and they were, for example, treated as far back as 1887 in Factory Accounts by Garke and Fells.(92) As for Wood's second point, that depreciation is difficult to assess and apply, Stamp's costing initiatives were already providing the answer. The

life cycle costs of locomotives, carriages and wagons were increasingly available in great detail. The application of costing to traffic operations presented a challenge in terms of scale but in no other area - unless it was the will to attempt it. Neither Wood nor Stamp had that will.

The consequence was that the major area of controllable expenditure was not subject to management accounting. For British railways as a whole in 1928 the figures were as follows:

		£m
Use of way and works (ie permanent way maintenance)		23
use of working stock (ie rolling stock maintenance)		27
Operating Expenditure		
Labour	70	
Fuel	16	
Other	9	
	<u>95</u>	95
General Expenditure (eg rates, etc)		15
Capital Charges		50
		<u>210</u>

Source: W V Wood(93)

Thus operating labour costs were over 70% of total operating expenditure, almost 50% of controllable costs and 33% of total costs. Without some system of management accounting, control of these costs was almost impossible.

It must be said that the traditions of the railways in the UK were resistant to cost control in the traffic departments, traditions which Stamp and Wood either compounded or reflected. Writing in 1928, C E R Sherrington says

In a country where development came early it is not surprising to find that with the construction of strongly competitive lines greater attention was paid to the growth of traffic than to the reduction of operating expenses. Thus the revenue-producing departments have always possessed greater power on British railways than on those abroad, where the general tendency has been to concentrate attention on the reduction of costs in Great Britain it has too often been the case that the added traffic has occasioned a proportionate addition to operating costs.(94)

Sherrington goes on to say that no UK railway had a position equivalent to a US Vice President of Transportation "who is responsible for co-ordinating the revenue-producing and operating expenditure sides of railway work"(95) He comments that in 1928 the LMS approached this most closely. After 1931 E J H Lemon occupied precisely this position, being in charge of traffic operation and commercial activities. We have seen that he was not able to carry out any radical change to operating efficiency and we have suggested that this was because he had no means of measuring the costs he might wish to reduce.

Thus a combination of tradition and personal preference (which may, in Wood's case at least, be a preference formed by tradition) left the operational side of the LMS without a financial strategy or the means to quantify the achievement of any strategy they might adopt. The comments of inter-war railway managers collected by Bonavia show that there was commitment to improvement in service to customers, particularly faster delivery but that cost reductions were attempted largely by efforts "to screw down both the wages and the grading of the staff" rather than by "obtaining a reduction in the total work-load by a systematic review of departmental procedures."(96) Innovations in the operating departments designed to radically reduce labour numbers were largely post World War Two developments, but there

was, it was admitted, no intrinsic reason apart from traditional thinking why they should not have been applied in the inter-war years.(97)

We can be aware of Bonavia's remark that "One danger besetting [railway] historians is that of criticising a failure to employ techniques that scarcely existed in the 1920's and 1930's."(98) But, as we have noted earlier (page 37ff), techniques of traffic costing had long been developed in the USA. The point should also be made that the LMS was perhaps uniquely placed to pioneer such methods rather than simply employ methods developed elsewhere and chose not to do so. The same point can be made about the apparently evanescent LMS experiment with budgetary control. Budgetary control was practiced on some US railroads but was hardly known of in the UK in 1930, though Stamp, in a radio broadcast in November of that year, showed that he had been aware of the development of budgetary control almost from its inception in the US:

In the past ten years, corporations like General Motors have developed their budget system to a very fine pitch of accuracy. Each of the many units of the far-flung selling organisation reports what is anticipated in its area as sales for each month of the year, and the aggregate forms the selling side of the budget. This forms the monthly target of every department, which makes the nicest possible adjustment to it, so that the year's budget lies ahead in great detail This budget is not merely an interesting statistical exercise, with monthly excitement and departmental emulation in accurate prophesy; it is a guide to policy and a means of departmental check and control The budget system is being extended to business of many different types.(99)

The chief problem for the US railroads was the prediction of "sales" - the market for a railway's services is much more complex than for a manufacturing company. For this reason their budgetary control fell short of the "very fine pitch of accuracy" at General Motors. The railroads were using predictions of income on a monthly basis to control spending on capital items, maintenance works and stocks of materials and these separate budgets were brought together to construct a cash-flow forecast for a quarter ahead, adjusted monthly. Despite the lack of even medium term predictability of income the lesson drawn from US practice was that "the preparation

of the budget is an inherent part of the management job as a whole" which stopped tendencies to departmentalism.(100) The use of budgets had also speeded up accounting processes to provide both estimates and out-turns as quickly as possible.

The LMS introduced a budget in 1931 though details are sparse and it gives a straightforward appearance of draconian cash limiting in response to the slump. Speaking at the Annual General Meeting in February 1932, Stamp announced that the Company had cut expenditure to the extent of 89% of the fall in receipts;

We owe a great deal of the large economies of the past year to the introduction of a provisional form of the budget system It sets a goal of assumed gross and net revenue with periodical review and the breaking up of this into departmental budgets, leaving the officers to sub-divide their allocations between districts and different subjects of expenditure. While often yielding at different points artificial results it has, at any rate, given a definite detailed goal to relatively junior officers which has had a different psychological effect from a more general exhortation to economise.(101)

Stamp also remarked that, with the high unpredictability in the market, it was difficult to take the system further but when conditions became more stable the budget system could be "carried to its logical implications and give its most productive results."(102)

No budget document is to be found in LMS Reports to the Board. No figures or general principles are discussed at board meetings - or at least the minutes are silent on the matter. There are no changes in the way financial results are reported to the board: income and expenditure for the year to date continue to be compared with the results of the previous year rather than with a budget figure for the current year. There was no change to the way in which item by item approvals for expenditure were given in board committee papers, no reference being made to budget figures. The method of auditing capital expenditure remained the same: investigators from the Costs and Statistics section of the Chief Accountant's department would check expenditure and savings against the amounts authorised and estimated. Items were treated individually. No attempt was made to provide totals for periods of time, for

departments or for classes of projects (eg signal modernisation). As a result the sole activity of cost accountants outside the manufacturing sections remained the traditional one of "criticising the details of management" through "what really amounts to a Director's independent audit".(103) None of their reports(104) make any reference to budgets.

It may be that in the Executive Committee and among senior officers much information that has not survived was circulated. But while Board and Board committee minutes can be somewhat opaque and developments are often more fully covered in the Railway Gazette, both sources are silent apart from Stamp's speech and reference to it. It seems safe to assume that the reason why the budget did not find expression in a wide range of financial or other plans and reports was because the budget was the simplest form of cash limiting by top management based on global assessments of income and expenditure. In the crisis conditions of the slump such emergency methods may have been necessary. If the budget system was to develop to give, as Stamp put it, "its most productive results" then further steps had to be taken which would have to find expression in every area and level of operation. In general the actual and potential market would have to be assessed, the alternative means of servicing that market would have to be known and costed and a marketing strategy with projected financial results produced. The difference between this approach and the 1931 cash limiting exercise is that it requires qualitatively different market information and a great deal of co-operation at all levels between commercial, operating and financial staff to plan, optimise resources and monitor results. In other words, the budget process becomes a way of integrating management both down and across the company.

We have seen that in one key area, costing, that co-operation was not particularly forthcoming. It is worth noting however that the means existed to build a marketing strategy on the commercial side. When the split of the Traffic departments into Commercial and Operating departments came into effect in 1932 the brief to the new Chief Commercial Manager was to: actively sell LMS services; set out the services required for passenger and goods business; develop new traffic and quote for

services.(105) In 1933 a series of detailed commercial surveys were produced for the commercial districts covered by the LMS.(106) These were clearly designed to analyse current traffic and the potential for further traffic. A system of sales canvassers was developed and extended with 429 full-time and 200 part-time salesmen by 1939. Each salesman, district or station was given a target:

The objective was the estimated total of revenue which could be obtained from passenger, goods or coal class traffic in the light of assessable charging conditions and in order that constant interest might be encouraged the amount allotted was apportioned in quarterly, monthly, weekly and daily quota which were recorded on suitably prepared calendars(107)

The system clearly had the potential to provide sensitive market information which could be fed back as realistic sales targets. But, oddly as the means to establish a budgetary control system of some sophistication were developed, the motivation from top management, or more particularly from Stamp, began to fade. Some sort of budget system was still in operation in 1933.(108) In 1935 he reported to his board in a tone markedly different from that of his broadcast of 1930 or his speech of 1932 on the experience of budget systems on US railroads. Many budget systems had broken down during the depression, he reported and concluded that "in general, the budget system has been hard put to it to afford real assistance and little stress was put on it as a force for progress."(109) A diametrically opposite view was taken by the Vice President for Way and Works, Harold Hartley, who reported that the companies who had developed budget systems further than others, like the Pennsylvania or the Baltimore and Ohio

all said that they found monthly budgeting indispensable during the past three years and that although the budget had required more frequent adjustment there had been no difficulty in using it as the basis of management. It was clear that they regarded the monthly budget meetings as most valuable, both for the effective control of expenditure and for the free and informal discussion of the problems of each department by all of the chief officers directly and indirectly concerned(110)

It seems safe to assume that Stamp and Hartley were using the US experience as a proxy for their own positions on the future usefulness of budgeting on the LMS. No further references to budgets have been found after this exchange in 1935 except for some to relatively minor sums for the Advertising Department. It would appear that Stamp's view prevailed and budgeting exercises for the LMS faded away.

5) Summary And Conclusions

The LMS represents an uneasy mixture of Chandlerian managerialism and the British railway tradition. In terms of structure the LMS remained essentially a traditionally departmentalised railway. The innovation of the Executive Committee composed of a President and Vice Presidents was no more than the institution of a collective general manager. The split between commercial and operating functions in the Traffic departments was not new and was not followed through with the application of costing and budgetary techniques which would have maximised the effectiveness of the arrangement. The committees of the board continued to oversee functions at departmental level with direct contact with second tier departmental chiefs and in the case of the Hotel Department, the Hotels Committee seemed to be the sole contact between the department and the rest of the LMS.

On the other hand the LMS demonstrated radical innovation in the application of mass production technique to rolling stock production and repair and the application of costing to manufacture, repair and design. Yet the radicalism of the manufacturing sections did not communicate itself to the rest of the organisation despite the move of an engineer from manufacturing to the head of the traffic side of the business. Budgeting was introduced then faded away. Marketing was developed sufficiently to allow income prediction and target-setting down to individual salesman level but no information on cost of services was produced with the result that no financial strategy could be produced for the traffic departments. The consequence was, as had long been the case, that the traffic functions showed no change in efficiency, expenditure rising and falling as a more or less fixed percentage of income.

In part, the explanation for the failure to accomplish what the appointment of Stamp, an exceptionally able and experienced man, appeared to promise lies in the personal preferences of Stamp and the Vice President for Finance. On the other hand, the sheer inertia of UK railway tradition surely played its part. One example might be the use of accountancy as an audit function for the directors. Another example might be that the function of the traffic departments was to get business rather than to ensure it was profitable. Such attitudes were validated and preserved by a system of "watertight" departments whose boundaries were more or less guaranteed by the board committees that supervised them. This departmentalism could only be overcome by a greater depth of top management and budgetary control. The former would ensure the introduction of HQ functional staff requirements in such areas as costs and stores(111), the latter would integrate the management structure and give the organisation common purpose. Both changes however would take away the function and power of the directors' committees by delegating departmental supervision and the power to make decisions within the parameters of the budget. No shift of power was suggested let alone attempted on the LMS. The traditions that played a large part in bringing only a patchy application of new technique to the LMS were upheld by the central traditions of directorial power.

CHAPTER FIVE

FOOTNOTES AND REFERENCES

- 1) Derek H Aldcroft British Railways in Transition London 1968, pp39,40.
- 2) Quotations are respectively from Economist LMS Supplement 2 July, 1938 p3, Sir Josiah Stamp on Railway Problems of the Day” Railway Gazette 18 November 1927 and Hamilton Ellis British Railway History London 1959, p329.
- 3) Gilbert Walker, Road and Rail, London, 1942, Table 10, p123. References in this paragraph are to this book unless otherwise stated.
- 4) See, for example, Stephen Salsbury, No Way to Run a Railroad, New York, 1982 and Albro Martin, Enterprise Denied, New York, 1971. The ICC appears to have effectively removed any commercial freedom from the railroads on these accounts and to have contributed to rigid and financially inept management structures after, say, 1910. (See also Gregory Thompson references footnote 48, Chapter 2.)
- 5) Unless otherwise stated biographical information on Stamp is taken from J H Jones Josiah Stamp Public Servant London 1964.
- 6) So described by Jones in *ibid*. This was the first production of consolidated accounts for an amalgamation of a size such as Nobels. It was not however the first UK example which appears to be the 1910 accounts for the Pearson and Knowles Coal and Iron Co, Ltd. See J R Edwards “The Process of Accounting Innovation: The Publication of Consolidated Accounts in 1910” The Accounting Historian’s Journal Vol 18 No 12 (December 1991).
- 7) See W J Reader ICI: A History Vol 1, London 1970, for contacts in general. See also Stamp’s piece “Amalgamations” in Some Economic Factors in

Modern Life London 1929, p173 where he refers to his personal business contacts with Du Pont and General Motors.

- 8) See “Amalgamations” as footnote 7 and “The Present Position of Rationalisation” in Criticism and Other Addresses London 1931.
- 9) See “Amalgamations” as Footnote 7 and also “Scientific Research in Transport” and “The Management and Direction of Industry” in Criticism and Other Addresses London 1931.
- 10) The phrase is Hamilton Ellis’, op cit, p.328.
- 11) As footnote 3.
- 12) “Amalgamations” as footnote 7.
- 13) British Library catalogue. A jointly authored book with W V Wood (Railways, London 1928) in fact contained only a short introductory chapter by Stamp.
- 14) List from the Daily Mail reprinted in the Railway Gazette 10 May, 1929.
- 15) Railway Gazette 14 February, 1930.
- 16) Michael R Bonavia Railway Policy Between the Wars Manchester 1981, p3.
- 17) LMS Directors Diaries (1926-27) PRO RAIL 421/13. The 18 committees were 14 functional and 4 local Scottish committees. There were also 64 joint or leased lines committees upon which the directors were represented!
- 18) I can find no official organisation chart for the LMS as a whole at any stage before 1939. Sources are shown at footnote 19.

19) Constructed from C E R Sherrington The Economics of Rail Transport in Great Britain London 1928 Vol II Chapter 2; Railway Gazette 29 December 1922; LMS PRO Indexes; LMS Directors' Diaries at PRO RAIL 421/12; Circular No 4, LMS General Manager's Office, 2 March 1923 [copy at Manchester Reference Library].

20) Bonavia op cit p10.

21)

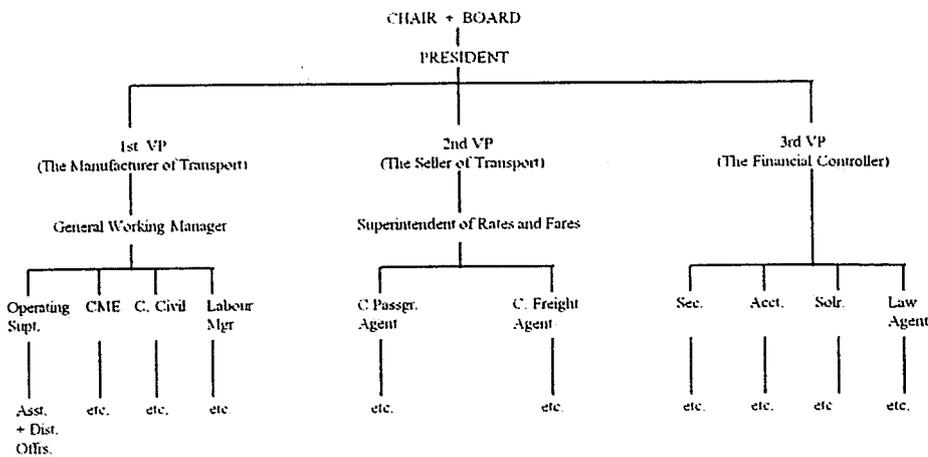


FIGURE 9

A suggested British version of a Vice Presidential system from the Railway Gazette 12 August 1921.

22) Interview in Railway Gazette 18 November 1927.

23) "LMSR Reorganisation" Railway Gazette 29 October 1926.

24) As can be seen from this diagram the chief general manager retains line management of the HQ functions and manages the divisional general managers. No real top management is created.

- 25) Railway Gazette 29 October 1926.
- 26) Sherrington op cit p22.
- 27) “Commercial Department Reorgansiation LMSR” Railway Gazette 17 July 1931.
- 28) Railway Gazette 15 July 1932.
- 29) Lawson op cit pp235-7. It was considered anomalous because a department responsible for running passenger services also controlled traffic operation for both goods and passengers. Inevitably there were accusations that goods traffic was held up in favour of passenger traffic. See also T B Hare British Railway Organisation London 1930 Chapter XII especially pages 138-9.
- 30) See Introduction, Figure 4 p6.
- 31) The London Midland and Scottish Railway Co. A Record of Large Scale Organisation and Management London 1946, p2.
- 32) LMS Board Minutes 17 December, 1931 PRO RAIL 418/8.
- 33) See the remarks of the Chairman Sir Guy Granet at the LMS AGM Railway Gazette 4 March, 1927.
- 34) Railway Gazette 26 November 1926 and 5 August, 1927.
- 35) LMS Board Minutes 28 July, 1929 PRO RAIL 418/6.
- 36) J H Jones op cit, Bonavia op cit passim.
- 37) J H Jones op cit, p285.

- 38) A railway informant of John Lee told him that the LMS board were simply there “to represent the shareholders. That is all a director is for. Give him weight and standing and a little knowledge of finance and he can watch the executive more or less approvingly”. J Lee Letters to an Absentee Director London 1928.
- 39) “Mass production” is used here in a defined way. It is not only a question of large scale production which is as old as large scale demand. Nor is it only a question of breaking down complex tasks into sequences of simple repetitive tasks, a process as old as collective production. What distinguished mass production is the application of nineteenth century and twentieth century technologies to large scale, sequential production. Here both the discrete tasks and the progress from task to task are mechanised. In order for this process to work a number of conditions apply. At one level component parts have to be interchangeable which implies an accuracy within known limits. This requires techniques of jiggling - accurate methods of holding the work piece(s) during operations - and gauging to measure the accuracy of each piece. At another level the higher capital costs of mechanisation put a premium on maximum flows of production through the sequences of production to minimise unit costs. This implies planning and balancing flows of products through the various processes and requires more intensive management to make it work.

“Rationalisation” emerged as a term in the inter-war years to describe the various responses to what was described as cut throat competition - cartels, the amalgamation of firms into larger financial units or the reorganisation of firms into more efficient and economic units. (There is a useful discussion by Josiah Stamp, “The Present Position of Rationalisation” in Criticism and Other Addresses, London 1931.) It is in the sense of organisation to achieve economy and efficiency that the term is used here. Clearly there is a connection between mass production and this meaning of rationalisation. A

key aim of rationalisation is to concentrate and standardise production so that demand is sufficient to make mass production possible.

- 40) Economist LMS Supplement 2 July 1932, p12.
- 41) See the list of large manufacturing employers in 1907 compiled by C Shaw in Business History, Vol 25 No 1 (1983).
- 42) See Edwin A Pratt British Railways and the Great War 2 vols, London 1921, particularly Chapter XLIII in Vol 2: "War Manufactures in Railway Workshops".
- 43) Ibid p602.
- 44) A T Vivian "Locomotive Repair Shop Organisation and Methods" Railway Engineer October 1920.
- 45) "Wagon Building and Machine Tool Operations" Railway Engineer February 1920.
- 46) An account of the system is given in the Railway Engineer in 6 monthly parts December 1921 to May 1922.
- 47) Midland Carriage and Wagon Committee minutes 16 May, 1918 to 18 December, 1919 PRO RAIL 491/260.
- 48) Railway Gazette 5 November 1926.
- 49) A Railway Engineer article refers to 5000 workers being employed at the Derby shops "in normal time" thus indicating no change in manning levels as a result of the change in methods: "The Midland Railway Carriage and Wagon Works at Derby - I", Railway Engineer December 1921.

- 50) Midland Carriage and Wagon Committee minutes 18 December 1919 to 20 January, 1921. PRO RAIL 491/260.
- 51) Ibid 6 April, 1922.
- 52) LMS Carriage and Wagon Committee minutes 28 May, 1924 to 30 October, 1924, PRO RAIL 418/23.
- 53) An account of the system is given in “Progressive Building of Railway Carriage and Wagons” Parts I and II Railway Engineer August and September 1925. The timing indicated is based on a rule of thumb that articles of this sort usually appeared about a year after the new system commenced. It is understandable that the company would wish to have a well-running system to show specialist journalists.
- 54) Railway Engineer August 1925, p279.
- 55) “A progressive system of railway carriage lifting and repairing” Railway Engineer, June 1927 and “A progressive system of railway carriage building”, Railway Engineer, April 1928.
- 56) Railway Engineer, June 1927 as footnote 55.
- 57) Minutes of LMS Carriage and Wagons Committee 29 April 1925 PRO RAIL 418/23. This also seems to mark the inception of the progressive system at Derby.
- 58) Ibid 27 October, 1926. See also footnote 71 below for programme of closures to 1932.

- 59) J W Williamson in A British Railway Behind the Scenes, London, 1933, Chapter V describes the Midland methods as the source of the changes to progressive system in the LMS locomotive works. The progressive system seems to have been introduced after a long planned reorganisation of Crewe was more or less complete, necessitating further works. This places the new works after Reid's appointment as Vice President some time in 1927: see "Financial Results - Crewe Reorganisation", Report to the Board No 3, March 1929, p3 in PRO RAIL 418/102.
- 60) See footnote 59 and "The Derby Locomotive Works of the London Midland and Scottish Railway" Railway Engineer September 1930, particularly Figure 16 p345.
- 61) See "The Reorganisation of Crewe Locomotive Works LMSR" in 11 parts, Railway Engineer, July 1928 to May 1929 inclusive: "The Derby Locomotive Works of the London and Scottish Railway" in 2 parts, Railway Engineer, September and November 1930. Middle
- 62) "Reorganisation of Derby Locomotive Works, LMSR" Railway Engineer, March 1932. The remarks at footnote 53 apply.
- 63) "Progressive repair of locomotive boxes" Railway Gazette January 18 and 25, 1935.
- 64) "Mass production of wagons at Derby LMSR" Railway Gazette May 27, 1932.
- 65) See the entry for Dennison in L Urwick The Golden Book of Management, London 1956.
- 66) Remarks of Sir Josiah Stamp and Sir Henry Fowler in discussion of E J H Lemon's paper "Railway Amalgamation and its effects on the Workshops", at the Institute of Transport Congress. Railway Gazette July 11, 1930.

67) See “The Derby Locomotive Works” Railway Engineer September 1930. Also Report to the Board No 19, 29 October 1931 in PRO RAIL 418/104. Note that the % given at Figure 16, Railway Gazette September 1930 (loc cit) is at odds with the number “shopped” as a % of the total number of engines given there at p337, ie 65 as a % of 3000, circa 2%.

68) Williamson gives repair times of “up to 60 days” prior to the progressive system while the Railway Gazette, September 1930 gives average times of 20 to 25 days out of traffic including weekends. The Railway Engineer July 1928 p240 gives repair times of 8 days (small repairs) and 12 days (large repairs) under the new system as compared to 30, 40 or 50 days previously. Lemon in his “Rationalisation on the LMSR” (Modern Transport 11 June, 1932) says average repair time for locomotives had fallen to six days.

69) Report Board No 3, March 1929, PRO RAIL 418/102.

70)	Loss of 2,500 loco staff prior to 1931	£461,000	*
	Interest on capital not expended on planned new No 9 erecting shed Crewe	£23,000	**

* staff figures from Board Report No 19, October 1931, PRO RAIL 418/104. Wages saved taken pro rata from money savings from staff dismissed in Chairman’s Speech AGM 26 February, 1932 reported Railway Gazette 4 March, 1932.

** planned expenditure £410K from Locomotives and Electrical Committee 28 March, 1928 PRO RAIL 418/49. 5.5% was the notional figure used in calculating savings in reports to the LMS Board eg Report No3, March 1929, PRO RAIL 418/102.

- 71) Six Works were closed between 1925 and 1932: carriage and wagon works at Stoke, Barrow, Crewe, Plaistow and concentration of two shops into one at Derby. (LMS Carriage and Wagon Committee 27 October, 1926; 28 November, 1928; 25 November, 1931 [PRO RAIL 418/23]; 29 July 1931 [PRO RAIL 418/24]. Closure of Newton Heath Carriage and Wagon Works: Locomotive, Electrical, Mechanical Civil Engineering Committee 25 May, 1925 PRO RAIL 418/49.

Railway maintenance costs were based on a renewals accounting system which meant that the costs of new rolling stock were shown as maintenance costs up to the point at which depreciation was covered and the value of assets equalled the capital shown in the accounts. Beyond that new rolling stock was added to capital. Otherwise capital was written down. The consequence is that it is difficult to clearly separate capital and maintenance costs as understood now. The expedient has been adopted of deriving a total cost of renewal, replacement and repair of locomotives and carriages and wagons per 100 train miles, or engine miles as appropriate, giving a measure of the cost in use of rolling stock. Figures have been taken from PRO RAIL 421/237 and RAIL 421/238 which are handbooks of statistics issued by the LMS.

	1930	1931	1932	1933	1934	1935	1936	1937	1938
Locomotive Maintenance costs £m	4.56	3.92	3.59	3.63	3.43	3.69	3.86	4.06	4.04
Costs per 100 engine miles	2.00	1.81	1.71	1.63	1.65	1.66	1.68	1.73	1.77
Index 1930 = 100	100	91	86	82	83	83	84	87	89
Carriage and Wagon Maintenance Costs £m	4.71	4.15	3.92	3.75	3.78	3.88	3.96	4.31	4.24
Costs per 100 train miles (£m)	3.08	2.81	2.72	2.60	2.50	2.52	2.51	2.67	2.65
Index 1930 = 100	100	91	88	84	81	82	81	87	86

The reason for the increasing costs in 1937 and 1938 is not known.

- 72) See eg the remarks in the Railway Gazette, Vol 55, p.708, 1931.
- 73) Josiah Stamp at AGM 26 February 1932 (Railway Gazette 4 March, 1932).
- 74) LMS employees 1930-1937

	1930	1931	1932	1933	1934	1935	1936	1937
Salaried	42,300	41,892	40,6513	39,655	39,942	40,506	40,734	41,725
Waged	191,275	189,115	181,439	176,382	182,978	186,446	185,787	190,501
Totals	233,275	231,007	222,090	216,037	222,920	223,952	226,521	232,226

Figures are for 31 December of year shown.

Source: director's diaries at PRO RAIL 421/13. This information was discontinued after 1937.

- 75) Economist LMS Supplement, 2 July, 1938, p16.
- 76) Proportion (%) of expenditure to receipts, 1924-1937

	1924	1929	1932	1934	1936	1937
Proportion Expenditure to Receipts (%)	80	80	85	83	81	81

Source: Economist, LMS Supplement 2 July 1938, Table V, p15.

- 77) Appendix V to Organisation and Accounts of Ordnance Factories (1902) at PRO WO 33/240 includes material on the LNWR workshop costing at Crewe.
- 78) Railway Engineer August 1922 pp289-294. Interestingly the article only acknowledges the assistance of the Carriage and Wagon Superintendent,

R W Reid, no reference being made to any accountant. Also A E Howell "Modern Production and Costing Methods in Locomotive Shops" Railway Engineer October 1922, which discusses costing at the Armstrong Whitworth locomotive shops including the use of punched card systems. Also Col. O'Brien "The Management of a Locomotive Repair Shop" Railway Engineer January 1921 on the Lancashire and Yorkshire Railway practice which discusses the return on capital for new machinery. It also shows that costs were only available when called for ie they had to be picked out of the detail of the records.

- 79) LMS Carriage and Wagon Committee Minutes, 23 June, 1926, PRO RAIL 418/23.
- 80) Ibid 28 March, 1928.
- 81) W V Wood "Development of Costing Methods on LMSR" Modern Transport 28 May 1932.
- 82) Report No. 19, October 1931, PRO RAIL 418/104.
- 83) Ibid.
- 84) As footnote 80
- 85) Ibid.
- 86) Ibid. Individual cost records for coaching stock were instituted from 1 January, 1933. (LMS Board Minutes, 24 November, 1932, PRO RAIL 418/8) The standard costing system had been introduced by July 1930 into the carriage and wagon works when the Costs Committee had been established "a few months" (E J H Lemon, Railway Gazette, 11 July 1930.

- 87) W V Wood in W V Wood and Sir Josiah Stamp Railways, London 1928, p237.
- 88) Ibid p.239.
- 89) Ibid pp 239-40.
- 90) Ibid p.240.
- 91) See R H Coase "Business Organisation and the Accountant" in D Solomons (ed) Studies in Costing, London 1952, p.146.
- 92) See the discussion by Solomons in (ed) Solomons as footnote 91, pp33-37.
- 93) Wood and Stamp op cit, tables pp.37 and 92 reworked.
- 94) C E R Sherrington op cit p.24.
- 95) Ibid p.25.
- 96) M R Bonavia Railway Policy Between the Wars Manchester 1981, pp.46-7.
- 97) Ibid pp45-6.
- 98) Ibid p141.
- 99) Sir Josiah Stamp "The Management and Direction of Industry" in Criticism and Other Addresses, London 1931, pp192-3.
- 100) H Bruère and A Lazarus Applied Budgetting, Chicago and New York 1926, Chapter IV for this paragraph, Quotation from p.72.

- 101) "LMS Annual Meeting" Economist, 5 March 1932.
- 102) Ibid.
- 103) For "criticising the details of management" see the objections to the proposed costing scheme at Crewe, this Chapter p149. For "Directors independent audit", this is how the exercise is described at Report No. 16, PRO RAIL 418/106 p2 para 4.
- 104) Report No. 3, March 1929 PRO RAIL 418/102
 Report No.12, July 1929, PRO RAIL 418/102
 Report No.31, November 1929, PRO RAIL 418/102
 Report No. 9, February 1930, PRO RAIL 418/103
 Report No. 20, July 1930, PRO RAIL 418/103
 Report No 14, June 1930, PRO RAIL 418/104
 Report No. 19, October 1931, PRO RAIL 418/104
 Report No. 16, October 1933, PRO RAIL 418/106
 Report No. 11, May 1934, PRO RAIL 418/107
 Report No. 5, February 1935, PRO RAIL 418/108
 Report No. 23, October 1935, PRO RAIL 418/108
 Report No. 9, May 1936, PRO RAIL 418/109
 Report No. 22, November 1936, PRO RAIL 418/109
 Report No. 14, July 1937, PRO RAIL 418/110
 Report No. 8, June 1938, PRO RAIL 418/111
 Report No. 8, June 1939, PRO RAIL 418/112
- 105) See introductory section of "A Review of the LMS Commercial Organisation and its Achievements, 1932-1939", 1940, at RAIL 418/209. ^{PRO}
- 106) A collection of 20 reports in RAIL 421/119. ^{PRO}
- 107) As footnote 105 p15.

- 108) At the 1934 AGM Stamp announced that “The actual expenditure finally worked out at 99.6 per cent of the budget fixed early in the year ...” Economist 33 March 1934. This indicates that no income targets were included and that again this was a cash limiting exercise.
- 109) PRO RAIL 418/108 Report No. 13.
- 110) PRO RAIL 418/108 Report No. 25 (October 1935).
- 111) The LMS Chief Stores Superintendant did not control stores for Bridges, Stations, Catering or Coal Stocks. See Minutes LMS Stores Committee 27 January 1932 and 26 October 1932 in RAIL 418/72.

CHAPTER SIX

IMPERIAL CHEMICAL INDUSTRIES (ICI)

1) Introduction

ICI created a single organisation from a merger of four companies(1) which were themselves mergers of some 60 companies in all. Though other inter-war mergers were undoubtedly difficult, in terms of the range of products manufactured, the technical complexity of its research and development, the problems of integrating development with marketing and bringing the whole organisation under financial control, ICI was in a class of its own. The problems of building a new unitary organisation were made more difficult by the fact that no particular thought had been given to them before the merger took place. Despite having access to and knowledge of the new corporate structures of Du Pont and General Motors in the US, senior managers at ICI produced a structure which was far less effective. The company was tightly centrally controlled financially and commercially, with decentralised divisions with manufacturing and product development functions. The result was a company that was paradoxically both over-centralised and loosely controlled. Lines of financial and commercial control soon centred on Sir Harry McGowan who dominated ICI until after World War Two. But ICI was simply too big to be controlled in this way. The central control was too rigid to allow the divisions to act as autonomous business units but the decentralised manufacturing and product development functions were too disconnected to allow central product and business planning. The consequence was technical and commercial under-performance. The Second World War weakened central control and allowed the divisions to become autonomous businesses but this did not solve the problems of central planning.

ICI is now examined in three sections which consider the evolution of the company's structure and its consequences, costing and financial control and finally technical and commercial development.

2) ICI: Structure and Consequences

The merger which produced ICI was not carried out to achieve an efficient business structure. W J Reader says that the merger was actually "brought about by force of circumstances - international chemical politics". The merger was seen as a defensive move by the firms concerned who were afraid of international competition while the state wished to secure and strengthen an industry which produced munitions. The merger "was not made because the participants believed in the superiority of a large combine from the point of view of organisation; nor had much preliminary thought been given as to what sort of an entity ICI was to be."⁽²⁾

The organisation of ICI reached a stable form in 1931 after a period of experimentation following the 1926 merger. The evolution of this structure was entirely internally generated and took, as far as one can see, no account of the new models of organisation emerging in the USA. In particular, no use appears to have been made of Nobel's long-standing contacts with Du Pont and subsequent investment in General Motors despite such precedents as a study by a Nobel executive of Du Pont's structure in 1919.⁽³⁾ While this visit was before Du Pont's divisional reorganisation in 1920-21 and cannot be taken to indicate that the divisional model was clearly before them, it does show that access to the innovative US models was freely available. Indeed, once ICI reached its stable form its executives were sent to study Du Pont on several occasions.⁽⁴⁾ The ICI merger itself, however, seems to have made reference to no outside model or indeed any model at all.

The new body had to resolve two broad problems in making a coherent whole out of an agglomeration of 60 firms. (The word "agglomeration" is just: of the four merging partners, only Nobel had an orderly holding-company structure.) Firstly, a way had to be found to rationalise ownership structures and production facilities.

Secondly, an appropriate structure had to be found to direct and develop the new firm as a whole. While in practice these two issues had to be addressed in parallel, they can be more clearly dealt with separately.

