



Durham E-Theses

The restructuring of an employment system: the experience of north sea oil in the north east of England

Cumbers, Andrew David

How to cite:

Cumbers, Andrew David (1991) *The restructuring of an employment system: the experience of north sea oil in the north east of England*, Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/6265/>

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

THE RESTRUCTURING OF AN EMPLOYMENT SYSTEM: THE EXPERIENCE OF
NORTH SEA OIL IN THE NORTH EAST OF ENGLAND

The copyright of this thesis rests with the author.
No quotation from it should be published without
his prior written consent and information derived
from it should be acknowledged.

Andrew David Cumbers

Doctor of Philosophy thesis submission
Department of Geography
University of Durham
July 1991



- 8 SEP 1992

ABSTRACT

THE RESTRUCTURING OF AN EMPLOYMENT SYSTEM: THE EXPERIENCE OF NORTH SEA OIL AND GAS IN THE NORTH EAST OF ENGLAND

ANDREW CUMBERS

The concern of this thesis is the impact of incoming oil related activities (in the form of rig fabrication) upon the existing industrial work force in the North East of England. It examines how the interrelationship of two processes (the increasing centralisation of the international oil industry and the historical development of the labour force in the North East) has shaped the precise pattern of labour relations within the fabrication sector in the North East. In particular it notes how a mixture of political indecision in the 1970s and ideological dogma in the 1980s has allowed the international oil industry to dictate the terms of North Sea oil developments. As a consequence, fabrication firms have been forced to marginalise large elements of the work force. It is this process, set in the context of past industrial development, that is the principle focus of this thesis.

ACKNOWLEDGEMENTS

As is usual with a work of this length, I have accumulated a vast collective debt of gratitude over the years. Firstly I would like to thank my supervisor, Ray Hudson, for his patience in the face of an ever extending deadline, and for his promptness in returning scripts. He seemed to have the knack of saying the right thing at the right time. My thanks also go to Jim Lewis, who introduced me to the delights of the North East and helped me to get off "on the right track" with my research. Sinclair Sutherland, and later Dave Robinson, were of great help to me, in unravelling some of the mysteries of the world of computers, whilst I also owe a debt to various counterparts for their advice and support, especially Tim, Carl, and Antony, the latter for his wider academic perspective. On a lighter note, I would like to thank the various friends, who have added colour to my time in Durham and kept me from the gates of insanity.

Away from Durham a special debt of gratitude is owed to the various individuals from within company and trade union organisations, who were willing to drop everything to answer my questions. I would also like to thank Gary Lawson (of the now defunct E.I.T.B.) for the huge amounts of data supplied and the free lunches at Watford.

Thanks also to the long suffering technical staff in the geography department for their assistance (beyond the call of duty) and sense of humour during 4 years at Durham.

Finally thanks to Mum and Dad, Liz and Nick who have never flinched in their support for this very difficult member of the family.

STATEMENT OF COPYRIGHT

The copyright of this thesis rests with the author. No quotation from it should be published without his prior consent and information derived from it should be acknowledged.

CONTENTSPage No.

Preface	vii
List of Tables	xvi
List of Figures	xix

CHAPTER 1: GLOBAL CHANGE AND LOCAL IMPACT INTHE OIL INDUSTRY

1.1 Introduction	1
1.2 Changing structures in the international oil industry	2
1.2.1 Monopoly Capitalism and the development of the international industry, 1880-1945	3
1.2.2 Implicit change in the post-war era, 1945-1970	8
1.2.3 The OPEC revolution and its aftermath, post 1970	12
1.3 North Sea oil in a global framework	16
1.3.1 The evolution of state policy prior to 1979	17
1.3.2 Ten years of "enterprise culture" in the North Sea, 1979-89	25
1.4 The nature of the offshore supplies industry in the North Sea	31
1.5 The impact of oil operations at the regional level	34

CHAPTER 2: THE DEVELOPMENT OF EMPLOYMENTSYSTEMS UNDER CAPITALIST ACCUMULATION

2.1 Divisions of labour and theoretical developments	48
2.2 Theories of Labour Market Segmentation	49
2.3 The debate on the Labour Process	55

2.3.1 Shortcomings in Braverman's work and reactions to it	62
2.4 Constructing a framework for the analysis of employment change	70
2.5 The employment system as a framework for the historical evolution of work	72
2.5.1 Contemporary accumulation and the labour process	74
2.5.2 Existing local labour market conditions	77
2.5.3 The nature of the product market and industrial organisation	78
2.6 Conclusion	80
 <u>CHAPTER 3: THE BACKGROUND TO OFFSHORE FABRICATION IN THE NORTH EAST: THE EMERGENCE OF AN EMPLOYMENT SYSTEM</u>	
3.1 Employment structure prior to North Sea oil developments	82
3.2 Industrial structure and product market development within the employment system 1850-1939	84
3.2.1 Shipbuilding	85
3.2.2 Engineering	94
3.3 The development of the capital structure in the North East to 1939	100
3.4 The development of the employment system in the coastal districts 1850-1939	105
3.4.1 The forging of a craft identity: labour process development, local labour market structure and craft regulation.....	105
3.5 The erosion of an employment system, 1939-1970	121
3.5.1 Shipbuilding	121
3.5.2 Structural Engineering	124

3.6 Employment change in the post-war era	126
3.7 Concluding Comments	131

CHAPTER 4 THE ROLE OF THE NORTH EAST IN OFFSHORE OPERATIONS

4.1 The nature of the oil supplies market in the North Sea	142
4.1.1 The fluctuating fortunes of the offshore supplies industry	143
4.1.2 Varying degrees of dependence upon offshore operations	147
4.1.3 The nature and longevity of offshore contracts	148
4.2 The structure of the offshore supplies industry	150
4.3 Operating at the margins: the fabrication industry in the North Sea	155
4.4 The role of the North East within the offshore industry	159
4.4.1 The magnitude of oil impact	161
4.4.2 The development of the fabrication industry in the North East	166
4.4.3 From boom to bust: the fabrication industry in the 1980s	173
4.5 Concluding Comments	181

CHAPTER 5 INTEGRATION AND ACCOMMODATION: THE RELATIONSHIP BETWEEN THE OIL INDUSTRY AND THE EMPLOYMENT SYSTEM IN THE NORTH EAST

5.1 The post war employment system	200
5.2 The introduction of the oil industry to the employment system	203
5.2.1 The labour market situation and developments in labour relations during the 1970s	203

5.2.2 Regulating the offshore industry in the aftermath of the oil boom	208
5.2.3 The organisation of labour in production	213
5.3 The restructuring of the employment system: on the market in the 1980s	220
5.4 The role of fabrication firms in the changing employment system	234
5.4.1 Changes in working practices during the 1980s	235
5.4.2 Recruitment strategies and the reconstitution of the supply side under offshore fabrication	244
5.5 Concluding remarks on the nature of the labour process, power relationships in the labour market and the reshaping of the employment system in the North East	254

CHAPTER 6 THE RELATIONSHIP BETWEEN FIRMS AND WORKERS IN OFFSHORE FABRICATION

6.1 A marriage of short term convenience: B.T.R, Charlton Leslie and the offshore industry	263
6.1.1 The development of Charlton Leslie Offshore	266
6.1.2 Declining fortunes and a false new dawn: the post 1986 environment	268
6.2 Labour force structure and the nature of employment relations at Charlton Leslie	272
6.2.1 The "as and when required" principle	273
6.2.2 A note about employment relations at Charlton Leslie: easy come - easy go	277
6.3 Strategic withdrawal at Whesoe	281
6.4 The organisation of labour	288
6.5 Redpath Offshore: in the shadow of	

Trafalgar	293
6.5.1 The development of Trafalgar House's offshore operations	293
6.5.2 The consequences of merger on Teesside	296
6.6 Getting by with a little help from our friends: the organisation of labour at Redpath	297
6.6.1 The white collar internal labour market	298
6.6.2 The uncertainty spectrum: blue collar labour organisation	303
6.7 Concluding comments	308

**CHAPTER 7 CONCLUSION: OFFSHORE FABRICATION
AND DEVELOPMENTS IN THE EMPLOYMENT SYSTEM
1970 - 1990**

7.1 Introductory Remarks	317
7.2 The political economy of North Sea oil related developments in the North East	318
7.3 The changing nature of employment under offshore fabrication	319
7.4 The changing employment structure: a declining core and widening divisions within the labour market	325
7.5 Failing the training test: government policy and labour market realities	328
7.6 Reinterpretating employment change	332
7.7 Stabilising the employment environment: reversing the decline in the North East	334

<u>BIBLIOGRAPHY</u>	341
----------------------------------	-----

APPENDICES

1. Location of North Sea Oil and Gas Fields 1985	366
--	-----

2. The Geology of the North Sea Basin	367
2. The Research Process underlying the Thesis	369
3. Index of Abbreviations	385

PREFACE

The purpose of this thesis is to explain the impact of the development of North Sea oil related forms of activity upon employment in the North East of England. Since the late 1960s, the region has been an important location for the construction of equipment for the offshore oil and gas industries. Although these North Sea oil related developments have brought net gains in employment to the region, during a period in which traditional manufacturing activities experienced declining fortunes, this situation cannot simply be described as a "new jobs for old" scenario. Whilst there has been much that is "new" to the region as a consequence of the arrival and subsequent establishment of the offshore construction industry in the North East, there has also been a surprising degree of continuity with traditional forms of employment.

To understand this situation, the argument advanced here is that oil-related developments need to be analysed in the context of past and existing forms of work organisation in the North East. In adopting this position, the conceptual framework that is used in the following chapters is identifiable with a growing tendency, within the social sciences, to place contemporary patterns of change in the organisation of work within an historical context.¹

In the past twenty years, the United Kingdom (and the "advanced industrial" world in general) has witnessed a

¹Like any work of this length there are marked differences between the research project as it was initially conceived and the final form of this thesis. The changes that have occurred in the intervening period are a reflection of both force of circumstance and the development of the author's own methodological perspective. An account of these developments is given as an appendix.

period of dramatic employment restructuring, unprecedented since the 1930s. Dramatic shifts in the wider world economy have wrought havoc to specific industries and regions within the United Kingdom, resulting in the decline of large sectors of manufacturing industry and the return of mass unemployment in many areas. Even for those companies and individuals, that have escaped the worst effects of recession, there have been significant changes to the way in which production is organised, and as a corollary of this, to what "being in work" actually means.

Responding to these events, a significant debate has developed within the social sciences about the most appropriate conceptual framework for the analysis of employment change. The intensity of this debate signifies the inapplicability of existing theories and models, within the neoclassical and behavioural traditions, to explain contemporary economic and social restructuring.

Probably the most useful outcome of this debate has been the recognition amongst the more radical approaches that surface level changes (at the empirical level) in the organisation of employment need to be firmly grounded within the context of underlying capitalist social relations. Explanations of change need to demonstrate awareness of both the structures underpinning, and the relationships within, production. In addition, the recognition that these structures and power relations exist necessitates that analyses are firmly located in historical context. Put simply, if something is claimed to exist it then becomes necessary to describe and understand its historical formation.

In the case of this study, incoming oil companies were confronted with a particular form of work organisation in the North East of England that was a legacy of the region's

historical economic development. To understand the outcome of the oil-related impact upon this "employment system"² it is firstly necessary to understand the latter's historical foundation. In the following chapters therefore, the nature of incoming oil-related activity is not viewed in isolation from past processes of capitalist development within the North East, but is instead set (and indeed can only be understood) within this particular socio-historical context.

The new employment opportunities, brought by the discovery of oil (and to a lesser extent gas) in the North Sea during the 1960s, were set against a background of long term economic decline in the region's traditional industries. In the 150 years prior to the arrival of oil-related activities, the employment experience within the North East had been dominated by the development of a narrow range of industries under the capitalist mode of production. Outside of the coalfield areas, the principal industrial developments were associated with the coastal strip, and in particular the rivers of the Tyne, Tees and Wear. In these areas the early development of iron and steel activities led to the creation of a manufacturing sector, that was to become dominated by the "heavy" industries of shipbuilding, mechanical engineering and structural engineering, to the detriment of more diverse forms of economic development. With the gradual decline of this industrial base during the twentieth century, through a failure to introduce an adequate level of capital restructuring in response to increasing overseas competition, the region became increasingly peripheral to the process of capitalist accumulation.

²A term that is developed in Chapter 2 to describe the historical evolution of work in a specific regional industrial context.

Accompanying the growth of these industries, the North East witnessed the development of a particular form of work organisation; the principal features of which were a craft-based production process and a local labour market structure in which the vast majority of workers remained marginalised from permanent employment. The historical evolution of this form of work organisation was marked by its resilience to change, either within the production process or in the structure of the labour market. Indeed any changes to the nature of employment tended to be slow and incremental, rather than involving any fundamental transformation of the physical process of production or the social relations underpinning it.

The advent of oil activity, whilst on the one hand representing a new market for the region's ailing industries, also brought to the North East a new set of capitalist social relations. Control over production became increasingly external to the region, taking place within the context of the international oil industry. Under these circumstances one might have expected there to be dramatic changes in the organisation of production and employment relations within the region. The situation however has been rather more complicated and whilst those firms that have engaged in oil-related activity have experienced substantial reorientation within the global capitalist system, an accompanying process of change to the actual organisation of work has been less discernible. Instead, the forms of employment organisation, brought by incoming oil activities (particularly with regard to the offshore construction industry), are more remarkable for their similarities to the "traditional way of doing things". In fact, as the following pages will demonstrate, the present pattern of labour organisation in the offshore construction industry is heavily influenced and indeed underwritten by past forms of

employment. This concern, to integrate oil related developments within the context of past processes of change within the North East, is subsequently reflected in the structure of this thesis.

Chapter 1 begins by tracing the development of the international oil industry, examining firstly how the majors came to dominate the global oil market, before tracing the background to the emergence of OPEC as the major price determinator in the industry. The development of North Sea resources is seen as one strategy employed by the multinationals in their attempt to retain global hegemony in the international industry, against the background of the OPEC revolution in the 1970s. The role of the British state, in pursuing a rapid depletion policy to improve its ailing macroeconomic position, happily coincided with the interests of the multinational oil companies. The implications of these events for the structure of the oil industry within the North Sea and the consequences for regional policy are then considered. The chapter concludes by suggesting that not only have the politicians given scant regard to the implications of oil developments for patterns of employment change in depressed peripheral industrial regions, but there has also been a deficit of academic work on the subject. Such stark realities provide the justification for this study.

Chapter Two examines the various recent theoretical approaches to the study of employment, evolving from both neoclassical theory and the Marxist theory of the labour process. Evolving from neoclassical theory, recent work from the labour market segmentation tradition is seen as an important contribution to the study of employment, recognising the diversity of forms of labour organisation across different industrial sectors. However it is argued

that even the most recent contributions within this tradition do not fully take on board the significance of underlying social relations in structuring employment organisation.

The historically constructed labour process theory is seen as a better means of explaining contemporary and past trends and processes within the labour market. However departing from Braverman's (1974) viewpoint, the labour process is not viewed in terms of a dominant form of organisation, underpinned by a dominant paradigm such as mass production, but as a more open ended process that can take upon a variety of forms, conditioned by specific social circumstances. The concept of an employment system, representing the integration of labour process theory within a broader segmentation framework, is then introduced to represent a less rigid framework for the historical analysis of work organisation.

Chapter Three uses the conceptual framework elaborated upon in Chapter Two to place the arrival of North Sea oil related activities, in the context of past industrial development within the North East of England. North Sea oil impacts did not occur in a vacuum but partially compensated for the severe post war decline of the traditional markets of the shipbuilding and engineering industries within the North East.

The evolution of these industries and the employment structures that accompanied them, prior to the advent of North Sea oil in the late 1960s, are therefore the dominant concern of this chapter. The principal theme to emerge from this analysis is the absence of any fundamental elements of restructuring, either in the methods of production, or in the organisation of labour, since the beginnings of

largescale capitalist industrial development during the latter half of the nineteenth century.

Having outlined the two important underlying processes responsible for the nature of the oil impact in the North East, **Chapter 4** places the offshore oil industry within the region in context. This begins with an analysis of the nature of the product market, and subsequently the structure of the offshore supplies industry. Put simply, the oil companies have attempted to pursue vertical disintegration strategies, amongst their suppliers, to compensate for the dynamics of the product market. Nowhere is this situation more prevalent than in the fabrication sector of the offshore supplies industry, the area that has become the most significant for the North East.

In the second part of the Chapter, the role of the North East, and especially the aforementioned fabrication sector, is expanded upon. The analysis emphasises the peripherality of the region to the core oil activities and the fluctuating fortunes of its fabricators as a result of the uncertainties inherent in the oil market. The strategies of the oil companies and their consequences for the North East are also considered, i.e. as a marginal location within the international oil industry.

In **Chapters 5 and 6** the implications of this chaotic market environment for contemporary patterns of labour organisation are analysed. Whilst Chapter 5 examines labour market trends and underlying processes of change at the level of the local labour market and regional employment systems, Chapter 6 focusses upon the role of labour strategies within individual firms in the organisation of work. This allows us to trace important changes in the nature of work and the employment experience, wrought by North Sea oil developments

at the general level, whilst at the same time examining the specific constraints facing individual firms.

What emerges from this analysis is the complex interplay of managerial strategy (conditioned largely by corporate and product market forces) with existing social structures in restructuring employment systems. Whilst initially offshore firms drew upon traditional employment mechanisms in the organisation of work, their strategies of casualisation and short-termism have interacted with wider economic trends to transform the nature of contemporary employment organisation within the North East. Thus firms are both reactive and creative/destructive in their relationship to employment structures.

In the concluding chapter the various strands of the argument are brought together. This involves charting in brief the processes of employment change, and their consequences for new divisions of labour within the North East. We note how the lack of effective state policy in the oil industry has left the development of North Sea resources firmly in the hands of the private sector. Consequently development decisions are made according to corporate strategy, rather than in terms of a well-defined national, or perhaps more poignantly a regional, strategic interest.

Against the background of wider industrial decline, and under the prevailing political economy of the British North Sea oil sector, the arrival of the offshore fabrication industry in the North East has helped to transform what was a relatively stable post-war employment regime into a dynamic labour market environment. Under these circumstances, firms have been forced to adopt labour strategies that marginalise large sections of the workforce, around a shrinking, but highly skilled core. With the break

down in the training environment, commonly manifested in the rundown in apprenticeship schemes, again a consequence of unfettered market forces, a possible scenario for the future is likely to be severe skill shortages coinciding with high levels of unemployment.

In the penultimate section of the conclusion, the implications of the research findings are used to signpost the direction for future work into the area of employment change. The main lesson to emerge from this study, it is argued is the diversity of historical experience that exists across the arena of capital accumulation.

Finally, we suggest that the offshore fabrication industry, as it stands, cannot hope to resuscitate the North East's declining economy, but is able to offer an alternative avenue for development. This involves the consolidation of existing employment structures, by building upon traditional informal mechanisms, through the formation of regional combines geared increasingly towards a production for long term European wide strategic interest, rather than for profit.