The problems of rationalising production facilities and ownership structures were related. The interests and concerns of legally independent boards of directors of subsidiary companies might very well differ from those of ICI as a whole on such issues as the transfer of assets to other companies or the closure of works. The disruptive potential of the boards of subsidiaries was therefore considerable. Despite the importance of the issue it was not until after the merger had taken place, in January 1927, that it was considered “not premature to consider how majority control [of subsidiaries by ICI] will be made thoroughly effective in practice.”(5) It was proposed that ICI be made “sole Director and Manager” of the subsidiaries though existing directors would be re-appointed as local directors with “the same emoluments and other financial rights” for three years to ensure continuity and as a form of compensation. This suggestion was evidently adopted but at this distance it does seem extraordinary that such a crucial issue should be decided after and not before the merger took place.

With the appointment of ICI as sole director and manager of subsidiaries power was effectively centralised. However, the shares of subsidiaries were often not completely held by ICI even when they had voting control. Thus the possibility of legal action by minority shareholders, in pursuit of sectional interests, remained. This danger seemed threatening enough for ICI to successfully lobby for the inclusion of a provision in the 1929 Companies Act allowing compulsory purchase of minority shareholdings when a majority owner held more than 90% of the shares.(6)

Without centralised power reinforced where necessary by the power of coercion minority shareholdings it is difficult to see how two reorganisations which took place in 1929 and 1931 and subsequent liquidations of subsidiaries could have taken place so relatively smoothly. The basis of these reorganisations was the common management of the production of the same or related products and this could not have

been achieved if it had not been relatively easy to switch the ownership of works from one

REFERENCES TO CHART
 O Indicates subsidiary company, or direct associate of I.C.I. □ Indicates sub-subsidiary company, controlled by subsidiary and associated companies numbered 1 to 45. ◇ Indicates sub-sub-subsidiary company controlled by sub-subsidiaries, e.g. (13 g) and (13 g).
 Δ Indicates industrial investment interest without share or management control.

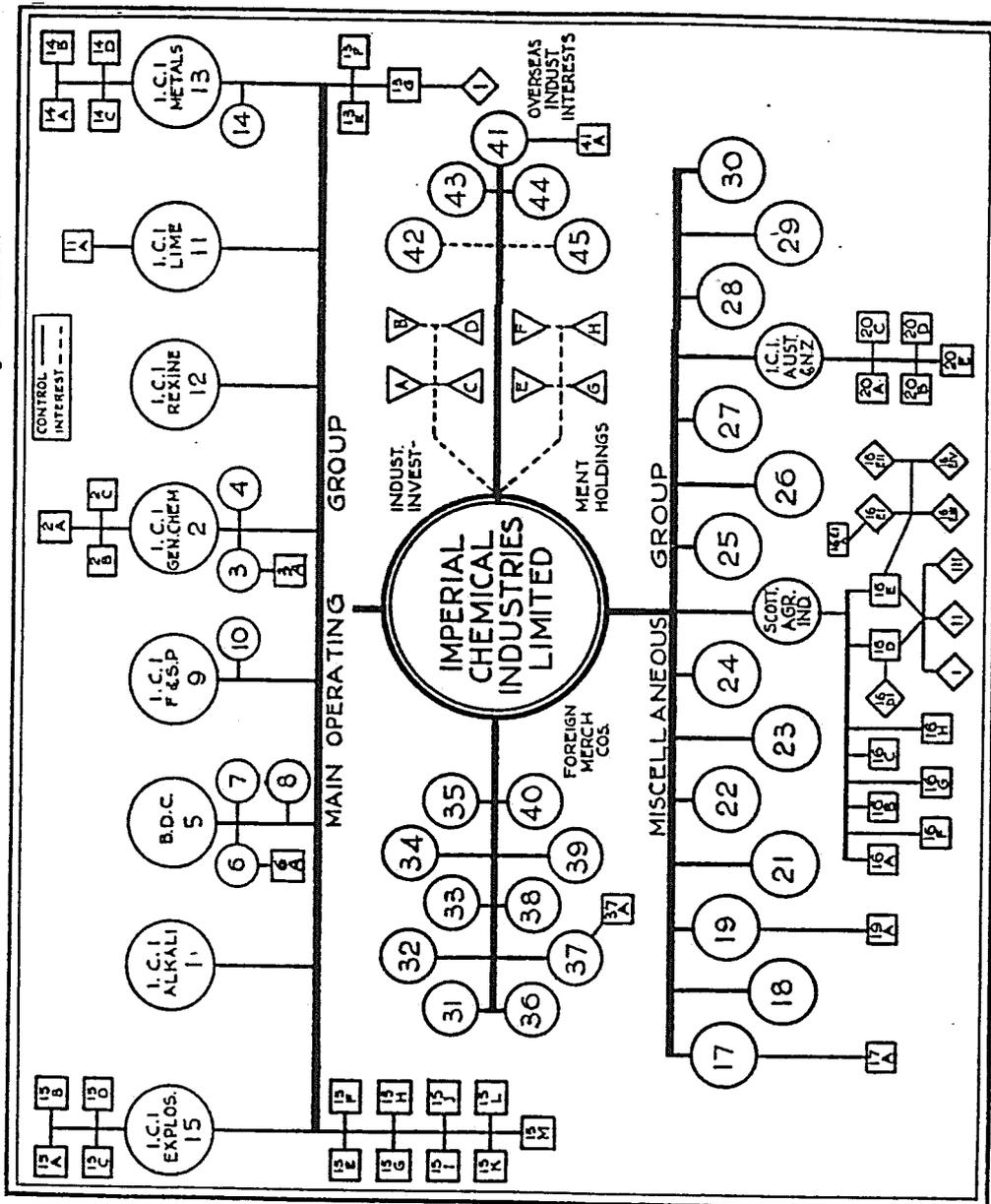
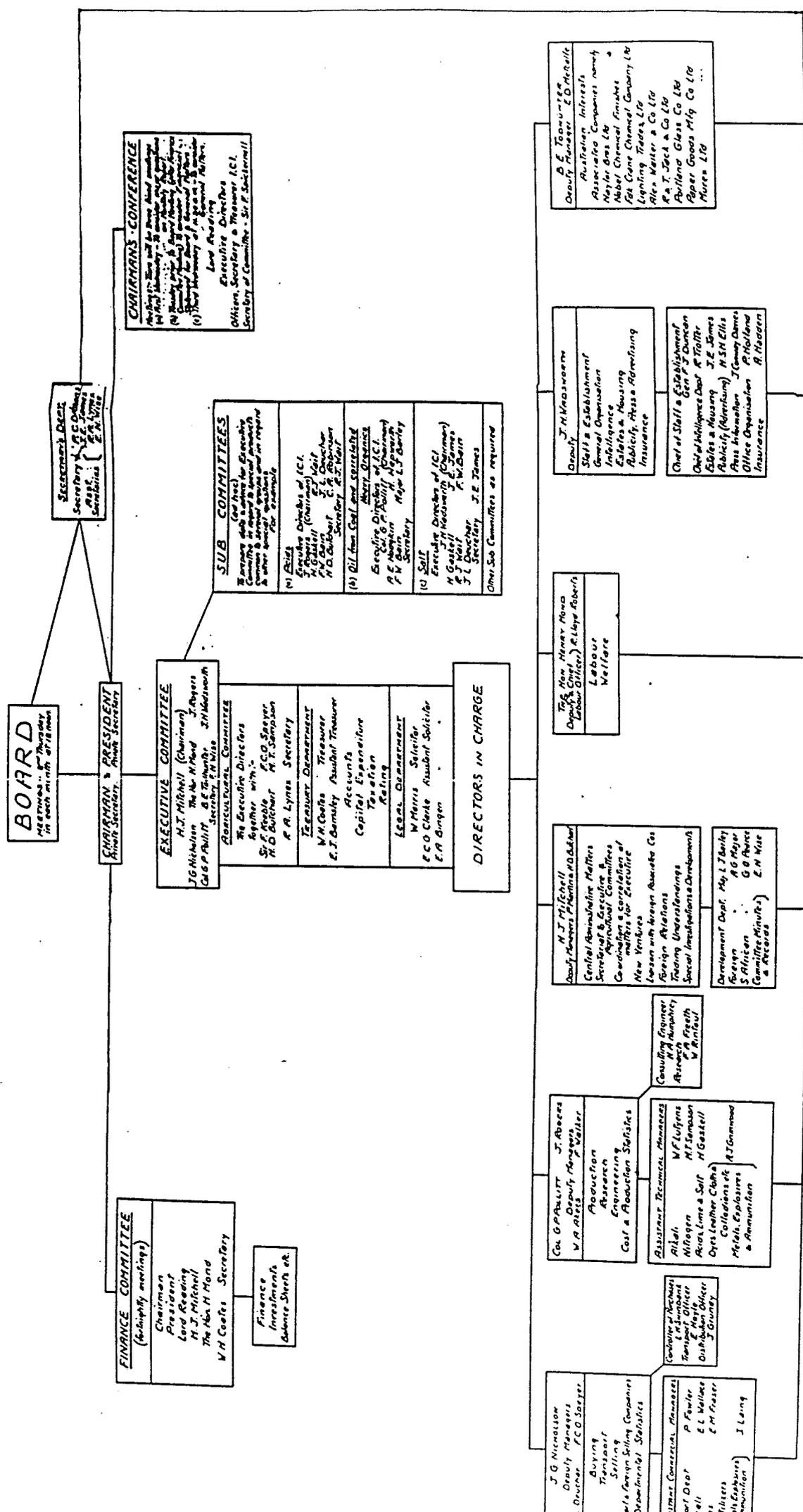


Figure 10. Chart from the Economist in 1935 showing ICI subsidiaries

company to another. Common management of different works making similar figure products meant that it was easier to concentrate production in the most efficient plants and close down excess capacity. These reorganisations (which we will consider in more detail below) appear to have been the culmination of a process of works transfer and closure in 1928 and 1929. The acquisition of minority shares proceeded as soon as the 1929 Finance Act became operative.(7)

In 1929 the liquidation of subsidiary companies was being suggested and was being carried out by 1931.(8) This appears to have been initially for those cases where they somehow got in the way, later it was as settled general policy. In 1931 Coates wrote: "Arising from the group concentration and the concentration of manufacture the necessity or desirability of retaining the identity of several subsidiary companies disappeared and steps were taken to liquidate them."(9) By 1932, however, it was being said that the newly registered ICI (Explosives) Ltd would "act as a holding company until, following the gradual liquidation of the subsidiary companies of the Explosives Group, it becomes the main (and ultimately the sole) operating entity of the Explosives Group."(10) The converging logics of establishing control over subsidiaries and rationalisation of production led finally to a form of divisionalised structure.

It is important, however, not to present too tidy a picture of ICI in the 1930s. It continued to acquire or set up subsidiary companies. Despite the steady liquidation of companies - 67 subsidiaries disappeared between 1926 and 1939 - ICI's number of subsidiaries rose to a peak of 125 in 1938.(11) An interesting "ownership chart" was published by the Economist 19 January 1935 and is given at Figure 10. It can usefully be compared with the organisation charts at Figure 11 and Figure 13 below, to show that the process of rationalisation of ownership and formal divisionalisation was somewhat less complete than the organisation charts appear to suggest. Nevertheless, the key to the Economist chart (12) shows many of the Group subsidiaries to be 100% owned and thus easily liquidated at will. There are still, however, a significant number of ICI majority shareholdings which are below the "coercible" 90% level.



SUBSIDIARY COMPANIES

Figure 11. ICI reorganisation 1927.

Overall, however, it would appear that once established a “sole Director and Manager” of a subsidiary, it was possible to proceed with rationalisation and concentration of production relatively untroubled by the problems of tidying-up the formal remaining subsidiary company structure. The General Chemicals Group, for example, could announce in 1936 that it had reduced the number of works in the Group from 30 to 7 and declare that “the process of concentration was nearly complete.”(13) Meanwhile the winding-up of two of the 100% owned companies was still being carried through in 1940.(14)

But if the logic of control over subsidiaries and of concentration of production pointed ICI in the direction of a form of divisionalised structure the particular form such a structure should take was by no means pre-determined. Indeed, ICI was created without any apparent organisational intentions at all. It may be as W J Reader has suggested that the founders of ICI were concerned with international chemical politics. Alternatively, it may be that “it is, in practice, quite impossible to discuss organisation in advance if most mergers are to go through at all Once the directors of the merging companies start talking about their own and their relations’ executive positions, the odds against the negotiations proving successful are very heavy.”(15) Whatever the reason, ICI started life with a board of directors, two managing directors (McGowan and Mond, who were also respectively President and Chairman) and an Executive Committee of six full time directors, three from Nobel, three from Brunner Mond. From that foundation everything remained to be built.(16)

The first response was to place the Executive Committee collectively in charge of HQ functions. They were also individually ICI representative board members of the (60) subsidiary companies. The Executive were also expected to advise the Chairman and President on a range of technical and organisational issues through a growing range of ad hoc committees. It was a heavy burden. A reorganisation scheme in December 1927 increased this burden. It now gave specific HQ functional responsibilities to the Executive Directors individually and produced a more elaborate board committee structure. The Executive Directors or their deputies continued to

represent ICI on the boards of the subsidiary companies. An organisation chart is given at Figure 11.

This structure was unsatisfactory in a number of respects apart from the near impossible expectations it laid on the Executive Directors. As a structure it was an uneasy half-way house between a holding company and a departmental type. There were over-lapping jurisdictions over subsidiaries between Executive Directors in their departmental or ICI Board capacities. The headquarters structure was again the consequence of mixed holding company and departmental tendencies with co-ordinating committees on the one hand and functional directors on the other with the added effects of the personal power exerted by McGowan and Mond. These were demonstrated in an Executive Committee distinct from, below and responsible to the two managing directors and a separate and secretive Finance Committee.

Subsequent organisational changes were not the consequences of attempts to achieve organisational coherence, however, but rather the desire of McGowan and Mond to have more of their Executive Directors' time and counsel.(17) Though, as we have noted, the logic of the rationalisation process was pushing forward some form of grouping by product - reinforced perhaps by a desire for orderly book-keeping.(18) - the model for a new structure arose quite contingently. Nobel's had owned a non-ferrous metal company with subsidiaries to which further companies were added after the ICI merger. It was decided in 1928 to group these companies under a single delegate board and a single management committee which "greatly reduced the duplication of work and the amount of detail which arose for the ICI Directors who belonged to both bodies."(19) Some of the features of this reorganisation were then applied to ICI generally as a whole in 1929.

The Group's reorganisation of 1929 grouped companies according to product - General Chemicals, Dyestuffs, Explosives, etc, under largely ornamental Delegate Boards ("to retain local goodwill"(20) but also, presumably, to work out the three year local director arrangement) and an Executive Board. The latter had all the power and was to have officials from the various works and headquarters officials representing

the technical, commercial and labour directors of ICI. The Executive Directors (with the Chairman and President) were ex officio members of the Executive Boards but did not have primary responsibility for representing ICI, this now being delegated to nominated officials. The 1929 scheme thus represents a transitional structure between the departmental and divisional structure though somewhat obscured by the use of a governing executive board rather than individuals. This structure may be represented schematically as follows:

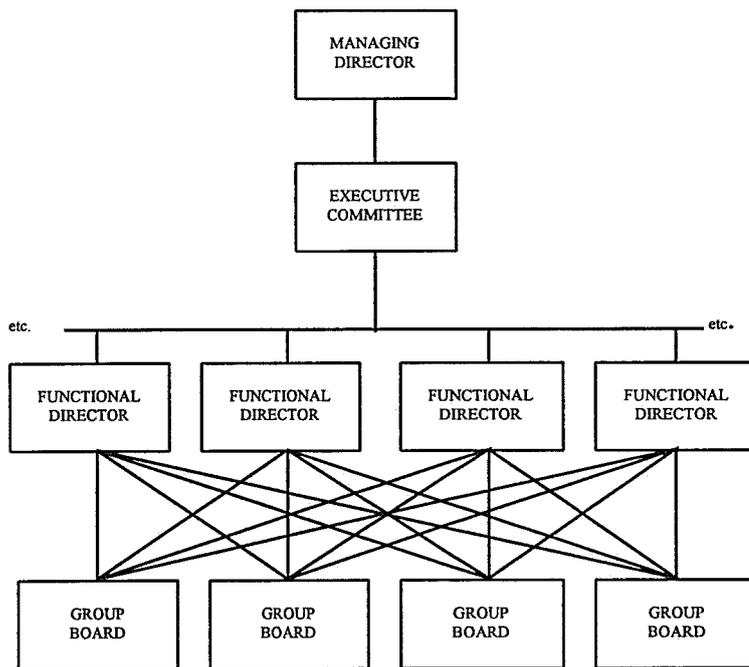


FIGURE 12 The 1929 re-organisation of ICI.

This structure has a strong resemblance to the transitional form used on the Pennsylvania Railway before the final establishment of a true divisional structure.⁽²¹⁾ There is direct management of the Groups through control by functional directors of their functional nominees on the Group Boards. To move to a true US divisional model a line management structure needs to be added, giving a command structure from an ICI chief executive through group chief executives. The 1929 Groups structure is important therefore as a potential key step towards the Chandlerian divisional structure. It was a step that was not taken.

ORGANISATION CHART IMPERIAL CHEMICAL INDUSTRIES LIMITED

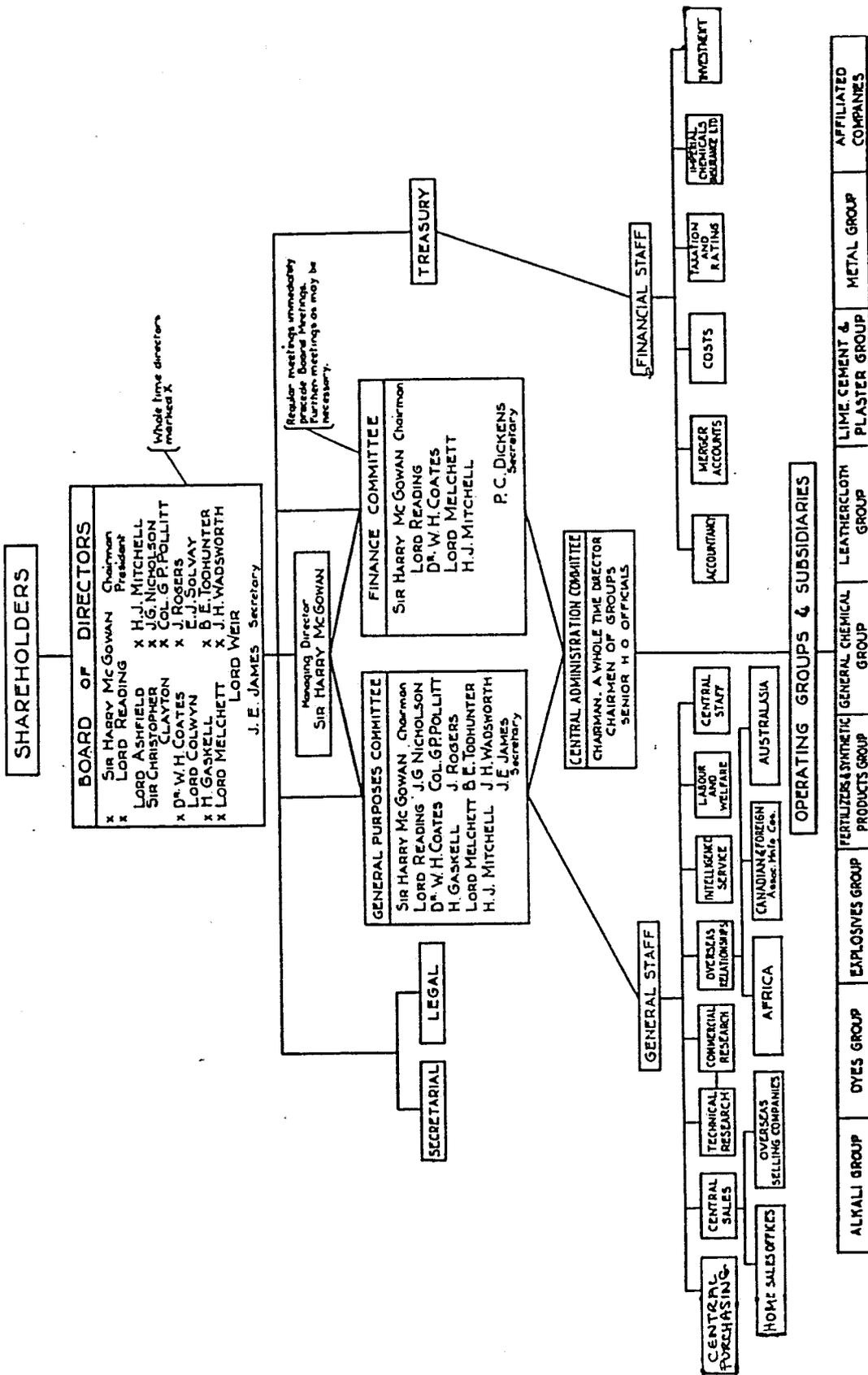


Figure 13. ICI reorganisation 1931.

Problems remained after 1929. The precise balance of power between the headquarters departments and the Groups had not been defined and there were disagreements.(22) The Group Boards were too big, headquarters officials had “so many other duties to perform that they must find it difficult to attend the Executive Board meetings regularly” which had the “disadvantage that the Group Boards cannot be alongside the position of the moment”(23) The Groups also generated volumes of minutes which contained far too much detail to be useful to headquarters. A further reorganisation in 1931 made rearrangements at both headquarters and at Group level which were to fix the ICI structure more or less up to World War Two.

The 1931 structure is shown at Figure 13. Following Mond’s death in December 1930, McGowan was made Chairman and sole managing director. The headquarters structure shows graphically how strongly McGowan controlled headquarters’ functions through his control as Chairman of the Finance and the General Purposes Committee and his managing directorship. This bottleneck, as Reader calls it(24) was fed pre-sorted information from headquarters departments and subsidiary groups largely through the Central Administration Committee which was also used to pass on the requests of McGowan to the Groups. Particularly significant, however, is the way that the Executive Directors are removed from functional responsibilities. The rationale seems to have been the earlier one of freeing Executive Directors to provide advice and guidance to the managing director individually through advisory committees.(25) Effectively this made the Executive Directors less like executives and more like traditional directors with collective responsibility but no individual function. In so doing, it emphasised the power of McGowan as managing director and reduced the possibility of opposition from executive directors with a functional power-base. It emphasised a director/manager split of responsibilities. More generally, positions equivalent to those of functional Vice Presidents in US corporations had been removed.

The 1931 re-organisation significantly altered the position of the Groups. The scheme published by McGowan in February 1931 declared that its purpose was to “delegate all possible authority and responsibility to the Group Delegate Boards

.....”(26) While there were real delegations they were not as fulsome as this might suggest. The Delegate Boards were to be executive boards of expert officials with numbers restricted “to the very few”, as McGowan put it. They would not be attended by Executive Directors or HQ officials. There were to be none of the old part-time directors on the Delegate Boards and the separate decorative boards were abolished. Each Group was to have a Chairman based at HQ with a seat on the Central Administration Committee. A Managing Director was appointed for each Group based largely at Group offices. One of the Delegate Board members was to be responsible for technical matters, production and research, another for selling. These were expected to keep in close contact with their relevant departments at HQ. However, headquarters departments were no longer executive as far as the groups were concerned but were service departments. This was a direct consequence of the removal of the Executive Directors from control of HQ functions which meant these departments’ powers became purely advisory. The Groups were expected to keep records and make returns to the Secretary or Treasurer in the form laid down by these officials.

But the rather wide freedoms which this structure gave the Groups was significantly modified by other provisions. Most importantly, the Groups had very little commercial freedom. A Commercial Department had been set up under the Executive Director, J G Nicholson, in 1927 and his department remained in place after the 1931 reorganisation.(27) The “sales machine” controlled by this department was, with a few exceptions, to sell the products of the Groups. Prices were supposedly arrived at after joint consultation between the Group and the head of the sales machine, but after 1931 as before, prices were “largely controlled at headquarters”.(28) Any pretence of consultation was dropped after 1933.(29) Raw material prices were not under the Groups’ control but provided by the Central Purchasing Department at headquarters. Wage rates were largely determined by the Labour Department.(30) In effect, therefore, the Groups’ influence over their commercial performance was limited to production efficiencies and in the longer term, new product development.

The commercial role of the Groups was further limited by the restriction of information which made the financial judgement of production efficiency more difficult. Sales figures were reported to the Groups and "detailed product charts showing the quarterly progress of trading and profit [were] prepared for the use of the group executives" by the Treasurer's Department.(31) Their use, however, was restricted: the ICI Finance Committee decreed in November 1932 that Group Boards should set up finance committees of three or four people only to consider "profit statements and finance figures" and that figures should not be pre-circulated but "the Group Accountant should produce the statements at the meeting and collect them afterwards."(32) Group Chairmen were not allowed to know the gross profits of other groups or of ICI as a whole.(33) The Sales Committee, which included Group representatives, set up in 1933 to, inter alia, set or recommend prices, did so without access to profit figures.(34) Furthermore, as we shall see below, the system of costing established by ICI centrally was designed for HQ oversight and was of limited use to the Groups.

But if the Groups had no commercial autonomy their technical autonomy was almost complete. Where there had been no institutional separation(eg sales) or specific supervisory responsibilities (eg finance) HQ departments under the 1931 reorganisation had no powers to compel observance of their requirements. The consequence was that the departments concerned with technical functions at HQ - Technical, Research, Development - tended to be disregarded by Groups and rather withered on the vine during the 1930s.(35) As we shall see, the result of this was weakness in the planning of investment in and the development of new products particularly where more than one group was involved. Group technical autonomy was a considerable obstacle to the concentration and rationalisation of the development, production and marketing of new products which was ironic given that that Groups had emerged as a mechanism for rationalising existing production.

The oddity of the 1931 reorganisation was the lack of management structure - understood as an institutional power structure - between HQ and the Groups that the previous paragraph points up. While the Groups had been given a managing director

and functional and geographic managers, there was no line or functional management relationship between the Groups and HQ. The functional responsibilities of the Executive Directors had been withdrawn. The Chairmen of the Groups were members of the Central Administration Committee which was a co-ordinating body with limited powers designed to clarify issues and options for the Finance and the General Purposes Committees. In these two bodies the members appear to have acted as advisors to McGowan, whose decisions were the sole authority across the company. But it was simply not possible for one man to manage a company as large and as complex as ICI, though he might dominate it. Whether as a deliberate strategy or not, ICI after 1931, was effectively a system of checks and balances which guaranteed McGowan's power at the price of a failure to develop a coherent management structure. When a Board revolt in 1938 limited McGowan's power to the extent of removing his power as managing director, the result was a complex system of further committees to co-ordinate the Company rather than manage it.(36) All in all, whether in its pre or post 1938 form, ICI may be typified as a divisionalised holding company. This description seems to capture best the central financial control of otherwise semi-detached subsidiary groups. We may also find this description supported by the purpose and character of the financial control mechanisms that ICI deployed.

3) Costing And Financial Control

We have seen how the Groups system, ostensibly a form of decentralisation, in reality left the Groups as manufacturing bodies with other activities and decisions channelled through headquarters. The costing and financial control systems introduced by ICI reflected and re-emphasised this centralised control. We will consider the topic under three broad headings: costing, capital expenditure and budgetary control.

Nobel's Treasury Department was transferred to ICI in September 1927 and included a costing section.(37) From the start the orientation of ICI's costing was towards the financial supervision of subsidiaries. This orientation was further

emphasised by the need for central financial supervision in the early years of ICI. The tasks of rationalising production and achieving an efficient organisation required financial information provided independently of constituent firms upon which organisational decisions could be made. A list, made in 1930, of special investigations carried out by the Costing Section shows that providing cost information for rationalisation decisions had been a major part of their work.(38) It was also inevitable that cost information from subsidiaries should be on a centrally determined basis to ensure comparability and an equitable basis for inter-merger trading prices.(39) There were compelling reasons, therefore, why costing should be an important headquarters function in the period leading up to the Groups reorganisations of 1929 and 1931.

These considerations, however, did not require that costing should remain centralised nor that it should remain solely an instrument of central control once the Groups structure was established. Attempts were being made to standardise cost and other financial returns after the 1929 reorganisation and the issue of costing and its purposes was the subject of some discussion. Reader says that "the Brunner people considered costing very much more from the technical side ie as a way of controlling works processes; Nobel's were concerned with costing as part of the financial statistics."(40) This is, perhaps, too narrow an account of the differences. Alfred Mond, for example, appears to have seen costing as part of the process of evolving technical and pricing policy, while the senior managers at Nobel saw it as a tool for supervision and discipline of subsidiaries.(41) While Mond's influence before his death in 1930 was sufficient to bring about some changes in the standardised cost system(42) essentially the Nobel view prevailed. Managers at the old Brunner Mond site at Winnington complained bitterly in 1930 but could not alter the system:

The different views on the costing system appear to arise owing to the fact that the costs are being utilised for two purposes, the first purpose being that of financial control at Head Office, and the second being that of technical control at the Works. The present system has been devised primarily from the point of view of financial control at Head Office in order that a broad view of the position may be ascertained quickly, without the position being obscured by temporarily disturbing factors. In order to achieve this the temporarily disturbing factors

which are useful from the point of view of technical control at the Works have been reduced to a standard level each period.(43)

The usefulness of the system to technical or works managers was further reduced when the frequency of reports was reduced from monthly to quarterly in October 1930. This was done to further iron out temporary fluctuations. The scheme was designed to provide reports at group and senior HQ level but to an extent fell between two stools: one manager commented "they are not sufficiently detailed to assist anyone who is really controlling a product while on the other hand they do not present a simple enough picture for those who are merely reviewing it."(44) More to the point the system did not actually provide an effective instrument for supervision and discipline of the groups. This is shown by a number of examples.

Firstly, it was not possible to use the returns to establish whether changing costs were the responsibility of the Group (eg changes in efficiency) or were caused by factors out of their control - like sales volume, wages or material costs all controlled from HQ. This question only seems to have been understood and addressed in 1938, some eight years after the system was established.(45) By this time at least two Groups - Alkali and Dyestuffs - appear to have developed systems of standard costs and benchmarks for technical efficiencies for their own use.(46) Attempts were made to incorporate these systems into a system of central control but the Groups do not appear to have been particularly helpful.(47)

Secondly, the costing system, because of its inflexibility, at least in the earlier years appears to have encouraged a dysfunctional response, particularly in encouraging plant managers to produce excessive amounts for stock "to shew good costs".(48) This in turn seems to have resulted in an equally unconstructive response from HQ officials - one comments that the issue of large stocks "is probably a fruitful source of embarrassment [to plant managers] at the present time."(49)

Thirdly, because the costs were in a form that was not particularly useful to them, the plants and Groups had no powerful motivation to make sure that the costs were as accurate as possible. Rules of thumb might provide data on a consistent

basis but could be significantly inaccurate: one product (electrolytic chlorine) costed on the same basis since 1928 was recosted in 1939 under the threat of Government investigation and showed increases in costs of between 12% and 19%.(50) Perhaps the clearest example of costs not giving an accurate picture of reality was the debacle over selling costs in 1936. The sales “machine” set up in 1931 was subject to some modifications in 1933-34 to locate some sales activity within the Groups while retaining control at HQ.(51) In November 1935 alarm was expressed at an increase in selling expenses from £1.5 to £2 million and an investigation was set up under J G Nicholson.(52) Nicholson’s report was devastating.

..... from the available figures useful comparisons of expenditure are impossible between Groups and also between years, as in practically no instance is it possible to compare like with like much of the assumed increase from 1932 to 1934 is, in fact, not a real increase of total expenditure by ICI but can be accounted for by the varying methods in presenting the figures and by the inclusion of items which are, in truth, not actual outgoings.(53)

Conversely “important items of expenditure have not been included by some Groups at all”(54)

Moves were subsequently made to standardise the interpretation of what had previously appeared clear instructions as to how returns were made. But what is important about this episode and the other examples given is that systems and figures giving the appearance of control were illusory. This was easier to see in some cases than in others but raises questions about the whole approach. The system of cost control designed for HQ supervision did not encourage self-checking within or between Groups because the Groups did not depend on the system or its results. On the other hand the central Costing Section depended on the Groups to make accurate returns but was not represented in the works or the Group offices and did not deal with the primary sources of information. There were no officials such as a Vice President for Finance whose role included oversight and audit of procedure, there was no line structure that enforced consistency. Once the system was established it took a crisis or new interest by an Executive Director for it to be altered.

Control of capital expenditure, on the other hand, was more reliable. It was taken on an item by item basis, estimated results being subject to audit. The problem here was that when the pressure for capital expenditure grew from the mid-1930s onwards the lack of any mechanism for making investment on a strategic basis became an increasing problem. Elements of a planning approach began to emerge during the thirties but the problem had not been resolved adequately by the end of the 1940s.

The Groups were required to submit requests for permissions to spend more than £2,000 to the General Purpose Committee (GPC) via the Central Administration Committee (CAC). The CAC could approve items up to £5,000 and recommend them to the GPC, amounts above this being passed straight to the GPC.(55) In addition the Groups were required to submit budgets for Research, Staff and Labour Welfare and Advertising. In effect, then, "the Groups had to get authority from Millbank (ICI HQ) for any important development" and "everything important [came] up before McGowan who was Chairman of the GPC."(56) The scrutiny became more intense during the 1930-32 slump with items between £1,000 and £2,000 from Group boards being brought to the GPC by October 1932.(57)

To this detailed committee scrutiny of individual proposals was added an estimate and audit system similar to that instituted by Stamp on the LMS. From 1929 onwards, requests for capital expenditure had to be accompanied by estimates of profits or savings which would result. These went to the HQ Costing Section for initial scrutiny before being passed to the GPC. Once the sum agreed had been spent and results were available the profits or savings were audited and the results passed to the GPC.(58) In February 1934 it was further decided that any capital expenditure proposals that would result in increased production would have to pass the scrutiny of the Sales Committee "as to there being an adequate market for the product and as to the probable selling price."(59) In the 1938 reorganisation, a Technical Committee was set up which appeared to be intended to start central technical appraisal of proposed capital investment but this development was overtaken by the war.

A system of estimate and audit for capital expenditure on an item by item basis was not, however, a system of investment planning. Even when sales appraisals and technical appraisals were added it remained an item by item approach. As a system it simply could not cope with the rapidly multiplying problems of planning and priority that ICI began to face in the second half of the 1930s. With war looming the capital programme was £4 million for 1937 while for 1938 it was nearly £7 million.(60) The impression one gains is that ICI HQ was simply overwhelmed. It had no headquarters department devoted to planning or priorities. The spending approval system had simply been that the Groups proposed and the GPC (or more specifically McGowan) disposed. The whole system was designed for restraining and controlling not for leading the organisation. An Executive Director, Gaskell, was put in charge of spending priorities in 1937 but, presumably because there were no administrative resources at HQ to do the job, worked through the Group Chief Engineers.(61) "This attempt by Gaskell to contain Group expenditure through the Group Chief Engineers" remarks Reader "can hardly be regarded as central planning

And in the war conditions which followed, the Groups forged along with little control from the centre. Most projects were for war materials and for this the planning was really in the hands of the Government and the Groups.(62)

We can thus see that ICI had no investment planning procedure linked to a form of longer term business planning. Nor did it have any shorter term financial plan or system of budgetary control which could link capital expenditure to priorities determined by estimated profit margins. There were, it is true, annual budgets put forward by the Groups for Research, Welfare and Advertising. The amounts involved were relatively small, however, and the process was really no more than a form of expenditure control rather than one of planning. For a system of budgetary control to emerge it was necessary for an organisational structure to exist both able and empowered to plan across the span of corporate activities from marketing, through production to development and investment. The structure of ICI as a whole

was too fragmented to carry out such a project before World War Two. The Groups, on the other hand, had neither the marketing function nor the financial information before the war to allow them to do it for themselves.

It took the war and the relative autonomy which it brought to the Groups to set the pre-conditions for systems of budgetary control to develop. The Dyestuffs Group is particularly noteworthy. We have already seen that Dyestuffs had developed its own costing system by the late 1930s. By 1933, whether because of the transfer of some sales activity to Groups or through local initiative, the Dyestuffs Group had developed market forecasting and sales intelligence techniques. In that year they could claim that the system was 97% accurate and it allowed them to match manufacturing orders closely to demand. The accuracy was attributed to daily sales reports by salesmen, a technique borrowed from Du Pont.

We have been able definitely to regulate manufacture before the altered rate of demand has become serious, instead of as in the past observing that there has been an increased or decreased turnover and then enquiring the reason from the Area Sales Offices before amending our forecasts.(63)

They had thus established the essential feedback loop from market to manufacturing. The system could not become one of budgetary control, however, without control over prices and full financial information on Group overhead costs since essential questions concerning production volume and profitability at different price levels and investment strategy could not be properly addressed. These conditions were met by the transfer of full responsibility for sales to the Groups during World War Two. In consequence, Dyestuffs were able to develop a budgetary control system which covered projected turnover, expenses, profits and return on capital invested.(64) These developments were clearly something of a revelation to W H Coates, the Executive Director having responsibility for Finance, at the War's end. He enquired whether "other Divisions prepare budgets on these lines" and stated that "there would be great advantage in extending this system as far as possible."(65) This is eloquent testimony to the distance between Group and HQ that the War

brought. It also demonstrates clearly how the structure of ICI before the War had prevented the Groups acting as proper divisional businesses.

But if the War brought the beginning of financial planning to the Groups there could be no planning for ICI as a whole until the structural relationship between HQ and Groups was established on new lines. This task was only really tackled during the 1950s and is outside the scope of this thesis.(66) The failure of ICI to develop a true divisional structure and effective systems of financial planning and control before World War Two was not merely a failure to meet the theoretical requirements of an abstract normative system. The consequence of its structure and control systems was a very real commercial and technical under-development which had clear adverse financial effects. These issues will be discussed in the following section.

4) **Technical and Commercial Development**

As an organisational function “development” can be used in a wide or restricted sense. Used widely, it refers to planning for families of products, or divisions or the company as a whole. Used in a restricted sense it is the process of bringing a new product to market or an older product to a new market. While in the early days of ICI, development in its wider sense was a real concern of some senior HA officials it was pushed aside largely, it would appear, as a result of the Groups reorganisation of 1931.(67) As we have seen, this reorganisation gave research and manufacturing functions to the Groups and sales and financial control to HQ. The designation of headquarters functions as “services” meant that while there might be concerns expressed or initiatives made, HQ had no real purchase on the process that took products from research to full scale production. Where new products, similar to those already produced within a Group, were developed there appears to have been no problem in bringing it to a stage where it was marketable. Where similar new products were being developed in different Groups co-ordination was difficult and progress slow and where outside agreements were involved it was more difficult still. As a result we shall see that if ICI’s performance is compared with Du Pont, ICI performed significantly less well. We will now spell these issues out in more detail.

At the formation of ICI the Nobel Development Department was transferred to the new company. It saw its remit in wide terms as a corporate planning body. A Forecasting Section was also set up and played a complementary role, looking at developments in the UK and world wide chemical industry and giving a context for any strategy that the company might develop. After the 1931 re-organisation, the Group Chairmen took an independent line, as they were now entitled to do, and declared in 1932 that;

they considered the responsibility for watching and studying new outlets for their products or diverting the supply thereof to a stage nearer the ultimate consumer lay with Group Managements and that these questions were constantly before them and were receiving intensive study ...(68)

The head of the Forecasting Section warned that “under the present organisation sales development and market research were being neglected.”(69) The head of the Development Department urged that “we should find some way of adapting the Group organisation so that we have a well-defined technical-cum-commercial policy regarding each of our products whether existing or projected.”(70) He also attempted to have a HQ Development Committee established “to work out a logical and economical forward policy..”(71) This attempt was unsuccessful and from 1931 the Development Department, together with the Research and Technical Departments, were grouped under the general umbrella of Executive Directors unsympathetic to such wider aims. Their role became an advisory one.

A new attempt was made to provide a focus for forward policy by Coates in 1932. A Commercial Research Department was set up bringing the Development Department together with sections for Commercial Intelligence, Forecasting, Statistics and Economics. This Department had a range of expert officers and tried to be proactive, requesting Groups to appoint Development Managers, holding meetings with Group Research Managers and publishing papers and reports.(72) By 1934 however, McGowan had apparently decided that the Commercial Research

Department “had failed at least in its function of positively encouraging and controlling new developments.”(73) This judgement seems harsh. The Department had no executive powers and could not compel the Groups to co-operate with HQ or each other on development matters. In 1936 the Department was taken from Coates and put under a new Commercial Committee where it appears to have quickly faded into insignificance. It does not seem to have been part of the sales responsibility to develop technical/commercial policy.

As far as the Groups were concerned, despite restrictions in the slump on research to projects which could show a return of 15% per annum(74) which would tend to restrict projects to familiar ground, and despite a perception of the Groups as “parochial”(75) it is remarkable how much research the Groups carried out. Where circumstances allowed, this research could be quickly turned into saleable products. In the three years, 1933-35, the Dyestuffs Group added 87 new products to its range and a further 912 were developed and approved for manufacture.(76) The Alkali Group invented polythene in 1935 and it had been developed into a marketable product by 1937.(77) Where products were being developed in several Groups, however, progress was far slower. For example, three Groups had developments in plastics other than polythene. They appear to have been prepared neither to co-operate with each other nor to hand-over development to another group. None of the Groups were obviously so far in advance of the others that they could claim a leadership role. The result was drift.

... no natural home or centre of development had been provided for plastics in the original organisation of the company, nor was there anyone at the centre who had strong reasons to feel any particular concern for them. Once the original ICI organisation hardened into a network of vested interests as it did very quickly, the situation became very difficult to alter.(78)

In pesticides, there were also three Groups involved with the further complication of competition with an outside firm, followed by agreements and joint selling. The situation showed, says Reader “the absence, in ICI, of any unified organisation capable of taking charge of the projects coming forward, in the organic

field in the late nineteen-thirties.”(79) In order to control matters between the Groups there was “an intricate network of committees, an arrangement which pleased none of the Groups and hindered rather than helped development since no Group felt inclined to put its whole weight behind a project which it did not wholly control.”(80) In plastics, ICI set up “the quaintly named ‘Plastics Division’. It was not a Division at all but a Committee, and not a very powerful one, since it had neither executive authority nor financial resources.”(81) It took from 1933 to 1938 for this “Division” to become a formal Group.

The situation in both plastics and pesticides shows that the worries of the heads of the Development and Forecasting departments had been well founded. The absence of any central authority able to enforce organisational change was not the only problem. Re-organisation needed to be both technically and commercially coherent and required a central authority capable of mobilising centrally based - that is non-partisan - technical and marketing expertise. It needed to be able to plan for and quantify the returns it could expect on its investment under different organisational arrangements. Because there was very little HQ based expertise on the technical side one important element was lost. But it was also the case that the skills required to maximise commercial returns were not available at HQ either.

This is demonstrated by the case of Lightning Fasteners. This company was a subsidiary of the Metals Group and had been hugely successful in terms of dividend received compared to the original investment. Yet a new Executive Director of ICI could suggest in 1941 that this was the wrong way to look at the matter:

... it is only in recent months that we have come to the conclusion by a careful study of the past that that Company might have achieved infinitely greater results and higher profits if a proper system of market investigation and investment in plant to take care of estimated sales had been put into effect.(82)

The point being made was a general one:

My point in giving this example is to show that we are too inclined to be lulled into a false sense of security by what appears to be success in any Group or Company and we have no means at our disposal at the present time of investigating and deciding whether these companies by better management, by better marketing investigation or by a more elastic policy [on price] might have ventured into new industries to their benefit and the benefit of the Company in general. I could give other examples...(83)

The lack of skilled assessment of technical and marketing potential at ICI HQ backed by an authority prepared to make the organisational changes necessary to realise that potential had real consequences for ICI's financial performance. A crude but effective measure is provided by a comparison of Du Pont and ICI results by W M Coates in 1937.(84) On products common to both companies roughly comparable earnings were made.(85) On those products not produced by the other, Du Pont earned 19% on total assets while ICI earned 9%.(86) In the case of non-common products, Du Pont had new research based products - tetra-ethyl lead petrol additive, cellophane - while ICI had chemical staples such as alkali and lime.(87) The lesson was clear: the speedy development and effective marketing of new research based products was rewarded very well financially. As one ICI officer concluded in 1938 after a comparative study of Du Pont and ICI: "something useful could be learned from a detailed study of the organisation and methods employed by Du Pont in the conversion of a Research Discovery into a well established Commercial Venture"(88) We have suggested, however, that any application of such organisation and methods required considerable changes to the organisation and methods of ICI as a whole.

It is instructive to compare the relationship between the organisation of research and the organisation as a whole at ICI and Du Pont. There was no apparent difference in the quality of the research itself. The work of Hounshell and Smith(89) on research and development at Du Pont demonstrates that there was great respect at Du Pont for the quality of both fundamental and new product research at ICI.(90) This work also shows, however, that Du Pont had clear organisational advantages when it came to commercially exploiting new products, particularly when they lay outside the scope of existing product groups. As at ICI, incremental research and development for existing products was decentralised to divisions. On the other hand,

fundamental research was carried out on programmes and in laboratories which were centrally controlled. Strategic new products were either developed from internal research or bought-in by the acquisition of other companies after intense central technical and commercial scrutiny. Senior managers at HQ were assisted in their deliberations by centrally-based treasury, chemical engineering and research and development departments. Once new products were launched, top management at Du Pont showed itself ready to readjust divisional boundaries where this appeared advantageous.(91) The consequence was the clear commercial advantage which Du Pont demonstrates over ICI in the development of new products.

5) Summary And Conclusions

We have seen how ICI's structure evolved into what we have called a "divisionalised holding company" in which centralised selling and financial supervision were the control mechanism for relatively autonomous manufacturing groups. This structure and its control mechanism had significant weaknesses. The financial supervision was revealed on a number of occasions as illusory and ineffective. The structure that was established by 1931 was an effective means of rationalising and concentrating production of existing commodities but it was obstructive to technical innovation where more than one group was concerned, it was not very effective at commercial appraisal and forward planning and it was resistant to organisational change.

The key problem, from which many of the others flow, was the lack of effective line and functional management of the Groups by ICI HQ. It was not that there was no control: the word of McGowan could be felt anywhere in the organisation and the control of finance, particularly capital expenditure, was very tight until the late 1930's.(92) It was rather that this kind of control could not provide the top management functions of performance review, strategic planning and allocation of resources in any particular way. The 1929 Groups' re-organisation seemed to promise that the functional Executive Directors would turn into the equivalent of US functional vice-presidents. This promise died with the 1931 re-organisation.

Thereafter, line and functional management between HQ and the Group was substituted for by an almost optional process of co-ordination and consensus through such bodies as the Central Administration Committee or the network of committees on pesticides unless there were direct instructions from the Finance and General Purposes Committees or McGowan himself. The general style is summed up in McGowan's words:

..... in my opinion it is better for a man to be told what he may not do without higher authority, rather than to define what he may do. In other words, men are expected to accept responsibility without reference to their chiefs, unless they feel the need for advice.(93)

The question must arise as to why this particular method of organisation emerged. The stated intention was to free the Executive Directors for general responsibilities, collective management and advice to the Chairman. As a system it gave great power to the Chairman, McGowan, which must have been a powerful motive for its adoption. Yet there are also several features of the organisation which strongly hark back to proprietorial forms. To be sure, ICI was not a proprietorial firm in the sense that control was predicated on the rights of ownership. In fact proprietors *per se* were given short shrift. The Group boards thereafter were composed of functional officers - engineers or accountants - or full-time general managers. And if the Group boards did not represent an executive committee of amalgamating proprietors neither did the ICI main board whose shareholdings collectively amounted to 0.5% of the ordinary shares in 1935.(94) Subsequent appointments of Executive Directors appears to have been solely on the basis of perceived performance and ability rather than some notion of balance between interests - eg Nobel and Brunner Mond.

Yet this being said, the organisation of ICI showed the continuation of proprietorial forms. This is the case even if we leave aside the individualist quasi owner/manager style and power of McGowan himself. After 1931 the Executive Directors had no executive functions and effectively reverted to a position where their power was exerted collectively on the Board or its constituted committees. It is

interesting to note that when the Executive Directors were withdrawn from management it is because of this that HQ functions become services:

..... any new organisation should liberate the whole-time Directors of ICI from direct executive control of individual Groups, with the corollary that the various Departments at Millbank shall function as Service Departments and not as Executive Departments as hitherto.(95)

After a period when the roles of Directors and managers were becoming confused with a board composed largely of executives, the 1931 re-organisation separated executive and director roles. In the process however it could not give executive power to HQ officials over Group boards and their Chairman and Managing Directors if the traditional status systems were to be preserved.

Proprietorial forms may also be seen in the use of boards and committees to co-ordinate and control rather than delegation of line and functional powers to individuals. In its use of committees in this way the organisation of ICI is closer to the Calico Printers Association than it is to General Motors. In the latter case the committees were used as a forum for those with executive authority rather than as the executive authority itself. Traditional proprietorial patterns may be seen in the way that accountancy was used as a means to police manufacturing from outside rather than as a tool of manufacturing management. They may also be seen in the control of capital expenditure on an item by item basis rather than through a system of planning or budgeting.

It can be suggested therefore that the survival of proprietorial forms and assumptions played an important part in setting up the relationship between groups and HQ which was the key obstacle to the emergence of a divisionalised company on US lines.

CHAPTER SIX

FOOTNOTES AND REFERENCES

- 1) Nobel, Brummer Mond, British Dyestuffs Corporation, United Alkali.
- 2) W. J Reader t/s note ICI Organisation 1926-31 at ICHO/ HIS/0030.
- 3) Report by Todhunter at ICHO/HIS/0031 (ii).
- 4) Pollard/Satterthwaite Report on visit..... 30 June 1932, ICHO/DIR/0678 (a report on dyestuffs organisation); W H Coates Du Pont and ICI.... financial comparison 14 September 1937, ICHO/HIS/0045; C S Robinson Comparison of the organisations of the Du Pont Company and ICI January 1938, ICHO/DIR/0681. Reader also mention a report by Slade on Du Pont research which I have not seen. (Readers notes, Appendix XIV, p.17, at ICHO/HIS/0045).
- 5) Author not stated (probably W H Coates): General Control, 6 January 1927, at ICHO/DIR/0874.
- 6) Companies Act, 1929, s.155. W J Reader wrongly refers to the 1929 Finance Act..
- 7) Reader's extracts for Executive Committee minutes at Appendix IX ICHO/HIS/0039.
- 8) See W H Coates memo to Finance Committee 20 April 1931 (ICHO/DIR/0762) where he quotes a memo of 22 July 1929 saying that "smaller companies can be liquidated" when it is commercially expedient or tax efficient to do so while in 1931 it is stated that "The minor companies will be liquidated...." (My underlining)
- 9) Note initialled "WHC, 1931" at ICHO/SEC/0716.

IMPERIAL CHEMICAL INDUSTRIES LTD.

INVESTMENTS (SHARES & DEBENTURES) IN SUBSIDIARY OR ASSOCIATED COMPANIES

Notes.—1. Particulars of issued capital relate to ordinary shares if not otherwise specified. Reference is made to footnotes where capital is partly paid.
 2. Holdings refer to company in immediate control except where stated, e.g. Imperial Chemical Industries holds 67.1 per cent. of Ordinary Shares of Scottish
 Agricultural Industries (16). The latter holds 100 per cent. of Alexander Cross (16d) Ordinary Capital, which in turn controls Nutrimol Feed (16d 1).

Company	Total Issued Capital	I.C.I. or Sub-sidiary Cos. Holding	Hold-ing Co. (%)	Company	Total Issued Capital	I.C.I. or Sub-sidiary Cos. Holding	Hold-ing Co. (%)	Company	Total Issued Capital	I.C.I. or Sub-sidiary Cos. Holding	Hold-ing Co. (%)	
Main Operating Groups				Explosives Group—cont.				D. Australasian Section—cont.				
Alkali Group:				(c) R. and T. Jack and Co.	10,000	10,000	100	(c) Leatherloth Prop'y.	400,000	204,000	51	
I.C.I. (Alkali).....	14197985	14197985	100	(f) Lancashire Explosives	5,000	5,000	100	(d) Nobel (Australasia) Pr.	1,198,950	1,198,950	100	
Mort. Loan.....	83,341	...	...	6% Pref.	7,500	7,472	99.6	(e) Victoria Ammonia Co.	10,000	8,000	80
General Chemical Group:				(g) Liverpool Magazines.	16,300	16,300	100	Proprietary.....	10,000	8,000	80	
1.I.C.I. (General Chemicals)	5,077,740	5,077,740	100	(A) Nobel's Explosives—	1,000,000	1,000,000	100	E. Other Miscellaneous Cos.:				
(a) Cassel Cyanide.....	352,500	352,500	100	5% Pref.	3,000,000	3,000,000	100	21. Arthur and Hinshaw—	55,000	55,000	100	
(b) Casner-Kellner Alkali	1,000,000	1,000,000	100	(i) Patent Elec. Shot Firing	10,000	10,000	100	7% Pref.	30,000	30,000	100	
(c) Chance and Hunt—	140,000	23,220	16.6	(j) Roburite & Ammoual	62,500	62,500	100	22. I.C.I. Estates.....	10,000	10,000	100	
5% Pref.	140,000	125,050	89.3	10% Pref.	78,340	78,340	100	Debs.....	1,261,920	...	...
1. Chemical & Metallurgical				(A) Sedgwick Gunpowder	30,000	30,000	100	23. I.C.I. Savings Bank.....	2,000	2,000	100	
Corp.—				(i) W. H. Wakefield & Co.	75,000	75,000	100	24. Imperial Chemicals Insur.	50,000	50,000	100	
5% Pref.	100,000	100,000	100	(m) Alexander Walker & Co.	60,000	60,000	100	25. Lancashire Public House	15,000	15,000	100	
Ord.	112,808	112,608	100	Miscellaneous Group				Trust—				
(d) English Gelatine and	443,919	443,919	100	A. Scottish Agricultural Section:				Ord.	75,908	4,317	73.1	
Phosphates.....	50,000	50,000	100	16. Scottish Agric. Industries—				Def.	720	...	...
4. Ormoran Chemical.....	4,775,580	4,775,580	100	6% Pref.	577,225	577,225	100	26. Mouldrite.....	475,000	49,950	68.6	
Specialty Group:				Ord.	822,226	551,443	67.1	27. Paper Goods Manufacturing	15,000	15,000	100	
(a) British Dyestuffs Corp. ...	5,000,000	5,000,000	100	Def.	252,522	...	28. Portland Glas—	68,109	63,134	95.5		
(b) British Alizarine.....	6332,000	6332,000	100	(a) Aberdeen Comm. Co.	100,000	100,000	100	6% Non-cum. Pref.	17,749	10,656	60.0	
(c) British Synthetics—	6,000	6,000	100	(b) Barclay, Ross &	...	...	29. Steatite & Porcelain Pro-	120,000	98,900	82.4	
5% Pref.	1,000	1,000	100	Hutchinson—	7,500	7,500	100	7% Cum. Part. Pf.	14,000	7,500	53.6	
Ord.	316,002	316,002	100	6% Cum. Part. Pref.	12,500	12,500	100	7 1/2% Cum. 2nd Pf.	60,000	37,024	61.7	
1. Scottish Dyes.....	24,370	24,370	100	Ord.	25,000	25,000	100	Debs.....	30,000	24,700	82.3	
& Other Wilkins and Co. ...	24,370	24,370	100	(c) Cross Chemical.....	266,000	266,000	100	30. Thames House Estate	11,000,000	573,000	5.7-5	
Fertiliser and Synthetic Products				(d) Alexander Cross & Sons	15,000	15,000	100	ASSOCIATED INDUSTRIAL INTERESTS OUT OF THE UNITED KINGDOM				
Group:				(i) Nutrimol Feed.....	180,000	180,000	100	41. African Explosives and In-	3,500,000	1,750,000	50.0	
1.I.C.I. (Fertiliser and Syn-	5,802,967	5,802,967	100	(j) J. & J. Cunningham—	220,000	220,000	100	dustries	500,000	500,000	100	
thetic Products).....	1,370,200	...	...	5% Pref.	20,000	19,750	98.75	(a) Cape Explosives Wks.	755,265	...	...
Deh. Stock.....	1,110	...	...	Ord.	4,000	3,300	82.5	5 1/2% Deb. Stock.....	4,850,000	225,000	0.5
"B".....	1,890	1,890	100	(ii) William Pattullo & Co.	3,000	3,000	100	Pref. Stock.....	615,974	297,937	48.4	
Ord.	1,000	630	63	(iii) Robt. Hart Anderson	3,000	3,000	100	Com sbs. n.p. "A".....	59,289	...	...
Alkali Group:				(iv) Neptune Mills.....	1,700	1,700	100	Arg. Paper Pesos	...	...	...
1.I.C.I. (Alkali).....	807,780	807,780	100	Held jointly by Alex. Cross & Sons, Ltd. and J. & J. Cunningham, Ltd.:				Arg. Paper Pesos	...	...	...
Deh. Stock.....	42,100	...	...	(f) Banff & Moray Agric.	20,000	20,000	100	43. Industrias Quimicas Ar-	15,000,000	7,500,000	50.0
Ord.	400,000	400,000	100	(g) Highland Agricultural	25,000	25,000	100	gentinas "Duperal" S.A.	...	...	...
Tar and Chemical Products				(h) John Milne and Co.	45,000	45,000	100	44. Magadi Soda Co., Ltd.—	219,094	...	...
Group:				(j) John Miller & Co.	165,000	165,000	100	6% 1st Pref.	328,047	13,787	4.2	
1.I.C.I. (Tar and Chem.).....	99,931	2,773	2.8	(Aberdeen).....	60,000	60,000	100	6% 2nd Pref.	57	...	...
10% Pref.	99,935	2,925	2.9	(g) Charles Tennant & Co.	127,250	127,250	100	12 1/2% 5a. Pf. Ord. 1p. ...	149,829	92,527	61.8	
Ord.	814,104	814,104	100	(h) Daniel Wylie and Co.	171,374	171,374	100	12 1/2% 5a. Pf. Ord., 3s. p.	100,000	100,000	100	
Alkali Group:				B. Lighting & Trades Section:				Ord.	425,700	2,300	0.5	
1.I.C.I. (Alkali).....	500,000	497,501	99.5	17. Lighting Trades—				45. Cia. Sud Americana de Ex-				
Ord.	4,296,750	4,296,750	100	10% Pref.	171,374	171,374	100	plosivos.....	400,000	169,575	42.4	
(a) British Copper Manuf.	1,500,000	1,500,000	100	Ord.	17,850	17,850	100	NAMES OF I.C.I. FOREIGN MERCHANTING COMPANIES				
(b) Elliott's Metal Co. ...	1,500,000	1,500,000	100	(a) F. H. Taylor and Co.	2,883	2,883	100	31. Brunner Mond and Co. (Japan), Ltd.	32. I.C.I. (Brazil),			
(c) Allen Everitt & Sons,	100,000	100,000	100	18. Welsbach Light Co.				Ltd.	33. I.C.I. (Chile), Ltd.	34. I.C.I. (Cina), Ltd.		
Ltd.—	200,000	200,000	100	C. Nobel Chemical Section:				35. I.C.I. (Egypt), S.A.	36. I.C.I. (India), Ltd.	37. I.C.I.,		
6% Pref.	50,000	50,000	100	19. Nobel Chemical Finishes—				(Levanti), Ltd.	37a. I.C.I. British and Levant Agencies,	38. I.C.I. (Lima),		
Ord.	103,000	103,000	100	6% Pref.	150,000	150,000	100	Ltd.	39. I.C.I. (Malaya), Ltd.	40		
(f) Lightning Fasteners	13,428	10,772	80.2	(a) Fredk. Crane Chemical	11,242	11,242	100	INVESTMENTS IN INDUSTRIAL COMPANIES				
(g) Broughton Copper Co.	475,000	475,000	100	D. Australasian Section:				A. Allied Chemical and Dye Corporation.	B. British			
(h) John Bibby, Soas &	...	...	...	20. I.C.I. of Australia & N.Z.—				Titan Products, Ltd.	C. E.I. du Pont de Nemours.	D. British	
Co. (Garston)	8	8	100	7% Pref.	4671,748	603,877	89.9	General Motors Corporation.	E. I.G. Farbenindustrie A.G.	F. International Nickel Corporation of Canada.	G.	
H. Amal Ltd.—				Ord.	11,848,354	1,511,129	91.7	Joseph Lucas and Co., Ltd.	H. Murex, Ltd.			
7 1/2% Pref.	133,898	62,376	46.6	Def.	250,000	250,000	100					
Ord.	181,895	109,561	60.3	(a) Ammonia Co. of Aus-								
Explosives Group:				(b) Brunner Mond & Co.								
1.I.C.I. (Explosives).....	4,992,872	4,992,872	100	(Australasia) Prop'y.								
(a) Bickford, Smith & Co.	200,000	200,000	100									
(b) Brit. Elec. Detonator	6,000	5,975	99.6									
(c) British Westlake ...	10,000	10,000	100									
(d) Curtis's and Harvey	428,250	428,250	100									

a 23,519 £1 1p.; 10,400 £1 shares, 10s. paid. b 232,000 £1 shares 1p.; 300,000 £1 shares, 15s. paid. c Notice to repay approximately £125,000 will be issued in February, 1935. d Notice to repay has been given. e Shares held by I.C.I. (Fertilizer and Synthetic Products), Ltd. f 20,000 £5 shares, £50 per cent. Gross: 50 per cent. Cunningham. A 605,079 £1 shares 1p.; 66,667 £1 shares, 1s. paid. h 1,513,621 £1 shares 1p.; 133,333 £1 shares 1s. paid. j 5,998 £1 shares, 15s. paid; 20 £1 deferred shares, 1s. paid. A 50,000 £1 shares 1p.; 25,000 £1 shares, 10s. paid. l 350,000 £1 shares 1p.; 350,000 £1 shares, 10s. paid; 400,000 £1 shares, 1s. paid. m On total shares.

Figure 14. Key to subsidiaries chart at Figure 10.

- 10) Davis to Routly, 7 May 1932 at ICHO/DIR/0537.
- 11) History of the Treasurers Department (author Minto?) at ICHO/SEC/0132.
- 12) See Figure 14. Source Economist, 19 January 1935.
- 13) Report of policy meeting on General Chemicals Group, 7 May 1936 at ICHO/DIR/0637.
- 14) Langford to James 7/11/40 at ICHO/CFD/7820.
- 15) L. Urwick "Executive Decentralisation with Functional Co-ordination" Public Administration Vol 13, October 1935, p354.
- 16) See W J Reader notes The Executive Committee, the Charners Conference and the Finance Committee (Appendix VIII) at ICHO/HIS/0038. Strictly the Executive Directors were not formed into a committee at the start of ICI - the committee was established by Board Minute 10, 8 December 1925.
- 17) W J Reader as footnote 16, p5.
- 18) At first reporting to the Board had been subsidiary company by company basis but 'almost immediately' had been changed to a product by product basis. (Reader's notes, pl, Appendix IV) The Group System of Control at ICHO/HIS/0039.
- 19) W J Reader ICI - A history Vol. II, p140.
- 20) Ref. as footnote 18, p3.
- 21) A D Chandler The Visible Hand pp105-7.

- 22) See Reader's notes and the paper by W H Coates Functions of Group Executive Boards at ICHO/HIS/0039.
- 23) H McGowan, Imperial Chemical Industry Limited - Organisation, 19 February 1931 at ICHO/DIR/0873.
- 24) See eg. Reader's notes Commercial Organisation 1931-1939 pl at ICHO/HIS/0047 (1).
- 25) ICHO/HIS/0040 Reader's notes p4.
- 26) As footnote 23.
- 27) H McGowan The Functions and Responsibility of the Selling Machine published with the 1931 reorganisation scheme at ICHO/HIS/0040.
- 28) Quote for W H Coates Functions of Group Executive Boards, 30 January 1980 at ICHO/HIS/0040 p.8. See Reader's notes as footnote 24 for subsequent arrangements.
- 29) Prices had to be referred to London and ultimately receive the sanction of the Sales Executive (after 1933 the Sales Committee) the GPC and ultimately McGowan. Note particularly McGowan's memo of 22 March 1933 p9 (as footnote 24) where this is specifically set down,
- 30) W H Coates Function of Group Executive Boards at ICHO/HIS/0039 and Reader's introductory notes at ICHO/HIS/0040.
- 31) History of the Treasures Department 1926-31 ICHO/SEC/0132 p6.
- 32) Financial Committee minute 1106 16/ November 1932; reproduced by Reader at ICHO/HIS/0045. Reader says that the collection of statements at the end of

meetings applied only to Group Boards not finance committees but the statement appears to include the latter also.

- 33) Memo by A J Quig, 21 March 1941 at ICHO/HIS/0045.
- 34) Memo by A J Quig, 1 May 1941 at ICHO/HIS/0045.
- 35) Reader's notes at Development (and planning) 1931-1939 (Appendix XVII) ICHO/HIS/0049(i) and The Executive Directors and their Departments at ICHO/HIS/0034.
- 36) Reader's notes at The Reorganisation 22.3.38 (Appendix XIX B) at ICHO/HIS/0051.
- 37) WHC(oates) Treasurers Department - Organisation 5 September 1927 at ICHO/HIS/0034. This section was transferred to the Technical functions later that year but back to the Treasurer's department in the 1929 reorganisation. (See organisation charts and Readers Costs and Statistics, ICHO/HIS/0037 pl.
- 38) Memo by Mr Young with Treasurer's Memo to Wadsworth, 15 May 1930. at ICHO/CFD.2409.
- 39) See the documents on inter-merger policy at ICHO/DIR/835 and Reader's Appendix VII Costs and Statistics at ICHO/HIS/0037.
- 40) W J Reader Costs and Statistics (Appendix VII) ICHO/HIS/0037, pl.
- 41) Ibid pp 1-3.
- 42) Notably the separation of overheads from prime costs to give what Mond called 'fighting costs' - that is the minimum price to which a firm could drop without loss against variable costs. ibid pp 3-4.

- 43) Quoted at *ibid* p.4.
- 44) Deuchar quoted Reader The Group System of Control (Appendix IX) ICHO/HIS/0089 page 5.
- 45) See Coates to Gaskell, 8 September 1938 Survey of Production Costs at ICHO/CFD/5295.
- 46) *Ibid.*
- 47) Presentation of Costs (minutes of meeting at Millbank 30 January 1939 at *ibid.*
- 48) Notes on the Supervision of a "Group" (probably H J Mitchell, probably 1930) at ICHO/DIR/0873, p4.
- 49) *Ibid.*
- 50) General Chemicals Group, Chlorine/Caustic Costly (Liverpool 3 March 1939) at ICHO/DIR/0672.
- 51) Divisional Sales Managers were in sales area offices but specialist product sales managers were based at groups. This does seem to have been taken advantage of by some groups noticeably Dyestuffs. See Reader's notes Commerical Organisation 1931-39 at ICHO/HIS/0047 (i) and report by Nicholson 8 January 1934 at ICHO/DIR/0576 (i).
- 52) Extract of minute of Central Administration Committee, 11 November 1935 at ICHO/DIR/0576 (i).
- 53) J G Nicholson Sales Report 30 January 1936 pp A6 and A7 ICHO/DIR/0576 (ii).

- 54) Ibid pA1.
- 55) This para except where otherwise indicated from Reader's notes Organisation General 1931-38 at ICHO/HIS/0045.
- 56) As footnote 55 p2.
- 57) GPC minute 26 October 1932, summary by Reader, Document marked 'p' (Appendix XIV) ICHO/HIS/0045.
- 58) Reader's notes How were the Groups requests for money assessed? at ibid, p3. Also document Capital Expenditure Requisitions at ibid.
- 59) As notes as footnote 58.
- 60) GPC and Board minutes 10 February 1937 and 9 February 1938 as footnote 57. The issued capital of ICI in 1935 was £77m ie 1938 spending proposals were equivalent to 10% of capital.
- 61) Reader's notes as footnote 58.
- 62) Reader's ICI planning 1942-1950 (App XXIV) ICHO/HIS/0075 (i).
- 63) Cronshaw to Walker 31 July 1933 at ICHO/DIR/0679.
- 64) Coates to Harrison 3 January 1948 at ICHO/HIS/0600.
- 65) Coates to the Treasurer 3 January 1948 at ICHO/HIS/0600. The budget system was apparently originated at the Blackley works of the group in about 1937 (Treasurer to Sir William Coates at ibid). By 1947-8 there were budget

systems of an unspecified sort in place or emerging in three other groups and discussions on introducing budgets for HQ departments.