LIST OF TABLESCHAPTER 1

1.1 Summary of the changes in the concentration of the international oil industry 1953-72	37
1.2 Changes in revenue regimes between multinational companies and selected producer countries	38
1.3 The share in energy consumption by major fuels 1950-89	39
1.4 U.K. Licensing rounds	40
1.5 Levels of production from major fields in the British Sector of the North Sea since 1976	41
1.6 The North Sea oil Balance of Payments impact	42

CHAPTER 3

3.1 Employment structure in the Northern Region, 1971	133
3.2 Shipbuilding Output in the North East 1870-1900	134
3.3 Industrial Concentration in British Mercantile Shipping	135
3.4 Teesside Bridge and Engineering Works' Profits, 1920-29	136
3.5 Size of Shipbuilding Works in 1951 (Northern Counties)	137
3.6 A Comparison of Wage Rates in Shipbuilding and Other Selected Industries, 1914	138
3.7 Wage Rates of Structural Engineering Trades on Teesside and Darlington, Compared to Other Selected Workers, 1938-39	139

CHAPTER 4

4.1 The Extent of Offshore Supplies	
Contracts in the U.K.	186
4.2 Initial Capital Requirements for the Forties Project	187
4.3 Expenditure on Fabrication Projects Compared to Total Development Costs on North Oil and Gas Projects	188
4.4 Offshore Turnover in the North East 1985	189
4.5 U.K. Based Companies Competing for Oil/Gas Platform Contracts 4.4.74	190
4.6 Investment in the Upgrading of Yard Facilities during the Mid 1980s by U.K. Fabrication Firms	191
4.7 Capacity in Offshore Fabrication Yards June 1988	192
4.8 Turnover for Selected North Eastern Companies, 1988-89	193

CHAPTER 5

5.1 Employment Change in Shipbuilding and Offshore Construction on the Tyne, 1981-7	257
5.2 Wage Rates from Selected Companies and Offshore Average for Skilled Workers	258

CHAPTER 6

6.1 Charlton Leslie's Annual Turnover, 1987-88	311
6.2 Whessoe Plc: Turnover, Profits (pre tax) Dividends and Employees 1985-90	312
6.3 Onshore Contracts undertaken at Whessoe's Offshore Yard, 1979-84	313

CHAPTER 7

7.1 Numbers achieving Certificate of	
--------------------------------------	--

Craftsmanship in North East, 1976-85	339
--	-----

LIST OF FIGURESCHAPTER 1

1.1 The Changing Nature of World Oil Supply	
1973 - 1989	43
1.2 The World Oil Price 1973-90	44
1.3 U.K. Oil Production 1975-90	45
1.4 The Oil Impact upon the U.K. Current	
Account 1973-80	46

CHAPTER 3

3.1 The British Share of World Shipbuilding	
1892-1914	140

CHAPTER 4

4.1 The Real Price of Oil 1965-85	194
4.2 Expenditure Costs in the North Sea,	
1980-9	195
4.3 The Location of U.K. Fabricators	196
4.4 Employment Change in Industrial Plant	
and Steelwork in the North East's Coastal	
Districts	197

CHAPTER 5

5.1 The Rising Number of Unemployed in the	
North East's Coastal Districts June 1978-	
December 1981	259
5.2 Number of Trainees compared to Total	
Skilled Employment in Industrial Plant and	
Steelwork in Gt. Britain	260

CHAPTER 6

6.1 Organisational Structure at Charlton	
Leslie	314
6.2 Employment Change in the Basic Trades at	
Whessoe: October 1987-February 1988.....	315

6.3 The Position of Redpath Offshore within Trafalgar House	316
6.4 The Dynamics of Employment Structure at Redpath Offshore	317

CHAPTER 1
GLOBAL CHANGE AND LOCAL IMPACT IN THE OIL INDUSTRY

1.1 Introduction

The international oil industry is often held up as the archetypal example of capitalist development in the twentieth century. But whilst it is certainly an important strategic sphere of capitalist relations, this very fact has resulted in a unique pattern of development. The strength of its importance to successful capitalist operations accounts for the extent to which governments have been prepared to intervene, at an international level, to ensure regular and stable supplies to their domestic economies. At the same time, the large-scale exploitation of oil has only been possible through the early development and sustenance of large corporate entities, whose earnings and scale of operations are often larger than those of medium sized developed countries.

This chapter will place the development of the political economy of North Sea oil within this wider context. To achieve this, it is first necessary to understand the historical evolution of the oil industry and the restructuring that has occurred in the wake of the OPEC "Revolution" of the early 1970s. The exploitation of North Sea resources is seen as one of the responses to this restructuring process.

The remainder of the chapter will then chart the evolving political economy of North Sea oil, and (in brief) the implications this has for the development of the offshore supplies industry. In conclusion the regionally specific nature of the industry is noted, and the similarities with past forms of economic activity in the North East of

England.

1.2 Changing structures in the international oil industry

The development of the international oil industry has long been associated with the emergence of the "Seven Sisters" (Standard Oil's offshoots: Exxon, Mobil and Socal; Gulf, Texaco, B.P. and Shell). Up until 1968 these companies still retained a large degree of control over 80% of world production (outside of North America and the Communist Bloc), 70% of world refining capacity and 56% of the world's marketing facilities (al-Sowayegh.A, 1984: 10).

Below the surface however, the "Sisters" power had long since been eroded by the emergence in the international arena of other large American companies such as Amoco, Continental and Occidental. In tandem with the development of these private companies, various state supported concerns such as E.N.I. in Italy and Petrobras of Brazil were becoming increasingly important players on the international stage. Although the "Seven Sisters" has become a meaningless term, the role of the multinational, in a wider sense, remains dominant, whether epitomised by the actions of older international corporations, such as B.P, younger ones, such as Amerada Hess, or state sponsored entities (e.g. the Kuwait International Oil Company).

The centralisation and internationalisation of capital within the oil industry can be subdivided into three stages: the period up until 1945 when the "Seven Sisters" colluded to dominate the industry, supported by the imperialist tendencies of certain western governments; the post-war era, during which the oil market experienced a gradual process of restructuring, that was to culminate in the O.P.E.C. revolution; and finally, a phase after 1973, when the tumultuous events of that year forced the various oil

companies to pursue alternative strategies, to protect their capital interests from other emerging actors within the oil industry.

1.2.1 Monopoly Capitalism and the development of the international industry 1880-1945

The large-scale exploitation of oil was not possible until the development of drilling technology, capable of retrieving oil from great depths under the earth's surface. The credit for this technological breakthrough, is usually given to Edwin Drake, whose revolutionary drill bit reached depths of 650 feet below the surface of the Pennsylvanian Coalfield, in 1859. At the time, the principle market for oil was as a replacement for coal in kerosene lamps. Not only was oil increasingly recognised as a cheaper and more efficient form of energy, but it was also much easier to handle and distribute from supply areas. Consequently, during the last one hundred years, oil has gradually overtaken coal as the principle form of energy in the transportation and electricity sectors of most industrialised economies.

More specifically, it was the advent of the internal combustion engine, that was most significant for the future growth and strategic importance of the oil industry within the context of twentieth century capitalist development. In particular, the rapid growth of the automobile industry during the early decades of the twentieth century, within the United States, associated with the introduction of the production line was a major factor in the exponential increase in the demand for oil. As Baran and Sweezy (1966: 217), in their seminal work, note:

"The petroleum industry, with more capital investment than any other American industry, is in large part a creation of the automobile.."

In their view (1966: 215-243), the automobile was the last in the line of three major technical innovations (the others being the steam engine and the advent of the railway system), into which the surplus arising from monopoly capitalism could be channelled, to ensure the continuation of the prevailing mode of production. In this context, the importance of oil to the development and sustenance of the capitalist mode of production cannot be overemphasised. If the automobile is held up as the motor of growth for the major part of the twentieth century, then petroleum has certainly been the lubricant.

The strategic importance of oil to the development of twentieth century capitalism¹, added to the tendency for the rate of profit in the oil market to rise disproportionately, through economies of scale, accounts for the extent to which capital became highly concentrated and centralised within the industry at an early stage.

In the United States, the oil market during the 1860s was inherently unstable as thousands of small producers undercut each other to maintain market share. John D. Rockefeller, quick to realise the benefits to be achieved through vertical integration, set about stabilising the market, through the mechanism of refining operations. Between 1870 and 1880, Rockefeller's company, Standard Oil of New Jersey, pursued an effective purchasing policy (with regard to refinery capacity) until by the latter year it controlled 90% of the U.S industry. By establishing a monopsonist position within the market, he was able to achieve effective

¹Mandel (1962: 393-4) has even suggested that the United States' early abundance of petroleum resources was a major factor in its displacement of the United Kingdom as the world's principal economic power during the first half of the twentieth century.

control over the fledgling American oil industry²

Although the break up of Standard Oil by the U.S. government in 1911³ represented an attempt to arrest the oil market's tendency towards concentration and centralisation, the measure proved to be no more than a temporary reverse. Within a few years, even the offshoots of Standard Oil were suspected of colluding in a covert manner regarding strategic aspects of the oil market. As Roncaglia (1985: 51) remarks:

"Senate documents from 1914 still refer to the "invisible government" of Rockefeller and his partners, and in 1915 a commission of inquiry concluded that the concentration of ownership of the shares in the new companies born out of the Trust were so similar to the pattern of shareholding in the old Standard Trust that it constituted a restraint on competition."

Despite the hysteria generated, regarding its size and control over the national oil market, it is unlikely that Standard would have realised a situation of absolute monopoly. Whilst in the early years, when oil production had been concentrated primarily on the Pennsylvanian coalfield, it had been able to establish control with relative ease, it

²Standard Oil is best perceived as the forerunner of, and standard bearer for United States multinationals in the twentieth century. As Baran and Sweezy (1966: 198) have since noted:

"It thus appears both from the record of the past and from the plans and hopes of the future that American corporate business has irrevocably embarked on the road long since pioneered by Standard Oil. Standard is still the model of a multinational corporation, but it is no longer an exception. It simply shows us in the most developed form what the other giants either already are or are in the process of becoming."

³The U.S. Supreme Court, acting on the basis of the 1890 Sherman Anti-Trust Act, had decreed that Standard Oil should be divided into 34 independent companies, in the interests of competition.

was slower to pursue the opportunities presented by the availability of supplies elsewhere (see Williamson, Andreano, Daum and Close, 1963). Instead, other companies were able to establish powerful bases, by capitalising on the various sources of supply then being discovered. In particular, Gulf and Texaco (as their names suggest) became prominent in the increasingly important producing regions of the Gulf Coast and Texas.⁴

Outside the United States, Standard Oil had already attempted to establish itself in the European market during the last decade of the nineteenth century, aware of the importance in maintaining its hitherto dynamic rate of expansion. However, as in the U.S, its attempts at market domination were hindered by the existence of other actors, whose entry into oil operations had been achieved through the harnessing of large-scale resources elsewhere.

In particular, the formation of Royal Dutch Shell, in 1907 a merger of British and Dutch imperial interests, utilising extensive reserves in Russia and the Dutch East Indies, was principally a protective action against the growing international threat of Standard Oil.

Another important corporate entity, Anglo-Persian (B.P.) was established in 1914, when the British government became aware of the increasing strategic importance of oil for both

⁴As a consequence of the establishment of such powerful domestic bases, these companies were subsequently able to pursue their expansionist interests in the international arena, albeit having a smaller range of operations than the various Standard Oil offshoots. Gulf's international interests were principally associated with Kuwaiti oil development, whilst Texaco embarked upon a succession of ventures with Socal in Latin America.

its domestic and imperial interests. As a result, the state became a "sleeping" partner in the company, providing the finance to exploit the rich oil potential of the Persian fields. Similarly, the French company, Compagnie Francaise de Petroles was given backing by its national government to develop the Mesopotamian oil fields. (C.F.P. is often referred to as the "eighth major", although its operations were on a smaller scale than those of the other majors.)

The 1920s were characterised by a series of confrontations between the majors as international competition intensified. These disputes partially reflected the growing American challenge, both politically and economically, to the older European colonial powers. In particular, it was the global hegemony enjoyed by British capital interests in the nineteenth century that was under threat (Baran and Sweezy, 1966: 182). The most important disputes concerned attempts by the U.S. majors to gain access to the emerging large-scale oil province in the Middle East, which was largely the preserve of the European companies.

The structural changes wrought in the world political economy by the effects of the Great War, 1914-1918 (in particular, the displacement of Great Britain by the United States as the major economic power) were reflected in the drawing up of the Achnacarry Agreement in 1928. This document accepted the claims of the Americans and effectively installed an atmosphere of consensus amongst the multinationals by recognising spheres of influence for each major company. More importantly, for the future economic development of the industry, a pricing agreement was negotiated, termed the "Gulf Plus System". The significance of this was that the price of oil at any one trading point would be uniform, irrespective of the point of origin. Thus, oil companies were able to make vast profits from their

Middle Eastern operations (where production costs were comparatively low), whilst at the same time, subsidising their more expensive American operations⁵.

From this point until 1939, the oil industry was effectively run as a cartel of the "Seven Sisters". Indeed new producing areas were often exploited through joint ventures, e.g. the formation of the Kuwait Oil Company by Anglo-Persian and Gulf, or collaboration by Socal and Texaco in the creation of Caltex to develop Arabian oil.

1.2.2 Implicit change in the post-war era

The importance of the Second World War as a destabilising influence on the world capitalist economic system cannot be

⁵This type of monopoly profit is termed "cartel rent". Mandel (1962: 421) explains how the Achnacarry system worked in practice:

"The most striking example of cartel rent as a form of monopoly profit is certainly that of the world oil cartel. An official inquiry published in 1952 by the U.S. Department of Commerce revealed that the "Big Seven" of the oil industry... had over a period of years imposed common prices for the oil produced in the Western hemisphere and that produced in the Middle East, though the latter's cost of production was four to six times lower than that of American oil.

During the war and in 1945, the American navy had to pay 1.05 dollars the barrel for oil, the cost of production of which (including taxes and royalties payable to the local rulers) was 0.4 dollars in Saudi Arabia and 0.25 dollars in Bahrein. The cartel rent was thus 65 cents per barrel produced in Saudi Arabia and 80 cents per barrel produced in Bahrein, which gives a monopoly rate of profit of nearly 200 per cent in the former case and over 400 per cent in the latter...

"In the post-war years these prices were raised to 2.22 dollars, then lowered to 2.03, 1.88 and 1.75 dollars per barrel, without the costs of production having been noticeably changed, with the sole aim of bringing prices into line with those of the American producers."

overstressed. More important than the obvious physical damages to the infrastructure of the western developed countries, were the underlying structural implications for the world economic and political order. Nowhere was this situation more prevalent than in the international oil industry.

Although the majors (at least from all outward appearances) were still dominant within the international oil economy from 1945 until the late 1960s, their stranglehold on oil affairs was gradually weakened during this period, due to changes in the underlying structure of the industry, as Table 1.1 illustrates.⁶

In particular, there were two fundamental processes behind these structural changes: firstly, the collapse of colonial rule in various parts of the globe, and subsequently the gradual emergence of the OPEC producer nations as important actors within the international oil industry, and secondly, the reconstruction of Western Europe, based upon oil and sponsored by the United States (through the auspices of the Marshall Plan).

The breakdown of colonialism and the integration of producing regions into the World Capitalist System

The weakening of the western powers' grip on their colonies, in the aftermath of the war, allowed the latter to pursue forms of political and economic independence, often with the tacit support of the United States. Within the oil industry, this development was especially pertinent in the increasingly important producing regions of the Middle East.

⁶N.B. The tables and figures for this thesis are located at the end of the respective chapters.

As Bina (1985) notes, the growth of the producing countries as a dominant force in the world oil market can only be fully appreciated through an awareness of the changing relationship between them and the major oil companies in the post war period. In particular the exchange relations between the two parties underwent a fundamental change, away from a predominantly pre-capitalist regime towards full integration within the framework of the wider international oil market.

During the pre-war period, concession rights granted to oil exploration companies were in the form of property rights for which a royalty was received, rather than the granting of exploration rights for a particular area. Decisions made by the sovereign power over the granting of concession rights were often in accordance with pre-capitalist values. Bina describes the situation at that time (1985: 24):

"..the financial obligation of the oil companies to the ruling authorities during the early period represents a primitive form of economic royalty and the genesis of oil rent today. The origin of this primitive form... was the existence of old property relations in conjunction with the political climate within which the surrender of property rights had taken place."

In the period up until the OPEC crisis, the relationship between the international oil companies and the major producing nations underwent a period of transition, towards full integration within international capitalist social relations⁷. In particular 50-50 profit-sharing schemes, reflecting producer countries' concerns about issues of sovereignty, were gradually imposed upon the companies to

⁷OPEC was formed in 1960 in response to the oil companies unilateral decision to reduce the "posted price" of oil on the world markets in the face of a "glut". At the time, this did not constitute a radical attempt to change the structure of the industry, but rather to stabilise the revenues of producer countries.

replace existing royalty schemes. By the early 1970s these changes were widespread, as Table 1.2 illustrates.

The reconstruction of Western Europe: the changeover from a coal-based to an oil-based economy

A second contributory factor to the restructuring of the international oil industry was the growth in importance of the demand within Europe (and Japan) for oil products.

The rebuilding of Western European economies was largely achieved through the switch away from coal to oil (Odell, 1986)⁸.

The importance of this new development was twofold. Firstly, the new sources of supply that became available, to match the increased demand, were often in areas outside the control of the majors, e.g. in North Africa and Nigeria. Secondly, as their economies became increasingly dependent upon imported supplies of oil, European consuming nations sought to reduce their dependence upon the multinational oil companies either through the establishment of state oil companies, or by championing the interests of domestically based oil companies abroad (Tanzer, 1974: 78-91).⁹ This situation coincided with the emergence of formerly domestic

⁸The switch to oil had been fostered by the terms of the Marshall Plan (for economic aid to Europe) which insisted that the price of oil should be reduced to reflect true costs. Prior to this, oil prices had included the cost of transportation from the Mexican Gulf, irrespective of the source of origin.

⁹In many countries there was also an expansion in refinery capacity so that they could benefit from the high value added during the production process. An alternative means of avoiding the control of the majors was demonstrated by West Germany, which pursued a policy based upon the increased import of Soviet oil.

oriented U.S. companies, at the international level.¹⁰ Before 1945 only six non-majors were involved in international exploration, but by 1953 twenty-eight U.S. companies were working in this field (Ghadar, 1977: 7).¹¹

1.2.3 The OPEC revolution and its aftermath

As Bina notes (1985: 110-119) the OPEC revolution represented the climax to a period of implicit, but fundamental change, rather than a process of restructuring itself. It also marked the beginning of the "Era of Integrated Oil Operations" (Bina, 1985: 27) following an extensive transition period. At the same time, the ability of the OPEC countries to express themselves as fully-fledged capital entities would not have been possible without the element of developing European demand and the accompanying weakness of the "Sisters's" position illustrated by Table 1.2.

The rise of OPEC

Notice of OPEC's intention to achieve control over upstream oil operations had been served in the form of a "Declaratory Statement" in 1968. This represented the culmination of what Bina would describe as the transitional phase of

¹⁰For a detailed account of this process see Jacoby (1974: 120-149).

¹¹Several factors were responsible for this development:

- (a) U.S. government taxation policies such as the "depletion allowance" encouraged companies to engage in overseas operations.
- (b) "Independents" were encouraged to enter by producing countries, determined to loosen the grip of the "sisters" (Sampson, 1975: 140-155).
- (c) Finally technological changes that made exploration cheaper in real terms, reducing the "economies of scale" effect, which had initially contributed to increasing centralisation of control within the industry.

international oil operations¹². From this time onwards, oil operations within the OPEC countries were to be fully integrated into the global capitalist economy, whilst the controlling forces in these areas became important actors in the international oil market. As Bina writes (1985: 115):

"Since 1970 the international oil industry developed into an organic entity composed of different oil regions of the world. The consequence of such a development was a major reorganisation through crisis that swept through the entire structure of the oil industry at the global level. Therefore the oil crisis of 1973-74 was historically the first economic crisis of the oil industry at the international level."

The first phase of this reorganisation occurred in the period from 1968 to 1973 with negotiations between the oil companies and the various governments, concerning the price structure of the oil market. The issue was over posted prices in the oil market, traditionally the principle method of control prior to the era of fully integrated production.

During this period, OPEC achieved small increases in the price of oil after negotiations with the oil companies. At the same time, Libya (the world's largest oil exporter outside the Soviet Union and especially important as a

¹²Despite the general excellence of his analysis, Bina does not satisfactorily account for the aggressive change in attitude by the OPEC countries. Whilst there is not the space here to investigate this issue in detail, one should stress the importance of the social reproduction process in altering the perceptions of actors in this situation. There is little consideration given to the fact that the old decision makers of the colonial world (in the OPEC countries) had largely been replaced by a new generation more familiar with the workings of capital. Thus, Libya's radical policies after 1969 have to be seen in the light of the overthrow of King Idris and his replacement by the regime of Qadhafi in that same year. Similarly Saudi Arabia's policies in the 1970s were shaped by Sheik Yamani, probably the most poignant example of this "New Wave" of thinkers.

source of supply to Western Europe) unilaterally nationalised the marketing side of the industry and successfully imposed stricter production limits upon the international companies. Its lead was followed by similar policies from the Algerian government.