- 66) See the minutes etc in Reader's notes at Finance 1944-1950 at ICHO/HIS/0086.
- 67) See the discussion in Reader's notes Development (and Planning) 1931-39 at Appendix XVII, ICHO/HIS/0049 (i) for this para.
- 68) CAC minute 386 quoted by Reader's notes p2 at *ibid*.
- 69) Reader's paraphrase of memo by Munro, 11 February 1932 at *ibid*.
- 70) Barley to Mitchell Development Policy 29 January 1932 at *ibid*.
- 71) Barley to Nicholson, 11 February 1932 at *ibid*.
- 72) See Reader's notes Commercial Research Department at *ibid* also document Technical and Commercial Research 2 February 1933 at ICHO/SEC/0746.
- 73) Reader's notes p4. The Special Research Committee at ICHO/HIS/0049 (ii).
- 74) GPC minute 148, 23 September 1931, Minute extracts titled 'Capital Expenditure' at ICHO/HIS/0045.
- 75) Reader's notes Technical etc Organisation in the Thirties' p3; at ICHO/HIS/0046.
- 76) ICI A History Vol II p333.
- 77) *ibid* p.

- 78) *ibid* p344.
- 79) *ibid* p335.
- 80) *ibid*.
- 81) *ibid* p345
- 82) AJ Quig Commercial Control at ICHO/HIS/0045.
- 83) *ibid*.
- 84) WHC(oates) Dupont and ICI, Summary of Financial Comparisons
14 September 1937 at ICHO/HIS/0045 - the accounts studied are those for
1935.

85)	<u>Du Pont</u>	<u>ICI</u>
Earnings (%) on total investment	16.58	17.52 (excluding goodwill)
Earnings (%) on total investment	14.73	11.83 (including goodwill)

This demonstrates the large quantity of goodwill (or water) in the ICI accounts; Du Pont's goodwill was £7m out of total assets £54m. ICI had £18m of goodwill out of total assests of £76m.

- 86) Rounded to nearest whole number, goodwill excluded. If goodwill is included Du Pont earned 18.6% and ICI 7.6%.
- 87) See Table 1 as footnote 84. Du Pont's textile interests including Rayon and ICI's non-ferrous interests are taken for our purposes as having roughly comparable technological maturities. A paper by C S Robinson comparing ICI and Du Pont in 1938 (at ICHO/DIR/0681) makes it clear that the range of technological development in common products is greater in Du Pont.

- 88) CS Robinson, as footnote 87, p25.
- 89) D A Hounshell and J K Smith, Science and Corporate Strategy - Du Pont R & D, 1902-1980, Cambridge and New York, 1988.
- 90) *ibid* p180 ff.
- 91) *ibid* *passim*.
- 92) Reader suggests that control over group spending was 'nominal' (ICI Vol 2, p143) but I beg to differ. The audit system and the scrutiny process were powerful tools for precensorship by groups. If most requests went through this did not mean that control was weak.
- 93) H McGowan speech at Ashridge The Organisation of a modern large-scale unit in industry 7 December 1935 at ICHO/HIS/0045 p13.
- 94) See the list of Directors share holding at ICHO/DIR/0525 which total £193,847 (largest share holdings £88k, McGowan £3k). The ordinary share capital of ICI was £43.8 million in 1935. (Econmist 19 January 1935).
- 95) A. McGowan Imperial Chemical Industries Limited Organisation 19 February 1931 (the 1931 Group reorganisation) p2 at ICHO/HIS/0040.

CHAPTER SEVEN

THE AUSTIN MOTOR COMPANY

1) Introduction

The motor industry as it has developed in the twentieth century has presented considerable challenges to its managers. It combines continuous technological development, high volume production requiring heavy investment in plant and a market volatility at times close to that of the fashion wear trades. It depended on and brought about innovations across a range of industrial sectors - "no other product yielded so rich a harvest of forward and backward linkages" as one writer puts it.(1) The industry also demonstrates the strongest linkage between high volume production and the mass market. Unless motor vehicles can be produced in large volumes, high unit costs will restrict the market to a rich minority. The growth in volume and sales with mass production and the fall in price that accompanied it was demonstrated spectacularly by Ford in the US. As the market grew it segmented and vehicles were produced in various price brackets which showed different market behaviours. The market as a whole was very volatile as a result of its sensitivity to changes in wider economic conditions. The application of the divisional form of organisation and budgetary control to General Motors were a direct response by that organisation to the segmentation and volatility of the market. The US motor industry is therefore the epitome of Chandler's "Three Pronged Investment" in technology, marketing and management.

The UK motor industry before World War One was a collection of small and medium sized enterprises producing relatively small numbers of relatively expensive vehicles. Some of the larger manufacturers were mobilised by the government to manufacture munitions during World War One. The waR may not have brought

about engineering innovations⁽²⁾ in terms of new processes but as far as Austin Motors was concerned it did introduce flow production (components passing from process to process without intermediate storage) and the use of costing as a method of production control.⁽³⁾ (The possible application of mass production techniques to vehicle production was not fully appreciated by Herbert Austin, however, until he saw them used in the US during a trip in 1922.)⁽⁴⁾ The UK market for motor vehicles was potentially greater in the interwar years as a result of the greater use of and familiarity with motor vehicles during the war. The example of Ford who had demonstrated the price sensitivity of the market for cars in the US was also important. At the end of World War One, therefore, for those UK manufacturers who were prepared to expand production both the technical means and the market appeared available.

Though the number of small manufacturers in the motor industry remained high two large indigenous volume manufacturers - Austin and Morris - pulled away from the rest in the later 1920s. In 1929 Austin had 25% of the UK market while Morris had 35%.⁽⁵⁾ The two manufacturers had different approaches. Morris saw his role chiefly as an assembler of bought-in components, setting up or buying manufacturing capacity only when it was necessary to ensure supply. The use of competition between external suppliers to ensure keen prices was extended to apply to competition between internal and external suppliers.⁽⁶⁾ The relative independence of the managers of the Morris plants⁽⁷⁾ resulted in a combination of personal management by Morris and a form of market co-ordination. Austin on the other hand had an integrated plant with all management present on a single site. All transactions therefore had to be managed internally. A financial crisis in the early 1920s also resulted in the development of a sophisticated costing system (which was to rapidly evolve into a system of budgetary control) and the imposition of technically expert full-time outside directors.⁽⁸⁾ Thus both the technical expertise and the modification of Austin's power as owner-manager gave some promise of the development of a more sophisticated management structure than at Morris Motors.

We shall see, however, that the management structure at Austin Motors did not evolve in any particularly sophisticated way. The consequence was that the system of budgetary control appears to have disappeared on the death of Austin and the retirement of his cost accountant in 1941. We shall look at Austin Motors in three sections. The first will consider the management structure, the second costing and budgetary control and the third will look briefly at the consequence of the structure on the commercial strategy and performance of the firm.

2) Organisation

Before World War One, Austin was a medium sized engineering employer with perhaps 2 - 3000 employees. By the war's end his employees had increased ten-fold(9) as had the size of the plant.(10) The new plant was not, however, immediately suitable for car manufacture. In addition, Austin's patriotism had led him to take a minimal return on his munitions contracts(11) and the war's end found him with debts both to the government and subsequently to the Midland Bank when he reorganised for post-war production. His chosen post-war 20 HP model did not sell particularly well and Austin seems to have badly misread the onset of the post war slump in 1920. By March 1921 Austin was reporting losses of "several thousand pounds per week"(12) and by April a Receiver had been appointed. It was quickly "intimated" that new finance would be conditional on a "re-organisation of the Directorate".(13) Austin resisted with energy and ingenuity but two new Executive Directors were imposed on him: C R F Engelbach as Works Director in November 1921 and E L Payton as Financial Director in April 1922. These two directors together with Austin, now designated "Commercial Director" and in charge of design and sales were now to form an executive committee of management.(14) Austin would retain the Chairmanship but would lose the title of Managing Director. With new non-executive directors and a Trustee put on the board by the creditors, now transformed into debenture holders, Austin was apparently effectively constrained.

However, this constraint could only really last as long as the company remained in a financially delicate state. Despite all his financial problems, Austin

had two new models - of 12 and 7 HP - in production in 1922, nervously monitored by the debenture holders. The creditors clearly wished Austin Motors to trade out of debt and for all their nervousness had no-one but Austin to rely on. Austin, the owner of about half the ordinary (voting) shares and Chairman and a functional director was clearly the most powerful figure in the company even if he was not all-powerful. His new models were a success and by September 1923 the firm had clearly turned the corner: substantially increased production was planned for 1924(15) and further increases were made in 1925 and 1926.(16)

With profits returning from increased sales, Austin attempted various stratagems to rid himself of the constraints placed on him by the debenture holders, particularly the outside directors. However, the debenture holders proved obdurate and the Finance and Works Directors and the Committee of Management were effectively recognised as permanent by Austin in an agreement of December 1925.(17) Significantly, this agreement also gave Austin control over Costs in addition to Secretariat, Sales, Service and Design. We shall look at this in more detail a little later. In the event neither Englebach nor Payton seem to have insisted on a strong form of collective management and the Board do not appear to have exercised a particularly strong grip. In November 1929 - nearly four years after the permanent establishment of the Committee of Management - the following item was raised at the Board:

Enquiries were made as to the procedures and functioning of the Committee of Management. It was presumed that a Minute Book was kept of the meetings and a suggestion was made that it should be produced at Board Meetings.

The Chairman said that the Committee of Management were always in touch and in consultation, although the meetings were not held formally and the Minutes recorded. This could be done if necessary
(18)
 ...

No such request was made and the matter was not raised again. There is no mention in subsequent board minutes of Committee of Management minutes being presented.

It seems clear then that the three executive directors looked after their own sphere without formal co-ordination. Given that the responsibility for commercial strategy - design and sales and, subject to some oversight, prices - lay with Austin, his position was powerful. He also appears to have established a generally accepted personally dominant role. One of the non-executive directors forced on him by the creditors, T D Neal, described, in 1927, the Committee of Management members as follows: "We have Mr Engelbach in the Works, Mr Payton in the counting house and Sir Herbert everywhere. We find that it has worked most admirably"(19) Nevertheless, the delegations which the creditors forced on Austin were real and necessary given the growth of the firm in the 1920s and 30s. While it is conceivable that Austin could have run the company as sole proprietor and manager, it is inconceivable that he could have done it well.(20) Austin himself seems to have recognised that the situation was a blessing in disguise. When the long standing Deputy Chairman, H du Cros, who had taken Austin's side throughout the disputes with the creditors, died in 1928 it was Austin who proposed E L Payton as a replacement.(21) When Engelbach retired due to ill-health in 1938 he was simply replaced by L P Lord with no diminution of powers.(22)

Thus the top management of the company, divided its functions in an individual, personal way. There were no written functional responsibilities laid down as far as one is able to judge from the surviving documents. Probably as a consequence of the personalised structure no formal management organisation chart appears to have been drawn up for the Austin organisation as a whole.(23) The executive directors had the power to run their departments by personal diktat and for Austin and Payton at least the tasks for which they were responsible could be carried out by simple departmental structures. The production departments under Engelbach were more complex but as we shall see their organisation was not well defined. In any case Austin himself was suspicious of any administrative overhead cost and had been so well before his post World War One financial difficulties.(24) The opportunity provided by the war to establish a more complex management structure was declined after the war was over. Austin told a meeting of the Institute of Cost and Works Accountants in 1920:

The war upset things in most works. We got a little out of balance; we lost our sense of proportion and our organisation was in many cases on a very lavish and expensive scale In the only direction in which it was possible to make changes - the overhead expenses - we have been able to look round and find out where we could get rid of some of the red tape After several months struggling, when the Armistice was declared we came to the conclusion at Longbridge that the best thing was to cut out everything we possibly could and to leave it to the bare side.(25)

As the firm became more prosperous the issue ceased to be economically pressing but the emphasis on low administrative overheads recurs in articles through the twenties and thirties.(26) A later writer relying on personal accounts from managers at Longbridge describes the company as “frugally run - Austin had never forgotten the near-disaster of 1921”.(27) Austin was, however, unusual among UK industrialists in that his rejection of more complex management structures was an informed one, aware of the US literature:

I have read, I suppose, all the works that I have seen published on works control and methods by American, English and other writers and I have come to the conclusion that when one studies a question such as works control - it is a complex question because it covers every department - if you specialise on a system such as that of Emerson or Gant (sic) you will realise that you are liable to drift into a system far too complex and quite unnecessary.(28)

No information on Payton and Austin’s departments has been found. Nevertheless, an organisational chart of the production departments was published in 1935 - see Fig15.(29) This was designed to show the relationship “between the Engineering, Cost Control and the Production Departments”(30) rather than as a map of the departments themselves. This diagram can at first sight be taken as a staff and line structure with the Engineering, Inspection and Cost Control as staff functions and the production manager as line manager of the Superintendents and Foremen. (The “Chief Executive Officer” in the diagram is Engelbach, the Works Director.) The diagram does, however, have some anomalous features. For example we may query the Production Department’s apparent line management of the Production Manager.

One presumes that the Production Department produces the detailed schedules and programmes for the manufacturing departments and measures progress against them. Surely this is a task for which the Production Manager must take responsibility - and did, in fact, take responsibility.(31) We are given no information, however, whether the Production Department “belongs” to the Chief Executive or the Production Manager.

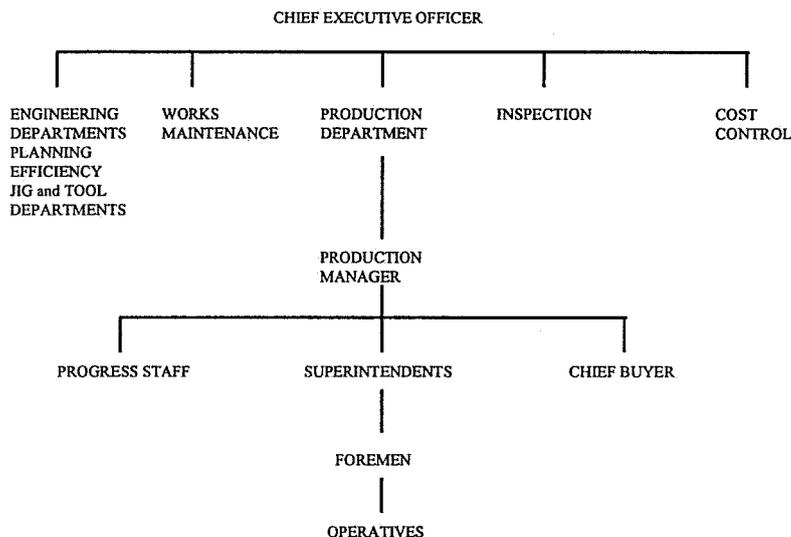


Figure 15. Austin Motors production departments organisation.

Source: CRF Engelbach “Production Management Technique” Reports, Sixth International Congress for Scientific Management, London 1935

The relationship between staff functions such as Engineering and Inspection and Production is unclear. In a true staff and line structure they would have the authority to require performance of their wishes within their remit by and through the Production Manager. Ultimately their authority is that of the Works Director. Engelbach, however, in a discussion on the Inspection function insists that what is required is co-operation rather than authority.(32) Similarly the “Chief Executive Officer must not allow himself to be absorbed in details. Each individual member of

the staff must be responsible for his own work instructions as to how to do their work should be in the form of friendly advice rather than instruction.”(33) Rather than by formal authority, co-ordination appears to have been achieved by a weekly meeting “of all heads so that difficulties can be discussed and failure rectified.”(34) The organisation diagram at Figure 15 therefore appears only to differentiate functions, not indicate authority levels between specialist functions and line management.

The final difficulty with the chart at Figure 15 is the position of costing. As we have seen, costing had been put under Herbert Austin’s auspices under the agreement of December 1925. There is no record of the responsibility for costing being transferred to Engelbach and his paper curiously omits discussion on the topic because it “is too lengthy a subject to be included in this paper, which deals only with production problems.”(35) The assumption that costing was not a production problem or a means of identifying and rectifying production problems was very much a traditional attitude but was one that Engelbach apparently shared.(36) Costing was the responsibility of A Perry-Keene(37), first Cost Accountant then Comptroller. He seems to have worked closely with Austin both before and after the receivership and was almost certainly the sole author of the budgetary control system (see the section of Financial Control below) which he administered. A budget system as we have seen proceeds from the assessment of future markets to the formulation of the production programmes. But for Austin Motors the estimated market was a market at a given price. Decisions on pricing and production volume, under Herbert Austin’s control determined production programmes with “itemised estimated costs, both for materials, labour (productive and non-productive) and oncost charges in every department.”(38) Actual costs were then tracked by Perry-Keene’s department against these estimates used as standards. As a consequence, the budgetary control system had a useful function as far as Herbert Austin was concerned of effectively giving him control of production through Perry-Keene. As Austin was perhaps ingenuously to tell an audience of cost accountants in 1925:

Mr Perry-Keene does not exercise any control over the other man's department other than giving him figures..... the figures control the Directors just as much as they control anybody else

It is not the fact that you are present at the works but that you have the data on the sheet of paper which you can present with confidence to them and which they will believe in - which controls their future actions.(39)

In the specific circumstances of the Austin Motor Company, therefore, the use of a budget system can hardly be used as a diagnostic test for the emergence of a Chandlerian management structure. While the costing system did provide essential financial control and gave comfort to the firm's creditors in the early 1920s by demonstrating financial control, its persistence may in part be due to its use as an instrument of personal control by Austin in a structure where he was formally excluded from production matters. It also explains why a sophisticated budgetary control system co-existed with a less well developed management structure.

3) Costing And Budgetary Control

Herbert Austin had been interested well before World War One in the use of costing as a means of predicting costs as well as recording them. His public statement on this predates the US "efficiency engineer" H Emerson's articles which supposedly first emphasised the importance of having costs before rather than after the event.(40) It is not, however, apparent that Austin had succeeded in this aspiration before the war. He refers in 1920 to attempts rather than successes:

For more than thirty years I have been trying to obtain a condition in the works cost office that control should commence even before one started on the work, rather than building up an organisation for recording the figures and results at the end of some period.(41)

During World War One, Austin Motors was one of the firms who broke the shell manufacturers' cartel by demonstrating that shells could be produced at radically lower costs than those previously claimed.(42) The availability of this cost data

indicates that the Ministry of Munitions costing system or one very like it was used at Longbridge. For all that Austin was to denounce “the cost keeping of the Government, particularly during the war [as] very, very bad”(43) his war experience seems to have taught him how costs might be predicted. “Before the Armistice was signed, at Longbridge we had not only produced our model car but had laid out the estimated cost of the car in its various details, components and completed whole.”(44) The method used was to break the production process down into individual operations which were given a time. This meant that even when wage rates changed the time basis of the costs did not and a recalculation of predicted costs was straightforward. Similarly by producing details of material quantities required and pre-planning supervisory staffing levels for the proposed car material and overhead costs could easily be re-calculated as prices and salaries changed. This had proved its worth in the volatile post-war period:

Although we have had, as a firm, to make considerable increases in our selling prices, our estimate remains today within the results of our experience during the past year, showing that, if you set out to do so, you can lay down the cost of even so complicated an article as a motor car

If it is possible to lay all these things down in the circumstances of the change over at our works, it shows that we can from the cost department ensure the future to a very large extent - an extent which has never been realised in the past.(45)

At the war's end, however, Austin had not managed to establish a system which would feed back costing data rapidly which, taken together with a lack of marketing feedback, lay at the heart of his post-war financial difficulties. We will look at the marketing question shortly. As far as costing data was concerned, Austin was to say in 1920:

I have been trying for thirty years to obtain a condition of affairs that would place me, as manager or managing director, in a position which I knew from week to week, or almost from day to day, that I was carrying on the works at a profit, and did not have to wait until the end of some period before I knew whether we had made a profit or a big loss I am still struggling, but with the help of some very efficient and willing men at our works at the present time.(46)

It seems clear from the Austin Motors board minutes, however, that Austin was waiting months for cost information in 1919-20. In late October 1919 the price of his 20HP car was raised by £100 - a considerable amount - as a temporary measure "only until such times as our costs were ascertained" and the issue was to be reconsidered in six months.(47) In March 1920 - just over four months later - the board were given "extracts from the Cost Sheets which had been prepared at the works" and again prices were raised.(48) More information was promised in December 1920 but none is subsequently noted in the minutes.(49) It is possible that one piece of the administration that Austin had removed at the end of World War One was the Ministry of Munitions' or a similar costing system. The Ministry system delivered costs monthly(50) and given that Austin's shell manufacture costs were used against the armaments cartel the timing of the latter dispute indicated that his costs must also have been available within a month of a cost system being installed..(51) We have already seen how costs were preplanned for the 20HP car before the Armistice. All this indicates the existence of a substantial costing section. Yet an article by Austin in a business magazine in November 1919 entitled Making a Modern Car - A Study in Organisation makes no mention at all of costing or a costing section.(52) The halting availability of cost information presented to the board in 1919-20 appears to confirm that Austin had abandoned the wartime system.

Given the acute pressures that Austin was facing from his creditors, his energy in 1921 and 1922 was extraordinary. Not only did he manage to design and put into production the new 12HP and 7HP cars that were to restore his fortunes but oversaw the establishment of a costing system that not only could provide costs on a daily basis by July 1921(53) but which had evolved or was evolving into a budgetary system of financial control. From the sources available it has not been possible to precisely date the evolution of the system. It seems to have been fully in place by April 1922.(54) In July 1921 Austin described his "Cost Keeping Department as being the starting point of all our organisation".(55) At this point the drawings for the 12HP car had been completed(56) and the board was being told that the

“Efficiency Engineer” had estimated the cost of producing 12 prototypes.(57) It would appear that the new model was being costed in advance in the same way that the 20HP model had been. But there was a key difference: in proposing the new car, Austin was responding to requests by dealers who suggested that there was a particular market for it.(58) The clear implication was, however, that to meet this market the car had to be designed to a price. And this was even more important when considering the smaller 7HP car, which is first mentioned in the board minutes in August 1921.(59) But the discussions on selling prices, volumes and costs for this smallest model took place in meetings of the board between May 1922 and December 1922. By September 1922 Perry-Keene was publishing a series of articles on the financial management system in the Cost Accountant. All the indications are, then, that the budgetary control system was evolved with the proposals for the production of the 12HP car in 1921.

The series of six articles on “Cost Control in the Motor Car and Allied Industries” in the Cost Accountant between September 1922 and February 1923 are the first public account of a budgetary control system that has been found in the UK. They start in the same year that the first systematic account of the process was published in the UK - James O McKinsey’s Budgetary Control. While hints and partial systems may have been provided by publications before 1922(60) the Austin system, as published, is pioneering work. The scope of the system is wide and clearly represents a response to Austin Motors’ difficulties since the war’s end. In his introduction Perry-Keene says:

The fluidity of commercial conditions which developed during the war and the consequent necessity for taking new bearings has brought about an acute need for accurate costing and statistical work, together with some method of continuously controlling both production and expenditure, more especially in the case of large concerns The momentum acquired by a manufacturing plant in full swing is such, under today’s conditions, that immediate closure could not be effected without appalling financial loss. Therefore the ebb and flow of quantities to match seasons and markets must be controlled and controlled with knowledge.(61)

The starting point was the selling price of the car. Following the previous practice with the 20HP car the new model had been broken down into its many constituent operations which were given times. These had been pre-costed in terms of labour and material. With the new model, however, each of these component costs had a limit set by the percentage it represented of the target cost of the complete car. The costing system now monitored the actual cost of each operations against the target costs - or "allowable costs" as Perry-Keene calls them. In order that the cost information should be available quickly a large Powers mechanical accounting system was acquired using Hollerith-type punched cards, card sorters and tabulators. According to Perry-Keene the system allowed him to extract costing details of any process at any time. The main use at this time (ie 1922) does seem to have been to produce a weekly trading account which showed actual performance against programmes for production, sales, expenditure and profits. But the availability of readily analysable information did allow an audit trail back to the level of the individual section if worrying variations from targets required it.(62)

A thirteen week production programme "based upon average of sales in sight"(63) was modified in a relatively smooth and timely way. A cash flow forecast was also produced and the cash position monitored against it.(64) Together with a number of business ratios used as performance indicators(65) the system both gave tight control of costs and gave early warnings of problems of shortage of cash or the growth of inventory or unsold finished cars. In this it answered Austin's immediate need for commercial certainty.

Thus from the beginning the system installed at Austin Motors to control costs was much more than that since it contained the feedback loop typical of a system of budgetary control. As time passed the opportunities which were offered by this feedback were used for managing and reducing costs rather than keeping them to pre-set limits. By 1925, in a presentation on "Budgetary Control" to the Institute of Cost and Works Accountants (ICWA), Perry-Keene, while retaining the emphasis on accurate detailed pre-costing, placed a new emphasis on an "active attempt to create and maintain a market through manufacturing and selling products at a price which is

truly economic from the point of view of the purchasing public.”(66) By 1928 Perry-Keene is explaining how working back from the selling price for a car the company took each of the 6000 parts “a piston, a connecting rod, and so on

and reduces them to their actuarial terms of what we shall get for them. We then say in effect to labour, “We are not your paymasters we are merely agents of the general public which pays us all and which will only pay “X” price for a piston, connecting rod and so forth. Your share is “Y””(67)

The general practice in the UK, says Perry-Keene, has been that “the works accountant goes down to the works and asks what a part is made for

but that is totally wrong as we have shown by our system of definitely determining at what cost an operation should be carried out, having regard to the previously fixed price of the finished product.(68)

While the system clearly depended in part on “speed-up” as far as labour was concerned, the labour times were shown to be practicable by demonstrating any operation “by an average man”. Care was taken to prepare machines, jigs etc to eliminate setting-up times and reduce handling. Perhaps most importantly care was taken to make the sequence of operations more efficient. Perry-Keene gives an example from 1925 when “in the case of the gear box, for example, [we] re-arranged operations and were able to produce a particular gear box for nearly 41 per cent less than the original cost without any opposition from labour” whose earnings, it is said, increased.(69) In 1928 the whole of Longbridge was re-organised for flow production. The primary intention was to increase production to meet increasing demand and was the culmination of improvements and experiments from about 1925.(70) But Perry-Keene’s contributions to the Cost Accountant and the Proceedings of the Institution of Production Engineers also make it clear that flow production was also the culmination of attempts to achieve radically reduced costs of production.

The introduction of flow production brought about some shifts in emphasis in the budgetary control and cost monitoring system. Firstly, the greatly increased production volume re-emphasised the necessity of achieving the best possible predictions of market demand in order to adjust production levels or increase advertising. Estimates of sales from Austin's now greater network of agents were carefully assessed, weighted where necessary by reference to the success or otherwise of previous estimates.(71) Secondly, with the increased capital intensity of production the "allowable cost" of each operation now not only focused on the layout and material cost but on the cost of the machinery itself. The heavy depreciation charges meant that they became a significant part of the costs of any operation. Therefore machinery had to cost no more than the multiple of allowable machine costs per operation and the estimated number of operations it would perform in its working life. Where outside suppliers could not supply machinery within those limits the Austin Motors Company built their own to pre-specified costs.(72) Thirdly, increasingly capital intensive production shifted (but certainly did not eliminate) the emphasis on labour productivity. Now the usage of a machine to its target level was important if the on-cost per unit produced was to remain within allowable limits. Intensity of machine usage became a focus of labour discipline as much as the rate for each operation. Perry-Keene said in 1931 that "the man who is earning the biggest money is by far the cheapest operator in the Company".(73) Unless workers earned bonuses of 80% they were sacked.(74) There was a personal daily cost account for every worker(75) and the company claimed to know within hours if the oncost percentage was rising for any worker.(76)

By the 1930's then, budgetary control had become an integral part of company business planning which started at market research and covered production capacity, investments pay-back, "make or buy" decisions, replacement of labour by machinery and so on. As Perry-Keene said in 1934:

Budgetary control as now being applied is more than an assembly of estimates. Based upon actuarial averages it discloses a method of anticipating events and arranging their happening in a logical order and at the right cost.(77)

This attitude of mind was not restricted to the Comptroller's department. In an initiative which clearly owed something to the cost control system, J A Hannay, the Austin Production Manager set up a system using punched cards with mechanical sorting and tabulating to control work in progress.(78) This appears to have been set up after the introduction of flow production in 1928 and was seen as a way of further integrating costing and production: the system was conceptualised as "a progress scoreboard, with means of transmitting the score to all who require it, including the department which must check production costs."(79) By complementing the cost and inventory control systems with control of routing and easily available detailed information on work in progress it brought about the completion of a system of production planning and control.

As presented in published articles, especially those by Perry-Keene, the systems of control both at the level of production and for the firm as a whole were capable of sustaining considerable further growth in capacity and forming the basis for an expanded managerial hierarchy. But as we shall see, as a result of the leadership of the firm and the commercial environment of the 1930s the potential of the planning and control systems was not realised and the systems themselves were dissipated and lost.

4) **Leadership, the Market And Commercial Success at Austin Motors**

In terms of progress towards Chandlerian managerialism, then, Austin Motors presents a mixed picture: a personally managed, loosely integrated management co-existed with a highly effective system of planning and control. Whether or not the firm proceeded to build a management hierarchy depended on market conditions, the strategy adopted in response to those conditions and the specific wishes and desires of the leadership of the firm. Professor Church has surveyed the now extensive literature on the performance of the British motor industry.(80) His conclusion is that the response of the motor manufacturers to the market in the 1930s was rational and, in Austin's case, profitable. We will conclude that in the market conditions of the

1930s whatever the long term consequences for the industry(81), a commercially successful response did not require the development of a management structure in depth.

The impetus towards capital intensive flow production was checked after 1930-31 by a change in consumer demand. In the 1920s competition in the industry had been driven by the falling prices of the smaller models of Morris and Austin who, through the economies of large volume production, radically reduced costs. Prices of cars fell by about 50% in the 1920s(82) but in the 1930s prices stabilised and the basis of competition changed: "design and model differentiation within price and horsepower bands was the principal determinant of companies' share of the market".(83) Or as other writers put it: "Success came to those firms whose models selling at the conventional price for their class, made the greatest appeal to the public."(84) As far as the largest producers, Austin and Morris, were concerned the consequence was an increase in the number of models and the frequency of model changes. This checked the advance of capital intensive, high volume methods. As C R F Engelbach, the Austin Works Director, put it:

Rapid changes in fashion and ideas have slowed up the progress of special single operation machines. Continuous high production is too uncertain for special machines to be further developed. Designs have to be changeable at short notices at present there is no market likely to develop sufficiently that will lead to the extension of such specialised tool methods.(85)

This change in the nature of the UK car market had the effect of decreasing concentration as previously relatively minor car producers were able to increase market share through commercially successful designs manufactured with a high proportion of bought-in parts. Thus market conditions in the 1930s favoured a relatively un-mass producing, un-mass distributing industry. The qualities required for success were less those of a strongly integrated management structure with effective planning and control and more those of the entrepreneurial marketeer. The latter was closer to UK owner-management traditional practice and the pressure for structural change was correspondingly less.

Furthermore, there were no pressures for organisational change from other organisations or as a result of diversification. The relatively prosperous nature of the industry did not inspire moves towards defensive merger or reorganisation. None of the major producers appears to have shown Napoleonic tendencies towards take-over and given the nature of the market, it is not clear what economies of scale any take-over could have achieved. In Austin's case the final removal of the financial restraints placed on him by his creditors did not take place until 1930.(86) It is understandable that he would not wish to expose himself again to the discomforts of raising capital.

The only other pressure towards structural change would appear to be the consequence of a strategy of diversification, either within the motor sector, geographically or into other product lines. Fortuitously, all Austin's attempts at diversification did not produce sufficient success to bring pressure for change. Within the motor sector, Austin produced a range of vehicles from 7HP to 20HP, including light commercial vehicles. But a sample weekly production programme from 1935 shows that out of a total of 2060 vehicles only 290 were greater than 12HP and only 165 were commercial vehicles.(87) It is safe to conclude, therefore, that Austin's attempts to diversify outside the production of small cars were not successful - certainly not successful enough to consider some kind of divisionalisation. Attempts by Austin to diversify geographically were not particularly successful either. An associated US company was set up just before the 1930 slump and collapsed as a result of it.(88) A licensing arrangement with the German company BMW was undermined because of difficulties in repatriating fees from the Nazi state after 1933.(89)

Production diversification was limited and also unsuccessful. The Austin Lighting Company, which emerged after World War One to continue manufacturing products requested by the Government during the war was finally wound up in 1927.(90) Negotiations to establish a joint venture with Vickers to produce aero engines collapsed in 1929 when Vickers withdrew.(91) One area where new

products were not tried was machine tools. This is perhaps surprising. As we have seen, Austin Motors had been able to produce machine tools for its own use at considerably lower costs than outside suppliers were prepared to quote. These lower costs were achieved by preparatory attention to the details of the manufacturing operations required and the efficient sequencing developed for producing cars.(92) It is not clear how extensive a market existed but there was certainly a gap in the market as far as machines specific to car manufacture were concerned: Engelbach was complaining in 1927 that Austin Motors were unable to buy many types of machine tools from British makers and were forced to buy them from the US or Germany.(93) Despite the apparent opportunities, no steps were taken.

Thus there was no pressure, whether externally or internally generated, for Austin Motors to reorganise to give greater depth of management. The management remained loosely integrated and personal in style. Such integration as there was, was represented by Herbert Austin himself and his death rendered the firm vulnerable in a way that only became apparent when the special circumstances of the Second World War (and the sellers market after it) disappeared. Herbert Austin was the life force of the company. He alone understood and linked marketing, design, finance and production. While he lived he did not construct a top management structure which could replace him. When he died in 1941 there were no individuals within the firm or forces outside it able or willing to do the job. After Austin's death Payton now Chairman and Lord (deputy chairman), ran the company as joint managing directors until 1945 when Payton was committed under the Lunacy Act.(94) This left Lord in sole control. Leonard Lord was a "brilliant production engineer" but was not the man to bring a new top management to Austin Motors:

He detested pomp and also distrusted anything approaching sophistication in the running of the business. He regarded both salesmen and accountants as overheads Nor was he even a believer in the simpler forms of training for industry This was the man on whom the fate of the British motor industry was to rest for almost thirty years.....(95)

Lord sacked J A Hannay, the systems-literate production manager, after he succeeded Engelbach in 1938. Perry-Keene retired in 1941. It is not clear whether Lord dismantled the planning and control system or simply left it to wither away, but by the 1960s BMC (formed by a merger of Austin and Morris under Lord's leadership) is described as not having "a sensible way of pricing its cars, because it did not know precisely what they cost to make."(96) By this time, there were clearly no traces left of Austin and Perry-Keene's pioneering work.