But the situation changed fundamentally on October 16th 1973, when OPEC unilaterally announced a 70 per cent price increase¹³. This event coincided with action by certain Arab producers, i.e. withholding oil supplies, against pro-Israeli western consuming nations during the Yom Kippur War. OPEC's success in both these ventures established the organisation as the principal determinator and administrator of the price of oil on the world market.¹⁴

¹³This measure circumvented the posted price system and introduced the "spot market" as the principle determinant of international oil prices. This was a crucial moment, representing as it did, the first instance of OPEC countries acting independently of the multinational companies in an oil market and secondly, the full integration of the oil market into the capitalist market system of exchange. Prior to this, the agreements reached between Arab producer countries and the oil companies had still contained elements that were a throwback to the colonial age.

¹⁴One theory especially popular amongst Europeans during the 1970s (Chevalier, 1975) was that the United States covertly supported the measures adopted by OPEC. Its import quota policy had supported inefficient domestic producers during the 1960s, keeping U.S. fuel prices well above those of her main competitors. Therefore rising prices in the international oil market helped to improve the competitiveness of U.S. firms. However this seems unlikely, given the obvious effect of a regime of rising oil prices on the wider U.S. economy, heavily based, as it was, on petroleum. Indeed the U.S. suffered a depression in its major manufacturing areas several years earlier than Europe, where state intervention in ailing industrial sectors proved to be more durable.

The organisation maintained this hegemony (with the tacit support of the majors) over the oil market up until the second major price shock (1979/80), when the diversification strategies of multinational capital into other oil regions (aided and abetted by Western nations) was to undermine the position of OPEC (El Mokadem et al, 1984).¹⁵ They were to benefit in this respect from the discovery of large energy supplies in hitherto unexploited regions such as Alaska and the North Sea during the 1950s and 1960s. But only after the restructuring of the oil market and the subsequent price increases of the 1970s were these high cost oil provinces considered viable.¹⁶

OPEC's price increases of the late seventies underestimated the changing structure of the oil market, and in particular the growth of other suppliers (see Figure 1.1) Prices rose from a range of \$12-14/barrel in 1978 to \$31-43/barrel by the end of 1980. But, as a result, non-OPEC oil became considerably more competitive in an increasingly "soft" market with OPEC losing its role as the main price determinator to the international "spot" market (Ahrari, 1985; Gately, 1986).¹⁷

¹⁵The strategies of the international oil companies also included diversification away from the oil sector, particularly into mineral and metal extraction during the 1970s and 1980s (Mikdashi, 1986: 13-14).

¹⁶Multinational companies also intensified their interests into downstream activities such as petrochemicals, and alternative sources of energy, e.g. ESSO's involvement with oil shale developments in Australia, Texaco's work on gasohol and coal gasification (Croll, 1980).

¹⁷The role of the international companies, in restructuring the oil market, was crucial in this respect. They were primarily responsible for the exploitation of alternative sources of energy, that had previously been unprofitable. Following the events of 1973-4 the real price of oil fell on the world market, thus reducing this new

Since 1980 OPEC producers have attempted to reduce output to regain market supremacy without success. This has favoured other more, high cost producers especially the United Kingdom, whose output, from a starting point of zero in 1974, had reached 100 million tonnes per annum by 1983, making it the world's fifth largest producer. OPEC's share of production dwindled from 60% in 1978 to 50% by 1984 (Ahrari, 1985). The market became increasingly unstable during the middle years of the 1980s (prices fell to \$10/barrel in 1986) leading to restructuring amongst the multinationals, the most significant being the takeover of Gulf by Socal. Despite this there are signs that OPEC's long term strategic advantage, given the relative wealth of the Middle East's resources, may lead to a tighter market in the 1990s.

1.3 North Sea Oil in a global framework

The integration of North Sea oil into the system of global oil operations has to be seen in the context of the events outlined above. Since the late 1960s it had been recognised that the region was potentially rich in carboniferous fuels but the high costs of extraction precluded development, whilst the multinational companies could extract large profits and control production in their traditional areas of operation. Thus, it is no coincidence that interest and development expenditures in the area grew substantially in the aftermath of the OPEC Revolution.¹⁸ Not only were the

profitability. With this in mind the second price shock of 1979-80 clearly benefitted the international companies in their new areas of operation, a fact that has led some commentators (e.g. Andreasjan, 1989) to suggest that they engineered the change.

¹⁸Such was the intensity of exploration and development activity in the U.K. sector of the North Sea following OPEC events, that the short time-lag between the first discovery (1970) and first production (1975) was almost unprecedented

international oil companies favourably disposed towards an area that offered opportunities for the production of oil, within an established framework of relatively stable capitalist social relations, but the price increases that accompanied the OPEC restructuring had transformed the economic nature of the North Sea.

Development of the United Kingdom's oil resources has become increasingly dependent upon events in the wider international oil sphere during the 1980s. The lack of government involvement or regulation in the industry (see below) has resulted in the growing strength of international oil operators, who will base their development decisions according to their expected rates of return on ventures elsewhere. The consequence of this is that extraction of North Sea resources (particularly with regard to the more marginal fields) has become almost completely contingent upon the dynamic price of oil on the world's spot markets. This was vividly illustrated during the sharp price fall of the middle eighties (Figure 1.2) when the North Sea experienced its first major slump. We now examine the development of North Sea oil and policy responses in more detail.

1.3.1 The evolution of state policy prior to 1979

In the period following the Second World War, Britain imported increasing quantities of energy. This was associated with a change in the structure of the demand for energy, as Table 1.3 illustrates. Domestic coal gradually lost its position to cheaper imported oil, predominantly from the Middle East. This change in the structure of energy demand was associated with a switch away from a coal based

in oil history.

economy to one powered by more fluid hydrocarbons such as oil and gas. The increasing dependence upon imported oil became especially prevalent following the O.P.E.C. revolution in the 1970s, when inflated oil prices became a major factor behind the growing deficit in the Balance of Payments' Current Account (see Figure 1.3).

Therefore the discovery of oil in the North Sea, not only made the United Kingdom a net energy exporter for the first time since 1945, but also coincided with a period of rapid price increases during the 1970s. Clunies-Ross (1986) reminds us that "United Kingdom oil came in on the crest of a high price wave". Under these circumstances, the issues of energy self-sufficiency and the increased government revenue, arising from the exploitation of North Sea oil, have tended to underpin national policy at the expense of alternative strategies.

The legislative framework for the exploitation of North Sea resources was laid down in the 1964 Continental Shelf Act.¹⁹ This was in response to the discovery of hydrocarbons in the southern sector of the North Sea and at Groningen in the Netherlands. The main rationale behind this legislative

¹⁹The act introduced a licensing system based upon a grid network. Within this network individual blocks (of 250 square kilometres) were allocated to companies on a discretionary basis. Grid systems were also used in Holland (550 square kilometres) and Norway (450 square kilometres), whereas Denmark and West Germany preferred to give exploration rights to individual consortiums.

Initially the bulk of the exploration blocks taken up were in the southern North Sea with gas production under way in the British sector from the Sole gas field (discovered in 1965) by the end of the 1960s. The vast majority of the 475 blocks taken up in the first two rounds (1965 and 1966) were in the southern North Sea.

framework was to encourage a rapid rate of exploration.

At the time, the North Sea was only considered to be a marginal hydrocarbon province. With larger and cheaper supplies available elsewhere, the government, lacking the indigenous expertise in the oil sphere, felt compelled to offer an environment favourable to the large oil multinationals. The clauses relating to the extraction of mineral resources represented an almost wholesale transference of the landward 1934 Petroleum Production Act to the offshore sector. This gave private companies the right to acquire mineral rights under licence from the sovereign power.

In addition, companies were offered a highly favourable taxation regime, a rate of 50-60%, compared to other areas such as the Middle East (75-80%) or Nigeria (70-75%). The annual rental was also kept at a low level: £6,250 per block for the first six years, subsequently rising in £10,000 stages to a maximum of £72,500 (MacKay and Mackay, 1975). To stimulate exploration a total of 2655 blocks (each 250 square kilometres) was made available in the first four licensing rounds, between 1964 and 1970.

During the 1960s the government's primary concern was with the extraction of Natural Gas in the southern sector of the North Sea. But the discovery of the huge Ekofisk and Forties oil fields in more northern waters (in 1969 and 1970 respectively) heralded a new era in the development of the North Sea. This upturn in the North Sea's fortunes was reflected in both the number of blocks on offer and in the number of interested parties in the Fourth Round of licensing (Table 1.4). During this period, the Forties, Claymore and Piper fields were all discovered and declared commercially viable in the Central Graben off the east coast

of Scotland.

Towards the end of 1972 a larger oil province was discovered to the north in the Viking Graben, which included Brent, Maureen and Thistle (see Appendix 1 for a map of North Sea fields up to 1985). By the end of 1974 Argyll, Auk, Brent and Montrose had all been declared commercially viable (Table 1.5 illustrates the levels of production from the major fields since 1975).

The new developments presented the opportunity for a reassessment of government policy which had, up until this point, been characterised by nonintervention²⁰. In an earlier government report (Dept of Trade and Industry, 25.1.1973 "North Sea Oil and Gas: a report to Parliament) four objectives were outlined: to reduce dependence on imported oil; to use the revenue to redress the country's Balance of Payments' deficit; to gain exchequer revenue from rents and royalties; and (almost as an afterthought) to encourage new employment and technology, particularly in Scotland. However the basic political framework for, and underlying rationale behind, oil exploitation did not change during the 1970s. Although legislation was passed, for all practical purposes, policy objectives remained the same. If anything the rapid price rises associated with the OPEC revolution only reinforced government determination to pursue the rapid depletion policy.

Government policy was increasingly dominated by concern over the macroeconomy and tackling the recurring Balance of Payments problem (Table 1.6). As a result the first three objectives tended to override the fourth, oil revenues were

²⁰This was inspite of a Labour Party White Paper (1967) which advocated some degree of state control in the sector.

perceived as a quick and efficient means of putting the country back into the black²¹. Little attention was given to the opportunities presented to ailing sectors of British industry by the market for engineering goods that the North Sea presented. Only in 1974 was the Offshore Supplies Office set up as a reaction to the highly critical International Management and Engineering Group (I.M.E.G.) report in 1972. This had noted that British companies were only achieving a 25-30 per cent share of a market worth £500-600 million. The O.S.O. was given the task of "encouraging" British companies to take advantage of this market. Its principle instrument for achieving this was the "Full and Fair Opportunities Policy" to ensure that British companies were not being discriminated against by foreign oil companies in the granting of contracts. Although more British companies did enter the North Sea market after this point (the share rising to 40 per cent by 1976), they tended to operate in areas that were peripheral to the core of decision making and new technology. In this sense, the FFO can largely be regarded as a rearguard action, which as Cameron (1986: 18) notes:

"...implies a recognition of dependence upon foreign firms in many, if not, most areas."

By the early 1970s multinational oil companies held sway over the North Sea oil market. The absence of government intervention had led to the incorporation of the British

²¹The most obvious and frequently quoted contrast in policy is with Norway (Earney, 1982; Lind and Mackay, 1980; Noreng, 1980). Here, the greater level of government regulation and the slower rate of depletion have been directed towards a conscious effort to upgrade the economic structure of the less developed areas of northern Norway. As Mariussen (1987: 6) notes:

"In Norway, the development of "petroleum regions" through decentralisation of petroleum administration has been instrumental in a decentralization policy."

North Sea into the international capitalist arena. As such the terms of development were decided almost exclusively by large corporations, whose aims happened to coincide with a benevolent British state during the 1970s.

However by the time of the Labour Party's second election victory in 1974, circumstances had altered the international oil situation. Having lost control over the means of production in the OPEC countries, the multinationals were intent on diversifying into other regions. On the new balance sheet, the North Sea (with new and substantial discoveries occurring almost weekly) was now a positive asset. As we have already noted, the huge increases in the oil price instigated by OPEC (see Figure 1.2) had given North Sea oil an acceptable aura of profitability.

In addition to the improved relative economic position of North Sea oil, the stable political situation in the United Kingdom, allied to cultural similarities with the United States (the host nation for the majority of multinationals) further enhanced the international oil community's perception of the North Sea sector.

It was this situation that encouraged the new Labour government to establish a state oil company, under the terms of the Petroleum and Submarine Pipelines Act, 1975. Although, at the time, this decision appeared to herald the onset of a new era, ultimately this piece of legislation proved to be an exercise in cosmetics.

The new entity was to be based upon the Norwegian model, Statoil, with the aim of participating in all aspects of oil activity. It was hoped that such action would limit the power of the international oil companies and ensure the development of marginal fields, that were unattractive to

the private sector. Not only would this prolong North Sea developments but also partially stabilise an historically dynamic market. From 1976 onwards, the company was to have a 51% stake in all future field developments and the government had the legal ability to control the rate of production. Between 1976 and 1979 B.N.O.C. was active in the development of the Thistle, Ninian, Dunlin, Statfjord and Murchison fields.

Although its terms gave the government much scope for intervention to encourage alternative policies (especially linked to regional development within Scotland) in reality the conservative Labour government sought to allay the fears of the private sector, rather than change the terms of reference on which oil production had been based.²² Indeed public organisations established to oversee offshore developments, such as the Offshore Energy Technology Board, were often dominated by oil industry personalities (Jenkin, 1981: 104).

The government remained committed to a policy of rapid development, as the first North Sea fields began to pump oil, until the objective of energy self-sufficiency had been achieved²³. The reality of the situation was that the unstable political and economic climate of the 1970s caused

²²The government also faced a hostile campaign against interventionist policies by various sections of the media, whose sympathies were largely with the oil companies. Indeed in some cases media organisations (most notably the Thomson group) actually had business interests in North Sea developments (McBarnett, 1980).

²³Concern about the rapid depletion rates was expressed by both Conservative and Labour M.P.s at the time (Robinson and Morgan, 1978), but the government persisted in the policy despite protests from other interest groups (especially the Scottish Nationalists).

the government to neglect longer term structural strategies towards oil development. Instead it was hypnotised by the possibilities that huge revenues from North Sea oil offered for solving its short term problems. The government viewpoint was neatly encapsulated in a contemporary article by Adrian Hamilton for the Financial Times:

"Here the new Chancellor, Mr Dennis Healey, told the Commons was the light at the end of the tunnel, the asset against which the country could borrow to see it through its current difficulties. Here, the Energy Secretary informed the Press, was the development which would make the country the strongest energy nation in the West. And here, the Prime Minister told the country, was the God-given asset which the state would control and which would turn the country's difficulties into short-term problems rather than long term disaster."

(Financial Times, 8.1.1975: 9)

It so happened that the government's aims in this respect coincided with the diversification strategies of the international oil companies in the wake of global restructuring. Indeed the level of collaboration with the private sector (especially with B.P.) was such that B.N.O.C. was commonly perceived as an ally of multinational industry, rather than an instrument of state regulation.²⁴

The government's unwillingness to challenge the hegemony of the private sector in the North Sea was perhaps understandable during the sixties and early seventies. It lacked the experience required to develop oil, whilst the Continental Shelf had not proved itself to be a major hydrocarbon province. Additionally the multinational companies retained control over large scale oil assets elsewhere. But in the late seventies, the Labour government

²⁴Indeed the new nationalised oil entity exhibited all the features of state capitalism practised in other sectors of the economy during this period (Beynon et al, 1986).

failed to capitalise on the vulnerability of the international oil companies, in a changing economic and political climate.²⁵

1.3.2 Ten years of "enterprise culture" in the North Sea 1979-89

The election of a radical Conservative government, on the platform of free enterprise, heralded a marked change of attitude towards North Sea developments. Whereas preceding governments in the post war era could be defined within the Keynesian consensus, the Thatcher government was novel in its initial adherence to the concepts of Monetarist ideology. One of the cornerstone's of this approach was the dismantling of the apparatus of state control, which hindered competition in the private sector. As such, the existence of a state-owned oil company was clearly anathema to such a government. Indeed the dismantling of B.N.O.C. had been propounded as part of the 1979 Tory election manifesto.

Despite the nature of its political rhetoric, the new government found it convenient to use B.N.O.C. to surmount its initial economic difficulties. Ironically the corporation was used to bolster the Conservatives' monetarist experiment, e.g. in 1980 B.N.O.C. was persuaded to delay development of the Clyde field, because the capital costs would increase the Public Sector Borrowing

²⁵A note of qualification should be made here with regard to the British political situation at the end of the 1970s. The Keynesian post war consensus had largely become discredited due to the United Kingdom's poor economic performance, and rising levels of unemployment accompanied by a growing inflation problem. As such, a strong state involvement in oil affairs would have been against the tide of opinion in government circles. What Gamble (1988: 174-207) describes as a new hegemonic project was emerging, for freeing the economy from state controls, into which a state oil company did not fit.

Requirement, damaging the government's Medium Term Financial Strategy. The Tories also increased Petroleum Revenue Tax to 70 per cent in 1981, again in pursuance of their M.T.F.S.

After surviving its early economic and political difficulties, the government was able to pursue its radical privatisation policies. The important legislation regarding B.N.O.C. had to wait until 1982, and the Oil and Gas Enterprise Act. This reduced B.N.O.C. to an oil trading role as a private company (the National Oil Account was abolished), whilst the exploration and development interests were incorporated into a newly privatised company, Britoil. The Act also reduced the British Gas Corporation's role as a monopsonist within the North Sea gas market (and privatised its oil interests in the form of Enterprise Oil), whilst at the same time instructing it to sell its interest in the Wych Farm onshore oil field.

The revenue from North Sea oil has largely been used to bolster the government's macroeconomic policies. As a result, the government has supervised a rapid rise in production, as Figure 1.4 indicates. Little consideration has been given to alternative strategies and the government's privatisation policies have left North Sea oil developments largely in the hands of the private sector.

The centralisation of control in the United Kingdom oil sector

The main consequence of the Conservative government's policies in the oil sector has been the increased centralisation of resources amongst the international oil companies. Although, as we have already noted, the international oil companies had risen to prominence in the production of the United Kingdom's energy resources, the opportunities presented by North Sea developments encouraged

the creation of a new category of oil company: the "Independents" (companies solely involved in oil and gas exploration), particularly with regard to the exploration of areas considered marginal by multinationals. The lack of government regulation however has left these minnows increasingly vulnerable to multinational predators.

During the 1960s and early 1970s it was the multinationals that had set the pace in North Sea developments. But following the OPEC price rises in 1973, other forms of capital began to take an interest in the potential of the North Sea oil market, which represented a growth sector offering high profit dividends, at a time when the wider economy was experiencing stagflation. Broadly speaking two types of new investor were brought into the North Sea in the period from 1973 to 1985. Firstly, there were the large conglomerates with interests outside the oil industry, which were attracted by the short term investment potential of the North Sea. As such these entities have characteristically taken up small blocks of shares in individual fields, whilst allowing established oil companies to hold the principal operating position. This type of relationship suits both parties: for a small capital stake, the non-oil concern has widened its investment portfolio, whilst the oil company has an alternative source of revenue and reduced its investment in what remains a risk-laden operating environment (especially compared to its traditional areas of operation). A prime example of this type of operation is B.P.'s Bruce Field, discovered in 1974, whose shareholders presently include Associated Newspapers (6 per cent) and Kleinwort Benson (1.2 per cent).

The second wave of entrants to the North Sea sphere of operations were those that are now collectively referred to as the "Independent" oil sector. This group was particularly

active after the second price shock of 1979, when an increasing number of formerly "marginal" oil fields were declared profitable. As well as Britoil and Enterprise Oil, the Conservative government's privatised flagships of the oil sector, there was the emergence of new enterprises (e.g. Sun Oil), boosted to a certain extent by the government's attempts to encourage small business through its licensing policy. But of more significance to these companies was the favourable oil market environment of the early 1980s:

"All of us had a very significant advantage, not only in being awarded acreage at a time when some of that acreage was prospective and therefore we were able to make discoveries which sustained us, but we had the fair wind of a following oil price... and were able to get the support of shareholders and the city, allowing our shares to remain high and allowing us to use equity financing in large part."