CHAPTER SEVEN

FOOTNOTES AND REFERENCES

- 1) The phrase is that of David S Landes The Unbound Prometheus, Cambridge 1969, p443.
- 2) Wayne Lewchuck, American Technology and the British Vehicle Industry, Cambridge 1987, pp158-9.
- 3) H Austin says that the 'atmosphere of push and go' that he found in US automobile plants is 1922 'resembled in its effects the conditions existing at Longbridge during the war on the manufacture of shells. The secret no excess material between operations. Each operation is being pushed forward by the one behind and drawn forward by the one in front.' Visit of the Chairman to the USA, p7 (226/AU/1/1/1 - ii, Rover/British Motor Industry Heritage Trust deposit: Austin Motor Company minutes.) For costing see below. Austin was to write in 1935 that World War One had taught UK manufacturers mass production (Proceedings of the Institution of Production Engineers), Vol xiv No 8, August 1935.
- 4) Austin Board Minutes (ABM) as footnote 3.
- 5) R A Church The Rise and Decline of the British Motor Industry, London 1994, Table 3 p37. Graham Turner The Leyland Papers, (pb. Edn 1973) suggests that the lead by Morris was the result of Morris' acquisition of two small producers, Wolsley and Riley. These market shares were to decline as the 30s progressed for reasons which will be examined below.
- 6) K. Richardson The British Motor Industry 1896-1939, 1977, p14.
- 7) P W S Andrews and Elizabeth Brunner The Life of Lord Nuffield Oxford 1955, p182; 'the devolution of management, in which Morris firmly believed,

left the position of the branches not very different from that of the independent companies’.

- 8) More will be said on the below. Technically speaking one of the directors, E L Peyton, was only required to attend four days a week but this hardly affects the main point that he was a potentially strong constraint on Austin’s personal management of the plant.
- 9) Roy Church, Herbert Austin, London 1979, p34
- 10) EGM, ABM, 21 January 1920.
11. R A Church op cit (1979) p57. Austin made profits of £80k on a turnover of £8m on one contract or 1% and other contracts made profits which were “negligible or considerable losses”.
- 12) ABM 14 March 21.
- 13) ABM 19 May 1921.
- 14) This was first proposed in November 1921, by the creditors Committee but was clearly the subject of continuing acrimony and the issue again erupted in 1925. It was not until December 1925 that the situation was finally accepted by Austin. By this time the commercial situation had radically altered and effectively Austin was back in the saddle. The story may be found in more detail in Church op cit though Professor Church does not perhaps bring out the single minded almost furious way that every move that Austin made as designed to reassert his control over ‘his’ company. This is very clear in the board minutes.
- 15) ABM 26 September 1923 show a full years programme for the first time since the crisis. Instead of grudging sanctions for hundreds of cars as previously,

approval is given for 1000 20 HP cars (now selling at reduced prices) 3500 12 HP cars and 5000 7 HP cars.

- 16) ABM 24 September 1924 and 26 August 1925.
- 17) ABM 15 December 1925.
- 18) ABM 27 November 1929.
- 19) T D Neal at AGM, ABM 31 December 1927.
- 20) The example of the destructive effects of Morris' sole control of his company is given by Graham Turner, op cit pp77-9.
- 21) ABM 28 November 1928.
- 22) Indeed it is said that Lord excludes Austin from the works. See Graham Turner op at p85.
- 23) It is the view of Professor Church that no organisation chart for Austin was drawn up before 1939 (conversation at the Conference of the Association of Business Historians, Leeds, 1993).
- 24) Lewchuck op cit p144.
- 25) The Accountant 19 June 1920.
- 26) Perry-Keene 'A modernised office - what it has meant for us' System February 1927. (Using machines they had too fewer staff with 9,200 employees than they had with 3000). Perry-Keene 'Production a dream come true' Proceedings of the Institution of Production Engineers, Vol VII No1, 1928. (Same office staff for 12,500 employees as for 3000). Perry-Keene

- 'Changing Incidence of Costs in Production' Cost Accountant, Vol II No 9, February 1932. (A spend of £50k on machines brought savings in clerical staff sufficient to pay for them in 12 months - equivalent to 250 staff at £200 pa). Perry-Keene 'Estimating', Proceedings of the Institution of Production Engineers, Vol XIV No 11, 1935.
- 27) Graham Turner op cit p80.
- 28) The Accountant 19 June 1920. Emerson's works were largely on cost and efficiency records with some further work on bonus systems. Gantt evolved wages systems and graphic methods of works control. See the entries in The Golden Book of Management (ed) L Urwick, London 1956.
- 29) Source C R F Engelbach, 'Production Management Technique', Proceedings of the 6th International Congress for Scientific Management, London 1935.
- 30) Ibid p202.
- 31) See J A Hanney 'Production Management Technique' Proceedings of the Institution of Production Engineers, Vol XIV, No 7, July 1935. Hanney was the Austin Production Manager who, it appears, evolved the use of 'mechanical methods' for planning and progressing material through the shops by the use of office machinery - particularly Hollerith type machines.
- 32) Engelbach op cit p206.
- 33) Ibid.
- 34) Ibid.
- 35) Ibid p202.

- 36) In a talk to the Coventry section of the Institution of Production Engineers in November 1928 on 'The Scope and Work of the Production Engineer', Engelbach makes no mention at all of the use of costing. (Proceedings of the Institution of Production Engineers, Vol VIII, No 3, 1928-9). Compare this with a statement of Perry-Keene's, 'In cost control there is no such thing as a department. The whole firm is cost control from the Chairman to the Office Boy....' ('The Changing Incidence of Costs in Production' Cost Accountant, Vol 11 No 9, February 1932).
- 37) He used different initials for articles published in different journals but seems to have only been one person! He was an engineer who had early experience in armaments manufacture (Cost Accountant, Vol 4 No 12, May 1925, p416) and joined Austin in about 1910 (ABM 26 March 1941 fixing retirement details says that he had 'served the Company well for 30 years).
- 38) Engelbach op cit p203.
- 39) Cost Accountant, Vol. 4 No 12, May 1925, p420.
- 40) See Austin's remarks at a meeting of the Institute of Automobile Engineers in 1906 reported by Lewchuck op cit p444. H Emerson's articles in Engineering (USA) were published 1908-9.
- 41) The Accountant 19 June, 1920, p721.
- 42) R A Church (1979) op cit p57. See also A Perry-Keene's remarks in the Cost Accountant, Vol. 4 No12 ,(May 1925) p416.
- 43) Cost Accountant, Vol. 1 No 12, July 1921. Austin's speech at second annual dinner.
- 44) The Accountant, 19 June, 1920, p722.

- 45) Ibid.
- 46) Ibid.
- 47) ABM 30 October 1919. According to Collins and Stratton it was the 'hefty' price rise which 'killed off much of the potential demand' for the 20HP model: P Collins and M Stratton British Car Factories from 1896, Dorset 1993. The price of the car rose from £395 to £550 "within months" in 1919-20, Roy Church (1979) op cit, p54.
- 48) ABM 9 March 1920.
- 49) ABM 20 December 1920.
- 50) See eg. Costing at National Factories, lecture by M Webster Jenkinson at the LSE 9 October 1918 at PRO MUN 5/107/450/9.
- 51) The Ministry cost system was first installed in factories by November 1915 and the first returns were back in December 1915. (History of the Ministry of Munitions, Vol III, part II, chap 1, p13. London 1922). The negotiations with the cartel started in January 1916. (C Addison Four and a Half Years, London, 1934, Vol I, entry for Feb. 1 1916, pp165-169 - Austin is specifically mentioned as one of the firms whose costs were used as examples in negotiations.
- 52) Business Organisation and Management Vol 1 No 2, Nov 1919.
- 53) As fn 43.

- 54) Engelbach arrived at this point (though his appointment had been forced on Austin the previous November) and from his endorsement of a series of articles by Perry-Keene on the system it was fully formed on his arrival.
- 55) As fn 43.
- 56) ABM 23 May 1921 and 30 June 1921. At this point it was described as a 10 HP car - altered to 12 HP in 30 August 1921 minutes.
- 57) ABM 13 July 1921.
- 58) ABM 6 April 1921.
- 59) ABM 30 August 1921. At this stage the proposal is for a 6 HP car which becomes a 7 HP car in May 1922 (ABM 31 May 1922).
- 60) eg A Hamilton Church Manufacturing Costs and Accounts, New York and London, 1917 and an article originally published in 1909 in System (USA) by M W Mix as 'Planning Next Years Business' and republished L C Marshall (ed) Business Administration, Chicago 1921 as 'Measuring Aids, Quotas and Budgetary Control'.
- 61) Perry-Keene 'Cost Control in the Motor Car and Allied Industries', Cost Accountant, Vol 2 No 4, September 1922, p104.
- 62) Cost Accountant, November 1922, p170.
- 63) Cost Accountant, October 1922, p132.
- 64) Cost Accountant, September 1922, p106.

- 65) For example the percentage of costs of materials, direct or indirect labour making up total costs (Cost Accountant, October 1922, table p132) or the ratio:-

$$\frac{\text{Total Costs - Cost of work in progress}}{\text{Total Quantity delivered for sale}}$$

(Cost Accountant, September 1922, p107)

- 66) Cost Accountant, Vol. 4 No12, May 1925, p402.
- 67) Perry-Keene 'Production - A Dream Come True', Proceedings of the Institution of Production Engineers, Vol VII No 1 (1928), p28. Subsequent unreferenced material in the next two paragraphs from this source.
- 68) Ibid, p29.
- 69) Ibid, p30.
- 70) P Collins and M Stratton, British Car Factories from 1896, Godmanstone, Dorset (UK) 1993.
- 71) See eg. Perry-Keene's remarks in his paper 'Estimating', Proceedings of the Institution of Production Engineers Vol XIII No 12, December 1934 and subsequent discussion Proceedings of the Institution of Production Engineers Vol XIV No 11, 1935.
- 72) Ibid. See also A Perry-Keene 'Changing Incidence of Costs in Production' Cost Accountant, Vol 11 No 9, February 1932.
- 73) 'Changing Incidence of Costs-Production' as 72 p252.

- 74) A Perry-Keene 'Management and More Work in Less Time', Proceedings of the Institution of Production Engineers, Vol VIII No 8, 1929).
- 75) As fn 73.
- 76) 'Production a Dream Come True', as fn ⁶⁷ 57, p 32; 'Estimating', as fn 71. Since on piece rate the price per piece remained the same however long the job took, the increased on-cost percentage meant that the worker was not meeting the pre-allocated time for the job. Such tight control of labour makes a nonsense of Lewchuck's claim that failure to adapt a 'Fordist' day system of payment indicates loss of control of the labour force. (Wayne Lewchuck, American Technology and the British Vehicle Industry, Cambridge 1987, especially Chapter 8 'Fordism and the British System of Mass Production 1914-1930'.
- 77) 'Estimating', at fn 71, p638.
- 78) J A Hannay 'Production Management Technique', Proceedings of the Institution of Production Engineers, Vol XIV No 7, July 1935.
- 79) Ibid p346.
- 80) R A Church The Rise and Decline of the British Motor Industry, London 1994.
- 81) Professor Church also concludes that in the long term the ultimate decline of the British motor industry was due largely to 'historically ^{rooted} ~~routed~~ weaknesses in corporate structure and management which for so many years obscured the need for systematic planning and organisational change'. Ibid p124.
- 82) Ibid p12: The Society of Motor Manufacturers and Traders price index fell from 100 to 52 between 1924 and 1934 with the major price reductions in the late 1920s (Ibid p13). The index stood at 49 in 1938 indicating the limited role of price competition in the 1930s.

- 83) Ibid p32.
- 84) G Maxcy and A Silberston The British Motor Industry, London 1959, p106.
- 85) C R F Engelbach 1933-4 quoted in Church, Rise and Decline of the British Motor Industry, p35.
- 86) Debentures held by the creditors were not redeemable until 1930 and up to that point the creditors could make their influence felt if necessary through a trustee with the right to sit on the board. (ABM 23 September 1925).
- 87) C R F Englebach 'Production Management Technique' Appendix I, Reports of the Manufacturing section Sixth International Management Congress, London 1935.
- 88) ABM 30 April 1930 ff passim.
- 89) ABM 28 January 1931 ft passim.
- 90) ABM 29 September 1927.
- 91) ABM 24 July 1929 and 28 August 1929.
- 92) See the discussion on Perry-Keene's 'Estimating', Proceedings of the Institution of Production Engineers, Vol XIV No 11, 1935.
- 93) C R F Engelbach 'The Modern Production Engineer', The Automobile Engineer, October 1927, p376.
- 94) ABM 21 November 1945. The straightforward accession of Payton (as deputy chairman) to the chairman's position on Austin's death together with the

unforseeable way in which he was removed from it casts considerable doubt on Professor Church's contention that Lord was Austin's chosen successor. Further doubt is also cast by Lord's apparent exclusion of Austin from the works! See G Turner, The Leyland Papers, London 1973, p85.

- 95) Graham Turner, op cit, p79. Lord's dominance came about post-World War Two with the Austin/Morris merger to form BMC, of which he became chair.
- 96) Ibid p114.

CHAPTER EIGHT

UNILEVER WITH SPECIAL REFERENCE TO THE LEVER SOAP COMPANIES

1) Introduction

The official company history of Unilever which covers the inter-war years(1) is in fact largely an account of the component parts before the merger took place. In two volumes with over 700 pages of text, only some 66 pages are devoted to Unilever in the ten years from the merger to the Second World War. Other authors cover some aspects of the firm in more detail(2) but neither they, nor Wilson, consider the structure of Unilever, or the way it was controlled, in any depth. It is nevertheless upon these secondary sources that Chandler's assessment in Scale and Scope relies.(3) Chandler feels able to assert that Unilever was a typical example of the British approach to organising large enterprises: minimal change on a purely reactive basis combined with a preference for personal management. This approach "led to a reliance on federations of relatively small enterprises."(4)

As we shall see, however, a closer study of Unilever's central organisation and of its UK operations reveals a radically different picture. Unilever, in fact, rapidly established a tightly centrally controlled organisation, rationalising production around its marketing requirements and controlling the enterprise with a developed budgetary control system. While the company had not reached a finished Chandlerian form - a personal management style obstructed the growth of top management and the control of some overseas subsidiary companies was loose(5) - it does not deserve the characterisation laid upon it by Chandler.

Unilever was formed in 1929 by a merger of Lever Brothers and the Margarine Union. Both firms were themselves the result of mergers. Lever Brothers had grown by acquiring many UK soap companies and had diversified, largely by acquisition, into oils and fats, margarines and foods. It had also established subsidiary companies in Europe, the Empire and North and South America. The Margarine Union was an amalgamation of European oil and fat firms with major interests in margarine. Unilever had, therefore, a developed structure outside the UK to a much greater extent than the other case studies. This does not, however, invalidate comparisons between them. Unilever's management was centralised in London. Furthermore, while information on the non-European activities of Unilever remains incomplete(7), the available literature shows that the most complex management tasks faced by the company were in the UK.

The major UK operations of Unilever were in oil milling, margarine and soap, with more minor operations in chemicals and non-margarine food manufacturing and retail. Of all these activities the most complex in terms of marketing, rationalisation and management was soap. The soap firms acquired by W M Lever had been encouraged to compete with each other and had largely been left with their original management structures. Here, if anywhere, the federalist tendencies which Chandler describes would be at their strongest and would provide the greatest test of top management resolve to build a more integrated management structure. The soap firms also provide a good test of the thesis that where UK companies did manage to produce integrated management structures they remained underdeveloped because of the persistence of proprietorial principles of organisation. Consequently after considering the overall organisation of the enterprise as a whole we shall consider the evolution of the Unilever UK soap businesses. This is followed by an examination of Unilever methods of financial control.

2) The Organisational Framework

The formal agreement to amalgamate the Margarine Union and Lever Brothers was signed on 2 September 1929. The ruling body was a board of directors representing interests from the UK to Czechoslovakia.(8) The inconvenience of frequent meetings of all directors quickly caused the board to delegate much of the more formal business to ad hoc meetings of available directors(9) and day to day running to a small group of directors in an Executive - later Special - Committee.(10) The full board now met only three times a year.(11) According to Wilson, by 1931 it was fully accepted by all parties that the administrative centre for the enterprise as a whole and the seat of the Special Committee should be London.(12)

The Executive/Special Committee started its weekly meetings in mid-October 1929 and at only its second meeting set up an array of 29 committees and sub-committees "for the purpose of dealing with the various matters which are of common interest to Union and Levers."(13) The committees were composed of both senior managers and directors and covered every aspect of the new company's business. The Executive ruled, however, that all committees "should act only in an advisory capacity with power to recommend and that nothing should be done without the approval of the Executive Committee"(14) Decision-making was thus reserved to a committee of the board with formally delegated powers. It is not clear whether or not it was intended that a highly centralised Executive with a range of advisory committees was to be a permanent arrangement. In the shorter term the advantages were clear: the committees brought people together from the various constituent parts of the amalgamation and established a common sense of identity and purpose. This was particularly important because the various companies' London offices remained operational until a purpose-built unified Unilever HQ was finished in 1932.

But the system of committees became increasingly unwieldy: a May 1931 list gives 40 committees(15) and by June the number had reached 46.(16) At this point the Special Committee agreed that

while these Committees have served their purpose in making the personnel of each side acquainted with each other, it is found that in practice, delay is caused owing to the necessity of one Committee discussing matters with other Committees, and it is also considered that government by Committees is destructive of that sense of responsibility which should exist in the Executives.

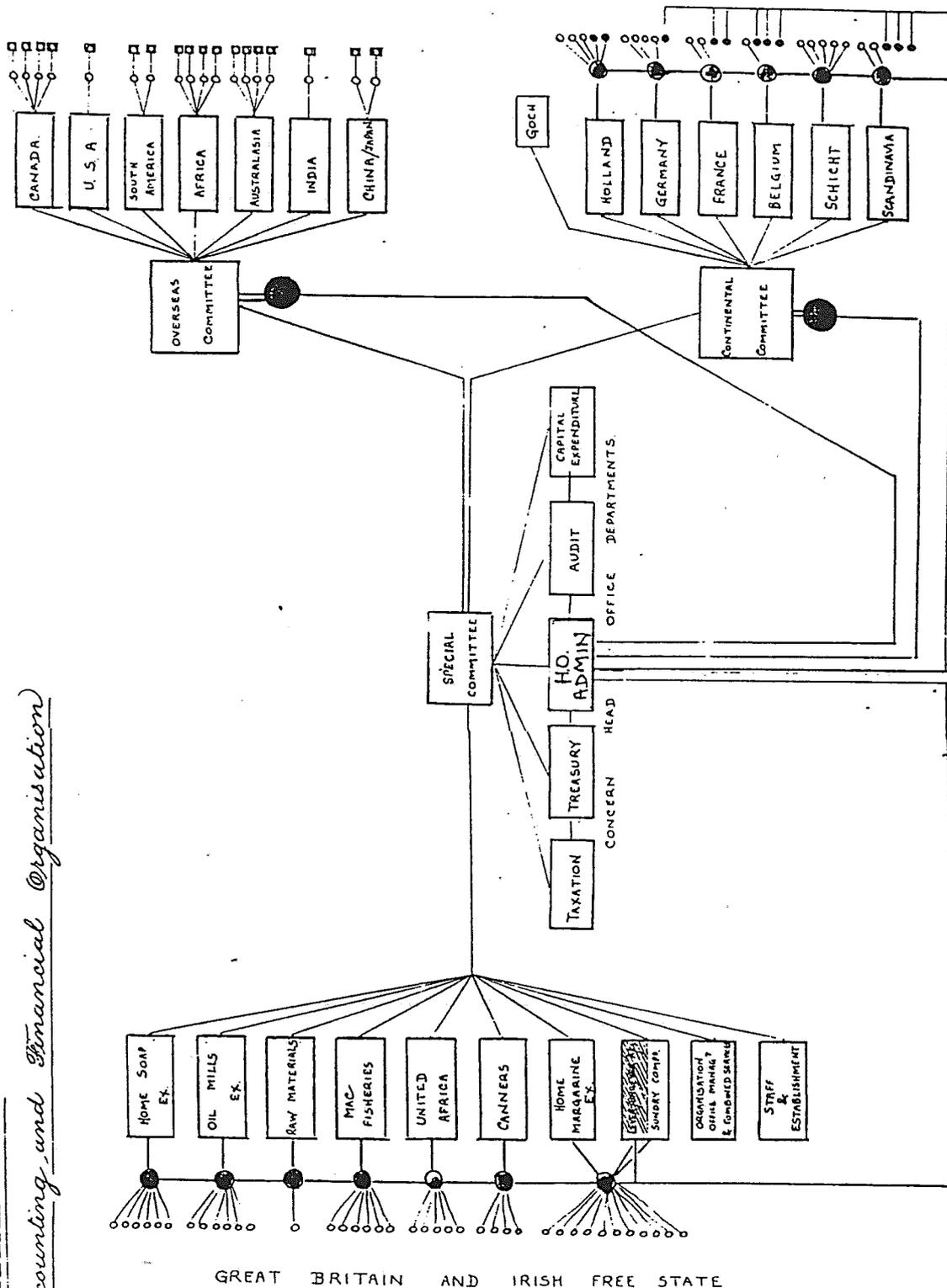
It was decided to abolish all committees, with the exception of the Special Committee and the Overseas and Continental Committees, the latter two bodies being responsible for the non-UK subsidiaries. In place of the committees, 26 "Executive Departments" were set up, the word "Executive" meaning that they were run by full-time managers.(17) The departments ranged in size from small headquarters staff bodies dealing with audit, taxation and trademarks to bodies responsible for financial control and the management of large parts of the company's UK business. The latter task was given to three important bodies which were, effectively, the three Unilever UK product divisions: the Home Soap Executive, the Home Margarine Executive and the Oil and Fat Executive.(18)

To a degree, the setting up of these executive departments may be seen as the beginnings of a managerialist structure. Power had been taken from committees and given to individuals. Furthermore, there was a distinct concentration of power in the case of the three product division Executives who were given the responsibility to both manufacture and sell their respective products.(19) Prior to the 1931 reorganisation, these activities had been the responsibility of different committees. The Executives evolved from the committees set up to sell these groups of products and the concept seems to have emerged initially as a pragmatic response to difficulties in co-ordinating the UK soap subsidiaries. The selling committee for soap, the Home Soap Committee, was reduced to three people in February 1931, renamed the Home Soap Committee of the Board and a Commercial and a Technical Officer were appointed to serve it. The appointment of a Technical Officer indicates that this body now had responsibility for soap manufacture. By May 1931 it was being referred to as the Home Soap Executive(21) and was thus fully formed before

Fig 16

UNILEVER

Accounting and Financial Organisation



Regional & Group Accountants.....

67821

the general reorganisation of June and July 1931. The establishment of the three Executives thus appears to have been the result of the streamlining and concentration of an unwieldy committee system and the perceived need for a common focus of authority for each of the three main groups of products.

Yet the delegations of power as a result of the 1931 reorganisation were very limited. The new structure was antipathetic to the Chandlerian divisional model in two key respects. Firstly, there was no decentralisation: the Executives, the executive departments and the Continental and Overseas Committees were sharply centralised on the Special Committee. Secondly, there was no attempt to differentiate between line, staff, and functional departments or to indicate the authority relations between departments as distinct from the very clear subservience of the departments individually to the Special Committee. The sharp centralisation and the imprecise relations between departments is graphically demonstrated by an organisation chart of the financial functions shown at Figure 16. (This is the only organisation chart of Unilever as a whole which has been found for the period before World War Two.)

Figure 16 shows how great the span of control of the Special Committee was even after the groupings of functions and companies under the Executives and the foreign committees. Even in this schematic account the Special Committee is shown directly managing nine manufacturing and marketing groups and seven HQ departments. In fact, there were five further commercial departments and ten more HQ departments who appear to have had no other master than the Special Committee.⁽²³⁾ It is also clear from the chart that along the lines of authority radiating from the Special Committee there is no ambiguity as to the power and status hierarchy. No connection at all, however, is shown between the bodies lying on different lines of authority. The accounting system (which will be dealt with in more detail below) lies alongside other lines of authority but has no authority of its own over subsidiaries.

DAY.	MORNING.	AFTERNOON.
MONDAY	11 a.m. (a) Oil & Fat Sales. (b) Oil Mills. (c) Raw Materials.	3 p.m. Overseas Committee. 4 p.m. Continental Committee (Alternate weeks) 3 p.m. Mac Fisheries Board Meeting.
TUESDAY	11 a.m. (a) Home Soap.	2.30 p.m. United Africa 2.30 p.m. Overseas Committee.
WEDNESDAY	11 a.m. (a) Home Margarine. (b) Continental Committee. (c) General Matters.	3 p.m. Continental Committee. 4 p.m. Overseas Committee.
THURSDAY	11 a.m. (a) Overseas Committee (b) Treasury.	3 p.m. Board Meeting.
FRIDAY	11 a.m. (a) Home Compound, or (b) Miscellaneous Buying, or (c) Shop Companies, and others as may be arranged from time to time.	3 p.m. Continental Committee 4 p.m. Overseas Committee.

THE MEETINGS IN THE MORNING WILL BE HELD IN THE COMMITTEE ROOM ON THE
FOURTH FLOOR.

UNILEVER HISTORICAL ARCHIVES
 NOT TO BE REPRODUCED
 WITHOUT PERMISSION
 REFERENCE NUMBER: Q95/55 Figure 17. Special Committee meeting schedule 1931.

The centralisation of power on the Special Committee was accompanied by detailed centralised scrutiny and decision-making. After the 1931 reorganisation a timetable of meetings between the Special Committee and bodies it supervised was established. An example is given at Figure 17.

What is striking about this timetable is that the Special Committee is in more or less permanent session. The frequency of some meetings was later reduced and some ceased to be regular and were called on an "as and when required" basis but the pattern of Special Committee meetings occupying the working week remained until World War Two.⁽²⁵⁾ The timetable shows that only one session, entitled General Matters, is not a joint session with another body. Examination of the minutes for the General Matters meetings show that they were not strategy or planning meetings. All the Special Committee meetings considered the various areas of the business and made decisions in great detail, the General Matters meetings simply considered matters that could not easily be put onto other meetings' agenda.⁽²⁶⁾ The Special Committee, therefore, do not seem to have reserved time to consider the overall strategy and direction of the company. At the same time the Executives do not seem to have met separately from the Special Committee to consider matters under their jurisdiction.⁽²⁷⁾ One can only conclude that the function of the Special Committee was to run the company directly and that no decisions of any importance were made by the Executives: all decisions were made at the joint meetings with the Special Committee and delegations were minimal. The structure established in 1931 was not, therefore, a hierarchy of decision-making bodies but one decision-making body working through bodies of managers (the Executives) who gave advice and carried out instructions. It appears that the streamlining in 1931 of the previous unwieldy committee structure had not abolished a system of Special Committee plus advisory committees but had reintroduced it in a new form.

The immersion of the Special Committee in detailed matters does not seem to have been balanced by any other formal structures of the board. The minutes of

directors meetings show no discussion of strategic matters and the formal meetings of the board three times a year were too infrequent to do the job. No papers have been found which indicate that policy formation took place formally at any level other than the detailed, departmental or Executive level discussions of the Special Committee. It seems likely therefore that company-wide policy formation took place more informally at the non-decision making Directors' Conferences introduced in 1933-4(28) or through personal contact: "..... directors and experts from the controlling committees of both Dutch and English companies travelled endlessly, reporting on factories, politics, economic trends and, most important, on men."(29)

The close central control of the Special Committee led to an underdevelopment of top management. While Unilever had established product divisions and a full range of headquarters functional specialisms the connections between functions and divisions were not through a hierarchy of managers, but through the centralised personal control of the Special Committee. The unformed nature of top management is illustrated by discussions on how the most senior staff were to be graded which took place in 1932 and 1937.(30) In 1932 an inter-departmental committee had recommended a hierarchy of managerial staff in six bands.(31) The Special Committee had reduced this to five bands, all staff above the level of Department Manager being designated a single class of "Directors and Senior Servants". The meeting in 1937 was called to advise whether this most senior class could be split into two and, if so, on what basis. The meeting agreed that such a split might be advisable but seemed at a loss as to how such a split might be made. The principal difficulty was how to rank, say, a Deputy Chief Technical Officer to the Home Soap Executive with the Chairman of a manufacturing subsidiary or the head of a middling sized HQ department. The meeting failed to reach agreement on how this might be done, but recommended that designations of people or positions as top grade (or, if split, either of the two top grades) should be recommended by a joint committee of Executive and HQ nominees. In other words, the decision whether someone was a senior officer and, if so, how senior they were, was not always immediately apparent

from the position they held but was a matter for their colleagues to judge on a case by case basis.

There were strong reasons for a particularly centralist role of the Special Committee. Lever Brothers and Jurgens and Van der Bergh, the latter two the chief partners in the Margarine Union, all had autocratic traditions. The Unilever merger brought about a board and a Special Committee designed to balance the merging interests.(32) While the board of Unilever may have become less of an issue as far as a meticulous balance of interests was concerned the Special Committee remained carefully balanced in 1949.(33) The Special Committee thus had a particular importance to the directors and it is not surprising therefore that its leading role should be emphasised and preserved. This situation was also quite consistent with a more general UK tradition of separating the roles of directors and managers. The Special Committee was a committee of the board, the Executives were not. While the Executives might have members who were directors, they were not directors because of their positions in the executives.(34)

Yet it must be said that the structure for all its imprecise, personalised and centralised nature did not fail in any obvious way. The Economist which had been worried in 1930 about the “earning capacity of Unilever’s enormous capital”(35) was later to judge the company as “extraordinarily efficient”.(36) It would seem that because its core businesses were relatively well integrated around oils and fats(37), with intelligent and effective leadership the company could still be managed successfully in this personal way. It has been said that in the mid 1940s “Unilever, for all its size, was still a comparatively simple business”(38) and that the company “in 1949 was still - just - a business which one man could understand in the way in which a nineteenth-century entrepreneur understood the business he owned.”(39)

We might judge that such a structure had reached the limit of its organisational capacity and that it was vulnerable to rapid expansion or diversification. The point

would come at which decentralisation and delegation would be necessary without the line and functional management structure in place to allow it to be effective. Yet Unilever adapted itself relatively smoothly to post World War Two expansion with a strategy of decentralisation(40) and indeed was preparing for such change during the war.(41) This was not an achievement one might expect from a federation of relatively small businesses.

So far, we have discussed the organisation at the top of Unilever. We shall now look at the most complex of the product divisions, the UK soap businesses under the Home Soap Executive (HSE). We shall see that the integration of manufacturing and marketing under the HSE was a key pre-condition for effective rationalisation and commercial success. But it also suggests that the integration of marketing and manufacture was the key to relatively smooth further delegation and decentralisation at a later date.

3) Marketing, Rationalisation And The Organisation Of The UK Soap Businesses

The Home Soap Executive was set up to manage the UK soap businesses, largely those acquired by W H Lever.(42) Before the Unilever merger little progress had been made in rationalising the selling or manufacturing organisations of these firms, though centralised control of advertising and exports had been introduced by W H Lever before his death in 1925. At the time of the merger there were 49 soap manufacturing companies within the concern in the UK with 48 separate sales organisations.(43) It was also a time of intense competition from the Co-operative Wholesale Society and smaller rivals and of a clear shift in demand from hard soaps to flakes and powders.(44) The large majority of the firms in the concern produced

hard soaps and there were thus strong incentives to close the least efficient and concentrate production in the more efficient factories.

On the other hand, any rationalisation process had to take account of the complexities of the UK soap market. W H Lever and his successor as Chairman, Francis D'Arcy Cooper, had believed in diversity of and competition between subsidiary companies within the concern for two broad reasons. The first was that competition kept the subsidiaries efficient. The second was that the wide diversity of products produced within the "family" contested as many as possible of the available segments of the market and was the best competitive strategy.(45) It was the fear of losing the competitive advantages of diversity that prevented both Lever and D'Arcy Cooper from pursuing a policy of rationalisation before the formation of Unilever despite abundant evidence of the success of Lever's US subsidiary in its policy of heavy concentration on a few successful brands.(46) It was considered that the complex overlapping of regional, local and national brand loyalties in the UK did not allow such a strategy.

The solution to the problem of reconciling rationalisation and diversity was discovered within two years of Unilever's foundation. In its essentials, it separated brands from subsidiary companies and considered the diversity of brands and the rationalisation of production as two different, though related, problems. The diversity of brands was the primary problem which had to be solved through a marketing strategy. This strategy then determined the way in which production was reorganised. As Geoffrey Heyworth was to put it later: "our organisation was built specifically to meet the tasks it had to do - mainly dealing in consumer goods."(47)

It is probable that this approach emerged from the way in which tasks were divided by the committees set up almost immediately after the merger: in the case of the main product categories committees were set up for selling and a separate Rationalisation Committee was set up to consider the concentration of production.(48)

The pressure for rationalisation can only have increased with the merger. The Margarine Union had already started a robust rationalisation process, before Unilever was formed, which was continued afterwards. When the Rationalisation Committee set up sub-committees, the Rationalisation of Soap Factories Sub-Committee actually contained a majority of ex-Margarine Union members.(49) When the HSE was formed, L G Fisher, a member of the Rationalisation Committee was appointed Commercial Officer. External factors also pressed the case for rationalisation. As a result of the slump, hard soap sales dropped 18,000 tons or 11% from 1929 to 1932.(50) Unilever also faced financial difficulties because it had committed itself to the purchase of raw materials at pre-slump prices and volumes. Competitors buying at spot prices during the slump had an advantage of approximately 50% lower prices than Unilever in 1929-31.(51) There is some evidence of impatience among directors at the slow pace of change in 1929-30.(52) Decisions to close Gossages and a small London soap factory were clearly taken as a result of these pressures.(53)

But as we have indicated, rationalisation in the UK soap trade had to be based on a marketing strategy if it were to be anything other than a short term measure. This strategy was first publicly explained by Geoffrey Heyworth in 1931.(54) It was intended to work over 5 to 10 years to a situation where there should be three competing nation-wide sales organisations, each handling no more than ten branded soap products of various types with no competition between products, within each selling organisation. There would be separate additional organisations for toilet, unbranded and industrial soaps. The consequence would be savings as the number of sales organisations and sales staff were reduced to achieve this strategy. In turn, the reduction in the number of lines would expedite concentration of production and the reduction in output of hard soap.

Because the timescales proposed was long and because the ideal of three national selling organisations selling in all no more than thirty products, was not achieved until World War Two, the accepted view appears to be that the approach was

gradualist.(55) In fact, there appears to have been an initial rapid phase of ground clearance followed by a more deliberate period. The earlier phase was easier because it involved deleting a large number of small selling lines and was pushed forward by immediate pressures of the slump. After 1932 trade began to revive(56) and rationalisation involved the more complex problems of dealing with brands with some significant consumer loyalty. This was an important issue: 85% of Unilever's soap sales were in proprietary and named lines in 1931.(57) These two phases overlapped to some degree but can be said to broadly cover 1931-1934 and 1934-1939.