(BRINDEX evidence to Select Committee on Energy, 1988)

Up until November 1985, with reasonably high oil prices, several of these companies were able to establish themselves as oil operators in their own right, through the discovery of unexpectedly profitable fields, often in areas previously discarded by the multinationals. But the drastic price reductions from this point onwards, combined with the end of the first phase of oil activity in the North Sea²⁶, encouraged a period of restructuring amongst the major oil companies. The independents with their highly prized assets, became victims of their own success. Undermined by their plummeting share values on the stock exchange, they

²⁶The middle years of the 1980s marked the peak in U.K. oil production. From this point onwards it was generally recognised that the majority of larger and most profitable fields had been discovered. In the future, development attempts would centre around smaller and more marginal fields, and be more than ever dependent upon the price of oil on the world markets. In this situation the position of the Independents was likely to be increasingly undermined.

presented the ideal opportunity for a takeover wave, which would not only allow the multinationals to re-establish their hegemony in the North Sea, but also enable them to rationalise their own North Sea interests and reappraise their global strategies. Subsequently the number of independents has declined by half to 31 since its peak in 1982. In 1988, the year of greatest takeover activity, the number declined from 40 to 31. Apart from the most notorious takeover of Britoil by B.P, Tricentrol and Acre Oil have recently been absorbed by larger concerns. The position of other independents is far from secure, e.g. Elf Aquitaine, the French oil giant presently has a 25 per cent stake in Enterprise Oil.

The decline of the independents and the increasing concentration of oil acreage in the hands of the international companies in the North Sea has important consequences for the status of the North Sea as a hydrocarbon province. The independents, by their very nature, were committed to a certain level of North Sea development, and the evidence of the early 1980s is that their presence helped to maintain exploration effort during a period when most of the most profitable and easily exploitable fields had been discovered and developed.

Despite this, the international oil companies have now regained their initial dominant position in the North Sea, and as such the sector has been fully reintegrated into the global oil economy. Future investment decisions are increasingly balanced against individual corporations' holdings in other parts of the world. Under these circumstances the North Sea, as a mature resource region, will increasingly be regarded as peripheral to the mainstream of the oil industry.

Government reaction to this recent activity has been relatively muted, in any case it is hoist by its own free market petard, which precludes intervention. This Conservative government also seems unconcerned in practice about encouraging competition in markets, despite its earlier rhetoric. Britoil was allowed to be swallowed up by B.P. despite the government's "special share" in the company.²⁷ With the subsequent job losses at Britoil (970 at Aberdeen and Glasgow)²⁸ the government's position has been to highlight the net job gain as a result of B.P.'s other North Sea activities in Scotland, although these jobs are in field development (Bruce) or construction projects (modifications to the Grangemouth chemical and Kinneil gas plants), traditionally marginal and short term activities.

The attitude of the present government has reflected that of its predecessors in not coming to terms with the long term strategic significance of North Sea oil. Naivety during the 1960s was replaced by hesitancy in the 1970s. This situation allowed experienced multinational oil entities to dominate the political economy of North Sea oil. In the 1980s this trend has been positively accentuated by a government, hidebound in its belief in market forces. Its privatisation policies have encouraged the centralisation of control, and fostered an increasingly oligopolistic North Sea oil market, rather than creating a competitive environment. The following section examines the implications of this

²⁷The laissez-faire attitude of the Tory government has been fueled by persuasive arguments in the media decrying the role of the independents (Financial Times, 23-8-88, "The case for small players may be hard to prove") and by the powerful publicity machines of the multinationals. For example, B.P.'s widely circulated journal, Shield (1988: 6-11) ran an article "justifying" its takeover of Britoil.

²⁸Select Committee on Energy (1989)

development for the industry that grew up to supply North Sea oil.

1.4 The nature of the Offshore Supplies Industry in the North Sea

The development of the North Sea's oil and gas resources has created a supply market, worth £60 billion up to 1984 (Economist Intelligence Unit, 1984). The diverse number of companies that operate within this market is usually grouped together as the "offshore supplies industry". Not only is this industry new in British terms, but it is novel on the world stage, originating in the 1930s, when American companies first attempted to extract oil offshore in Lake Maracaibo (Cook, 1986: 213). Although there will be a greater analysis of the structure and development of the industry in Chapter 4, a brief outline of the industry's development in the United Kingdom is given here.

From the outset, the role of indigenous supply firms has largely been confined to the more peripheral sectors of the economy, such as in the final assembly of rigs.²⁹ Foreign companies (such as the United States firm, Brown and Root) with experience of operating overseas were able to establish hegemony in the key areas of project design and management as a result of their early involvement in the North Sea.³⁰ Although the percentage of British based firms and local employment in the offshore sphere boomed throughout the seventies, the key decision making powers lay outside the

²⁹Hallwood (1988) uses evidence from a study of the supply industry in Aberdeen to suggest that the incoming American companies actually colluded to deter domestic companies from entering this core.

³⁰In fact U.S. supply firms were involved in the first exploration for gas off the Dutch coast, during the latter part of the 1950s.

United Kingdom.

Initially, the offshore supplies market during the 1960s, was associated with the development of gas resources in the southern North Sea. The capital requirements for such developments, in shallow waters were minor in comparison with later field development costs for oil exploitation. The small size of this early market partially explains the unwillingness of either British business or the state, to become involved in North Sea operations.³¹ As a consequence, the earliest developments in oil rig construction were largely the preserve of foreign companies.

American firms in particular were able to establish a foothold in the North Sea, by using techniques pioneered in older offshore regions, such as the Gulf of Mexico and Lake Maracaibo. Of the European companies, the French quickly established themselves in several key areas: Forex and Foramer were successful in the exploration drilling sector; UIE became an important jacket and module fabricator; whilst ETPM dominated the market for pipelaying and installation. Although Norwegian firms were unable to match the success of French companies during the early stages, there were several notable successes, especially from shipbuilders such as Aker, who persevered in the fabrication market despite early setbacks.

³¹Although the shipbuilding industry did initially participate in the construction of drilling and support vessels, substantial losses were made on these early ventures, which tended to discourage further activity. There was also a lack of financial capital available, resulting from the City's unwillingness to invest in the oil sector. By 1975 only 20 per cent of finance had come from British banks (Hamilton, 1978).

The discovery of vast oil resources in the deeper northern North Sea, allied to the destabilising effects of the OPEC revolution, meant that the North Sea attained a higher priority as a hydrocarbon province. The implications of this development for the offshore supplies industry were significant in three aspects. Firstly, the capital requirements for the exploitation of oil at such great depths were likely to be enormous, compared to previous investments. Secondly, the fact that the new resources were at a greater depth than for any previous offshore related activity, would necessitate a high level of research and development work. The third aspect that was of considerable importance for the structure of power relations, within the industry, was that the firms that had entered the offshore market in the early stages would be in the more favourable position to profit from this secondary stage of developments.

As we have seen, British companies were only able to obtain a 25 per cent share in the burgeoning offshore supplies market up until the formation of the Offshore Supplies Office in 1974. The lack of British market share of the United Kingdom offshore sector (32 per cent up to 1974) was compounded by an inability to break into other offshore markets, as a result of the protectionist policies of foreign governments, most notably Holland and Norway.

Although British companies have improved their share in the overall market (to 84 per cent by 1988) their late entry has left them at a strategic disadvantage within the industry. This has serious implications for the industry's long term survival, which is likely to hinge on the ability to export after the North Sea boom dissipates.

1.5 The impact of oil operations at the regional level

The peripheral role of British activity in the North Sea has important consequences for the existing pattern of capitalist social relations at the regional and local levels. Not only have regional issues been neglected by successive governments, whether Conservative or Labour³², but academics have also been reluctant to develop studies of oil and regional impact.

Ironically those areas that were most affected by incoming oil developments had long been regarded as "underdeveloped" rural locations (Scottish Highlands) or "decaying" "Old Industrial Regions"³³ (the north east of England and the Greater Glasgow region of Scotland). These "problem" regions had come to be regarded as endemic within the national framework, largely because they had not reacted to policy stimulants imposed from above by central governments of various political persuasions.

The attention that has been focussed upon oil and regional development has been heavily biased towards Scottish issues. For most of the 1970s the debate focussed upon the impact of oil with regard to the devolution issue (e.g.

³²The one instance of state regional policy in the offshore fabrication industry occurred in the mid 1970s (Cook and Surrey, 1982: 28), when the Labour government purchased two sites in Scotland, at Portavidie and Hunterston, in attempt to take advantage of the concrete rig market. Unfortunately the vast majority of platforms built after this point were steel, rather than concrete, resulting in the sites being made redundant and the loss of £23.5 million in government expenditure.

³³This term has been taken from Hudson's (1988, 1989a) usage, and refers to those areas that spawned the earliest developments in industrial capitalism.

MacKay and Mackay, 1975). Later as the prospects for devolution diminished, attention focussed upon the vulnerability of Scottish industry to oil price shocks (see Salmon and Walker, 1986).

At a more local level, research has concentrated upon two strands. Firstly, the analysis of the social and economic impact of oil on existing urban areas. Aberdeen, as a major new growth pole has attracted the most attention in this respect (House, 1980; Harris et al, 1986; Hallwood, 1988). Alternatively, Moore (1980) demonstrates how the interests of the local community in Peterhead are ultimately subservient to those of the British state and the major corporations where the development of oil resources is concerned.

Secondly there has been some emphasis upon the issue of oil impact in rural areas of Northern Scotland (Cairns and Rogers, 1981). A valuable contribution in this sphere has been made by Shapiro (1980, 1981, 1985a, 1985b) who has placed the impact of incoming oil operations within the context of existing forms of social and economic organisation.

However, there has been scant attention paid to the impact of North Sea related developments upon regions (or localities) with long industrial histories and often decaying economic and social infrastructure. Even those studies of the Scottish impact have been guilty of this. This is the aim of the present study, which limits itself to the study of labour organisation, within the context of inward oil investments in the North East of England. Thus it confines itself to events within the workplace and their consequences for the structuring of the industrial labour market in the region.

To do this necessitates the formulation of an alternative framework for the study of incoming industry. Unlike many forms of incoming industry at the regional level (e.g. electronics in South Wales³⁴) oil fabrication activities in North East England do not represent a break from other forms of economic activity. Rather, the nature of work, and patterns of labour organisation in the industry are markedly similar to those in the region's more traditional heavy engineering and shipbuilding industries. In this sense, the new activity is not alien to the regional environment, but complementary, representing the continuation of an existing process. It is with this in mind that Chapter 2 expounds a theory of labour organisation appropriate for an understanding of changes brought by oil developments in the North East.

³⁴Morgan and Sayer (1984, 1988) note for example how the electronics industry in South Wales has served to refashion local labour markets by introducing new working practices and using non-traditional forms of labour.

Table 1.1
Summary of the changes in the concentration
of the international oil industry 1953-72

	1953		1972	
	Seven Largest (Percent)	Others	Seven Largest (Percent)	Others
Concession Areas	64	36	24	76
Proven Reserves	92	8	67	33
Production	87	13	71	29
Refining Capacity	73	27	49	51
Tanker Capacity	29	71	19	81
Product Marketing	72	28	54	46

[Source: Jacoby (1974)]

Table 1.2
Changes in revenue regimes between multinational companies
and selected producer countries, 1948 and 1972

Country/ Company	1948		1972	
	Royalty		Income Tax	
Saudi Arabia/ Aramco	4 shillings gold per ton	Exempt	12.5 per cent of posted price	55 per cent of net profits
Iraq/AIOC	4 shillings gold per long ton	Exempt except for modest tax commutation payments	12.5 per cent of posted price	55 per cent of net profits
Kuwait/ Kuwait Oil Co	3.25 rupees per long ton	Exempt, except for commutation payment of 4 annas per ton	12.5 per cent of posted price	55 per cent of net profits
Algeria	No special legislation		12.5 per cent of posted price	55 per cent of profits
Venezuela	Production tax of 16.66 per cent of calculated price based on U.S. Gulf Coast prices	Minimum of 50 per cent of net income	16.66 per cent of agreed commercial value based on Texas posted prices	60 per cent of net income

[Source: Jacoby, N.H. (1974)]

Table 1.3
The share in energy consumption by major fuels
1950-89 (m.t.c.e.)

Year	Coal	Petroleum	Nat.Gas	Nuclear	Hydro Elec.
1950	202.6	22.2	-	-	0.9
1955	215.2	34.5	-	-	1.0
1960	198.6	68.1	0.1	0.9	1.7
1965	187.5	106.2	1.3	6.1	2.2
1970	156.9	150.0	17.9	9.5	2.3
1975	120.0	136.5	55.4	10.9	2.0
1980	120.8	121.4	71.1	13.4	2.0
1985	105.3	115.0	82.3	22.1	2.1
1989	108.1	118.2	80.5	33.4*	-

[Source: The Digest of U.K. Energy Statistics, various]

* After 1985 figures for nuclear and hydro-electricity combined under category "Primary Electricity".

Table 1.4
U.K. Licensing Rounds

Round	Year	Number offered (blocks)	Number taken (blocks)
1st	1964	960	348
2nd	1965	1102	127
3rd	1970	157	106
4th	1971 - 2	436	282
5th	1976 - 7	71	44
6th	1978 - 9	46	42
7th	1980 - 1	specified area of northern North Sea, 80 elsewhere	90
8th	1982 - 3	184	70
9th	1984 - 5	195	80
10th	1986 - 7	127	51
11th	1988 - 9	212	115
12th	1990 - 1	120	Awards Pending

[Source : Department of Energy "Brown Books", various]

Table 1.5
Levels of production from major fields in the
British Sector of the North Sea since 1976 (000 tonnes)

Year	Field				
	Brent	Forties	Ninian	Piper	Thistle
1976	0.1	8.6	-	0.1	-
1977	1.3	20.1	-	8.6	-
1978	3.8	24.5	0.04	12.2	2.6
1979	8.8	24.5	7.7	13.2	3.9
1980	6.8	24.6	11.4	10.4	5.3
1981	11.1	22.8	14.3	9.8	5.5
1982	15.2	22.2	15.0	9.8	6.0
1983	18.7	21.7	13.7	9.6	5.1
1984	20.0	20.3	11.6	8.9	4.2
1985	20.0	18.4	10.9	9.0	3.7
1986	19.5	16.5	9.7	8.4	3.0
1987	17.7	15.9	7.5	8.0	2.7
1988	16.1	14.2	7.0	3.2	2.5
1989	9.5	10.2	6.2	0.0	1.4

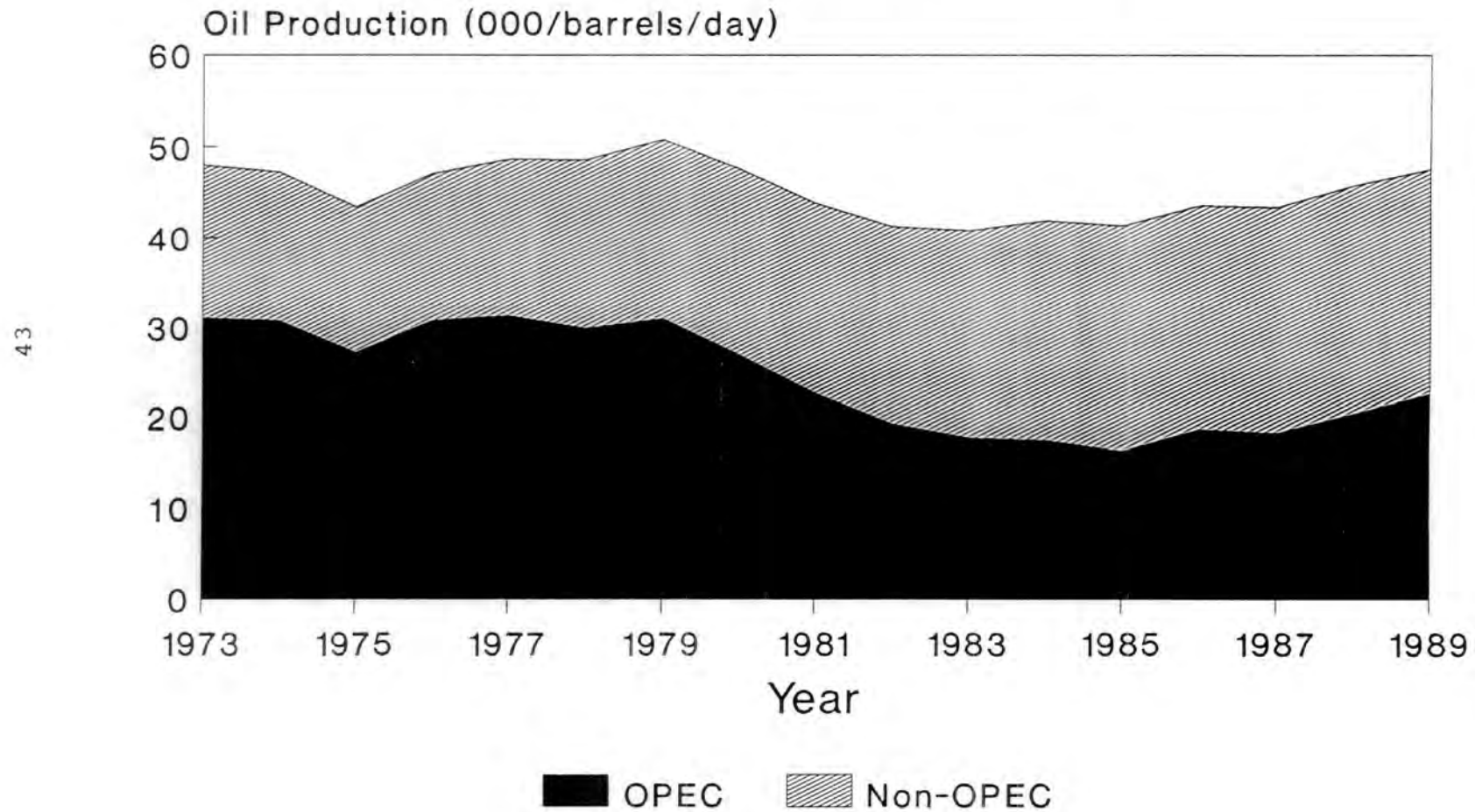
[Source: Department of Energy "Brown Books", various]

Table 1.6**The North Sea Oil Balance of Payments Impact (£m)**

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1981</u>
Value of oil sales	58	645	2226	2805	5861	8893
Net Import of goods for Nth Sea sector	-341	-536	-531	-185	-171	-144
Net Import of services for Nth Sea sector	-481	-640	-701	-545	-447	-461
Interest, profit & dividend payments of Nth Sea sector	-23	-24	-550	-666	-1368	-2233
Total NSO current account impact	-787	-555	449	1409	3695	6055
Overseas Invstmnt	946	1142	1508	833	694	732
NET B.O.P IMPACT OF NTH SEA SECTOR	159	587	1952	2242	4389	6787

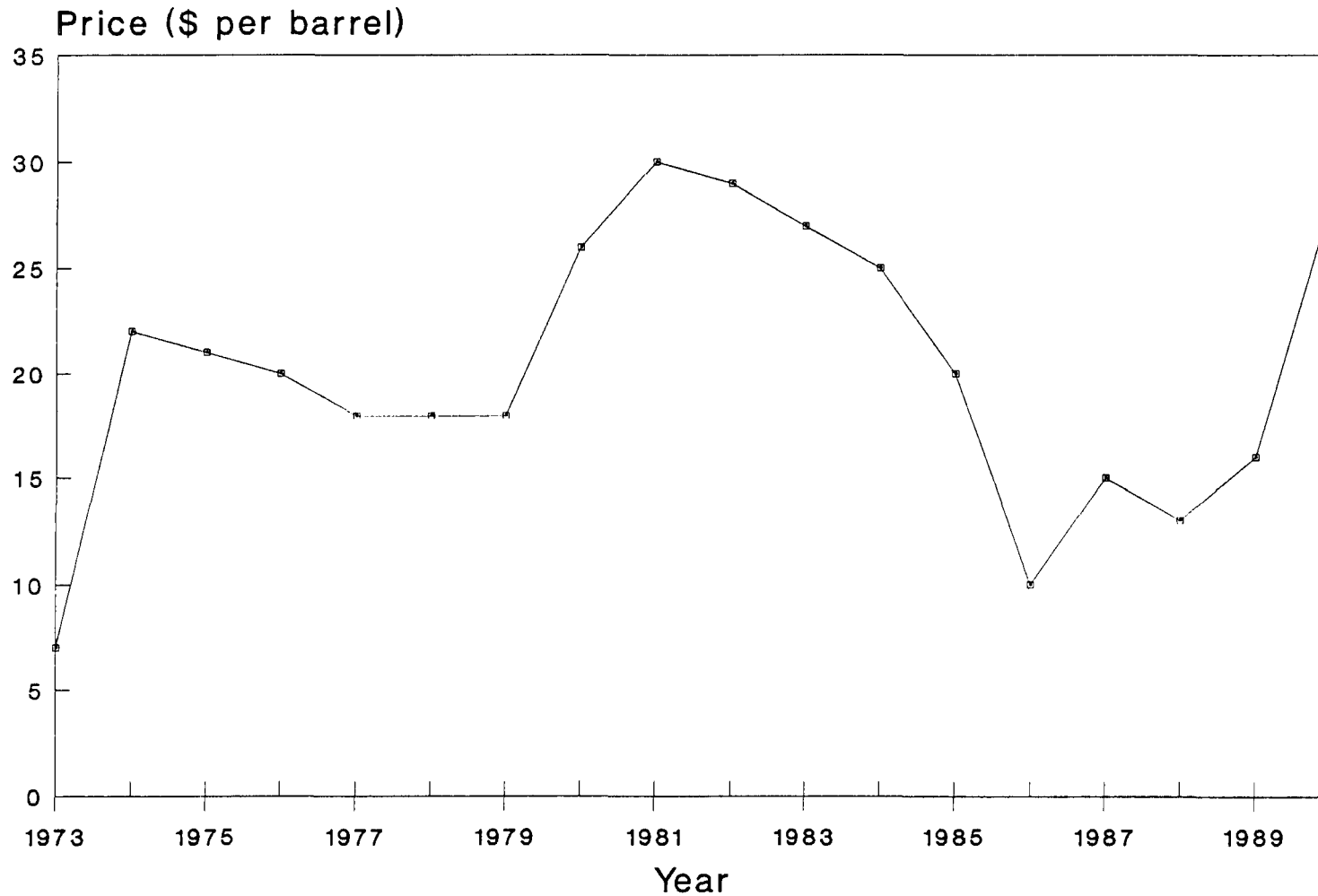
[Statistical Trends, various]

Figure 1.1 The Changing Nature of
World Oil Supply: 1973 - 1989



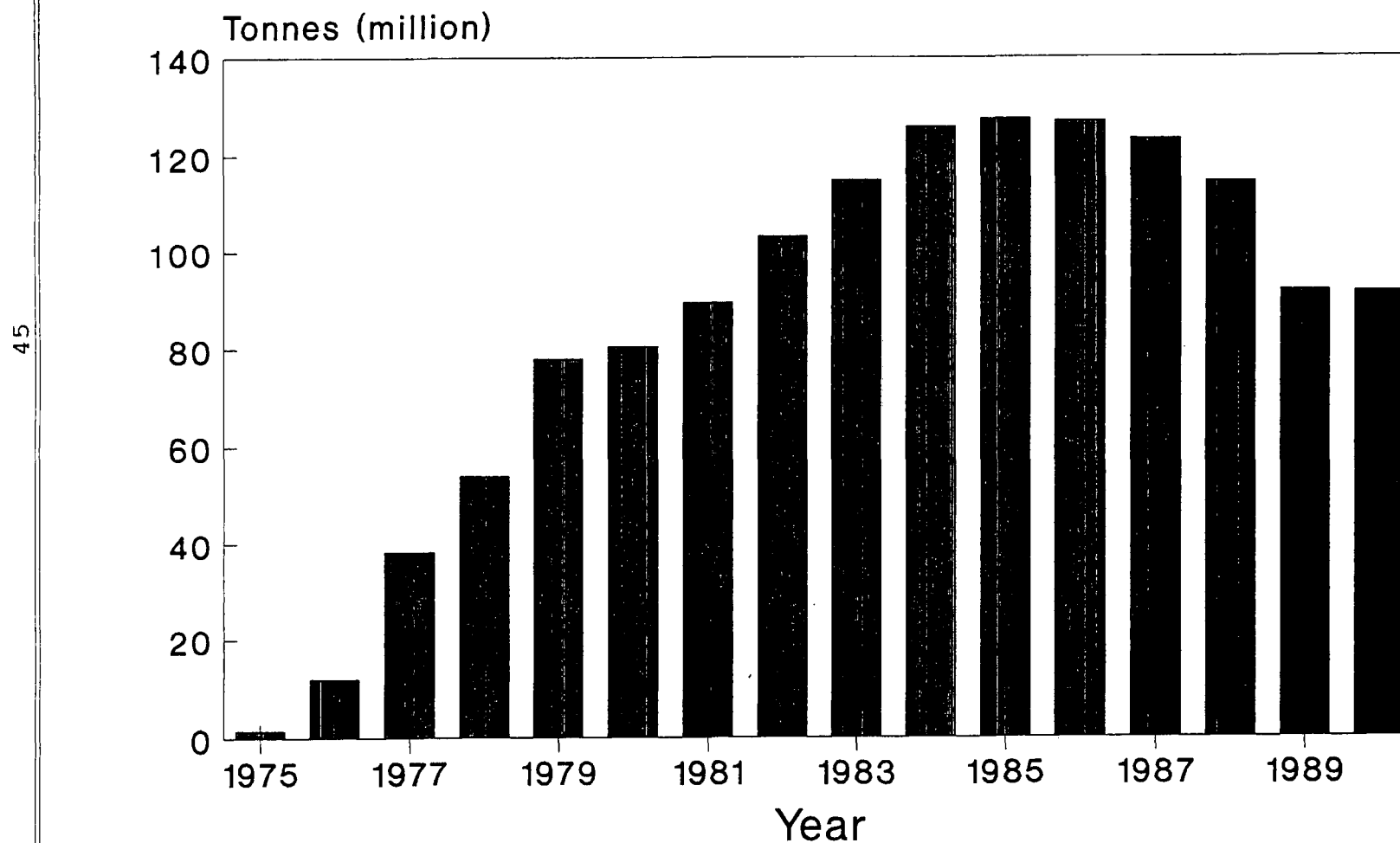
[Source: Petroleum Economist]

Figure 1.2 The World Oil Price 1973-90
(Arabian Light Crude) as at January 1st



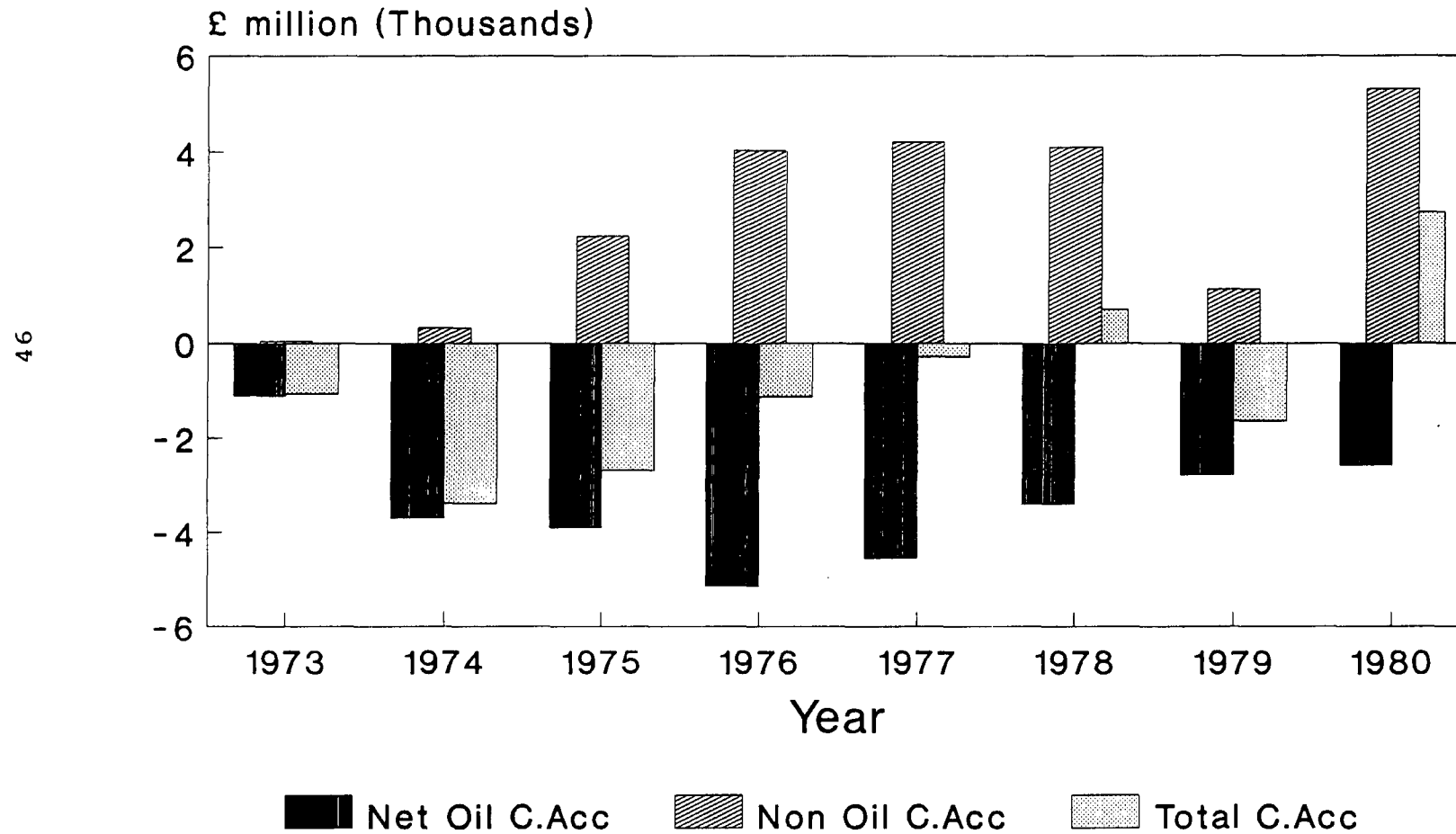
[Source: Petroleum Economist]

Figure 1.3 U.K. Oil Production
1975 - 90



[Source: Brown Books]

Figure 1.4 The Oil Impact upon the U.K.
Current Account, 1973-80



[Source: Statistical Trends]

CHAPTER 2
THE DEVELOPMENT OF EMPLOYMENT SYSTEMS
UNDER CAPITALIST ACCUMULATION

"Every society is a moment in the historical process and can be grasped only as part of that process. Capitalism, a social form, when it exists in time, space, population, and history, weaves a web of myriad threads; the conditions of its existence form a complex network each of which presupposes many others... And it is only in this sense, as a fabric woven over centuries, that we may say that capitalism "produced" the present capitalist mode of production. This is a far cry from a ready-made formula which enables us to "deduce" from a given state of technology a given mode of social organisation."

(Braverman, 1974: 21-22)

The aim of this chapter is to develop a theory on the restructuring of employment systems appropriate for an analysis of labour market change in the North East, within the confines of the present study. In doing this, it firstly examines some of the ways in which academics have explained divisions of labour within society. Until recently there was a recognisable dichotomy between those whose explanations located industrial organisation, market structure and the hierarchical nature of job forms at the core of their analysis; and those that regarded the evolution of the labour process within the work place as central to their explanations. This dichotomy reflected the artificial nature of the disciplinary boundaries from which these two perspectives were drawn (emanating from within the confines of economic and sociological theory respectively). However, as the complexity of employment structures has become more apparent, a more sophisticated approach to the subject has evolved (Rubery, 1989).

This integrated approach is drawn upon later in the chapter to construct a framework from which to understand the nature of the employment impact of North Sea oil upon the North East of

England. This is achieved by arguing that change within any sector of the labour market can only be understood through recourse to the historically specific nature of the labour process in that sector. Thus the employment impact of the offshore oil industry upon the North East cannot be understood without reference to the historical development of the labour processes in the North East of England, and specifically, those processes which evolved in the structural engineering and shipbuilding sectors. But although labour processes are viewed as central to an understanding of present patterns of labour organisation, they do not work alone in constructing an employment system. Instead the labour process, in a given situation, is conditioned by and interacts with specific labour market conditions. As such, labour processes are regionally and functionally specific, within the confines of capitalist historical development.

2.1 Divisions of labour and theoretical developments

The 1970s saw an awakening of interest into the nature of labour organisation and its implications for divisions within society. This reflected an increasing degree of awareness, during the 1960s, of continuing schisms within society, despite the broadly based consensus on social welfare issues, in the post war period, in OECD countries.

One consequence of this renewed awareness was the extent to which researchers, in the social sciences, began to reflect upon the paucity of existing theories in explaining the role of the labour market in perpetuating divisions within society. The recognition of this vacuum in academic thought led to a proliferation of attempts at explanation from which, generally speaking, two basic strands emerged: labour market segmentation theories, and theories of the labour process.

2.2 Theories of Labour Market Segmentation

Theories of labour market segmentation stem from the early 1970s and arose due to the unsatisfactory nature of neoclassical labour market theory to explain the continued disparity in wages and conditions of different segments of the labour market. Although there were various forms to emerge (e.g. Bluestone, 1970; Gordon, Edwards and Reich, 1975) the most celebrated work remains that of Doeringer and Piore (1971) recognising that labour markets were structured according to the nature of specific industrial contexts. In this sense, they recognised three basic types:

- i) Enterprise markets (essentially internal labour markets) where the allocation of labour takes place within the boundaries of the individual enterprise, and is characterised by a well defined occupational hierarchy and high level of demarcation. They suggested that this pattern was typical of most manufacturing industries.
- ii) Craft markets, whereby the labour structure was primarily influenced by occupational and geographical jurisdiction. "The major problems of internal allocation are preparing apprentices and trainees to be journeymen and of moving groups of workers of roughly equal skill and rank among jobs of short duration." (1971:4) This type of market typifies many construction industries.
- iii) Competitive markets, where the features of the internal labour market are absent, the best example of this being the market for migrant labour.

Doeringer and Piore saw three factors behind the development of ILMs:

- a) Skill specificity, employers recognising the need to develop a work force with enterprise specific skills;
- b) The tendency for "on the job" training rather than through educational institutions;
- c) The development of workplace customs. "Custom at the

workplace is an unwritten set of rules based upon past practice or precedent." (1971:23) For them, customs represented "the outgrowth of employment stability within internal labour markets". This stability was to the mutual benefit of employers and employees.

This diversity of labour market forms between industries coexists with segmented labour markets within industries into primary and secondary sectors. As Loveridge and Mok (1979: 65,66) note:

"The primary sector contains the better paying, steady, and preferred jobs in the society. Those employed in this sector possess job security and opportunities for advancement, high wages, good working conditions, employment stability, equity and due process in the administration of work rules. Work in the primary sector is associated with an established position in the economy. Workers here tend to identify with institutions; the company for which they work; their union, their occupation. One who has lost a primary sector job is unemployed in the involuntary, Keynesian sense..... The existence of a secondary sector is of crucial importance for the maintenance of the marginal jobs. Secondary sector jobs tend to be self-terminating, or are basically unattractive, and provide little incentive for workers to stick with them."

These early theories of labour market segmentation failed to provide adequate explanations for the labour market divisions that they had identified. In this sense, the principle value of this approach was in asking crucial questions rather than in providing the answers (Villa, 1986). At the root of this problem was the failure to break the umbilical cord of neoclassicism. As Doeringer and Piore themselves acknowledged, internal labour market forces:

"...do not work alone. Rather they work in combination with those forces recognised in neoclassical theory. An understanding of the origins of internal labour markets can only be approached through the study of the canons of conventional theory." (1971: 27-28)

The recognition of serious deficiencies in early segmentation

theories sparked off a second generation of studies that attempted to explain the nature of labour market disparities. On the one hand, segmented market structures were explained as a response to different levels of uncertainty in product markets (Berger and Piore, 1980). Alternatively Wilkinson et al (1981) accounted for different labour market structures in terms of a "dynamic non-equilibrium framework" (1981) in which institutional operations (forms of labour market regulation) and the balance of power according to the nature of productive structures were accorded important roles.

At the same time, this second strand sought to locate empirical evidence from various industrial contexts within the framework of dualism. As Bluestone and Stevenson (1981: 45) noted at the time:

".. a full understanding of segmentation and dualism in the labour market requires further exploration of industry transformation on a case by case analysis."

This required the identification of primary and secondary industries, from which occupations within industries could then be defined according to their ascriptive qualities within the dual labour market. But herein remained the nature of the analytical problem facing segmentation theories. This second generation of segmentation theories made important inroads into the analysis of labour market change both within specific industrial contexts (see for example Villa, 1986) and at the global level (Gordon et al, 1982) by recognising the importance of extra economic factors and a more dynamic historical approach. However the approach breaks down eventually for its a priori assumptions of dualism within the labour market. Constrained within this analytical dualism, labour market events are ultimately explained in terms of their relationship towards the primary and secondary segments of the labour market. Thus industries, and occupations within industries, are defined on this basis. Reich (1984), for

example, using statistics based upon industrial structure, sex structure, and race, classified industries within a core-periphery framework. Thus the core included: primary metals; machinery manufacture; transportation equipment; instrument and related goods; tobacco manufactures; paper and allied products; chemicals; petroleum and coal products; and rubber and plastic goods. Meanwhile the periphery consisted of: lumber and wood products; furniture and fixtures; stone, clay and glass products; fabricated metal products; miscellaneous manufacturing; food and kindred products; textile mill products; apparel goods; printing, publishing and allied industries; leather goods; not specified manufacturing.

Despite their importance in questioning conventional neoclassical theories, dualist approaches are problematic for two related reasons: firstly they ignore the historical dynamism of capitalism, and as a result, do not take account of the changing importance of specific industries over time; secondly, they presuppose the duality of economies. The flexibility debate has reminded us of the ability of capital to restructure economies over time, so that today's industrial growth sectors will be tomorrow's decaying, marginal industries. Thus in the western capitalist economies, the motors of growth in the nineteenth century were first the railway boom, and later the expansion in metal shipbuilding. In the twentieth century the automobile and, more recently, the electronics industries have been central to the process of capital accumulation.

The problems with segmentation theories stem from the fact that they have been utilised in areas of study for which they were never intended. Originally used as a framework for the analysis of employment disparities in the United States during the 1960s (particularly with regard to racial inequalities within cities), they have since been extended to explain a

multiplicity of employment circumstances. This has since brought the realisation that what is required in investigating labour market structures:

"..is a conception of the labour market that rejects the search for simple universal laws of labour market structure and development in favour of an analysis of the interplay of the historically conditioned institutional structures that generate specific systems of labour market regulation. It places a central emphasis on the empirical investigation of the nature and sources of change rather than the development of complex deductive models based upon highly simplified assumptions about the determinants of human behaviour."

(Gallie, 1988: 18)

With regard to the development of a suitable framework for the analysis of British labour market structures, the Cambridge school has had the most influence. The concept of a "productive system", first advocated by Wilkinson (1983: 413)¹ involves a more holistic, and infinitely more satisfactory approach to the study of labour markets. His approach incorporates institutionalism within a historical materialist perspective:

"Economic relationships are shaped by institutional forces and cannot be separated from them. The "free" market and "free" trade are not "natural" states of the world; they are created by human agencies and guided by legislation and institutional rules."

(1983: 417)

Wilkinson focusses upon the "forces of production", i.e. labour power, the means of production, the relations of production, the structure of ownership and the social and political framework within which the above forces operate. It is the interrelationship of these factors that determine the nature of the labour market.

¹This has been further elaborated in a more recent work (Tarling and Wilkinson, 1987) to explain how the influence of the productive system impinges upon a firm's costs and subsequently its success in controlling the market within which it operates.

The importance of this work is in its identification of the relationship between labour and capital, employers and workers, as central to an understanding of how productive systems operate. Wilkinson notes that whilst labour and capital derive mutual benefit from the process of production, the needs of capital are less immediate for its subsistence. This is a recognition of the inherent inequality of the power relationship between the two parties in the labour market that breaks with the neoclassical view. Despite this, labour can enjoy relative power in the labour market dependent upon other influences, such as the nature of institutional forces and the regulation system in operation. At the same time, differences in the supply of labour available to the labour market will obviously affect the balance of power.

Productive systems will differ through time according to the dynamics of the relationship between the productive forces. He argues that his framework can be used at all levels: the family, productive units, the firm, industrial districts, industries, regions, economies, and at the global level.

Alternatively, Rubery (1989) has developed the concept of an "employment system" as a framework for analysing labour market change. She breaks down the forces controlling the system into four components: the system of labour market regulation, the industrial system, the labour market system and the system of social reproduction. Unlike Wilkinson she is less ambitious in her claims, and uses her approach to explain trends within the labour market in Britain during the 1980s.