In August 1931 the "non-goodwill" Pioneer Group of companies selling unbranded hard soaps was established(58) and there was already in existence a "non-distributive" section selling to institutions, laundries and industry which had reduced its number of lines by 65%.(59) By September proposals were made to join the sales forces of Crosfields (of Warrington) and Christopher Thomas (of Bristol).(60) In October 1931 the toilet soap companies were brought together into two selling forces led by Gibbs and Pears for branded lines, and a "non-goodwill fighting group" for non-branded toilet soap lines. In April 1932 T H Harris' sales force was amalgamated with that of two firms in Exeter and Plymouth. Each of these amalgamations of sales forces was followed by the cutting of lines and a loss of sales staff, the concentration of production and administration, and eventually the closure of factories. Between November 1931 and August 1932, for example, the Pioneer Group withdrew 357 out of 578 packs and further reductions were proposed.(61) By May 1932 a pricing strategy for the leading toilet soaps had been established accompanied by reductions in the number of other lines.(62) By December 1931 the manufacture of "fighting group" toilet soaps had been concentrated at two sites as had "non-distributive" manufacturing by June 1932.(63) As a direct consequence of these decisions, three factories were closed in London in 1931, 1932 and 1933.(64) As a result of T H Harris' absorption of the sales forces of the two South West firms, the factories of the latter were closed in 1935.(65) We have already mentioned the closure of the factory of the Widnes firm of Gossages, though this is something of an exceptional case. Gossage mainly produced for export and its closure involved fewer

issues of local brand loyalties and goodwill.(66) The Gossage sales force, however, survived for the time being. Through closures, the merging of sales forces and offices, and dismissals following efficiency exercises by HSE officials(67) the HSE lost over 2,000 employees between January 1931 and January 1933, 13% of its workforce.(68) It seems safe to conclude that the early rationalisation efforts were thus vigorous and effective in reducing costs.

Marketing led concentration and rationalisation was to continue after this early period, but at a slower pace. A major element of Heyworth's strategy of establishing three national selling organisations was achieved by the establishment of two such organisations under the leadership of Levers and Hudsons by May 1934.(69) (This was followed by the closure of Hudson's Bank Hall factory in 1935.)(70) These two national organisations sold the nationally advertised Unilever brands such as Sunlight Soap, Lux Flakes and Toilet Soap, Rinso, etc. A third national organisation was difficult to achieve. Neither the Crosfield/ Christopher Thomas amalgamation of sales forces of 1931 nor a later amalgamation of the sales forces of Watsons (of Leeds) and Gossages in 1936 produced a truly national sales force. The reason was simply that there were an insufficiently compact number of national brands for such an organisation to sell. Apart from the Levers and Hudsons organisations, by the late 1930s there were three selling organisations with more than £100,000 per year profit: Crosfield/Christopher Thomas, Watson and Gossage and John Knight.(71) Each of these organisations had major national branded lines: Crosfields had Persil, Watson and Gossage had Eve toilet soap and shampoo and Knights had Castile toilet soap. An examination of the sales projections of these organisations however shows that each of them were still expected to make profits of at least £50,000 from branded hard soaps with local markets in 1939, even after a decade of decline.(72) It was only with the further decline of the local markets for branded hard soap that further consolidation of selling organisations could be expected. This was rapidly achieved by government regulation in the Second World War which brought the amalgamation of Knights with Hudson and Crosfields with Watson and Gossage.(73) This left smaller organisations like T H Harris (which by 1939 had absorbed the "pioneer"

unbranded companies for hard and toilet soaps) and toiletry subsidiaries like Gibbs and Pears.(74) Because of this tail of smaller companies and the persistence of a number of small selling lines - 124 lines were cut at the outbreak of the war representing only 2% of home soap tonnage(75) - it is possible to miss the extent to which the Heyworth strategy had been achieved by, say, 1940. Any remaining "untidiness" was largely attributable to an entirely rational desire to keep local market share in hard soaps or the smaller toiletries market.

The Heyworth strategy, as we have already stressed, was first and foremost a marketing strategy. Concentration and rationalisation of production was desirable in itself but had to be consistent with the needs of marketing. The subsidiary companies retained a formal legal existence but no particular effort was made to keep production of any brand in a factory with which it had a historical association or to locate sales forces where products were made. As a consequence the production facilities of the HSE are best understood as a collective flexible resource producing for the company as a whole. This may be seen from the following examples. The Lever and Hudsons selling organisations were run from Unilever House in London, while Hudsons' products were made at Port Sunlight (Lever Brothers) and Warrington (Crosfields) after Hudsons' own factory was closed. When the British Soap Company of Hull was closed in 1934, production was transferred to Watsons of Leeds and Cooks of London while the sales organisation was transferred to Gossages in Widnes.(76) The production of Erasmic toiletries was transferred from Crosfield (of which Erasmic was a wholly owned subsidiary) to Port Sunlight while Erasmic sales were transferred to Gibbs' selling force.(77) On the other hand, when the sales forces of Watsons and Gossages were amalgamated in 1936 into a new company Watson and Gossages(78), that and the two manufacturing companies were all located at Whitehall Road, Leeds and all had the same board of directors.(79) There seems to have been no intention to integrate sales and manufacturing behind these arrangements, it was regarded as a simple administrative convenience. The only whisper of such an integration comes in a suggestion that field control of Crosfields' sales be located at Warrington but nothing further appears to come of it.(80)

The use of all manufacturing facilities as a single flexible resource is emphasised by two decisions. The first, made in 1931, was to standardise the sizes of packs.(81) This clearly aided the switching of manufacture and packing from plant to plant. The second was an agreement in May 1933 between Lever Brothers Limited and thirty-four subsidiary companies for “reciprocal manufacture of each others products”.(82) Many of these companies had neither manufacturing facilities nor sales forces and the agreement appears to have been a way of putting concentration of production on a simple contractual footing between the subsidiaries.

The rationalisation of the legal structure of the subsidiary companies was barely considered. The marketing led strategy was not affected by the continued legal existence of a large number of subsidiaries. There were, at the very least, irksome administrative consequences but this was not, for the most part, a problem for the HSE but for the Company Secretaries. It is not clear how many subsidiaries Unilever actually had. There were certainly more than the 52 listed in the Economist in 1930.(83) As we have seen, at the time of the merger there were 49 companies manufacturing soap and this takes no account of the companies that had ceased manufacturing. The list of moribund companies with neither selling nor manufacturing organisations was apparently simply allowed to grow. No proposals to liquidate these companies were put to the Special Committee or the board. Occasionally they were used as shell companies for other purposes(84) but for the most part these companies were unproductive low-level administrative burden, each company requiring boards of directors, number of shareholders consistent with the articles of association, the appointment of proxies, annual meetings and secretarial and accounting services.(85) On the retirement of one of Unilever’s Company Secretaries in 1938, for example, it was necessary to redistribute 63 different positions or shareholdings devoted to maintaining this undergrowth of subsidiaries. He was not an isolated example.(86)

There are no structural or ownership explanations for this situation. Most of the subsidiaries were completely owned by Unilever.(87) In the majority of cases, therefore, there were no shareholder interests which could prevent liquidation. Even when there were outside shareholder interests the HSE did not move particularly forcefully to try and acquire them even after the problems with outside preference shareholders at Gossages in the early 1930s objecting to its closure. Even with the typically limited rights of such holdings(88) it was still possible for Gossage Preference shareholders to use legal actions to delay closure by at least six months.(89) The response of the HSE seems to have been to ensure control by adequate "head office representation" on the boards of subsidiaries rather than acquisition of all outside shares and subsequent liquidation. (The board of Gossages had also resisted closure and an uncompliant board was clearly a greater threat than discontented Preference shareholders.)

In only two cases were steps taken to try and achieve complete ownership of subsidiaries before World War Two. The first example was perhaps the technical case of T H Harris and Sons Ltd whose shares were all owned by John Knight Ltd which was only partly owned by Lever Brothers. The position was simply rectified by exchanging Knight's holding of Harris shares for Lever Brothers shares of equal value.(90) The second case was Joseph Watson and Sons Ltd where small blocks of remaining outside Preference shareholdings were being pursued in 1933-4 and 1937.(91) Action on T H Harris and Joseph Watson may have been taken merely because they were considered to be simple to tidy up. It seems unlikely that the significance of the companies as manufacturing centres was the main motivation otherwise the outstanding Preference shareholdings in Crosfields, Knights and Pears would also have been pursued.(92) It was not until 1940 that attempts were made to acquire all the shares of Pears and Atkinsons.(93) Unilever did not acquire all of Gibbs shares until 1950.(94) The motivation in 1940 was greater financial privacy and commercial freedom. It was not until after World War Two that the motivation was more clearly the wish to radically reorganise product divisions.

The key question, however, is whether the untidy legal structure of the soap companies obstructed the HSE in any way. The answer must be that it did not. The HSE was able on the evidence of surviving minutes and papers to operate with complete freedom once the problems with Gossages were behind them. The reimposition of control over Gossages had been accompanied by the sacking of its Chairman and another board member and demonstrated that the HSE would not be defied.⁽⁹⁵⁾ For this reason or because of the imposition of selected trustworthy directors referred to earlier, no other subsidiary resisted the imposition of the HSE's will. The majority of the active subsidiaries in any case had boards of directors made up of local salaried managers augmented where necessary by part-time HSE nominees. But even where there was a substantial family presence on the board, for example at Gibbs, the board was compliant. There also appears to have been a policy of moving up and coming young family members away from their family firm to other parts of the business to weaken dynastic ties.⁽⁹⁶⁾ In any case, the progressive decoupling of selling organisations from manufacturing units as a result of the marketing-led strategy was accompanied by the steadily decreasing significance of the formal legal structures of subsidiary companies. The HSE was able to orchestrate its selling organisations and its manufacturing units at will.

This process was carried out directly and personally without an intermediate managerial hierarchy. Because of the absence of an organisation chart the precise roles of individuals connected with the HSE are often difficult to assign and only general remarks are possible. Nevertheless, it seems clear that the top management of the HSE remained tiny throughout the 1930s. The HSE HQ organisation is described in 1932 as comprising 24 managers and 24 typists plus the Executive of three.⁽⁹⁷⁾ By 1939 the staff at HQ connected with the HSE had grown to 242 but detailed evacuation proposals show that most of them were involved in sales organisations and the core executives and staff designated for the war time HQ numbered only 25.⁽⁹⁸⁾ There were extensive flows of management information to the HSE from its selling and manufacturing units (see below) and this certainly helped to reduce any problems in controlling them. But the inevitable consequence of a lack

of management structure between the HSE and its operating units was a personal management style involving many visits to outside sites by the three members of the Executive.(99)

An indication of the way the HSE dealt with more complex questions may be seen from the career of Mark Vardy. He may have had a family connection with the firm of Christopher Thomas and Brothers of Bristol.(100) He first comes to notice in October 1931 when he is described as “acting for the HSE in the co-ordination of the Toilet (soap) companies.”(101) He was clearly very active in the next three years reorganising sales forces and concentrating production. He also intervened in D & W Gibbs to help “reposition” products and develop new ones including Gibbs SR.(102) This demonstrates that his position was one of considerable power enabling him to issue instructions to the management of subsidiary companies. Yet, in a move which was clearly seen as a promotion he was made Chairman of Pears in June 1934.(103) That is to say, from a position of power over a number of subsidiaries he was promoted to run just one of them. The HSE had clearly not intended that the job of reorganising the toilet soap companies should become the job of managing them. Had Mark Vardy’s position of authority over the toilet soap companies been made permanent then an intermediate management layer would have been created. The HSE showed no sign of wishing to build a managerial hierarchy between a small top management and the operating units. They clearly wished to retain direct control.

And that direct control was very direct. Examination of those minutes of operating units that survive for the period before World War Two shows very limited local decision-making and a great deal of reference back to HQ over minor matters. Both Watson and Port Sunlight managements in the late 1930s appear to be seeking permissions from HQ to spend money on items costing more than £50.(104) Watsons took four months to persuade “technical services” at HQ that a repair was

necessary on an essential piece of plant in 1939 and Port Sunlight felt it necessary to get HQ permission before it felt able to serve its staff morning tea in 1938.(105)

Thus the HSE ran its part of the Unilever business in the same way that the Special Committee ran the business as a whole with great attention to detail and personal management. The structure of Unilever displayed strong proprietorial traits in its organisation which can be seen most clearly in its centralised decision-making by a directors' committee but also in the refusal to build management hierarchies and in the fragmentation of top management. No proposals were put forward to change this structure between the reorganisation of 1931 and the start of World War Two. Indeed, no trace of any discussion of organisation at senior level has been found in this period. Yet a number of elements in Unilever's organisation did mean that change towards a more Chandlerian structure could be relatively straightforwardly achieved.

The internal barriers to change were being removed as the legal entities of the subsidiary companies became less and less significant and the scions of family firms were turning into managerial recruits. The product divisions were closely controlled from the centre but in two crucial respects they were well placed for greater autonomy through increased delegations and decentralisation. Firstly, they had combined responsibility for marketing and manufacture which meant that in the event of decentralisation they would be complete businesses. Secondly, as we shall see shortly, the system of financial control through budgeting which had been evolved as an instrument of close central control was also a means of delegating and decentralising. It can also be suggested that an indifference to formal organisational precepts and a certain imprecision of management structure combined with a strong commitment to follow the market allowed the structure of Unilever to follow commercial strategy. Nevertheless, while the organisation of Unilever made change into a modern business enterprise potentially straightforward there were constraints on

such change which can be seen clearly in the financial organisation and the way financial control was used.

4) **Financial Organisation And Budgetary Control**

The discussion that follows will show that the centralisation of Unilever affected both the financial organisation of the company and the financial systems it used. The financial organisation of Unilever in the 1930s was efficient yet clearly demonstrates top management fragmentation as a result of the strict centralisation of the functional management of the organisation. The systems of financial control were separated from and imposed on the sub-units of the organisation. Manufacturing units do not appear to have used the costing information they were required to provide to headquarters. The budget system set sales targets centrally and had evolved essentially as a way of centrally assessing the likely profitability of the businesses within the organisation on the basis of those sales. During the 1930s the budget system was not used as a system of decentralising the organisation nor was it used as a method of investment appraisal or the planning of manufacturing cost reductions. The budget system did not, therefore, reach the full potential of which it was capable.

The financial organisation of Unilever was set out in a memorandum to the Special Committee in 1932 accompanied by the diagram already given at Figure 16.(106) The diagram shows the formal responsibility for the organisation of finance lying with "Head Office Administration" which in turn is directly responsible to the Special Committee. Originally, according to the memorandum, it had been intended to carry out the accounting and statistical work on subsidiary companies "by a combination of Service Departments under the supervision of the Office Manager's Department". The Office Manager was responsible for the accounting machines,

machine book-keeping and the Sales Ledger Department. When financial supervision of subsidiaries was moved to "Head Office Administration" (which according to one report "would be more appropriately called Chief Accountants Department"(106) these book-keeping responsibilities remained with the Office Manager. This split responsibility for accounting from the book-keeping upon which it relied. No particularly adequate explanation was offered for this split.(108) The diagram at Figure 16 also shows four further independent accounts related departments, all of which had heads of executive status.(109) They were also shown as directly responsible to the Special Committee though they were also required to keep the "closest possible contact" with Head Office Administration.(110) These splits in responsibilities appears to have remained in place at least until 1939.(111) In a classic Chandlerian structure all these accounting related functions (with the possible exception of audit) would have been placed under a single senior officer such as a Vice President for Finance. Such a figure would, however, be powerful and an implicit challenge to the board powers vested in the Special Committee. As with other matters, the Special Committee clearly intended to have direct and detailed control of finance. This fragmented the finance departments and prevented the manager of Head Office Administration formally leading the hierarchy of finance functions despite the pre-eminent role of his department.

The organisation of finance followed but was not delegated to the various sub-units of Unilever. To each Executive or Region, "the place where the Managerial Control is centred there-as been attached an Accounting Officer through whom all accounting matters pass relative to the Companies under the control of the respective Executives or Regions."(112) These Accounting Officers were responsible to Head Office Administration for the accountancy principles to be followed, the circulation of instructions (presumably on accounting matters) to subsidiary companies, the preparation of their accounts and the preparation of weekly financial accounts of the Executive or Region. The Accounting Officers were responsible to the Executives or Regions for the supply of trading results and "all statistical information necessary for their Managerial Control including the supervision of the preparation of the detailed

Factory Cost Accounts on the lines laid down for the Concern.” The Accounting Officers were therefore responsible for providing control information on operating units to the Executives or Regions and also, via Head Office Administration, for providing control information on the Executives and Regions for the Special Committee or foreign committees.

Organised in this way the flows of financial information reflected and emphasised the centralised control of Unilever. On the evidence of the minutes of the meetings between the Special Committee and the HSE the Executive was not starved of information and the results given to the Special Committee were tabled and discussed. It is not clear, however, how much of the information was used or was allowed to be used in operating units. Sales effort seems to have been very much at the direction of the HSE but there are no apparent surviving records of sales organisations. As far as the manufacturing units were concerned, it is clear that they must have gathered the data that was used to compile the factory cost accounts though from May 1932 the HSE decided to make up the various returns itself that had previously been made up by subsidiary companies.(113) This cost information appeared to play no part in local decision-making: surviving records of the local boards at Watsons and Port Sunlight contain no discussion of costing or other financial information.(114) No local management structure appears to have contained a finance expert in a senior position.(115) There are claims in the later 1930s that a system of Tariff Costing (see below) had inspired local managements to greater efforts to achieve lower costs than their colleagues elsewhere.(116) This is not reflected in the surviving records.

This apparent disinterest in costs in the production units reflected the way that costing had been traditionally used in the Lever soap firms. From early times to post World War Two the focus of costing information in the Lever companies had been to provide information for trading accounts rather than as a means of achieving efficient production. Such systems could show if there were higher than average costs but not

how to achieve cuts in current costs. The Unilever archives possess notebooks for the late nineteenth and early twentieth century which contain detailed cost and profit information for each Lever Brothers product line.(117) The figures were produced every six months, however, which is not frequent enough to give real assistance in managing costs of production. The timing of the inception of these costing books is significant. While there were fluctuations, the overall trend of raw materials prices was a steady rise from the late 1880s to 1914. At the same time the soap market was highly competitive which compelled soap makers to keep prices steady. Calculations from figures given by Wilson show that the cost of raw materials made up about half of Lever's selling price in 1900 but by 1913 it was two thirds.(118) Under these circumstances control of the more obviously controllable expenses such as advertising, selling and transport costs was imperative and was clearly a motive for proposals for the "Soap Trust" of 1906.(119) There is no evidence that cost information was used to try and cut production costs.

By the inter-war years prior to the merger, accounts were being produced quarterly for Port Sunlight showing sales, trade discounts, costs ex-works (ie raw materials and production costs combined), distribution, selling and advertising charges and profits both in total and per ton for each product made.(12) The conflation of raw material and production costs again indicates that these were a form of trading account rather than an attempt to survey or control manufacturing costs. At this time, too, overseas companies reported operations in considerable detail but again the emphasis was on trading performance rather than manufacturing costs.(121) We may presume that other UK subsidiary companies were required to submit similar detailed accounts. Prior to the merger, while W H Lever was alive, the use to which this information was put was as a form of personal supervision.

He followed closely every aspect of the business even when it was world wide and diversified he was not only the boss but the owner of the business and he wanted to know. His knowledge enabled him to be alert to praise and when necessary to criticise but, being informed, he left his managements to attend to their business.(122)

Here is some evidence that while the system of supervision remained the personal reserve of W H Lever the system of compiling and storing records may have been subject to delay and under-use. A senior Unilever manager, A M Knox, says in his memoirs that the systems in use provided historic data of limited value for progress chasing of local managements.(123) To a degree this was inevitable, partly because in the period to which Knox refers - 1922 to 1924 - the records were compiled by hand. By 1928, however, the compilation of returns had been mechanised using Hollerith and other office machinery.(124) This did not particularly affect the frequency with which subsidiaries reported to head office - sales figures were always reported weekly - but in the speed with which this information could be summarised and analysed. Therefore when the system of Executives was set up in 1931 a more systematic and immediate scrutiny of the summaries and analysed data was possible. But even with the greatly increased information processing capacity available there was little focus on production costs even though it is clear that they were used to make inter-firm comparisons from time to time(125) or in decisions on factory closures.(126) It is noticeable that the efficiency investigations first carried out by Special Committee nominees, then by a Head Office Investigation Department, were all concerned with selling or administrative structures rather than production departments.

The most likely explanation for this lack of attention on production costs is the central importance of marketing to the organisation. This may be clearly seen in the attitude of Geoffrey Heyworth, HSE member and later Chairman of Unilever, as remembered by someone who had been his personal assistant in 1949. As a trainee he had been “shocked to find how many Unilever companies in the UK were old-fashioned and badly managed” and had reported as much to Heyworth.

Surprisingly often, he knew. He knew the company needed better educated, technically more competent management. He knew that the Unilever factories left something to be desired but his attention was always on the marketing side. He argued that extra efficiency in the factories would make only limited savings while getting the marketing right in a business with high advertising and promotion costs was fundamental. The argument was correct but certainly by the later

nineteen-fifties it would have been desirable to do more about modernising the factories.(128)

Unilever, then, separated the process of assembling production cost information from the managers of production. Although the information thus assembled was not used to intervene in the production process, above average costs would be noted readily. This use of average costs as a benchmark was institutionalised by the introduction of “tariff costing” in 1933. This averaged the manufacturing costs for similar lines across all factories and actual costs were compared with this average.(129) This may have been an “incentive for the various Factory Managers to work up better figures”(130) but hardly helped them do it. The general overriding indifference to production questions except where they affected marketing meant that production costs were not a priority issue.

The long established tradition of detailed trading returns aided by the later extensive mechanisation of accounting did serve, however, to reinforce the use of a system of budgetary control. W H Lever had evolved the system as early as the late 1870s when “he was running the Wigan branch of his father’s grocery business”.(131) He started by comparing his own trading performance against estimates for a quarter ahead. As time went by, the period was lengthened to a year and the system was applied to the various parts of his expanding business.

An annual estimate was prepared by the management of each associated company. This estimate was in full detail giving sales, margin of profit, advertising expenditure, cash flow and so on. [Lever] examined these and then set what he called the datum for the company concerned. If he agreed with the annual estimate the datum was the figure of total profit as shown by the estimate. If he did not agree with the estimate, he just set an arbitrary figure as the datum and the management concerned had to do their best to attain that figure.(132)

Combined with detailed returns and the year end accounts this system gave a feedback loop both for those at the centre with access to the original budget and to local managements which encouraged action when the target set looked unlikely to be

achieved. Under Lever and subsequently in Unilever in the 1930s the system was undoubtedly used as a system of tight centralised control of sales performance. It is clear from the Special Committee/HSE minutes just how intense the scrutiny of performance against estimate was. Yet the system could be readily adapted to cope with decentralised decision-making by delegating power to act within the limits set by the budget and lengthening the intervals between reports to the centre. It may be noted that the returns from subsidiaries were simplified in 1932 but the motivation appears only to have been to save money by reducing the numbers of accounting staff.(133) During the war, however, the decision was made to decentralise control of the foreign businesses and the, by now reduced, number of operating units in the UK by using a system of budgetary control. This system was put into operation in 1949.(134)

The budgetary control system at Lever Brothers/Unilever was thus primarily an instrument of central control for directing sales effort to meet targets. It also undoubtedly provided some increased certainty of business conditions but unlike, say, Austin Motors where market signals could be used to plan or modify the inward flow of components or raw materials, Unilever was placed in a position where it had to contract well ahead for raw materials and/or had plantations whose costs were already sunk.(135) The budget process could therefore only have a minor influence on raw materials purchasing. Neither does the budget process appear to have particularly influenced capital investment decisions. We find no discussions of costs of production, projected future volumes and savings versus costs that new plant might bring. This must be, in part, because the market trends were clear and steady in the 1930s, particularly the decline in hard soap and the rise in flakes and powers. Capacity in the former was closed and was increased for the latter. Overall there is no evidence that Unilever failed to make all the products it could sell or failed to sell the products it made. On the other hand we find discussions of under-capacity in the London factories in 1937 in terms which indicate very little forethought. Renewals and extensions were “urgently necessary” at Knights while Harris was expensively sub-contracting production to Port Sunlight. But “the trouble is to arrive at the ideal solution in such a way that the money is spent in providing adequate

accommodation at one of the factories, which can be added to in future years, rather than in piecemeal extensions at each of the three small London factories".(136) Both Knights and Harris were producing long-established products whose market trends were well understood. It would appear that in this case (and possibly others too)(137) the budget system being primarily a marketing tool was not used as a production planning and investment tool. Capital expenditure was treated as a separate process. Proposals were made to the special Committee with expected savings and the results were later audited to ensure that the savings had been achieved.(138)

5) Summary And Conclusions

We have seen how Unilever achieved an organisation that was tightly centrally controlled at least as far as the UK and continental subsidiaries were concerned. This control centred on the Special Committee made up of key Unilever directors. Their control was direct and personal as far as they could manage. They worked through Executives for the UK which were un-decentralised product divisions and via board committees through Regions elsewhere. The Special Committee considered matters in great detail at least as far as the UK was concerned, which may have reduced its ability to think strategically. Nevertheless, the company was prosperous after some problems in the first years of the 1930s' slump. The conclusion must therefore be that Unilever's structure provided no barrier to commercial success because, for all its great size, Unilever was fundamentally a simple business in the 1930s.

We have also seen how the component parts of the enterprise were subsumed particularly in the area where most problems might be expected, the UK soap firms. While there were conflicts, particularly over the closure of Gossages, the Home Soap Executive had a relatively easy time bringing the UK soap firms into a common Unilever mould. In part this was achieved by firm control of the membership of the boards of the active subsidiaries. But, we have suggested, it had as much or more to do with commercial strategy that the HSE followed. By concentrating on the selling of the products, the strategy effectively uncoupled the connection between the legal structure of a company, its manufacturing unit and its selling organisation. The

consequence was that subsidiary companies were effectively left as husks despite their continued legal existence.

The strong central control centred on the Special Committee was exercised therefore over an increasingly homogenous organisation as the 1930s progressed, at least as far as the UK was concerned. The proto-Chandlerian divisions established by the Executives and the Regions remained tied to a centralised system of control until World War Two - even if the logistics meant that the control of some overseas subsidiaries was loose. Two broad problems thus faced the organisation if it contemplated expansion beyond the capacity of its sharply centralised organisation. The first question was of how it would decentralise its divisions without losing control of them. The second problem was how it would organise the relationship between the centrally controlled functions organised from HQ and the decentralised divisions once the Special Committee ceased to be the node through which all information passed and all decisions were made. The particular traditions from which Unilever came made the first problem rather easier to solve than the second.

The product divisions of Unilever controlled both the marketing and the manufacture of their products. This meant that any decentralisation would give divisions the main components of an autonomous business. The system of budgetary control evolved by W H Lever potentially allowed the control of divisions by decentralising decision-making within the limits set by a budget agreed between HQ and division. Regular reports of actual results against the budget gave central control. This was the path chosen by Unilever after World War Two. There were no traditions, ~~whoever~~, which could guide the construction of a line and functional structure out of the centralised power structure of 1930s Unilever. The Special Committee as an executive committee of the board could not sit easily with powerful groupings of HQ functions such as manufacturing or finance under the leadership of single executives. Nor was it at all clear how the majority of the 26 "executive" departments set up in 1931 could make their writ run through a decentralised organisation without some top management power if they were not grouped under a powerful executive or acting as advisory groups for the Special Committee. This was

particularly the case where functions were split in unhelpful ways, as in the division of duties between the Office Managers Department and Head Office Administration.

Unilever was not completely without possible models or structures which could be adapted or modified. The financial organisation which shadowed the organisation could have been put under the line management of divisions while headquarters finance was responsible for policy and methods. But all such possibilities had to cope with one central dilemma: it was simply not possible to reconcile the managerial logic of a directorate of chief functional officers under a chief executive officer with a supreme structure which was an alliance of amalgamated interests. The Unilever board was a full time working board but the board and the Special Committee to which it delegated powers exercised supervision over the business as a whole but did not individually manage any part of it. Their responsibilities were collective not individual. Any delegation of board powers to chief functional officers threatened to undermine the power of the board in a way that budget control decentralised divisions did not.

The story of developments after World War Two is outside the scope of this thesis but it may be mentioned that after the war and into the 1950s divisionalisation appears to have been only proceeded with in a weak form and the headquarters functions were designated "central Advisory and Service Departments" with, as their name suggests, no power to coerce the divisions.⁽¹³⁹⁾ We may conclude therefore that Unilever created the conditions for a divisionalised structure but would not or could not create a top management structure to control it at the end of World War Two. And the reason it would not or could not create a top management was because it contradicted the power of the board and an executive committee set up to represent amalgamating interests.

- 1) Charles Wilson The History of Unilever, 2 vols London 1954.
- 2) D K Fieldhouse Unilever Overseas London, 1978; Ruth Cohen 'The Soap Industry' in P L Cook and Ruth Cohen Effects of Mergers London 1958; Andrew Knox Coming Clean, London 1976. (The last title is the autobiography of a director of Unilever) A E Musson Enterprise in Soap and Chemicals-Joseph Crosfield and Sons Ltd 1815-1965 Manchester 1965. (Crosfields was acquired by WH Lever in 1919.)
- 3) Chandler spent at most two days in the Unilever archives: information from the Unilever corporate archivist. See also references in Scale and Scope.
- 4) Scale and Scope p.388.
- 5) Fieldhouse asserts (contra Wilson) that 'the amount of central control had never been great' over the overseas associated companies, op cit p.44.
- 6) A detailed account of the Margarine Union and Unilever mergers is in Wilson op cit, vol II.
- 7) Fieldhouse does not cover North or South America. Work is currently being carried out by Dr Rory Miller of Liverpool University on Unilever in South America.
- 8) More precisely there were two identical boards of two identical companies, one registered in London the other in Rotterdam. The arrangement was designed to avoid double taxation. See Wilson op cit vol II, Chapter XVI, also p. 307.

- 9) The formal business of the board was matters like use of the company seal on property sales or share transfers, dividend declarations, the appointment of proxies for subsidiary boards etc. Major business decisions involved full board meetings. See the Minute Books of Unilever Ltd at microfiles M/F 9/5 and M/F 10/1, Unilever Archives Post Sunlight (UAPS).
- 10) This is different from Wilson's account which does not mention the existence of the Executive Committee, this possibly giving the impression of slow response. The Unilever archives currently in Unilever House, London, (UAUH) contain a File of Executive Committee Minutes 16 October 1929 - 13 March 1930 containing minutes of weekly meetings. The format of these meetings remain unchanged when the name is changed to Special Committee from 7 October 1930. Originally composed of eight members it was slowly reduced to three between 1929 and 1959. Wilson op cit vol II, pp. 310, 386.
- 11) Wilson op cit vol II, p. 309.
- 12) Ibid p. 310.
- 13) Document 'Union and Levers' 23 October 1929 in file marked Committees/Executives - formation changes etc., UAUH.
- 14) Executive Committee 13 November 1929.
- 15) List dated 8 May 1931, loc as fn 13.
- 16) Special Committee minutes 17 June 1931. Wilson gives the number at this point as 48 but gives us no source for this figure.
- 17) Meetings of Directors of Unilever 17 July 1931 as fn 13.

- 18) Ibid. The Oils and Fats Executive appears to have been the result of combining the Oil Mills Department and the Oils and Fats sales department after the 17 July 1931 meeting of the Directors. Later the title becomes Oil Mills Executive.
- 19) The meeting of directors of 17 July 1931 also gives an Executive for Compound Fats but this seems to have been relatively unimportant.
- 20) Extract Executive Committee Meeting 4 February 1931 at loc as fn 13.
- 21) Document 'Committees of Unilever Ltd' dated 8 May 1931 at *ibid.*
- 22) Chart in SC Supporting Document no. 196, 1932.
- 23) See the list dated in 17 July 1931 Unilever Ltd, Minutes Book (Directors) 2 at Microfilm MF 9/5 UAPS. The five commercial departments were the Home Compound Fat Executive, Glycerine (sales), Chemical (sales), Whaling and the shop companies other than MacFisheries.
- 24) Document accompanied by circular letter dated 24 July 1931, as fn 13.
- 25) From October 1933 the Continental Committee met the Special Committee twice per week and the Overseas Committee once. (SC/Gen; E190,9 October 1933, M 490. From March 1932 only the HSE, Home Margarine Executive, Raw Materials and Treasury met the Special Committee regularly. Others were called in when decisions were required. (SC/Gen., E57, 24 March 1932, M. 141. (For abbreviations see fn 26).
- 26) The minutes of the meetings of the Special Committee with other bodies and those called to consider general matters are contained in 12 sets of minutes at UAUH. They are indicated here as SC/ plus either HSE or Gen. (General

Matters) to indicate the series. Meetings are numbered and dated and the minute numbers is indicated as M

- 27) Andrew Knox says that on his appointment as Secretary to the HSE in 1937 he found that 'there were not even regular meetings of which I was to take the minutes.....' op cit p. 120.
- 28) These conferences were not decision-making occasions despite Fieldhouse's suggestion (op cit pp. 40-41). Decisions were only made at formally minuted directors meetings (which includes the Special Committee). It was not possible to see the records of the Directors Conferences which are held in the Legal Department of Unilever. Information on their content provided via the Unilever archivist.
- 29) Wilson op cit vol II, p.315.
- 30) SC supporting documents 149 (March 1932) and 2890 (17 November 1937).
- 31) 1) Executive Managers, 2) Divisional Managers, 3) Departmental Managers, 4) Heads of Department, 5) Senior Clerks, 6) Private Secretaries. (SC Supporting Document 149.)
- 32) Wilson op cit vol II, p307 and Appendix 25, p. 420.
- 33) Ibid p. 386.
- 34) This can be seen by comparing the lists given in Unilever Minutes (Directors) for 17 July 1931 and M/F 9/5 UAPS with the lists of directors given by Wilson op cit vol II Appendices 25 and 26. Later comparisons taken from the series of SC/HSE meetings confirm that the Executive positions were not necessarily held by directors though directors did regularly hold these positions.