These more sophisticated approaches have done much to throw off the cloak of dualism, and incorporate social forces into their analyses, without quite "grasping the nettle" in their explanations of employment dynamics. Although the Marxist view of social relations of production is explicitly taken on

board, the exploration of the historical foundations of social systems is at best partial. Thus Wilkinson (1983) states that the forces in production are not pre-existing, but rather are produced and reproduced in the course of capitalist development, without recognising the importance of the valorisation process². Despite this, such work does hint at the struggle over the variable factor, labour power, between employers and employees in the labour process (Tarling and Wilkinson, 1987). Similarly Michon (1987), whose approach follows Piore in the central role given to uncertainty in structuring labour markets, acknowledges that divisions of labour are dependent upon the demands and needs of the production process.

The implication is therefore, that what happens in the organisation of production remain central to the structuring of employment systems, despite the diverse range of industrial structures and existing labour market conditions in which firms have to operate. But to understand these different forms of organisation it is necessary to explore inside the "black box of production" (Nichols, 1986: 34), to examine the nature of the labour process, which is considered to be central to an examination of employment structure, under specific conditions. It is to this subject that we now turn.

2.3 The debate on the Labour Process

Labour Process theories stress the centrality of events within the work place to the development of capitalist societies. This type of approach had largely been consigned to the periphery of academic discussion since Marx's time, until Braverman's great work, "Labour and Monopoly Capital" (1974).

²Valorisation being the means by which capital derives surplus value (profit) through the exploitation of labour.

Braverman's work was undertaken because he realised the need to update Marx's theory on the labour process with the development of capitalism in the twentieth century. As he notes (1974: 9):

"Marx completed this work [Capital] in the mid 1860s. During the past century this very same dynamic has been far more powerful than the manifestations of it which Marx witnessed in his own lifetime and upon which he based his critical analysis of capitalist production. Yet the extraordinary fact is that Marxists have added little to his body of work in this respect. Neither the changes in productive processes throughout this century of capitalism and monopoly capitalism, nor the changes in the occupational and industrial structure of the working population have been subjected to any comprehensive Marxist analysis since Marx's death....there is simply no continuing body of work in the Marxist tradition dealing with the capitalist mode of production in the manner in which Marx treated it in the first volume of "Capital"."

Braverman blamed this neglect firstly upon the apparent "thoroughness and prescience" of Marx's critique of capitalist production, and secondly, concern over modes of distribution rather than production. Additionally, Marxists had become obsessed with the advance of technology and science to the extent that prevailing modes of production and the subsequent organisation of labour were seen as inevitable.

Braverman correctly recognised the need for a fresh approach to the study of the world of work, which did not consider the present labour organisation under capitalism as external or inevitable. This involved the reappraisal of the relationship between technology and social trends. Initially this required the recognition that modes of production under capitalism do not arise through changing technologies, but are moulded over time by capital through the mechanism of new technology. In this sense, Braverman is merely reiterating Marx's own analysis:

"Within the historical and analytical limits of capitalism, according to Marx's analysis, technology,

instead of simply producing social relations, is produced by the social relation represented by capital."
(1974: 20)

If one studies "Capital" closely, it becomes obvious that, in Marx's view, the development of a particular form of work organisation under capitalism is the product of socially driven forces rather than technological ones.

The industrial capitalist and the factory system were only possible as the result of the creation of the category of "free labour", as opposed to the serf or slave. In Britain this category largely arose from the expropriation of the agricultural population from the sixteenth century to the nineteenth century ("Capital": 671-701) and the large-scale in-migration of dispossessed Irish peasants during the course of the nineteenth century. Only as a result of the advent of free labour was there the potential for the exploitation of labour power by the capitalist and the creation of the capitalist mode of production. These large movements of population from rural to urban areas created a surplus unskilled labour force (the reserve army of labour), with which the industrial capitalist could organise new forms of production and undermine the positions of craft workers engaged in pre-capitalist forms.

Applying Marx's definition of the working class, as those with no means save the sale of their own labour power, Braverman suggests that today this would include most of the population (1974: 26). As such he treats the working class as a homogenous mass, with a commonality of interest.

The key phenomenon associated with the evolution of the working class in its twentieth century form has been the development of monopoly capitalism. The mechanism behind this process according to Braverman is scientific management

(Taylorism), whose principle rationale is the separation of the acts of doing and planning. This is seen as the principle weapon used by capital in the class struggle.

The development of Taylorism is viewed as the driving force behind the deskilling and subsequent subordination of labour in the production process. Taylorism represented a second phase of management development under capitalism. The first phase was characterised by a new wage relation and the need to extract surplus value. To do this, the capitalist increasingly recognises that a measure of control over the production process is required. The manifestation of this is the transition from cottage industry to the factory. Only in doing this would the capitalist achieve control over methods and hours of work and extract a greater return from labour.

"Control without centralization of labor was, if not impossible, certainly very difficult, and so the precondition for management was the gathering of workers under one roof."

(1974: 65)

However this first phase represented only a form of relative control. Although production was now centralised, the control of the production process was still in the hands of the worker, which limited the ability of the capitalist to extract the maximum surplus value. Only through absolute control over the production process by the capitalist could this be achieved. This search for control was encapsulated in the Scientific Management ethos. Principally associated with the work of F.W. Taylor in the late nineteenth century, Braverman perceives Scientific Management as an attempt to increase the productivity of labour through a more technical analysis of the production process by management. For Taylor this would only be achieved by management wresting control of the production process from labour.

Consistent with his historical approach, Braverman points out that experiments with different forms of work organisation are not novel to capitalist development, and neither was Taylor the first to indulge in the theoretical aspects. However he claims that scientific management represented the first attempt by the manager to design work tasks rather than the worker. This is essentially a phenomenon unique to capitalism, a fundamental break from the past.

"The use of experimental methods in the study of work did not begin with Taylor; in fact, the use of such methods by the craftsman is part of the very practice of the craft. But the study of work by or on behalf of those who manage it rather than those who perform it seems to have come to the fore only with the capitalist epoch; indeed very little basis could have existed for it before."

(1974: 88)

It has been noted that management attempted to gain control over the labour process through the centralisation of production into factories during the early phase of capitalism. However under Taylorism, management took on new dimensions. Taylor believed that managers should now dictate the very nature of the work task to the worker. Only with this total control could management extract the maximum return from the worker.

Taylor's concern over control stemmed from his recognition, that there existed an underlying conflict between manager and worker. The worker is paid up to a certain level for work done, above which he receives no more (even with piece rates). It is therefore against his interests to produce over a certain level. Conversely the manager attempts to extract the maximum return possible from labour power. This situation is responsible for the basic underlying conflict between the two parties, and necessitates management control over labour. Braverman notes (1974: 100):

"So long as they [the workers] control the labour process

itself, they will thwart efforts to realize to the full the potential inherent in their labor power."

In Braverman's view, the twentieth century has seen an ever widening gap between the conception and operation of economic activity. This process was the result of management's desire to wrest control over production away from the worker. This control was a prerequisite to expanding surplus value. For him Taylorism was the key mechanism, resulting in the deskilling of labour.

As capitalism has become more complex, through the consolidation and concentration of capital under competition (Baran and Sweezy, 1966), the systems by which capital controls labour have become more sophisticated. The development of Monopoly Capitalism and its manifestation, the modern corporation, have seen a corresponding growth in the layers of business organisation.³

The importance of the development of Monopoly Capitalism for the development of the labour process is seen in functional terms, as firstly, that point when capital ceases to be personalised and secondly, where ownership and control functions become separated.

"The corporation as a form severs the direct link between capital and its individual owner, and monopoly capitalism builds upon this form. Huge aggregates of capital may be assembled that far transcend the sum of the wealth of those immediately associated with the enterprise. Since both capital and professional management - at its top levels - are drawn, by and large, from the same class, it may be said that the two sides of the capitalist,

³Braverman dates the development of Monopoly Capitalism to the late nineteenth century, associated with the growth of the first trusts and cartels. For him, monopoly capitalism and scientific management are bound up in the same process of capital accumulation. Monopoly capitalism arises out of the driving force of accumulation, with management reorganising the labour force through the means of scientific management.

owner and manager, formerly united in one person, now become aspects of the class. It is true that ownership of capital and the management of enterprises are never totally divorced from each other in the individuals of the class, since both remain concentrated in a social grouping of extremely limited size: therefore, as a rule, top managers are not capital-less individuals, nor are owners of capital necessarily inactive in management. But in each enterprise the direct and personal unity between the two is ruptured. Capital has now transcended its limited and limiting personal form and has entered into an institutional form."

(1974: 258)

The growth of Monopoly Capitalism results in the development of a managerial process that is analogous to that of the labour process. Hence just as the traditional craftsman is displaced by a new division of labour, then the small firm owner-manager is replaced by a complex of management divisions: manufacturing, marketing, finance, sales, advertising, personnel, public relations, etc. In this way, management, has itself become a product, the product being the control of the production process for the extraction of surplus value.

A side effect of the managerial labour process is the creation of what Braverman terms "the middle layers of employment".⁴ Here Braverman is identifying individuals who simultaneously have roles as "manager" and "worker" in the labour process:

"...there is a range of intermediate categories, sharing the characteristics of worker on the one side and manager on the other in varying degrees."

(1974: 405)

The status of these groups differs to that of those below them in the labour process because of their ability to control the

⁴Wright's (1978) definition of this group as occupying "contradictory class locations" is more useful than Braverman's. This suggests the possibility for shifting allegiances in the labour process.

fortunes of those under their command, and the extent to which they benefit from capital through a share (however small) in the spoils. They are also guaranteed a degree of independence, contingent upon their ability to "hire" and "fire" others.

From the point of view of their superiors at the top of, and in control of, the labour process this group has two key functions: firstly as the recruiting ground for top managerial positions, and secondly as a buffer zone of support against a "hostile or indifferent mass" (1974: 407).

This brings us to the apex of the pyramid under monopoly capitalism; the corporate executives, the elite, who are either born with the wealth to buy into the class, or are able to ascend to these exalted heights through demonstrating in their actions the attributes required by capital. Braverman describes the attributes required to be a member of this class as follows:

"To belong to the capitalist class by virtue of ownership of capital, one must simply possess adequate wealth; that is the only requirement for membership in that sense. To belong to the capitalist class in its aspect as the direct organizer and manager of a capitalist enterprise is another matter. Here, a process of selection goes on having to do with such qualities as aggressiveness and ruthlessness, organizational proficiency and drive, technical insight and especially marketing talent."

(1974: 258)

2.3.1 Shortcomings in Braverman's work and reactions to it

Braverman's work represented the most significant contemporary attempt to reformulate Marx's original thesis. However the value of Braverman's work is not necessarily to be found in his conclusions, but rather in the style of his approach and his view of the labour process as central to the organisation of society under capitalism. By focusing upon the contradictory nature of the relationship between capital and labour in the evolution of the production process, Braverman

has constructed the theoretical template which researchers into the nature of labour organisation should expand upon.

Nevertheless, having accepted the importance of Braverman's contribution, it is necessary to be critical of his theory in analysing the variety of circumstances that exist across different sectoral and geographical boundaries. The acid test for a theory is the extent to which it can be applied to explain empirical events. It is in this respect that Braverman has been found wanting, and it is likely that his long-standing contribution to the nature of labour organisation will have been in reopening the debate, and providing a framework for analysis.⁵

Braverman's basic failing was in his unilinear view of the labour process in the century since Marx wrote "Capital". This was partially the result of Braverman following Marx's analysis too closely in his own approach (Nichols, 1986: 35). In Marx's thesis, industrial capitalism was in its infancy and the factory system was viewed as the epitome of the labour process. Capitalism was later to acquire a more sophisticated character and develop along a series of divergent paths.

But even in its early stages, the capitalist labour process differed across functional and spatial boundaries. The imposition of the factory system (identified by Marx) was never a universal phenomenon in early industrial capitalism (Elbaum et al, 1979). Marx's model of manufacturing industry, centred upon the textile industry within the United Kingdom, neglecting the development of the labour process in other

⁵On this subject, Littler notes (1982: 26):
 "Braverman's major contribution was to smash through the academic barriers and offer the potential for the birth of a new, integrated approach to the study and history of work."

industries such as engineering and shipbuilding, that were arguably equally as representative of contemporary capitalist structures.⁶ In such industries, the labour process was characterised more by the continuation of forms of craft control, rather than by deskilling.

Braverman's analysis rests upon the existence of a craft based society that is transformed into an homogenous deskilled mass under Taylorism.⁷ Various writers have exposed this craft myth; instead the working population in the nineteenth century was predominantly composed of an unskilled mass surrounding a small core of craftsmen.

At the same time, Braverman ignores the diversity of labour market circumstances that existed prior to industrialisation; Elbaum (1989) makes this point in contrasting the importance of apprenticeship to the development of employment regimes in Great Britain and the United States. The survival of apprenticeship as an important institution within the British capitalist system reflects the durability of pre-industrial craft training practices, whereas in the United States the

⁶Even within textiles, Lazonick has shown that the labour process was not driven by the continuous triumph of capitalism in deskilling and disfranchising labour of control. Rather:

"..there was a continual process of conflict, compromise and even cooperation between capitalists and workers over the form and content of the components of technical change-mechanisation, divisions of labour and intensification of labour."

(1979: 257)

⁷Braverman also deserves criticism for stressing the merits of craftsmanship (1974: 131-138) without recourse to the social conditions which surrounded it. For example, Landes (1969: 43) has noted that even in the medieval period the notion of an independent craftsman was a false one. More often than not, he was in a dependent relationship with the merchant for whom he produced.

lack of a strong craft tradition and the more fluid nature of nineteenth century society precluded such practices.

Another problem with Braverman stems from his perception of control. For him, management requires absolute control over workplace relations, Taylorism is the mechanism for this process. This necessity emerges from the nature of the inherent conflict between labour and capital. But as Friedman (1977) has shown this conflict is not always so immediate. In any case, Burawoy (1979, 1985) reminds us that management is often capable of "obscuring" the nature of this conflict by encouraging competition amongst the work force. This suggests, as Elger points out, that scientific management and deskilling have never been more than options, from a range of choices, available to capital to secure surplus value from the labour force 1982:52):

"It is necessary to advance beyond the spurious concreteness of the generic impulse towards deskilling which governs Braverman's account towards a historically located theorization of the transformation of the capitalist labour process within which deskilling may be adequately located as a tendency."

In the wake of Braverman, other works have highlighted the existence of alternative forms of worker control utilised by management in the labour process. Friedman (1977) argues that capitalists tend to employ two approaches in practice: Direct Control and Responsible Autonomy. Whilst the former is a synonym for Taylorism, the latter is available to management when faced with worker resistance. Decisions over which strategy to deploy are contingent upon the strength of worker resistance and the product market structure facing capitalists. Thus in certain circumstances, short term surplus can be foregone and immediate control relaxed (1978: 77-85).

Alternatively, Edwards (1979) suggests that there are usually three types of managerial control system in operation: simple

control, broadly speaking supervision of workers by foremen within small plants; technical control, of which Fordism is considered to be an early form; and bureaucratic control, which is centred upon procedures within large organisations.⁸

Other studies such as Brecher's (1979) recognise that deskilling has only ever been a partial tendency within the labour process. Crucially, he makes the link between the development of mass markets and the possibility for introducing mass production techniques. Hence, only with the rapid growth in demand for televisions in the United States, during the 1950s and 1960s, was it possible to introduce an extensive subdivision of labour into this sector of the electrical products industry. But, even with the development of mass markets, a certain skilled element is still required in the production process, particularly in what Brecher (1979: 208) describes as the "heavy current" part of the industry.

In a similar vein, More (1982: 121) notes that the nature of the product market in engineering has forestalled the process of deskilling:

"In the engineering industry, for instance, the bulk of the work before the First World War involved one-off or small-batch production, and even after the war only sections of the industry, such as motor vehicle manufacture went over to mass production. In small-batch production the variety of the work makes it less susceptible to routinization and deskilling."

At the international level, Wood (1982) stresses that scientific management has never been universally accepted as a strategy by management, especially in the United Kingdom. In cases where it has been established, for example in Nazi Germany and pre-war Japan, it has tended to be part of wider

⁸This form of control is analogous to the workings of the internal labour market.

national movements and ideologies, as such it is difficult to point to a common model.

A further common criticism of Braverman is for his neglect of the ability of labour to counteract the strategies of management within the context of capitalist development. One of the more significant criticisms of Braverman's neglect of worker resistance in the labour process comes from Friedman (1977). He notes that Braverman:

".. while recognising that current technical and organisational methods of production are not inevitable to any future system, wrongly treats them as inevitable within the capitalist system. In doing so he misses the possibility of changes within the capitalist mode of production in response to worker resistance."

(1977: 30)

In developing a framework for worker resistance, he points to three basic characteristics: firstly, it exists in a variety of forms; secondly, the level of resistance varies between different groups of workers; and finally, in certain circumstances, successful worker resistance is in the long term detrimental to the needs of labour.

He suggests that labour resistance can be divided into "individualistic" and "collective" forms. The former centres around the physical impossibility faced by the capitalist in controlling, in entirety, the individual's contribution to the production process. Collective resistance is an extension of the form taken by individual resistance, but its success is reliant upon the maintenance of solidarity.

Friedman argues that the strength of worker resistance is likely to be higher, the larger the work force within an individual plant in situations where:

".. workers live in a homogenous community centred around a particular form of work such as mining or docking."

(1977: 53)

With his analysis of worker resistance, Friedman partially compensates for Braverman's neglect of the supply side in his analysis of the labour process. The view of worker participation in the labour process advocated by Friedman was extended in an important work by Rubery (1978). Here she recognises that the formation of trade unions may create divisions of labour to the same extent that managerial control systems do. Thus, whilst there is a likelihood that at certain points, in time and space, the interests of such groups are likely to coincide, one should also recognise the inevitability of areas of conflict developing between groups, the outcome of events within the labour process (see for example Zeitlin, 1985).

This brings us to another failing of Braverman's work, which is remarkable for its lack of class analysis.⁹ He assumes that the shared experience of Taylorism gives the working class a common identity. Thus his acceptance of the working class as a "class in itself" leaves vital questions unanswered about levels of class consciousness, and the roles and positions of the various interest groups that are engaged in the labour process. This suggests the need for a more dynamic view of class relations, where a conflict can be superseded by an alliance of interest, for as Sadler notes (1985: 39):

".. the very nature of class lies in the working of the system itself, not in some set of attributes analysed in a particular circumstance."

Penn (1982) also notes the importance of social exclusion strategies by certain groups to protect their skills and position in the labour process against other workers. But

⁹Stark (1980) provides an important critique of Braverman's neglect of this issue.

crucially, the success of such strategies is contingent upon the nature of the labour market in which they are engaged. This leads him to suggest that:

"The real significance of skill within the manual working class cannot be grasped from aggregate data; we must examine the local labour markets and local industrial relations structures where most of the battles over skill are fought. There is clearly a need for more research into such areas, but if it is to be adequate, it must examine the real bases of skill in the workplace."

(1982: 108)

The above discussion suggests that Braverman's vision of deskilling as the central characteristic of the labour process in the twentieth century is at odds with the empirical evidence. Instead the requirements of capital in production may involve simultaneously both deskilling and upgrading processes. Indeed this is the impression reached by many studies into the restructuring of work during the 1980s (see for example Jones and Rose, 1986).

But, at the same time, many of Braverman's detractors have become overconcerned with dispelling his deskilling thesis, and consequently have themselves become embroiled in a debate about managerial control of the labour process in the narrowest sense (see Littler, 1990 for a review of these developments). This, to a certain extent, deflects attention away from Braverman's true purpose which was to expose the workings of capital, and the removal of control from the worker in a wider sense. Given this insight, debates concerning worker control over the immediate sphere of production are to a certain extent redundant, for they fly in the face of the complex global system which capitalism has become in the past 100 years. Thus arguments concerning the extent to which workers are undergoing deskilling processes, at the level of the individual factory or plant, pale into insignificance in the light of an increasingly global capital accumulation system. This is a system in which "meaningful

decisions" (Armstrong, 1988: 147) concerning the production process are gradually being removed from the individual worker (and in fact from the immediate geographical point of production) and concentrated within the hands of a corporate elite.

2.4 Constructing a framework for the analysis of employment change

To reiterate earlier remarks, Braverman's principle legacy lies in the style of his approach, reminding us that contemporary patterns of labour organisation are the result of historically constructed social processes.¹⁰ At the same time the most frequently cited criticism of Braverman is for his single track view of the evolution of work. It is therefore surprising that during the 1980s the major theoretical developments concerned with the organisation of work have also been found wanting in this respect.

Responding to a period of increasing labour market chaos, and growing unemployment in most advanced industrial countries from the mid 1970s onwards, the dominant theme espoused by theorists during the 1980s was that a major reorganisation of work was underway, representing the decline of Fordism (mass production) and the growth of newer more flexible forms of production (Piore and Sabel, 1984). Braverman's deskilling thesis has been supplanted by an alternative hypothesis, the

¹⁰Significantly this point has long since been conceded by researchers working in the labour market segmentation tradition:

"In this book we argue that one cannot understand current divisions within the working class without tracing the character and effects of labour market segmentation... We develop this argument through an analysis of the historical dynamics of institutional change in American labor-management structures and U.S. labor markets."

(Gordon et al 1982)

central theme of which is that periods of crisis within capitalism bring about a restructuring of production relations and the emergence of new forms of labour organisation (Gordon et al, 1982). Thus during the present period of restructuring (made necessary largely by the saturation of mass consumer markets) the extensive sub-division and deskilling of the workforce under Fordism is being replaced by a new division of labour into a "core" of multi-skilled craftsmen, surrounded by a periphery of semi-skilled, unskilled and underemployed individuals (Atkinson, 1984).

There is an extensive and well developed literature devoted to the critique of flexibility in its various guises (e.g. Pollert, 1988a; Amin, 1989; Elger, 1989; Rubery, 1989) and its claims to account for contemporary changes in the organisation of work. However what is of interest to us here is the tacit acceptance (by both advocates of flexible specialisation and many of those in the labour process school tradition) of fordism as the benchmark by which to study the transformation of work during the 1980s. Thus arguments about whether the present restructuring of work represents post-fordism or neo-fordism implies an acceptance of a recent past where the organisation of work was intrinsically determined by a mass production ethos. This is despite evidence that important sectors of production exhibited systems of labour organisation, especially in the British case, that were never governed by the logic of fordism (see for example the studies of the construction and shipbuilding industries by Moore, 1981 and Lorenz, 1983 respectively).

Certainly a fordist description was never appropriate for the forms of labour organisation that were associated with the development of industrial capitalism in the coastal areas of North East England, prior to the development of North Sea oil. Bearing this in mind, it is inappropriate to consider changes

in the nature of labour organisation within the region, as a result of the arrival of oil-related developments, in terms of either a fordist - flexibility perspective or a deskilling thesis.

2.5 The employment system as a framework for the historical evolution of work

What the above discussion suggests is the need to go beyond a single basic model to explain changes in the organisation of work (Thompson, 1990: 98). In particular it is necessary to reject the temptation to reduce what are often highly diverse organisational structures to variants of a theme. As Pollert notes in her critique of the "Flexible Firm" model:

"The overstretching of the model to explain the evidence makes it appear more of a conceptual strait-jacket than an analytical tool."

(1988b: 45)

Instead what is required is a less deterministic and rigid framework for analysis, that is capable of explaining the multiplicity of employment circumstances that arise under capitalist production. Rubery's concept of an employment system, referred to earlier, is a useful starting point in this process. In essence she recognises the extent to which the restructuring of employment has (1989: 155):

"..to be considered within the context of a specific labour market and the economic and social systems of organisation that underpin the operation of that market."

Although Rubery introduces the term, "employment system", as a means by which to examine changes in the labour market at the national level, it is an equally appropriate instrument for charting the restructuring of employment at other scales of analysis.

Here, we adopt the term in a narrower spatial perspective, but over a longer timescale, to chart the historical evolution of

work associated with a specific form of industrial development within a particular region. An employment system in this sense refers to the development and sustenance of a form of labour organisation, linked to and indeed structured by the demands of a particular branch of production within a given locality. In this case we use the concept to represent a form of labour organisation that developed in the North East of England in the period from 1850 to the present day. It was an employment system that originally developed to serve the industries of shipbuilding and structural engineering, but was then adopted and restructured by the incoming oil industry.

Significantly the analysis is restricted to an examination of the organisation of labour in production, and not upon the labour market at the macro level. We are concerned with a particular segment of the labour market that was associated with shipbuilding and engineering and its reproduction over time. As such, the major departure from Rubery's framework is in the central role given to specific processes of capital accumulation and their associated forms of work organisation (manifested in the labour process) in restructuring the employment system.

However this is not a general labour process on Braverman's terms, governed by one immutable law of development, but rather the labour process of a specific industrial and social context. From this perspective the labour process is subject to two important influences: firstly, the industrial structure and product market circumstances within which it takes place; and secondly, the prevailing set of social relationships that exist at the level of the local labour market. We argue that it is only within this type of framework that one can begin to fully comprehend differences in the organisation of work across geographical boundaries and industrial sectors.

The recognition that the labour process is contingent upon prevailing external social relationships forces us to take a wider view of what constitutes this same labour process, i.e. not merely as the physical organisation of work at the point of production, but also as the process of recruitment (or put another way the nature of internal labour market development) by which employers reproduce their supply of labour.

With this more expansive view of what constitutes a labour process, we will proceed to explain the development of North Sea oil related employment within the context of past forms of work organisation in the North East of England. However, prior to this it is necessary to elaborate upon our understanding of the concept of a labour process, in terms of its relationship to the wider process of capital accumulation and the key influences upon it; namely the local labour market circumstances and specific product market conditions.

2.5.1 Contemporary accumulation and the labour process

There is little doubt that the nature of capital accumulation has altered radically since Marx's time. In particular, the nature and scope of capital is itself less personal. The mid Victorian factory owner has been supplanted by the large corporate enterprise as the central unit of analysis in most industries, through the process of competition, and embodied in the increasing concentration and centralisation of capital:

"In all advanced capitalist economies there now exists a sector of huge corporations whose top managers exercise considerable discretion over their policies. We now live in the era of Monopoly Capitalism."

Friedman (1977: 23)

In the 1980s these processes accelerated to the extent that the world economy has become increasingly dominated by large transnational organisations, often with their own vast global

linkage networks.¹¹ Accompanying this internationalisation of capital, there has been a restructuring of employment systems to the extent that divisions of labour are increasingly located at the global rather than the national level:

"Thus a characteristic of corporate decision-making and corporate strategy in late capitalism is the "rationalisation" of labour and work at home and the transfer of industry to areas abroad where labour is cheaper and can be "super-exploited", with consequences for wage rates, accidents, working conditions, and most significantly, profits".

(Littler and Salaman, 1984: 40)

Even in those industries where divisions of labour have not assumed a global, or for that matter a dispersed geographical, form but remain fully integrated within individual sites, such as shipbuilding in the United Kingdom, the indirect effects of the internationalisation of capital are still felt. Capital investment strategies, increasingly the preserve of financial rather than industrial institutions, are taken at the global level and face a galaxy of competing avenues for profit accumulation. Thus in this advanced stage of capitalism, not only is there intense competition between individual corporations, but also between different economic sectors, which by their very nature offer varied returns on investment.

But although the capitalist system is becoming increasingly global in character, the wealth of literature from the post-Braverman debate continues to stress the diversity of forms of labour organisation in production. The development of Monopoly Capitalism has been characterised not by one dominant labour process, nor by a series of stages identified by dominant modes of production and labour organisation (Piore and Sabel,

¹¹The most recent trend in this centralisation process has been the collaboration of former rivals in joint production ventures, epitomised by the Rover-Honda deal and more recently by the agreement between Chrysler and Toyota (Wood, 1988).

1984; Gordon et al, 1982). Instead the nature of capital accumulation has been uneven across the parameters of industry, time and space. Labour processes have developed to accommodate the specifics of individual spheres of capital accumulation.

The survival and extension of capitalist accumulation in the past 100 years has been dependent upon its inherent flexibility. The diverse forms of capitalist development across geographical boundaries lie as testimony to its ability, as a mode of production, to assimilate with existing social and cultural structures. At the same time, whilst the need to extract a surplus remains paramount, the need to extract an immediate surplus varies according to the degree of monopoly enjoyed by a firm within a specific industrial context. Thus whilst capital still requires ultimate control over production to ensure continued accumulation, forms and levels of control over labour within the production process will vary along a relatively wide spectrum.

A further characteristic of the capital accumulation process is its inherently dynamic nature. Today individual corporations experience an ongoing restructuring process, in response to competition, recycling capital for the highest returns on investment. This in return results in new systems of production and employment often at new locations. The forms of labour organisation that emerge in these circumstances will represent the interplay of existing local labour market forces (themselves the result of previous labour processes), with the nature of product market conditions and industrial structure in that particular sector. This is not to negate the role of the labour process as central to the accumulation of capital, but rather to argue for an understanding of the labour process within the boundaries of individual spheres of capitalist accumulation.

2.5.2 Existing local labour market conditions

In structuring an employment system, the labour process, at any one point in time, does not take place within a vacuum, but is influenced by the pattern of existing social relations, represented by prevailing local labour market conditions.¹² There are two principle means by which this influence is felt. Firstly it determines the balance of power between labour and capital in the labour process. Power relations are inherently unequal in the labour market; ultimately labour is forced to supply its labour power via the wage contract to ensure its own reproduction, as Adam Smith noted:

"It is difficult not to foresee which of the two parties must, upon all ordinary occasions, have the advantage in the dispute, and force the other into compliance with their terms. The masters being fewer in number can combine much more easily.... In all disputes the masters can hold out much longer... In the long run the workmen may be as necessary to his master as he is to him, but the necessity is not so immediate."

(1845 [1776]:66 quoted in Loveridge and Mok, 1979:32)

However having accepted this basic point, it is necessary to recognise that groups within the labour market can enjoy periodic, strategic advantages over capital, often through the result of changes in supply conditions (e.g. alterations in demographic trends or in levels of training). Additionally, upsurges in demand resulting from booms in the product market can further serve to tighten labour markets, giving groups in the labour market power to improve their position through and within the labour process. These fluctuating power relations characterised many labour markets prior to the First World War, notably in engineering and shipbuilding.

A second means of influence is the way in which changes in labour market structure can affect the position of supply side

¹²These conditions are themselves the result of previous and ongoing labour processes.

groups in the labour process. Thus in the nineteenth century, the influx of large numbers of unskilled cheap Irish labour, onto the British labour market, served to undermine the position of existing work forces in the labour process, across a wide range of industries.

A further way that the nature of existing social relations can also impart an influence on the nature of an employment system is through the regulatory framework within which the social relations of production take place. In Britain, employment relations in many industries (especially those that developed in the nineteenth century) have traditionally been governed by a "voluntarist" system (Deakin, 1985) of agreements between management and strong unions. In the past 150 years the state has played a relatively passive role in labour regulation, although there has been significant post war legislation, largely in favour of the employee.¹³

2.5.3 The nature of the product market and industrial organisation

Product markets act as enabling frameworks, providing a range of possibilities within which the labour process can take place. The nature of the product market, in terms of scale of production, degree of standardisation of the commodity produced and stability of market demand will all impinge upon the labour process and subsequent stratification of the labour market (Piore, 1980).

In industries characterised by mass markets (e.g. large parts of car manufacturing and food production) employers have been

¹³This situation has changed in the 1980s; the Thatcher government has pursued a legislative and political offensive against the unions (Towers, 1989), which are seen as institutions that hinder the development of free market forces.

able to instigate mass production (fordist) regimes, accompanied by the introduction of assembly lines, the increased use of machinery, and the subdivision and deskilling of labour.¹⁴ But other industries, notably those producing large capital goods, do not operate within mass market systems and are confronted by a different production rationale. The product market for these industries is typically characterised by a situation in which fluctuations are endemic, rather than sporadic, an integral feature. The shipbuilding industry is the most classic example, where demand, whilst on the one hand, being dependent upon trends in the market for passenger and cargo transportation, is, on the other, fundamentally associated with the age of existing vessels (capital stock) and their replacement needs (Lorenz, 1983). Similarly construction industries are faced with highly irregular patterns of demand. The underlying reason for the nature of these product markets is the factor of large, single unit production, rather than small-scale mass production. This in turn has important implications for the nature of the labour process.¹⁵

The nature of industrial organisation within product markets will also impinge upon the development of an employment system. The extent to which a market is dominated by several large firms, or composed of a multitude of small firms in dynamic competition, determines whether firms can forego immediate profit for stable employment relations (Friedman, 1977). At the same time, the role of large business

¹⁴This is not to dispute recent evidence that suggests the introduction of more flexible regimes and the erosion of fordism.

¹⁵Moore (1981) illustrates this point from his analysis of the U.K. construction industry, noting how employers casualise the bulk of the work force to cope with uncertainty in the product market.

conglomerates and their investment policies, that straddle a diverse range of product markets, are increasingly important in explaining employment change at the level of the individual plant.

2.6 Conclusion

This chapter set out to develop a framework with which to analyse the impact of North Sea oil upon employment in the North East of England. Initially this involved an examination of the ways in which employment structures have been analysed in the past. This led us to suggest that there is no universal model with which to analyse patterns of labour organisation. Instead labour market dynamics are best encapsulated in the notion of an "employment system". Whilst this system is structured by a range of mechanisms, at the level of the production process the labour process remains central to an explanation, being the the key mechanism by which labour is reproduced.

But labour processes take place within and are conditioned by pre-existing structures; the prevalent employment conditions within which firms have to operate. These are manifested in the form of local labour market conditions and systems of employment regulation. Additionally the evolution of an employment system is conditioned by the nature of the product market and industrial organisation in that sector of the economy within which the firm operates.

This provides the framework for analysis in the following chapters. In particular, we will demonstrate how the arrival of the oil industry in the North East was confronted with an employment system, that was characterised by a highly skilled male dominated work force with strong union traditions, and a division of labour based around craft demarcation. This employment system was itself the product of a labour process

based upon heavy engineering industries, and in particular shipbuilding. It is to this process that we turn in the next chapter to provide the context for the advent of oil developments.

CHAPTER 3

THE BACKGROUND TO OFFSHORE FABRICATION IN THE NORTH EAST: THE EMERGENCE OF AN EMPLOYMENT SYSTEM

The impact of oil-related development on the North East of England can only be fully comprehended through an understanding of the existing social and economic relationships in the region. Within the North East, the offshore fabrication industry did not represent a break from past economic activity, but was, in many ways, an extension of previous forms. More specifically it represented the continuation of a long-standing tradition of large-scale structural engineering and shipbuilding projects, stemming from the early industrial period. This chapter traces the evolution of this tradition, which represented the development of a particular type of production regime¹ and system of employment organisation.

3.1 Employment structure prior to North Sea oil developments

In Chapter 1 the North East was referred to as an "old industrial region". During the nineteenth and early twentieth centuries it was a core region for a particular phase of accumulation on a global scale; a period of industrial capitalism that was centred upon the development of heavy industry through the exploitation of indigenous coal and iron resources. As the twentieth century has advanced and new sectors of accumulation have been opened up for exploitation by capital, the North East has become increasingly peripheral to economic development, both

¹The use of the term "regime" here is not intended to reflect a particular phase of global capitalist accumulation as envisaged by the French regulationists (e.g. Aglietta, 1976; Lipietz, 1986), but rather as a particular type of production in response to the requirements of a specific industrial context.

nationally and internationally. Underlying this decline has been the failure of locally based capital to reinvest within the region, expressing instead a preference for investment in newer growth regions such as the South East of England and in export markets (Carney et al, 1977).

Consequently the North East exhibited an industrial structure centred upon "old" and decaying industries, that was still apparent at the time of the 1971 census of employment (see Table 3.1). The percentage employed in primary industries continued to be double that of the national average, whilst in manufacturing, the region remained heavily reliant upon the traditional industries such as mechanical engineering and shipbuilding (which combined, accounted for 25 per cent of all manufacturing employment) and had not received as high a share of the twentieth century's growth industries.² The major area of expansion in manufacturing in the twentieth century has been chemicals, predominantly based upon Teesside. Elsewhere there has been some development of light engineering, stimulated by government regional policy in the post 1945 era, located at trading estates such as Team Valley on Tyneside.

This concentration within manufacturing was further exacerbated by the fact that almost 40 per cent of mechanical engineering employment was in the "Industrial Plant and Steelwork" division. In reality this division represented an offshoot of the region's involvement with iron and steel, associated with the fabrication of steelwork for the construction industry. This sector of engineering is

²For example its share of motor vehicle production was only 3 per cent of total manufacturing employment, compared to the national average of 10 per cent.

striking in its resemblance to the functioning of the shipbuilding industry; manufacturing capital goods in single unit product markets employing similar types of production technique, and requiring an almost identical composition of labour. In short, these two industries combined constituted a particular form of industrial and employment experience and drew upon a particular form of craft labour market within the region. This experience was confined geographically to three industrial coastal districts at the mouths of the rivers Tees, Tyne and Wear, and inland at Darlington and was distinct from the mining culture of the Durham coalfield.

This employment tradition was also heavily, male dominated (women made up less than 10 per cent of the work force in the shipbuilding and mechanical engineering industries, compared to a national figure of 29 per cent for manufacturing as a whole). Women were largely excluded from the local labour market, being predominantly confined to domestic and other forms of service activity, or unpaid work in the home. Associated with this employment system, there developed a particular form of labour market regulation, that was characterised by a strong craft presence and embodied in the preservation of rigid demarcation lines. It is to the historical evolution of this employment system that we now turn our attention.

3.2 Industrial structure and product market development within the employment system 1850-1939

The origins of this employment system were rooted in a phase of industrial capitalism that followed the exploitation of the resources of the Northern coalfield. In the mercantilist period, the existence of easily accessible supplies of coal in the North East, and its growing importance as a fuel in most parts of Europe, allied to an expansion of

international trading links, facilitated an important if limited growth in shipbuilding:

"The reason for the shipbuilding boom was simple. With the emasculation of the forests, coal was being increasingly employed as the great natural fuel of the country and much of the coal was to be found in the north. By the end of the seventeenth century great fleets of coal-carrying ships were sailing from the Tyne for ports as far away as Danzig or the Channel Islands. But Newcastle's chief markets were London and East Anglia, or abroad, Northern France, North West Germany and the Low Countries."

(Dougan, 1968:20)

Although the construction of colliers remained the dominant form of shipbuilding activity at this time, the American War of Independence and the Napoleonic Wars brought with them some diversification into military vessels.

Whilst the development of the coal trade with London led to the emergence of a sizeable shipbuilding industry in the region, it was the transition to industrial capitalism embodied in the expansion of the iron, and later steel, industries that were key to the massive expansion of both shipbuilding and engineering.

3.2.1 Shipbuilding

In shipbuilding the substitution of steel for wood, during the middle years of the nineteenth century, resulted in a dramatic expansion in the scale of operations, both in terms of capital and manpower requirements, as McClelland and Reid note (1985: 153):

"While there had been some very large wooden yards, especially on the Thames, the average size of the firms scattered around the country's coasts and rivers was nearer to twenty men with very little fixed capital. In marked contrast even the earliest iron shipbuilding yards employed from 500 to 1000 men and had capital of from £5000 to £25000, whilst by the late nineteenth-century shipyards were among the largest industrial enterprises in the country with twenty employing over

2000 men each."

This development had implications for the continued growth of the wider capitalist economy. In the early part of the nineteenth century, the rapid expansion of the railway network had acted as the principle motor of growth, with its demand soaking up the burgeoning supplies of products emanating from the coal, iron and steel, and engineering industries (as we shall see later). With the saturation and subsequent demise of this market (at least in the domestic context) by the early 1880s, the expansion of the shipbuilding industry presented an alternative vehicle as the focus for accumulation within this sector of British industry.³

Accompanying this change in the scale of operations, was a shift in the spatial structure of the industry at both the national and international levels. Within Great Britain the dominant role of the Thames and the Mersey (largely achieved through their links with international trading operations) was gradually displaced by the growth of shipbuilding operations on the Clyde and the North Eastern rivers, facilitated by their proximity to important suppliers of raw materials.

At the global level, the previously dominant North American industry (founded upon abundant quantities of timber in the vast hinterland) was undermined by the combination of a switch to iron ships and the debilitating effects of the Civil War. It was in these circumstances that the North East shipbuilding industry was able to achieve prominence on a world as well as a national scale. As Pollard and Robertson

³This fact is illustrated clearly by Lorenz (1984: 100) who estimates that shipyards were consuming 30 per cent of all steel production between 1910 and 1912.