- 35) Economist quoted by Wilson op cit vol II, p. 308.
- 36) Economist 22 April 1933, p. 867.
- 37) See W J Reader's remarks in his Fifty Years of Unilever, London 1980, p. 86.
- 38) Fieldhouse op cit p. 46.
- 39) Maurice Zinkin in Geoffrey Heyworth, A Memoir, London, 1984, p. 26.
- 40) Charles Wilson Unilever 1945-1965 London 1968, chapter 2.
- 41) Wilson (1954) vol II pp 384-386.
- 42) A Scottish firm, Ogston and Tennant was bought after the Unilever merger.
- 43) P L Cook and R Cohen op cit, p. 257 quoting Geoffrey Heyworth. It has not been possible to locate a list which gives all 49 firms. The Stock Exchange Year Book for 1930 gives 19, a list agreeing mutual manufacturing facilities in 1933 gives 35.
- 44) Ibid p. 256, Also Wilson (1954) at vol I p. 299.
- 45) Wilson (1954) vol I p. 302.
- 46) Ibid p. 301. See also A E Musson op cit, p. 288 who says Lever 'was constantly wrestling with the problem of how to combine centralised control and integration with the maintenance of individual companies and internal competition'.
- 47) Quoted in Geoffrey Heyworth - A Memoir, p. 53.

- 48) As fn 13.
- 49) Two members out of three. Names on list dated 8 May 1931 loc as fn 13. It is not known when the sub-committee was established.
- 50) Calculated from Wilson (1954) vol II, Graph at Appendix II.
- 51) Calculated for Wilson (1954) vol II pp. 316-18. The situation was viewed as an emergency. See SC/HSE 29 September 1931, M. 205.
- 52) Minutes of meetings of Directors in file Directors Minutes Jan-July 1930 particularly 7 and 8 January 1930, 19/20/21 February 1930, 25 and 26 June 1930 and file Executive Committee 16.10.29 - 3.8.30 16 April 1930 and 28 May 1930. Both UAUH.
- 53) Ibid.
- 54) Cook and Cohen op cit p.257 follow Wilson (1954) vol II pp.345-6 in stressing the importance of Heyworth's speech to overseas managers in 1931. Cook and Cohen give the fuller account. It is not clear that a full text of this speech has survived.
- 55) This is the view of Wilson and Cook and Cohen.
- 56) See graph in Wilson (1954), vol II appendix 11.
- 57) SC/HSE, 6 October 1931, M.223.
- 58) SC/HSE, 18 August 1931, M75.
- 59) SC/HSE, 4 August 1931, M37 and M39.

- 60) SC/HSE, 1 September 1931, M123. Later confirmed with deadline of 1 January 1932 (SC/HSE, 27 October 1931, M287)
- 61) SC/HSE, 9 August 1932, M484. A 'pack' appears to mean a particular size or quantity in which a product is supplied. A 'line' is a particular product which can therefore have a range of packs.
- 62) SC/HSE, 19 May 1932; see SC/HSE, 15 December 1931, M423 and 28 June 1931, M402 for indications of reductions in numbers of lines. No figures given.
- 63) SC/HSE 22 December 1931, M432 and 28 June 1932, M408.
- 64) Wilkie and Soames (SC/HSE, 15 September 1931, M154) Prices (SC/HSE, 15 March 1932, M194) and T B Rowe (SC/HSE, 12 October 1933, M107)
- 65) Wilson (1954) vol II p. 347.
- 66) Ibid and Cook and Cohen op cit pp 261-2.
- 67) SC/HSE minutes passim but eg: Post Sunlight office rationalisation 12 April 1933, M147 and 3 May 1933, M162 which led to 142 dismissals.
- 68) January 1931, 15,814 employees; January 1932 14,718; January 1933, 13,809. SC/HSE, 22 February 1933, M87.
- 69) SC/HSE, 15 April 1933, M138; 3 May 1934, M169.
- 70) SC/HSE, 10 October 1935, M324.

- 71) See figures in SC supporting document 3410 Home Soap Executive - Sales, Advertising and HSE Profit - years 1937-1939. UAUH.
- 72) Calculated from ibid together with further information on brands from the archivist, Port Sunlight.
- 73) Cook and Cohen op cit pp 262-3.
- 74) There were other totally owned toiletry subsidiaries like Erasmic and Vinolia 1939 which appear to have had separate small sales forces despite earlier arrangements to bring them under Gibbs and Pears. T B Rowe's sales force continued after the closure of its factory but was an agency for selling Crosfield's soap products in the south of England. (Musson op cit p 328) There were also selling organisations for Eire, Northern Ireland and Scotland in 1939.
- 75) SC supporting document 3910, 15 November 1939, 'Present Position and Future Policy'.
- 76) SC/HSE, 12 February 1934, M69; 12 July 1934, M245, 6 December 1934, M417.
- 77) SC/HSE, 6 October 1931, M210. Also 12 July 1933. But see also fn 74.
- 78) This was a renamed moribund company, the British Refining Company, pressed into service. See Correspondence re-Setting up Watson and Gossage Ltd, 1935 at Ac 1993/6, Box 136 UAPS.
- 79) Ibid. Also notes to directors of board meetings of the three companies in folder of loose Joseph Watson minutes 1939-40, Ac 1993/6, Box 6, UAPS.
- 80) SC/HSE, 2 December 1937, M342.

- 81) SC/HSE, 28 July 1931, M11.
- 82) Lever Brothers Board minutes, Book 11, list given in index, agreement dated 4 May 1933, microfilm M/F 9/4 UAPS.
- 83) 'The Unilever Galaxy' Economist, 27 December 1930. Some known soap subsidiaries are not mentioned.
- 84) See fn 78.
- 85) See the Lever Brothers Board Minutes at microfilm M/F 9/4 UAPS passim. Also eg, the lists at microfilm M/F 15/2 'Indebtedness to or of subsidiary companies' 29 March 1941 or taxation arrangements at microfilm M/F 10/1, 6 March 1941, Lever Brothers Board Meetings.
- 86) SC supporting document 3384, 29 December 1938. A Mr Greaves, for example, seems to have specialised in board positions in moribund companies.
- 87) Of the 33 companies signing the 1933 reciprocal manufacturing agreement, the Stock Exchange Year Book lists the shares of only four in 1930 and 1939. All but these four have disappeared from the Year Book by 1939. Two other companies Gibbs and Atkinsons were incompletely owned but the balance of the shares appear to have been family owned and not traded.
- 88) See J B Jefferys op cit at pp 224-232. The Gossage Preference Shareholders had 1 vote per 10 shares (ordinary shareholders 1 vote per share) and could only use it when the dividend was in arrears or on questions affecting their rights. Stock Exchange Year Book 1930.
- 89) SC/HSE passim, 25 August 1931 - 15 August 1932.

- 90) SC/HSE, 24 May 1932, M344; 21 June 1932, M393.
- 91) SC supporting document, numbers 774 (19 September 1933) and 917 (1 September 1933); SC/Gen., 29 September 1937, M306.
- 92) The preference shares of these companies - and Gossage - were still being listed in the Stock Exchange Year Book in 1939, indicating that they were still being traded.
- 93) SC supporting document, numbers 3959 (9 January 1940) and 3981 (8 February 1940). See remarks on Atkinsons fn 87.
- 94) GBB/1/17, Box 6, UAPS.
- 95) SC/HSE, 2 November 1932, M635; 4 January 1933, M2; 1 February 1933, M51.
- 96) SC/HSE passim. This was true of Gibbs too, with its strong family presence and shareholdings. See historical notes at Ac 1991/3. Box 55 UAPS.
- 97) H. Davis and L G Fisher, 'Home Soap Executive', SC supporting document 90, 7 March 1932.
- 98) Tables in 'Report on Evacuation Plans for Unilever House', SC supporting document 3602, 2 May 1939.
- 99) As a general indication visits reported to the Special Committee in 1934 and 1935 averaged more than one per month. There may well have been more that went unreported and meetings at HQ with operating unit managers. There could also be regular contact with the Levers and Hudsons sales forces based at HQ.

- 100) A Mr Vardy retired as Chairman in May 1933 (SC/HSE, 3 May 1933, M166). The use of Mark Vardy's christian name in the HSE records indicates a father in the business.
- 101) SC/HSE, 6 October 1931, M210.
- 102) D and W Gibbs Management Committee minutes 1930-37, 16 March 1933 and 4 March 1933 at GBA/2/9 UAPS.
- 103) SC/HSE, 14 June 1934, M21 and 19 July 1934, M253.
- 104) Minutes of the board of Joseph Watson Ltd, Ac 1993/6, Box 6, UAPS and Lever Brothers Post Sunlight Ltd. Directors Committee meetings 1938-40, Ac 1993/20 UAPS.
- 105) As fn 104: Watsons, 28 March 1939 and 27 April 1939; Lever Brothers 16 June 1938.
- 106) SC supporting document 196, 15 June 1932. The author was P M Rees. The covering note described the memorandum as 'the principles which are being carried into effect as regards the Accounting Organisation of the concern as a whole.....' and invited confirmation or comments. No comments have been found.
- 107) Report on 'Head Office Administration' (1932) by H Davis and L G Fisher in Davis/Fisher Reports file at UAUH.
- 108) Rees in his memo (fn 106) says that the reason why responsibility for subsidiary accounts was shifted to Head Office Administration was because it dealt with 'the concern as a whole' while the Office Manager was responsible for Great Britain. This does not explain the split of duties and if anything makes the picture more confused.

- 109) This was the result of the 1931 re-organisation. See list of executives given at Unilever Ltd Minute Book (Directors) 2, 17 July 1931 (M/F 9/5 UAPS).
- 110) Rees memo as fn 106.
- 111) See SC supporting paper 2890 (17 November 1937) dealing with staff gradings and SC supporting paper 3602 (2 May 1939) dealing with evacuation proposals.
- 112) As fn 106. Also all quotes in this paragraph.
- 113) SC/HSE, 10 May 1932, M317.
- 114) As fn 104.
- 115) SC/HSE passim. Also note the remarks of Dr Clarke and G Heyworth on the ideal structure for Port Sunlight of a Chairman, a Technical Manager and a Commercial Manager. No mention is made of a financial manager (presuming always that the Commercial Manager was concerned with Sales/Purchasing). SC/HSE 8 October 1936, M287 and 9 May 1935, M144.
- 116) See Dr Clarke's remarks re: Crosfields that the resulting 'comparisons act as a stimulant to the works people at Warrington who are anxious to improve the efficiency of their works' SC/HSE 24 March 1938. M98.
- 117) Lord Leverhulme Correspondence files, 27-24-3BA, Parcel L, UAPS.
- 118) The manufacturers selling price was a steady £24 per ton for soap containing 63% fatty acid in 1910. (Wilson (1954) vol I, p117).

The prices of the materials used in 1900 and 1913 were as follows (source Wilson (1954), Appendix 9)

£ per ton

	1900	1913
Tallow and Palm Oil	28	36
Copra Oil	15	30
Cotton Seed Oil	8	8

Taking the composition of Sunlight soap (Wilson (1954) vol I, p 31) and using the above information we derive from material costs per ton of soap as follows.

£ Material Price x (% used) x 63%

Sunlight made up of %	1900	1913
41.9 Copra/Kernal oil (average taken)	5.68	8.71
24.8 Tallow	4.37	5.62
23.8 Cotton Seed Oil	1.2	1.2
9.5 Resin (assume=cotton seed oil)	.48	.48
Total	11.73	16.01
As % of selling price £24 per ton	48.0%	66.6%

This calculation takes no account of a reduction in pack size from 16 to 15 ounces in 1906. (Wilson (1954) vol 1, p 74)

119) Wilson (1954) vol 1, chapter VI.

120) PSMC (Post Sunlight Management Committee) Companies statistics 3 vols, 1923-30 Ac 1993/20 Box 38 UAPS.

121) Knox op cit, p 29.

122) Ibid p 69.

- 123) Ibid p. 30. It has to be said, however, that Knox generally has an impatient attitude towards business systems based on large scale information handling.
- 124) Norman Locking 'The Machine in the Office', Progress April 1928; Norman Locking 'At the GHQ of a Great Business', Progress January 1931.
- 125) See the comparisons between Post Sunlight and the factories of Unilever USA. SC/HSE, 5.1.32, M8.
- 126) See refs to eg. T B Rowe SC/HSE, 12 October 1933 and Cook and Cohen op cit p. 261.
- 127) A series of reports by H Davis and L G Fisher were sent to the Special Committee from 1932 onwards (SC supporting documents, passim). A file of 27 Davis/Fisher Reports and Decisions for 1932 is held at UAUH. A Mr Nash was to investigate departments at Head Office and elsewhere and was directly responsible to the Special Committee. (SC/Gen. 27 November 1933, M 548) These activities were made the responsibility of a formal Head Office Investigation Department in December 1934. (SC supporting document 1622 (22 July 1935).
- 128) Maurice Zinkin in Geoffrey Heyworth - A Memoir, p 28.
- 129) SC/HSE, 22 March 1934, M 126 and 4 July 1935, M 214.
- 130) SC/HSE, 4 July 1935, M214.
- 131) Knox op cit p 70. Wilson op cit vol 1, p 25 says that by 1881 the business at Wigan had outgrown its original premises indicating that it was well-established with the likelihood that the budget system had been started.

- 132) Knox op cit pp 70-71.
- 133) See Davis/Fisher report 'Head Office Administration' plus extract from Special Committee (General Matters) in Davis/Fisher Report file UAUH.
- 134) Wilson (1954) vol II pp 384-86.
- 135) The need to contract well ahead was the cause of the high cost of Unilever's materials compared to the market price in 1930 and 1931.
- 136) SC/HSE 11 November 1937, M 320.
- 137) See the purely reactive response to rising Eve Shampoo sales in 1935. Packing capacity had fallen well behind orders, 24 hour working had to be introduced until new packing machines could be installed to bring working back to the normal 8 hours per day. SC/HSE, 27 June 1935, M 207 and 25 July 1935, M240.
- 138) These audit reports may be found in the SC supporting documents passim.
- 139) Cook and Cohen op cit p 264-5.

SUMMARY AND CONCLUSIONS

This thesis has addressed the question: to what extent and why did large UK enterprise fail before World War Two to build managerial hierarchies on the Chandler model. This model of large enterprise structure takes a number of key features from the new type of US corporation which emerged in the early 1920s exemplified by Du Pont and General Motors. These key features are: a structure decentralised into divisions controlled by an overlaid dual line and functional management structure; the corporation as a whole controlled by a top management composed of full-time executives responsible for groups of line and functional activities under the leadership of a chief executive officer; the board of directors as a body of owners' representatives has been superseded by a board largely composed of the highest tier of management. The historical development of this model is shown in the Introduction where it is also suggested, and Chandler hardly emphasises this point, that these new large businesses could not realise the advantages of size unless they had systems of financial business planning and control, particularly a system of budgetary control. It was no accident that the widespread adoption of budgetary control in the US occurred at the same time as the new corporations emerged.

Part One surveyed representative groups of large UK enterprise before World War One and concluded that such enterprise was structured in a way which made the emergence of the Chandlerian corporation a much more difficult project than in the US. The particular structure adopted by large UK joint stock enterprise, a structure we have called "proprietary", was the consequence of a particular definition of the role of the directors of joint stock companies. This role depended for its legitimacy the property rights of the shareholders. The directors, as representatives of the shareholders and shareholders themselves, had the right and the duty to oversee the company on behalf of the shareholders as a whole. Large UK enterprise was structured around this principle despite the inherently part-time nature of the UK board members. Delegations to managers were inevitable in a large business yet delegation was inevitably in tension with the duty of the directors to control the enterprise. The requirement on the directors to retain control emphasised the

separation of direction and management. There was a strong assumption that one person should not adopt both roles. Where men did straddle both roles, as in the case of managing directors, we have seen how they were often hedged around with restrictions and checks and balances. This made the emergence of a fully-empowered chief executive officer equivalent to the president of a US corporation an unlikely prospect. It made the accession to the board of a number of full-time executives barely conceivable.

The particular emphasis on the role of the board also inherently restricted decentralisation and the formation of a top management. While proprietorial structures could quite easily be loosely controlled this was not the same thing as decentralisation, since the ultimate power of the Board was not questioned. Formal decentralisation implied extensive delegation to managers and contradicted the assumed powers of the Board. The federal structures of some amalgamations were a different case because these were alliances of owner-managers and the important boundary between owner and non-owner was not transgressed. No example has been found of a divisionalised UK company before World War One. The proprietorial board also prevented the emergence of top management. Top management, by its very nature, put the overall co-ordination and control of the company which was the prerogative of the board, into the hands of full time managers. Rather than delegate these powers to senior managers, Boards would reserve overall co-ordination to themselves and supervise key functions or departments by forming committees of directors. The consequence was that management was essentially departmental with no opportunity to practice general management of a whole enterprise. To match this departmental fragmentation, professional skills, particularly those of engineers and accountants were narrow in scope and neither developed nor aspired to general management skills.

The financial control of these companies was limited. It was not that the issue was ignored but rather that the board's perceived function was to safeguard shareholders funds and to supervise the business rather than manage it. The consequence was that boards would often take a very detailed interest in expenditure

permissions or in the case of banks, decisions to lend. But proprietorial boards seem to have had no ambition to examine and improve the efficiency of the firms they managed nor do they appear to wish to plan or to set goals for their businesses. In particular, the use of cost accounting was limited both in production and in the assessment of the cost effectiveness of administrative or other processes. Costing was not integrated with the management of production or under the control of production managers, but was used as a form of general supervision focusing on exceptional or over-average costs. Where wider issues were involved, such as the rising costs of operation in the traffic departments of the railways, boards simply appeared at a loss as to what action to take. It was impossible to assess the effectiveness of such action as was taken.

Without a clear sense of the costs of the constituent parts of a business it was difficult to make decisions on pricing, cost reduction or investment. If it were difficult to make such decision it was difficult to make decisions on business strategy. It is not surprising therefore that there is barely any evidence of budgetary control or other forms of business planning in large UK enterprise before World War One. The only example found is that of Lever Brothers which was not yet among the largest UK companies at that time, the budget system being an instrument of personal control by W M Lever, who owned all the voting shares. It was not an instrument of control by the Lever Brothers board.

Thus, much flowed from the perceived role of the board of a UK joint stock company. The consequences before the First World War were under-performance rather than disaster. With hindsight, however, it is clear that the proprietorial company structure placed upper limits on the organisational complexity or pace of change that it could cope with. Simultaneously, it was not building up the managerial human capital that would be necessary to move towards new structures of the Chandler type. The key question in Part Two, therefore, was the extent to which the new, larger enterprises in the UK in the inter-war years were able to break away from their proprietorial origins and construct new managerial structures. The approach used in Part Two depends on case studies which were selected because either through

leadership, sector or repute these firms might be expected to have advanced furthest towards the Chandler model. Each of these studies required slightly different approaches to take account of their particular origins and commercial circumstances. Nevertheless, common themes emerge and general conclusions can be drawn.

Three of these studies were amalgamations; LMS, ICI and Unilever. In all three cases the new amalgamated firms successfully produced new integrated management structures. These were not federal holding company structures with financial integration only. Before we consider the forms that these integrated structures took it is important to emphasise that their creation depended on the suppression of the interests of participant owners or proprietors. As far as the creation of the LMS was concerned, the process involved the loss of directorships in constituent firms in large numbers, but appears to have been achieved relatively smoothly between the Railways Act of 1921 and the start of the new companies in 1923. The process was undoubtedly helped by having the force of legislation behind it. In the case of the two manufacturing companies, ICI and Unilever, however, many subsidiaries had vendor managers, minority shareholders and sub-subsidiaries of a similar type. Here ownership structures and management structures were intertwined with each other and with further arrays of local sectional interests.

ICI and Unilever both overcame these problems though in rather different ways which seemed to stem from different market situations and different organisational requirements for rationalisation. Unilever was greatly conscious of local brand loyalties and yet had a need to rationalise production, particularly of hard soaps. The response was to preserve the legal existence of subsidiaries even when their factories were closed. Separate selling forces were amalgamated and the subsidiary, still with a separate legal existence, was eventually added to a growing list of moribund companies. Unilever were content to live with minority shareholdings and some untidiness of sub-subsidiary holdings as long as the central will was obeyed. To this end they relied on the appointment of loyal directors to the subsidiaries, many of whom were simply salaried managers. ICI on the other hand did not have to deal with local consumer brand loyalty but required a much greater degree of

reorganisation if it were to rationalise production. It was not only a question of closing inefficient or excess plant but of transferring production of different types of product between various subsidiaries so that they could be put under generic product management. All selling was put in the hands of a centralised selling "machine". The subsequent dismemberment of subsidiaries was so great that their continued legal existence was pointless and a process of liquidation was put in hand. ICI forced the pace of change, using legal devices to assert control over subsidiaries (ICI became "sole Director and Manager") and to coerce minority shareholders to sell out. Unilever achieved control without these methods, probably because they were commercially impelled to move more slowly. It should be noted that when Unilever wished to carry through an extensive re-organisation after World War Two it too proceeded to liquidate subsidiaries.

We may conclude therefore that large enterprises formed by amalgamations to initially produce new companies with complex webs of ownership and sectional interests did not present insuperable obstacles to the construction of integrated management structures or rationalisation of production or operation. The key requirement~~s~~ was a central directing will. But while ownership and proprietorial interests were swept aside the structures of all four of our case studies bore the imprint of earlier proprietorial forms of organisation. Most obviously and least surprisingly Austin Motors, for all the imposition of outside full time directors on Herbert Austin by creditors, remained a company dominated and co-ordinated by its founder. Austin provided the personal link which connected commercial and marketing strategy with design, production and finance. Despite finance and production being formally outside his jurisdiction, Austin, by retaining control of costing and budgetary control effectively controlled production and though still constrained on capital spending had great influence on financial planning. The Austin Motors management structure was sparse and the top management can be said to amount to one person, Herbert Austin. The death of the founder left no management structure to replace him.

LMS, despite some minor innovations, retained most of the features of a traditional departmentally structured, board dominated railway. The introduction of a

system of vice presidents led by a President of the Executive was a response to the impossible administrative burdens placed on any single general manager who attempted to run such a large company. It was not a system to increase decentralisation or delegation. The traditional system of Board committees remained in place and cut across the areas of jurisdiction of the vice presidents to the only slightly modified traditional system of department heads below them. There is no evidence to show that the board contemplated giving up any of its powers or that the vice presidents asked for more at any point. It is conceivable that when Josiah Stamp was appointed Chairman in addition to his post as President of the Executive he might have been able to press for at least a streamlined system of board committees working to the vice presidents. Even this modest reform was never officially suggested. Thus what was at best a sparse top management was constrained and weakened by a continuing system of detailed board scrutiny.

The manufacturing conglomerates, ICI and Unilever, were rather more complex cases but still displayed strong proprietorial legacies in their structures. In the case of Unilever, the initial phase produced a large number of committees. These committees had the power only to recommend, decision making being reserved to an Executive Committee of directors, later renamed the Special Committee. In effect this was a much expanded version of the structure of earlier amalgamations like the Calico Printers Association. This structure was found unwieldy and slow moving and was reformed. A small number of committees were renamed "executives" and were put in charge of the day to day running of the manufacture and marketing of groups of products - soap, margarine, etc. The other committees were replaced by what were called "executive departments" and comprised mainly headquarters based functions. There was potential here to develop a line structure through the executives and a functional structure through the executive departments. This could not develop, however, because of the continuing central role of the Special Committee. This remained the sole co-ordinating link between headquarters departments and between them and the executives. Frequent meetings between the executives and the Special Committee were detailed decision making bodies rather than the executives

themselves. Thus while manufacturing had been organised into product groups these groups were not decentralised divisions.

The consequence was an organisation which was tightly centrally controlled but which had an uncertainly defined headquarters structure. The delegation of much of the running of Unilever by the board to the Special Committee was not followed by delegations to managers. While senior managers undoubtedly had set functions and responsibilities their powers remained ambiguous as between functional departmental heads and chief officers in the executives. Furthermore, since more or less every decision taken by the executives appeared to require Special Committee approval, it can be said that the executives were almost as much emissaries of the Special Committee as they were managers of their product group. As a direct consequence of the reservation of detailed scrutiny and decision making to the directors' Special Committee top management remained under-developed and undefined. Even when a post World War Two reorganisation brought delegation and decentralisation to manufacturing and marketing, the relation between them and the headquarters based functional departments remained mediated through the board or was purely voluntary. The need for a clear overlay of line and functional management was not addressed until the 1960s.

As we have already seen in the discussion of ICI's treatment of sectional interests and subsidiary organisations, the company moved rapidly to organise product groups. Unlike Unilever these groups were decentralised into manufacturing divisions with a great measure of autonomy. However, in a number of key respects ICI resembled Unilever. Board powers were largely delegated to a group composed of managing and executive directors. This group soon became more or less completely dominated by one of the managing directors, McGowan, but this should not obscure the way the status difference between this group and non director senior managers appears to have determined the way in which the relation between functional and line management was structured. The divisional re-organisation took place in two stages in 1929 and 1931. In the 1929 re-organisation the executive directors retained control of functional departments at HQ and these departments were

accordingly executive departments able to instruct manufacturing divisions. In 1931 executive directors were withdrawn from the management of functional departments and these were as a consequence reduced to advisory status. In other words, only directors were to have the power to give orders to senior management. Senior management was required to mutually co-ordinate.

This principle is also noticeable in another aspect of the 1931 re-organisation. There is no line management structure set above the manufacturing divisions. A co-ordinating committee of divisional chairman acted as a conduit for instructions from two ICI main board committees to divisions but itself had no powers. Unlike Unilever, which does not have appeared to engage in discussion of the principles upon which it organised itself, ICI was fairly explicit, publishing its organisation charts and explaining them in publication and speeches. We can remain in no doubt therefore that ICI with a privileged knowledge of US corporate structures chose this particular structure deliberately, whereas in the case of Unilever it could be argued it arose contingently out of immediate commercial and administrative needs. In both Unilever and ICI, however, the result was the same: an under-development of top management and a failure to construct an overlaid line and functional structure.

We may conclude from our four case studies that the reservation of co-ordination and decision-making powers to the board or its committees (or in the more obvious case of Austin Motors to the founder and chief shareholder) acted against the development of the Chandlerian managerial hierarchy. In particular it prevented unambiguously empowered management structures emerging at the top of these organisations in explicit hierarchies based on clear delegations of power. The particular circumstances of each firm may provide partial explanations in the details of personalities, origins or markets. But it seems clear that there was an endemic separation between the board of directors and top managers in terms of status and duties which had sufficient continuing weight to prevent the development of a Chandlerian top management. The vertical split between directors and managers caused fragmentation horizontally between senior managers.

We may also note that in no case was an unambiguous chief executive officer in place. There was no single individual acting as a focus for management at Unilever, this function being carried out by a committee of directors. Stamp and McGowan were chairman and chief executive officer combined. Austin had been stripped of his title of managing director by his creditors but effectively filled that role and was also chairman. In all cases the issue of the powers of a chief executive officer *vis a vis* the board were simply side-stepped.

The point in all this is not whether large UK enterprise failed to measure up to some abstract normative organisational scheme drawn from US examples. The issue is rather that these US models appear to have been the most effective way of dealing with the problems of administering a business organisation as it passed some threshold of size and complexity. The purpose of a business organisation is to survive and prosper. What then were the consequences for our case studies of the structures they adopted; in terms of effective administration and the ability to survive and prosper?

The fragmentation of management that we described above was reflected in the way all our case studies administered their businesses. All of them in some combination separated marketing, management accounting and production/operation. At Austin, as we have already said, marketing and cost accounting were under Austin's control, while production was run by a director imposed on Austin by his creditors. In practice, however, the business was effectively dominated by Austin acting as a traditional owner/manager. But the balance between these different elements of management - indeed the very existence of cost accounting and marketing - depended on Austin himself. With Austin's death and the succession of Leonard Lord, marketing and cost accounting seem simply to have faded away. The failure to build a top management at Austin Motors while the founder was alive meant the loss of essential elements of business administration after his death.

LMS combined the marketing and operation functions under one of its vice presidents and management accounting under another. A further vice president was

in charge of engineering, including production and maintenance of rolling stock. These responsibilities were the culmination of a departmental structure under-written by the distribution of responsibilities of the board committees. There was no decentralisation of line management to even the minimum extent of relatively autonomous operating divisions. There was thus no structure which naturally created places for decentralised functional officers. Therefore everything depended on the vice presidents and the President of the Executive to balance and integrate functions across the business. Where the will was there, particularly the will of the President, as in the case of the application of costing to rolling stock production and repair, members of one vice president's departments could be outposted to another's. Where the will was not there, as in the application of costing techniques to traffic operating, nothing happened. There was no facility within the departmental structure for the Vice President for Traffic and Operation to run his own management accounting department. Thus the fragmentation of top management which was the consequence of a board committee dominated departmental structure lived on after the creation of the vice presidential system. LMS did create a sparse top management but any change in administrative procedure was always in potential tension with the departmental structure and new initiative depended both on new acts of will and co-operation rather than flowing easily from the requirements of the structure as a whole.

Unilever integrated marketing and manufacturing under the control of the executives. The finance departments, including management accounting, were headquarters functions responsible directly to the Special Committee. As far as the management of the executives was concerned there does not seem to have been the separation in practice that these spilt responsibilities implied. This was because the Special Committee was also keeping close control over the executives through detailed weekly meetings to which financial matters were routinely brought. The system was therefore one of unified control though that unified control was that of the Special Committee rather than the executives. Thus while the top management structure of Unilever was ambiguous and unclear, as far as the relationships between executives and executive departments was concerned there was no weakness in administration as long as the organisation remained of a size and/or complexity

capable of control by such a concentrated system. This remained the case until the end of World War Two. Though the period post World War Two is outside the scope of this thesis it may be further remarked that the transformation of this highly centralised system into a decentralised and then a divisionalised structure seems to have been managed without undue organisational or commercial disarray. The one weakness in the administration of pre-World War Two Unilever was the absence of adequate cost information for the purposes of managing production. It was the opinion of senior managers that the inefficiencies this might hide were of a far less significance than the losses from inefficient marketing. This may well be true given relatively simple or traditional products. It can be said, however, that the evidence is simply not now available to judge the matter one way or another.

ICI separated marketing, production and financial management from each other. As a result there were significant administrative disbenefits. At various points both manufacturing and selling costs were revealed to be significantly inaccurate and inferences drawn from them were illusory. The management of production was weakened by the absence of useful information on profits and costs. Marketing was weakened by the withholding of information on profits and costs. Central management was not able to judge the performance of its divisions and neither were the divisions themselves. The fragmentation of management functions was designed to give central control through the financial and marketing functions while allowing decentralisation of manufacturing and product development. The intention was to retain commercial initiative and strategic decision-making at the top while decentralising the supposedly routine matters concerned with manufacture. But ICI was attempting to use the traditional departmental checks and balances, or putting it more strongly, departmental divide and rule which may have been appropriate for a smaller less complex firm but were now inadequate. But because any empowerment of headquarters functions over the divisions and/or decentralising and integrating marketing and finance into divisions conflicted with the ascribed role of the executive directors any progress in this direction was slow and difficult. Marketing slowly became integrated with divisions before World War Two and finance during the war.

But while this allowed the divisions to act as autonomous businesses it did not resolve the problems of central control over divisions and how it was to be achieved.

The commercial consequences of their administrative arrangements were different for each of our case studies. For Austin Motors the failure to build top management and the loss of marketing and cost accounting skills after Austin's death had no immediate effect. The period of the war and the immediate post-war years were a seller's market and the firm was prosperous. In the longer term as the UK motor industry began to amalgamate and face increasing foreign competition, the lack of top management and marketing and management accounting skills can be accounted a key factor in the indigenous industry's decline. At LMS the most important result of the structure was the failure to control manpower costs in the Traffic departments. This was the single biggest item of variable cost for the company. As a consequence the competitiveness and profitability of the firm were less than they could have been though this is unlikely to have affected LMS's (and other railway companies) long term competitive disadvantage against road transport.

Unilever appears to have suffered no adverse commercial consequences of its particular organisational structure. Even during the process of product diversification and decentralisation during the post World War Two years, it appears to have been possible to control the organisation strategically and balance investment and returns profitably. This must be accounted for by two factors. Firstly, the company was extremely sensitive to the market and prepared to adapt its organisation accordingly. Secondly, the company had a system of business planning which provided sufficient protection to the company from shortcomings in its structure after it decentralised and before its structure became more Chandlerian. We shall consider the issue of business planning below.

The commercial consequences of ICI's structure were clear. The separation of marketing and accounting from product development and manufacture hindered product innovation in an industry where innovative products sold at a premium. The structure of the product divisions also hindered product development where two or

more divisions developed similar products because the centre appears to have abrogated its power to decide product matters between divisions. At divisional level problems were lessened as marketing and costing were integrated into the divisions. Inter-divisional problems remained to be resolved at the end of World War Two. As we shall see, unlike Unilever, ICI had no system of centrally controlled business planning which could mitigate the problem.

Even though the commercial consequences of the structures of our case studies were diverse it is possible to derive a number of conclusions. We may conclude that the structural form which was the legacy of the proprietorial firm did adversely affect the commercial performance of companies but that this depended crucially on the size/complexity of the firm and the availability of methods of business planning. Both Unilever and Austin Motors were tightly centrally controlled firms. The moment of danger for these companies came when amalgamations or diversification produced a situation where decentralisation and delegation became necessary and was carried through without the management in depth of a Chandlerian structure. At this point the different fortunes of the two firms is clearly related to the possession by Unilever of a system of business planning. LMS appears to have been close to the limit at which a company of its size could be managed in the traditional proprietorial manner. The consequence was significant under-performance rather than crisis. The company showed little sign of wishing to restructure. ICI, alone out of our case studies, was simply too large and complex to be run as a tightly centrally controlled organisation and had to find some method of decentralisation in the inter-war years. We can conclude more generally therefore that the most important negative organisational and commercial consequences of the proprietorial form of organisation came when decentralisation was forced on the company. To use the terminology of Elbaum and Lazonick and Chandler, the key institutional consequence of the proprietorial form of organisation was adaptive failure at the point of divisionalisation.

We have seen how that adaptive failure could be mitigated by the use of systems of business planning. It should be stressed, however, that the business

planning systems at Unilever and Austin Motors were not designed for this purpose. Both had earlier origins in the desire of owner-managers to retain control of expanded businesses at times of cost uncertainty. Their successors retained or abandoned these systems quite contingently, it would appear. Business planning in the form of a simple system of departmental cash limiting appeared - then disappeared - on the LMS. ICI centrally had intense problems trying to plan capital investment in the later 1930s and had no business planning for income and expenditure until after World War Two. Full budgetary control was, however, evolved by one of the divisions, Dyestuffs. It is difficult to see how ICI could have evolved a system of central budgeting and planning without introducing an empowered line management of the divisions at HQ whose powers would contradict those of the executive directors. We may therefore see the failure to establish central planning at ICI as a further adaptive failure caused by the institutional legacy of the proprietorial form of organisation. The situation contrasts with the simultaneous appearance of budgetary control and divisionalisation at General Motors.

Overall we can conclude that none of our case study firms had built a managerial structure on the Chandler model with an overlay of line and functional management in the inter-war years. By extension we may strongly suggest that no UK company had built such a hierarchy. Though some firms had systems of business planning they emerged for reasons other than the control of the Chandlerian structure and cannot be taken as an indication that such structures existed. The failure to build such structures for the most part had significant long or short term negative effect on their administrative efficiency and profitability. A key reason for the failure to build these hierarchies was the persistence of organisational rules drawn from assumptions about the role and responsibility of the directors of joint stock companies *vis a vis* managers. These in turn derived from the assumed prior rights of property over any status or autonomy due to skilled administrators of the network of processes which made up the firm and without whom the capital invested in the firm was worthless. If there was no managerial revolution at the level of the firm in the UK in the inter-war years it was because the structure of the firm had been designed to prevent it.

APPENDIX I

Three lists of companies are appended to show the top 50 companies by capitalisation and by market value and the top 50 manufacturers by numbers employed in 1905/1907.

There is no particularly scientific method for selecting groups of companies from the three lists. The railways clearly form a dominant group. The banks form a strong group in the list by market value. Of the remaining companies after these two groups in the lists by capitalisation and by market value the next strongest group is amalgamated manufacturing companies. If the top 20, say, manufacturing employers are examined for amalgamated manufacturing companies, we can identify ten, the balance being railway or railway related, state enterprise, the CWS or family companies. Taking the amalgamated manufacturing companies from the three lists a certain pattern emerges:

<u>By Capitalisation</u>	<u>By Market Value</u>	<u>By Numbers Employed</u>
Imperial Tobacco	J & P Coats	Fine Cotton Spinners
Watney Combe Reid	Imperial Tobacco	Armstrong Whitworth
J & P Coats	Vickers	Vickers
United Alkali	Armstrong Whitworth	Calico Printers Assoc
Calico Printers Assoc	Watney Combe Reid	John Brown & Co
Vickers	Fine Cotton Spinners	J & P Coats
Fine Cotton Spinners		GKN
Associated Portland Cement		Bleachers Association
Bleachers Association		United Alkali
Armstrong Whitworth		Stewarts & Lloyds

We can establish four broad groups in the steel, shipbuilding and armaments conglomerations (Vickers, Armstrong Whitworth, John Brown); brewing and tobacco (Imperial Tobacco, Watney Combe Reid); textiles and textile finishing (J & P Coats, Calico Printers Assoc., Fine Cotton spinners and Doublers, Bleachers Assoc.) and a miscellaneous group (Associated Portland Cement Manufacturers, United Alkali, Guest Keen & Nettlefold, Stewart and Lloyds).

It is not proposed to treat the brewing and tobacco group in the body of the thesis. As far as Imperial Tobacco is concerned, integration was clearly the last thing on the participants minds. (See the remarks of Sir Wilfred Anson, deput Chair of Imperial Tobacco in Business Enterprise, R S Edwards and W Townsend, London, pp 65-6.) The brewery industry's position in the lists was largely the consequence of the artificially high values placed on retail outlets - the public houses - as a result of restrictions on licenses by magistrates. Their organisations were simply unitary board structures made up of the partners of the amalgamating companies. (See J Vaizey The Brewery Industry 1886-1951, London.)

It is also not proposed to deal with the miscellaneous gas companies, insurance companies, extraction companies and others that form the balance of the capitalisation and market value lists. The groups extracted above appear to provide a sufficient basis for what is intended to be an illustrative survey.

LARGEST 50 UK COMPANIES BY CAPITALISATION, c 1905

<u>Company</u>	<u>Capitalisation</u>
	<u>(£000's)</u>
1. Midland Railway Co	191,051
2. London and Northwestern Railway Co	122,825
3. Great Western Railway Co	92,806
4. North Eastern Railway Co	78,006
5. Lancashire and Yorkshire Railway Co	68,001
6. Caledonian Railway Co	66,660
7. North British Railway Co	63,939
8. Great Northern Railway Co	58,385
9. Great Eastern Railway Co	54,207
10. London and Southwestern Railway Co	50,421
11. Great Central Railway Co	46,678
12. South Eastern Railway Co	32,075
13. London Chatham & Dover Railway Co	28,629
14. London Brighton & South Coast Railway Co	27,991
15. Gas Light & Coke Co	25,797
16. Glasgow & South Western Railway Co	24,630
17. London and India Docks	18,975
18. Imperial Tobacco	17,545
19. Manchester Ship Canal	16,603
20. Metropolitan Railway Co	15,764
21. Watney Combe Reid	14,950
22. Bank of England	14,553
23. Great Southern & Western Railway Co (Ireland)	13,381
24. Metropolitan District Railway Co	12,407
25. J & P Coats	11,181
26. National Telephone Co	10,833

27.	North Staffordshire Railway Co	10,454
28.	Underground Electric Railway Co	10,200
29.	Taff Vale Railway Co	9,421
30.	South Metropolitan Gas Co	8,820
31.	United Alkali	8,490
32.	Great Northern of Ireland Railway Co	8,267
33.	Calico Printers Association	8,227
34.	Eastern Telegraph Co	7,897
35.	Furness Railway Co	7,818
36.	Hull & Barnsley Railway Co	7,669
37.	Great North of Scotland Railway Co	7,611
38.	Vickers Sons & Maxim	7,440
39.	Fine Cotton Spinners and Doublers	7,290
40.	Associated Portland Cement Manufacturers	7,061
41.	Highland Railway Co	6,824
42.	Bleachers Association	6,820
43.	Midland Great Western of Ireland Railway Co	6,511
44.	Cambrian Railway	6,306
45.	Arthur Guinness	5,960
46.	Barry Railway	5,790
48.	Sir W G Armstrong Whitworth	5,316
49.	Samuel Allsopp & Sons	5,095
50.	Imperial Continental Gas Co	4,964

Source: P L Payne "Emergence of the Large-Scale Company in Great Britain, 1870-1914" in Economic History Review 2nd Series, XX, 3 December 1967 with the addition of companies taken from Peter Wardley's lists of market values (q.v.) with capitalisations from the Stock Exchange Year Book for 1905.

LARGE BRITISH COMPANIES IN 1904/5, RANKED BY MARKET VALUE

<u>Rank</u>	<u>Company</u>	<u>Market Value</u>
		(£M)
1.	Midland Railway Co	136.7
2.	London & North Western Railway Co	126.7
3.	Great Western Railway Co	92.3
4.	North Eastern Railway Co	90.9
5.	Lancashire & Yorkshire Railway Co	63.7
6.	Caledonian Railway Co	58.2
7.	North British Railway Co	58.0
8.	Great Northern Railway Co	54.9
9.	London & South Western Railway Co	54.5
10.	Great Eastern Railway Co	47.9
11.	Bank of England	44.5
12.	Coats (J & P) Ltd	42.1
13.	Great Central Railway Co	41.8
14.	London Brighton & South Coast Railway Co	38.0
15.	South Eastern Railway Co	35.6
16.	Gas Light and Coke Co	25.0
17.	Rio Tinto Co Ltd	22.8
18.	Imperial Tobacco Co Ltd	22.6
19.	London Chatham and Dover Railway Co	19.8
20.	Glasgow and South Western Railway Co	19.7
21.	Guinness (Arthur), Son and Co Ltd	19.9
22.	Metropolitan Railway Co	17.4
23.	London & India Docks Co	16.9
24.	Consolidated Gold Fields of South Africa	15.8
25.	Great Southern & Western Railway Co (Ireland)	14.5

26.	Lloyds Bank Ltd	14.1
27.	National Provincial Bank of England Ltd	13.1
28.	Prudential Assurance Co Ltd	12.0
29.	Vickers Sons and Maxim Ltd	12.0
30.	London, City and Midland Bank Ltd	11.6
31.	Great Northern Railway Co (Ireland)	11.6
32.	Armstrong (Sir W G), Whitworth & Co Ltd	11.3
33.	Watney, Combe, Reid & Co Ltd	10.5
34.	North Staffordshire Railway Co	10.1
35.	Bank of Ireland	9.9
36.	London & County Banking Co Ltd	9.8
37.	South Metropolitan Gas Co	9.5
38.	Barclay and Co Ltd	9.1
39.	Eastern Telegraph Co Ltd	8.8
40.	Metropolitan District Railway Co	8.6
41.	Union of London and Smiths Bank Ltd	8.5
42.	Manchester Ship Canal	8.5
43.	Imperial Continental Gas	8.2
44.	Taff Vale Railway Co	8.1
45.	Underground Electric Railway Co of London	8.1
46.	Fine Cotton Spinners & Doublers Assoc Ltd	8.0
47.	London and Westminster Bank Ltd	7.8
48.	Brunner, Mond and Co Ltd	7.3
49.	National Telephone Co Ltd	7.2
50.	Parr's Bank Ltd	7.1

Source: Peter Wardley "The Anatomy of Big Business: Aspects of Corporate Development in the Twentieth Century", Business History, Vol 33, No 2, April 1991, Table 3.

LARGE MANUFACTURING EMPLOYERS OF 1907

Rank By Employ- ment	Firm	Estimated No Of Employees
1.	Fine Cotton Spinners' & Doublers Assoc	30,000
2.	Royal Dockyards	25,580
3.	Sir W G Armstrong, Whitworth & Co	25,000
4.	Vickers, Sons & Maxim	22,500
5.	Calico Printers' Assoc	20,495
6.	Great Western Railway Co	17,770
7.	John Brown & Co	16,205
8.	Royal Ordnance Factories	15,651
9.	Metropolitan Amalgamated Railway Carriage & Wagon Co	13,868
10.	London & North Western Railway Co	13,500
11.	Co-operative Wholesale Society	13,203
12.	J & P Coats	12,700
13.	Guest, Keen & Nettlefolds	12,451
14.	Bleachers' Assoc	11,280
15.	Platt Brothers	10,708
16.	Stewarts & Lloyds	10,600
17.	North Eastern Railway Co	10,000
18.	United Alkali Co	9,049
19.	Pilkington Brothers	9,000
20.	I & R Morley	9,000
21.	Midland Railway Co	8,500
22.	Harland & Wolff	8,500
23.	Workman, Clark & Co	8,000
24.	Rylands & Sons	8,000
25.	North British Locomotive Co	8,000
26.	G Kynoch & Co	8,000

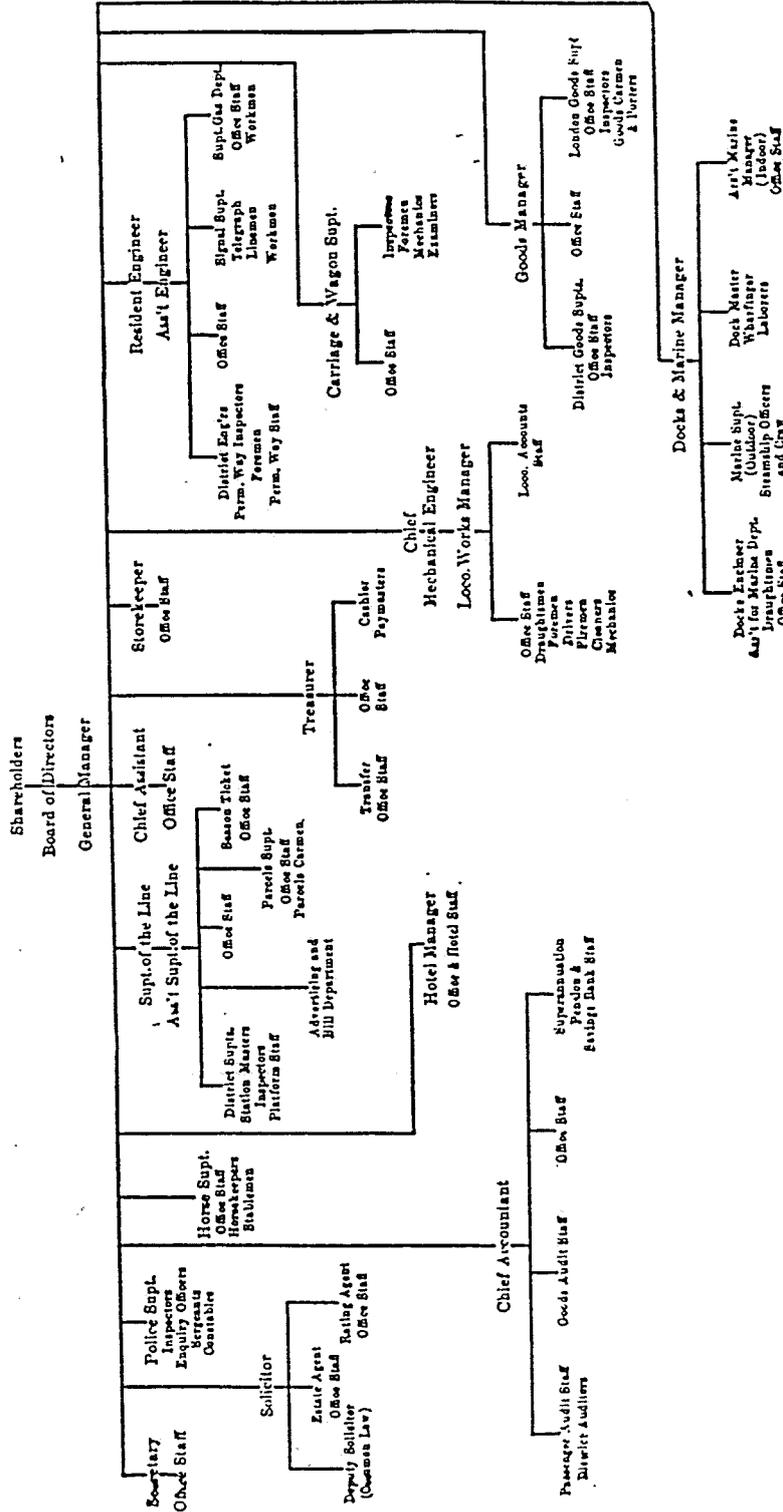
27.	Palmers' Shipbuilding & Iron Co	7,500
28.	Bradford Dyers	7,500
29.	Lancashire & Yorkshire Railway Co	7,250
30.	Scottish Co-operative Wholesale Society	7,000
31.	Singer Sewing Machine Co	7,000
32.	Great Eastern Railway Co	7,000
33.	Huntley & Palmers	6,500
34.	Associated Portland Cement Manufacturers (1900)	6,147
35.	Horrocks, Crewdson & Co	6,000
36.	General Electric Co	6,000
37.	Imperial Tobacco Co	6,000
38.	Fairfield Shipbuilding & Engineering Co	6,000
39.	Steel Co of Scotland	5,694
40.	Bolchow, Vaughan & Co	5,487
41.	Fairburn, Lawson, Combe, Barbour	5,050
42.	Waterlow & Sons	5,000
43.	Scotts' Shipbuilding & Engineering Co	5,000
44.	Irish Lace Depot	5,000
45.	Howard & Bullough	5,000
46.	Hibernian Lace Co	5,000
47.	British Westinghouse Electical Co	5,000
48.	Birtwistle & Fielding	5,000
49.	Charles Bayer & Co	5,000
50.	Lister & Co	5,000

Source: Christine Shaw "The Large Manufacturing Employers of 1907", Business History, Vol 25. This list gives manufacturing employers as the manufacturing components only of such businesses as railways.

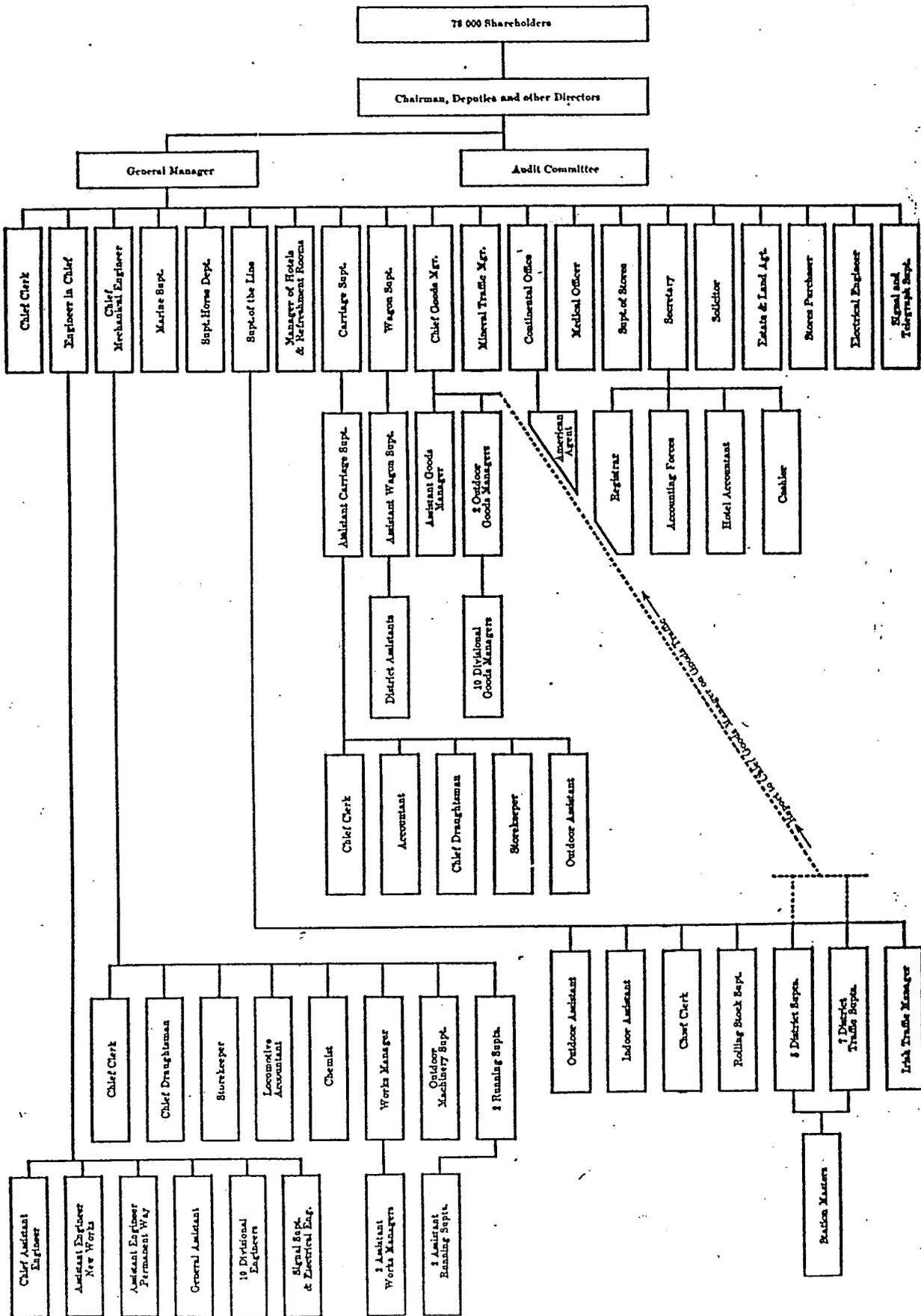
APPENDIX II

This appendix shows four organisation charts for pre-World War One railways. Each of them shows the General Manager in the position of a chief executive officer and none of them show the relationship between chief functional officers and the committees of the Board. These charts are taken from Ray Morris Railroad Administration, New York and London, 1910.

ORGANIZATION OF THE LONDON & SOUTH WESTERN RAILWAY, 1910



OUTLINE ORGANIZATION, LONDON & NORTH WESTERN RY., 1910 (UNOFFICIAL)



BIBLIOGRAPHY

Unpublished Sources

The Armstrong Whitworth and Rendal papers kept by the Tyne and Wear Archive, Newcastle upon Tyne. Permission to consult these papers is acknowledged with gratitude.

The ICI Company Archive held by ICI headquarters, Millbank, London. The permission to consult these papers and quote given by Mr K J Rushton, Assistant Secretary, and Mr I S Dunning, Technical Services Manager, is gratefully acknowledged. I am happy to make it clear that the conclusions drawn from this material are my own and ICI, in giving permission to use extracts are not to be taken as accepting my conclusions. I particularly wish to acknowledge the unstinting help and assistance of Ms K J Mitchell, former Corporate Archivist, ICI.

The papers of the London and North Western Railway, The Midland Railway, The North Eastern Railway, The London Midland and Scottish Railway, The Ministry of Munitions and the War Office held at the Public Record Office, Kew, London.

The Engelbach papers and the Rover/British Motor Industry Heritage Trust Deposit: Austin Motor Company Minutes at the Modern Record Centre, Warwick University. The assistance of Mr R Storey, Archivist, is gratefully acknowledged.

The Unilever Archives held at Unilever House, Blackfriars, London, and Port Sunlight. Permission to consult and use extracts is gratefully acknowledged. I particularly wish to acknowledge the help received from Mr A A Cole, Ms J Strickland and Ms M Stanniforth at Unilever House and from Mr G Collins at Port Sunlight.

The Ward papers, British Library of Political and Economic Science.

Letters from Mr A A Cole and Mr G Collins of Unilever and Prof. A Slaven of Glasgow University.

Periodicals

The following publications have been consulted during the writing of this thesis:

The Accountant
 Accountants Journal
 Business Organisation and Management
 Cassiers Magazine (later Engineering and Industrial Management)

Cost Accountant
 Economist
 Efficiency Magazine
 Engineering
 Engineering Production
 Journal of the Institution of Electrical Engineers
 Journal of the Royal Statistical Society
 Ministry of Munitions Journal
 Modern Transport
 Proceedings of the Institution of Automobile Engineers
 Proceedings of the Institution of Production Engineers
 Progress (Unilever)
 Railway Engineer
 Railway Gazette
 Stock Exchange Year Book
 System (later Business)
 Times

Published Sources

- | | |
|---------------------------|---|
| Addison C | <u>Four and a Half Years</u> , London 1934. |
| Aldcroft D H | <u>British Railways in Transition</u> , London 1968. |
| Alderman G | <u>The Railway Interest</u> , Leicester 1973, |
| Andrews P W S & Brunner E | <u>The Life of Lord Nuffield</u> Oxford 1955. |
| Armytage W H G | <u>A Social History of Engineering</u> London 1961, |
| Barnett C | <u>Audit of War</u> , London 1986. |
| Bonavia M R | <u>Railway Policy Between the Wars</u> , Manchester 1981. |
| Bonavia M R | <u>The Economics of Transport</u> , Cambridge 1936. |
| Bonavia M R | <u>Railway Policy Between the Wars</u> Manchester 1981. |
| Bromwich M | <u>The Economics of Capital Budgeting</u> , Penguin 1976. |
| Brown G | <u>Sabotage</u> , London 1977. |

- Bruère H & Lazarus A Applied Budgetting, Chicago and New York 1926.
- Burn D L The Economic History of Steelmaking, Cambridge 1940.
- Carlos A M & Nicholas S "Giants of an Earlier Capitalism: The Chartered Trading Companies as Modern Multinationals", Business History Review, Vol 62, No 3, Autumn 1988.
- Chandler A D Scale and Scope, Cambridge, Mass., 1990.
- Chandler A D Strategy and Structure, Cambridge, Mass., 1962.
- Chandler A D The Visible Hand, Cambridge Mass., 1977.
- Chandler A D & Daems H Managerial Hierarchies, Cambridge Mass. and London 1980.
- Channon D F Strategy and Structure of British Enterprise, London 1973.
- Church A H Manufacturing Costs and Accounts, New York and London, 1973.
- Church R A Herbert Austin, London 1979.
- Church R A The Rise and Decline of the British Motor Industry, London 1994
- Coleman D C "Failings and Achievements: some British Businesses, 1910-80" in Business History, Vol XXIX No 4, October 1987.
- Collins P & Stratton M British Car Factories from 1896, Godmanstone, Dorset (UK) 1993.
- Cook P L & Cohen R Effects of Mergers, London 1958.
- Crane D Sir Robert Perks, Bart, MP - The Story of his Life, London 1909.
- Crittall Mr and Mrs F H Fifty Years of Work and Play, London 1934.
- Cross D Choosing a Career, London 1908.
- Davis J F Bank Organisation Management and Accounts, London 1910.

- Dicksee L R The Fundamentals of Manufacturing Costs, London 1917.
- Dicksee L R Business Methods and the War, Cambridge 1915.
- Elbaum B Lazonick W The Decline of the British Economy, Oxford 1986.
- Elbourne E T The Costing problem, London 1919.
- Ellis H British Railway History, London 1959.
- Farnham D T America vs Europe in Industry, London and New York 1921.
- Federation of British Industries Proceedings of the 6th International Congress for Scientific Management, London 1935.
- Fieldhouse D K Unilever Overseas London, 1978.
- Findlay Sir G The Working and Management of an English Railway, London 1899.
- Goitein H Company Law, London 1949.
- Hannah L Rise of the Corporate Economy, 2nd revised edition, London 1983.
- Hannah L & Kay J A Concentration in Modern Industry, London 1977.
- Hannah L (ed) Management Strategy and Business Development, London 1975.
- Hare T B British Railway Organisation, London 1930.
- Hewcock J F The Organisation and Management of a Branch Bank, London 1933.
- HMSO Annual Abstract of Statistics 1995.
- HMSO Royal Commission on the Civil Service, 1913: Minutes of Evidence.
- HMSO Coal Industry (Sankey) Commission, Minutes of Evidence, 1919.

- HMSO History of the Ministry of Munitions, 12 Vols III, London 1922.
- HMSO Board of Trade Report on the Engineering Trades Cd 9073 1918.
- HMSO The (Balfour) Committee on Industry and Trade, Final Report, Cmnd 3282, 1929.
- Holmes A R & Green E Midland - 150 Years of Banking Business, London 1986.
- Hume J R & Moss M S Beardmore - The History of a Scottish Industrial Giant, London 1927.
- Irving R J The North Eastern Railway Company 1870-1914, Leicester, 1976.
- Jefferys J B Business organisation in Great Britain 1856-1914 PhD thesis. University of London 1938.
- Jones E Accountancy and the British Economy 1840-1980, London 1981.
- Jones E GKN Vol I, London 1987.
- Jones J H Josiah Stamp Public Servant, London 1964.
- Jordan H W ABC Guide to the Companies Acts 1862 to 1907, London 1908.
- Josephson M The Robber Barons New York 1934
- Kennedy W P Industrial Structure, Capital Markets and the Origins of British Industrial Decline, Cambridge 1987.
- Keynes J M The End of Laissez Faire, London 1926.
- Knox A Coming Clean, London 1976.
- L M S A Record of Large Scale Organisation and Management London 1946.
- Labour Research Dept. Labour and Capital on the Railways, London 1923.
- Landes D S "Technological Change and Development in Western Europe, 1750-1914" in Cambridge

Economic History of Europe Vol VI, Cambridge 1965.

- Landes D S The Unbound Prometheus, Cambridge 1969.
- Lawson R British Railways, A Financial and Commercial Survey, London 1913.
- Lee J Letters to an Absentee Director London 1928.
- Lewchuck W American Technology and the British Vehicle Industry, Cambridge 1987.
- Liberal Industrial Enquiry Britain's Industrial Future, London 1928.
- Locke R R The End of Practical Man, Greenwich Connecticut and London 1984.
- Loft A Coming Into the Light, London 1990.
- Macrosty H W The Trust Movement in British Industry, London 1907.
- Mann J & Judd H G Colliery Accounts, London 1909.
- Marshall L C (ed) Business Administration, Chicago 1921.
- Mathews P W & Tuke AW History of Barclays Bank Ltd, London 1926.
- Maxcy G & Silberston A The British Motor Industry, London 1959.
- McCloskey D M (ed) Essays on a Mature Economy, London 1971.
- McCloskey D N Economic Maturity and Entrepreneurial Decline, Cambridge Mass., 1973.
- McKinsey J O Budgetary Control, New York 1922.
- Ministry of Munitions Second Report on Costs and Efficiencies for H M Factories, , London 1918.
- Mitchell B R British Historical Statistics Cambridge 1988.
- Morris R Railroad Administration, New York and London 1910.
- Musson A E Enterprise in Soap and Chemicals - Joseph Crosfield and Sons Ltd 1815-1965 Manchester 1965.

- Newhook A T Railway Accounts and Finance, London 1914.
- No Author The History of the Institute of Chartered Accountants, London 1965.
- Noble D F America by Design, New York 1979.
- Norton G P Textile Manufacturers Book-keeping, 3rd Edn, London 1894.
- Paish Sir G The British Railway Position London 1902.
- Parker R H Management Accounting - an historical perspective, London 1969.
- Parsons R H History of the Institution of Mechanical Engineers, London 1947.
- Payne P L "Emergence of the Large Scale Company in Great Britain 1870-1914" in Economic History Review, 2nd Series, Vol XX No 3, Dec 1967.
- Payne P L Chapter IV "Industrial Entrepreneurship and Management in Great Britain" in Cambridge Economic History of Europe, Vol VII, Cambridge 1978.
- Powell J E The Output Problem, London 1920.
- Pratt E A British Railways and the Great War 2 Vols, London 1921.
- Reader W J ICI: A History, 2 Vols, London 1970.
- Reader W J Fifty Years of Unilever, London 1980.
- Rees J M Trusts in British Industry, London 1922.
- Richardson K The British Motor Industry 1896-1939, London 1977.
- Ross H M British Railways, their Organisation and Management, London 1904.
- Sayers R S Lloyds Bank in the History of English Banking, Oxford 1957.

- Scott J Capitalist Property and Financial Power, Brighton 1986.
- Shaw S Appendix I "The Large Manufacturing Employers of 1907", Business History, Vol 25.
- Sheldon O The Philosophy of Management, London 1924.
- Sherrington C E R The Economics of Rail Transport in Great Britain London 1928.
- Simmons J The Railway in England and Wales, 1830-1914, Leicester 1978.
- Slaven A & Checkland S (eds) Dictionary of Scottish Business Biography 1860-1980.
- Stamp J Some Economic Factors in Modern Life, London 1929.
- Stamp J Criticism and Other Addresses, London 1931.
- Supple B Royal Exchange Assurance, Cambridge 1970
- Sykes J The Amalgamation Movement in British Banking 1825-1924, London, 1926.
- Tarbell I History of the Standard Oil Company, 2 Vols, New York 1904.
- The Institute of Bankers The First Fifty Years of the Institute of Bankers, London 1929.
- Tolliday S & Zeitlin J (eds) The Power to Manage? Employers and Industrial Relations in Comparative-Historical Perspective, London 1992.
- Trebilcock C Vickers Brothers - Armaments and Enterprise 1854-1914, London 1977.
- Turner G The Leyland Papers, London 1973. which will be examined below.
- Unilever Ltd Geoffrey Heyworth, A Memoir, London, 1984.
- Urwick L The Meaning of Rationalisation, London 1929.
- Urwick L The Golden Book of Management, London 1956.

- Urwick L "Executive Decentralisation with Functional Co-ordination" Public Administration Vol 13, October 1935.
- Urwick L & Brech E F L The Making of Scientific Management Vol II Management in British Industry, London 1946.
- Vaizey J E The Brewing Industry, London 1960.
- Wardley P "The Anatomy of Big Business: Aspects of Corporate Development in the Twentieth Century", Business History, Vol 33, No 2, April 1991.
- Webster Jenkinson M Cost Accounts for Small Manufacturers, London 1907.
- Weiner M J English Culture and the Decline of the Industrial Spirit, Cambridge 1981.
- Williamson J W A British Railway Behind the Scenes, London, 1933.
- Willsmore A W Business Budgets and Budgetary Control, London 1932.
- Wilson C The History of Unilever, 2 Vols London 1954.
- Winton J R Lloyds Bank 1918-1969, Oxford 1982.
- Withy R A How to become a Qualified Accountant, London 1906.
- Wood W V Railways, London 1928.
- Young P Power of Speech, London 1983.
- Alford B W E "Chandlerism, the New Orthodoxy of US and European Corporate Development?", Journal of European Economic History, Vol 23, No 3, Winter 1994.
- Caves R E and Uekusa M Industrial Organisation in Japan, Washington DC, 1976.
- Cheape C W Strictly Business - Walter Carpenter at Du Pont and General Motors, Baltimore and London, 1995.

- Fruin W M The Japanese Enterprise System, Oxford, 1992.
- Hannah L "The American Miracle, 1875-1950, and After: A View in the European Mirror", Business and Economic History, Vol 24, No 2, Winter 1995.
- Hounshell D A and Smith J K Science and Corporate Strategy - Du Pont R & D, 1902-1980, Cambridge, 1988.
- Johnson HT and Kaplan R S Relevance Lost - The Rise and Fall of Management Accounting, Cambridge Mass, 1987.
- Kirby M W and Rose MB Business Enterprise in Modern Britain, London 1994.
- Martin A Enterprise Denied - Origins of the Decline of American Railroads, 1897-1971, New York, 1971.
- Piore M J and Sabel C F The Second Industrial Divide, New York, 1984.
- Porter M E The Competitive Advantage of Nations, London, 1990.
- Salsbury S No Way to Run a Railroad - The Untold Story of the Penn Central Crisis, New York, 1982.
- Suzuki Y Japanese Management Structures, 1920-80, London 1991.
- Thompson G L "How cost ignorance derailed the Pennsylvania Railroad's efforts to save its passenger service, 1929-61", Journal of Transport History, Third Series, Vol 16, No 2, September 1995.
- Thompson G L "Misused product Costing in the American Railroad Industry: Southern Pacific Passenger Service between the Wars", Business history Review, Vol 63, No 3, 1989.
- Thompson G L "Myth and rationality in management decision-making: the evolution of American railroad product costing, 1870-1970", Journal of Transport History, Vol 12, 1991.
- Walker G Road and Rail - an enquiry into the economics of competition and state control, London 1942.

LIST OF ABBREVIATIONS

ABM	Austin Board Minutes
CAC	Central Administration Committee (ICI)
CPA	Calico Printers Association
EGM	Extraordinary General Meeting
FCSD	Fine Cotton Spinners and Doublers
GPC	General Purposes Committee (ICI)
GWR	Great Western Railway
HSE	Home Soap Executive (Unilever)
ICAEW	Institute of Chartered Accountants in England and Wales
ICWA	Institute of Cost and Works Accountants
IPE	Institution of Production Engineers
JIEE	Journal of the Institution of Electrical Engineers
LNWR	London and North Western Railway
LNER	London and North Eastern Railway
NER	North Eastern Railway
PIPE	Proceedings of the Institution of Production Engineers.
PRO	Public Record Office, Kew.
SC	Special Committee (Unilever)
SCSD	Special Committee Supporting Document (Unilever)
STC	Standard Telephone and Cable Ltd
TWA	Tyne and Wear Archives, Newcastle upon Tyne.
UAPS	Unilever Archive, Port Sunlight
UAUH	Unilever Archive, Unilever House, Blackfriars, London.