(1979:48) note:

"This competitive advantage of British shipyards originated in the period 1860-1880 when no other major country, save perhaps America, whose resources were occupied elsewhere, had the iron, steel and engineering capacity to build modern steamers on a large scale. The advantage continued to 1914 largely because of three factors: access to a large market, full use of fixed capital, and external economies; cheap supplies of raw materials and components; and the skill and experience of management and men."

By 1889, Britain was producing 80 per cent of the world's ships, out of which the North East was producing almost one half (Dougan, 1968: 62).

Within the North East itself, the development of iron and steel shipbuilding became increasingly clustered in those areas that were closely linked both organisationally and geographically to the developing "coal combines" (Carney et al, 1977). From the construction of the first iron ship, "The Star" at South Shields in 1839, shipbuilding in the North East became increasingly synonymous with the Tyne, the Wear, and to a lesser extent the Tees.

In the period from 1870 to 1939 the British shipbuilding industry underwent a tremendous process of growth and decline that reflected the country's wider role in the development of the global political economy. The period from 1870 to 1900 was the one of most pronounced growth in shipbuilding in the U.K. and more especially the North East (see Table 3.2). This growth was a consequence of the huge expansion of trade, occasioned by British capital's expanding horizons overseas. In the period 1880 to 1914 British shipping companies accounted for approximately 35 per cent of the world fleet, providing shipbuilders with a sizeable and relatively stable domestic market (Lorenz and Wilkinson, 1983: 110). This enabled British shipbuilders to

specialise in production to a greater extent than their rivals, bringing a substantial competitive advantage and subsequent domination of the overall world market.

Despite this competitive advantage, the British share of the world market was already in decline in the period from 1892 to 1914, as is illustrated by Figure 3.1, as a result of protectionist measures pursued abroad, although the downturn in commercial demand was compensated for by a growth in the number of contracts for naval vessels.

Within these longer term trends, the industry was characterised by short term fluctuations (see Figure 3.2), the explanation for which lies in the nature of the product market.

Ships have never been produced for mass consumption markets in the same sense that, for example, cars have been in the twentieth century. A separate transaction is completed in the marketplace for each good produced, rather than multiple purchasing. There is no regular pattern of demand, the only continuous process is the marketing effort required to bring a steady flow of orders to a company's yards. Herein lies the fundamental uncertainty and dynamism with which firms are faced. Production is centred around single unit based contracts, the requirements of which are flexibility in the combination of inputs.⁴ This favours labour intensive regimes, rather than large investments in fixed capital

⁴One qualification to be made here is that certain companies produced whole series of ships, of a standard design, as McCord notes:

".. in the 18 years after 1893 Doxfords of Sunderland built 178 of a more or less standardized turret-deck cargo ship". However this does not constitute a form of mass production. Ships were still constructed one at a time in a single berth, representing at the most a primitive form of batch production.

equipment that is likely to remain idle for long periods.

The majority of North Eastern firms became specialists in the highly competitive market for cargo vessels (this in turn stemmed from the earlier tradition of producing coal tramps). These vessels did not require a great deal of sophistication in their construction, and thus there was no great technical restriction to entry. As a result, market fluctuations tended to be the norm rather than the exception. Firms that entered the industry were often of a highly ephemeral nature. The transient nature of the cargo division was reflected in the large number of single vessel firms that the industry witnessed in the period up to 1930.

The situation was compounded by the correspondingly high levels of competition amongst shipping companies. This precluded attempts to stabilise the product market through vertical integration. The cargo shipping industry continued to be characterised by a large number of individual ship owners up to the 1930s.

Consequently this sector of the shipbuilding industry continued to be constituted by many non-integrated producers, a situation that persisted through to the depression of the 1930s, causing Lorenz (1984: 20) to remark:

"The majority of shipbuilding firms in Britain remained independent and comparatively small in scale. Frequently under family ownership or control, there was a tendency to jealously guard independence of action. This.. was to prove a major obstacle to restructuring industry, the need for which became increasingly in the 1930s."

If this pertained at a national level, then it was accentuated when applied to the North East, with its

reputation for cargo vessels. The Wear alone still had 14 independent yards in this specialist field up to 1914 (Pollard and Robertson, 1979: 63). Thus in 1920 the region's shipbuilding industry was still fragmented; 35 separate firms producing an average merchant tonnage of 22,000 (Todd, 1983: 58).⁵

Apart from these smaller producers, several large integrated companies were established to supply the more sophisticated markets for naval vessels and passenger liners.

Military related contracts had been a key source of work since the eighteenth century, but increases in the scale and sophistication of activities from the nineteenth century onwards favoured the development of large-scale integrated shipbuilding complexes. Indeed the state actually encouraged the concentration of naval shipbuilding in the larger private yards through its "Admiralty List" (Pollard and Robertson, 1979: 211). The strategic nature of the naval market also accounted for the state's willingness to spread its contracts evenly to the appointed yards during harsh market circumstances. A final factor important to the naval segment of the product market was the priority placed by the client on quality rather than cost. This tended to enhance capital investment and new technologies.

Within the North East, the construction of naval vessels was restricted to the Tyne and associated with several large producers (in 1910 these were Swan Hunter, Wigham Richardson, Palmers, Armstrong Whitworth, Barclay Curle and Beardsmore, and Northumberland Shipbuilding Co.). These

⁵The corresponding figures in Northern Ireland, for example, with its specialisation in large passenger liners were 4 firms with an average annual output of over 40,000 tons.

companies benefited from being at the centre of complex industrial linkage systems, a typical example being Armstrong's (with its links with the armaments industry).

The North East did not become a major centre for the construction of passenger liners (Belfast and the Clyde became associated with this sector of the market); the Furness shipyard at Hartlepool being the most notable producer. Here a degree of market stability was established through its links with its sister company, the large shipping concern, the Furness Line.

The diversity and fragmentation of the industry that had been its strength in the period prior to 1914 was to prove its "achilles' heel" under the very different market conditions that prevailed after 1918. At first there appeared to be little change in the market environment facing firms; in 1920 the peak output in the North East of 948,000 gross tons was reached, 16.5 per cent of the world output (Dougan, 1968: 137). But unfortunately the surge of naval related orders during and immediately following the Great War had given rise to a false sense of security, encapsulated in the extravagant and ill-fated capital expenditure plans of Palmer's.

Palmer's experience was typical of many North Eastern companies; Dougan suggests that 14 firms closed between 1918 and 1931 (1968: 148). In the 1930s the recession deepened; at its height in 1933 82.5 per cent of the shipbuilding and shiprepair workforce was unemployed (Cousins and Brown, 1970: 315) and a production low point of 37,000 tons was recorded (Dougan, 1968: 166).

Behind the depression in shipbuilding were several key market trends. The most obvious of these was a decline in

demand in the world market as a whole during the 1920s, that was not to pick up until 1938 (Parkinson, 1979: 80-84). At the same time the British share of this market fell from 58 per cent in 1913 (on the eve of the Great War) to 34 per cent in 1938 (Pollard and Robertson, 1979: 45; Lorenz, 1984: 245). Whilst part of this decline in market share was due to the protectionist policies pursued by her competitors, British firms had also lost former markets as a result of the switch towards military production during the war. Britain's share of the world export market continued to decline during the 1930s although the full effects of this were masked by the upturn in the home market in 1934 and rearmament in the latter years of the decade.

Although all sectors of the market were adversely affected by the recession, it was those areas on which the North East most depended that were hit the hardest. The peace dividend brought by disarmament resulted in empty order books for the region's naval contractors. Between 1920 and 1928 only one warship, the H.M.S. Nelson, was constructed (by Armstrong's) within the region (Dougan, 1968: 146). At the same time the market for cargo vessels, in which the majority of North Eastern firms specialised, disintegrated. The Depression affected shipbuilding in the North East more than any other region, reflected in the lowering of the North East's share of U.K. production from 50 per cent in 1913 to a low of 28 per cent in 1933 before rearmament for the Second World War stimulated a recovery (Cousins and Brown, 1970: 315).

In the light of the recession it is surprising how little restructuring of the industry occurred within the North East during the inter war years. This was despite the efforts of the National Shipbuilders Security Ltd, a body established in 1929, to reduce capacity in the industry through the compulsory purchase and resale for non-shipbuilding purposes

of redundant yards. Its secondary purpose was to foster a rationalisation of remaining production facilities into larger units. This organisation was the brainchild of the shipbuilding companies themselves with the support of the Bank of England, and although it succeeded in reducing the capacity of the industry from 3.9 million tons in 1930 to 2.5 million in 1939 (Lorenz, 1984: 126), the latter figure was still over double the output of the most productive year in the 1930s. Apart from Palmer's yard at Jarrow, a further 12 yards were closed in the region through the scheme. With regard to its second aim the N.S.S. was even less successful, coming into conflict with owners, who jealously guarded their independence. Despite its efforts the industry remained highly fragmented, 47 firms remained at the national level in 1938 compared to 60 in 1930 (Table 3.3). Within the North East, although the number of firms (in merchant shipbuilding) was reduced from 35 in 1920 to only 14 in 1937 (Todd, 1983: 58) this was mostly achieved through closure rather than amalgamation or takeover.

The severity of the 1930s recession forced a change in attitude towards the issue of government involvement in industry. Within shipbuilding however the role of government remained largely confined to the military sphere. The one exception was its "scrap and build" programme, which was introduced in 1935, in an attempt to stimulate the shipbuilding market through the activities of the shipping companies. The aim was to induce shipping companies to scrap older stock and place orders for newer vessels with domestic shipbuilders with the aid of a government subsidy. Unfortunately by the time the act took effect the world market was in the recovery phase, hence shipowners were unwilling to scrap in conditions where freight rates were rising (Hogwood, 1979: 37).

3.2.2 Engineering

The engineering industry in the North East emerged from three overlapping waves of capitalist development during the eighty year period from 1840 to 1920. The first of these was the railway boom, followed by the massive expansion in shipbuilding that accompanied the changeover to iron and steel; and finally the development of the market for industrial plant and steel goods, whose most rapid period of expansion was in the first quarter of the twentieth century. The close chronological proximity of these developments often allowed companies to participate in all three markets simultaneously. There was also a spatial dimension to the development of engineering; for whilst in the early years (first half of the nineteenth century) a diverse range of workshops operated throughout the region supplying local markets, by the latter years of the nineteenth century localities were becoming specialised in different areas of engineering, associated with the emergent local combines and supplying global markets. In particular the Tyne and the Wear specialised in the more intricate and technically demanding markets of marine and railway engineering, whilst Teesside engineering became almost a by-product of the huge steel combines, churning out low value-added structural products.

North Eastern companies were involved in the railway boom from the outset; Whessoe of Darlington made the castings for Stephenson's original "Locomotion" and built the "Derwent" in 1845 ("The History of Whessoe", 1955). The Tees Engine Works was established in 1845 as a supplier of equipment to the Stockton and Darlington Railway Company. Another important company was established in 1859 at Thornaby by Thomas Head and Joseph Wrightson specialising in the production of iron window sashes and railway castings. As the nineteenth century wore on the early workshops,

employing a small number of skilled artisans, were supplanted by much larger organisations and more sophisticated methods of production.

By the 1870s the railway market was increasingly dominated by the rail companies themselves with huge manufacture and repair plants being established at Crewe, Derby, Doncaster, Swindon and Wolverton in particular, all employing between 2,000 and 6,000 men each by 1880 (Saul, 1968: 187). Within the region railway activity became concentrated on the Tyne in the private engine works of Hawthorn Brothers and Stephenson's. But with the increasing monopolisation of the domestic market by the rail companies, these remaining private companies were forced either into export markets (in particular India) or alternative sectors of engineering.

A second wave of engineering activity accompanied the growth of shipbuilding in the region. The sector of marine engineering developed from the expertise accumulated during the railway boom and was largely restricted to the areas with the highest concentration of shipbuilding activity, namely the Tyne and the Wear. The more successful marine engineers were usually those who developed close affiliations with their principle clients. This often led to amalgamations of engineering and shipbuilding capitals in powerful combines e.g. the formation of Hawthorn Leslie from the marine engineering firm of Hawthorn and Andrew Leslie's shipbuilding concern in 1886 (McCord, 1979: 131). But perhaps the epitome of integrated engineering and shipbuilding capital was Armstrong's. Originally rising to prominence through the manufacture of armaments for the Crimean War by William Armstrong, the company diversified into gunboat production after the merger with Mitchell's in 1882. With the takeover of a major arms rival, Whitworth's, in 1897 the Armstrong company became a powerful economic

unit, employing 26,000 men on the Tyne prior to the Great War. The basis of Armstrong's success however was a substantial degree of patronage from the Royal Navy, and the careful cultivation of personal links. It was not unusual for retired naval officers to become recruited onto the Armstrong board.

The third wave, that of structural engineering, is the most important for our purposes here⁶ representing a market created by a technical advance, i.e. the development of the Thomas Gilchrist basic steel making process on Teesside in 1879 (Almond et al, 1979). This effectively ushered in the era of cheap steel and encouraged its uptake in the construction of bridges and buildings. At the same time it was a timely event for the continuation of capital accumulation in Teesside's growing steel and engineering combines. The levelling off of construction in the region's shipbuilding industry at the turn of the century, coupled with increasing foreign competition, had led to the rationalisation of the steel industry into three major firms; Bolckow Vaughan, Dorman Long and South Durham Iron and Steel (Hudson and Sadler, 1985: 7). But there was also a movement downstream into the expanding market for constructional steel products, Dorman Long in particular establishing its own Bridge and Construction Works on Teesside to counter foreign competition in its traditional areas. Similarly Bolckow Vaughan acquired the Birmingham firm Redpath Brown, which was the largest structural engineering firm in Great Britain during the 1920s. Alternatively some smaller companies, formerly involved in iron and steel production retained their independence by

⁶It also represented a trend within British engineering as a whole away from the mass markets such as textile machinery and railway products into less standardised and more sophisticated products (Zeitlin, 1983: 25-54).

switching into the new market, exemplified by the Cargo Fleet Iron Works.

For existing engineering companies, the growth of the structural sector offered an escape route from the saturated railway sector. As the railway boom dissipated many of the smaller foundries and workshops suffered in the Great Depression of the 1870s. Whessoe's salvation was in the growing market for the steel erection of gas holding equipment. The company had been on the verge of closure in the 1890s, when an injection of outside capital allied to the new market opportunities associated with gas transformed Whessoe from a small foundry supplying the Darlington region, into an enterprise with a substantial export market ("The History of Whessoe", 1955). By the 1920s the company had diversified into process plant for the oil and chemical industries, and in the process, establishing itself as a main supplier to the Anglo-American Oil Company (the British subsidiary of Standard Oil), the fledgling Shell Trading Company (from 1897 onwards) and I.C.I.

One of the earliest construction companies, Teesside Bridge was also close to bankruptcy during this period, through a lack of trade and the stigma attached to it as the main contractor for the doomed Tay Bridge project. Survival was achieved by the restructuring of the company's shareholding capital bringing Christopher Furness in as Chairman of the board in 1892.

Head Wrightson also became involved in urban construction projects, diversifying out of the declining rail market. A significant development in 1877 was the establishment of the Cleveland Bridge company by former employees of the Skerne Ironworks; a company that was to become one of the world's major bridge builders.

The movement into the structural market heralded a change in focus for the firms on Teesside, markets were no longer localised, but nationally and later globally oriented. In the last two decades of the nineteenth century structural projects were undertaken as part of a large programme of civic works that characterised late Victorian capitalism: bridges, stations, hotels and piers all mushroomed as part of the changing human landscape. An alternative market, particularly with regard to bridge and railway construction, corresponded with the age of high British imperialism in the late nineteenth and early twentieth centuries, e.g. between 1900 and 1940 Cleveland Bridge built 15 bridges in total, 7 of which were overseas in Africa or South America (Company Archives). This represented the beginnings of an outflow of capital from the region, that was to lead to its long term demise as an industrial heartland. Its indirect effects were also substantial, absorbing part of the output of the area's iron and steel industry at a time when it was suffering from increased foreign competition in its traditional markets.

A second feature of this new market was its dynamic nature; even during a boom period the size and magnitude of contracts remained highly irregular. This point is well illustrated by the profit figures for the Teesside Bridge Engineering Company in the 1920s (see Table 3.3) when compared to the company's more stable foundry business.

Like shipbuilding, structural engineering does not face a standardised mass market in the sense that textiles and automobile manufacturing do; as such the features of the production regime are radically different, usually more labour intensive and requiring higher levels of skill.

A third feature of the market was the high levels of risk and initial outlay of capital required for individual

contracts. As a result it was common for firms to make huge losses through the uncertainties inherent in large-scale project work; Dorman Long made a significant deficit on its celebrated Sydney Harbour Bridge project, completed in 1927.

The First World War affected the region's engineering sectors in the same manner that it had the shipbuilding industry. Production was diverted away from civil works towards the war effort, predominantly armament production and whilst this provided regular profits, it also represented lost export markets and discouraged urgently needed capital restructuring programmes.

During the inter war years, the structural side fared better than most other sectors of engineering. The region's marine engineering companies suffered most through their dependence upon shipbuilding operations. As an industry it was all but extinguished on the Tees (North, 1975: 66) whilst in the Tyne and Wear heartland areas, cutbacks and rationalisation mirrored the shipbuilding experience.

For some structural companies it was a relatively prosperous time, Cleveland Bridge for example exhibited an average ordinary profit dividend of 8.1 per cent between 1920 and 1938 (Gourvish, 1979: 154). This was partly due to the growth of new markets, especially in the production of industrial plant. At the same time this reflected the continued expansion of export markets within the formal empire where the effects of the worldwide depression were less noticeable.⁷ The acceleration towards the Second World War and the advent of a rearmament programme by the

⁷In fact the most severe problem for many structural engineering firms was the shortage of materials resulting from industrial disputes, most notably after the General Strike in 1926.

government served to forestall doubts about the industry's competitiveness until the 1960s.

The outcome of this period of relative prosperity was an industrial structure little changed from that of 1918, characterised by a large number of medium sized companies operating in a diverse range of product markets. The major development was the takeover of Teesside Bridge by Dorman Long in 1930, although even here the former retained its own board and management structure.

The absence of radical restructuring within the shipbuilding and structural engineering industries of the North East, despite the ravages of recession, can be attributed, in part, to the nature of the employment regime that grew up to serve these industries. As we shall demonstrate later in the chapter, labour organisation remained predominantly craft based throughout the twentieth century, reflecting the emergence of a strong union movement. The Boilermakers, for example, operated virtually a closed shop in all the black trades throughout the North East coastal region, and had done so since the turn of the century (Clarke, 1987). Whilst the Depression years had undermined union organisation with many skilled workers leaving the industry and often the region altogether, the employers were still unwilling to challenge the unions over the fundamental questions concerning aspects of labour organisation and control in production. But at the same time, the structure of capital itself had become obsolete by the standards of the late 1930s. Before turning to the development of the employment structure in the North East, we examine this issue in brief.

3.3 The development of the capital structure in the North East to 1939

The capital structure of British industry in 1939 was

comparatively backward in comparison with the other dominant industrial nations of the world. Whereas by the 1930s Germany, the United States and Japan had developed large corporate entities that dominated important sectors of the national economy, British industry continued to be dominated by a preponderance of small and medium sized firms.⁸ This tendency has been apportioned to the "continued familial framework of many British industries" (Littler, 1983: 185). Although the concentration of capital was a feature of British capitalist development in the period prior to the Second World War, there was never a radical restructuring of industrial ownership away from its early personalised form (Chandler and Daems, 1979).⁹ Where mergers and takeovers did occur in the period from 1850 to 1939, individual units within loose conglomerates continued to function as before with a large degree of autonomy and often a significant degree of control was exercised by the original owners. Thus it could be argued that British industry was lagging behind its competitors in the development of monopoly capitalism.

Where this applied to Britain in very general terms, it is crucial in explaining the malaise of the North East's coastal districts. Amalgamations had occurred within shipbuilding and engineering in the period from 1880 to 1930 and there was even a strong element of horizontal integration,¹⁰ but capital remained concentrated within the hands of the major combines and never completely transcended

⁸For accounts of these developments see Homburg, Lazonick and Okayama in Littler and Gospel (eds).

⁹There were exceptions to this rule, notably I.C.I. and Unilever in the fast expanding chemicals industry.

¹⁰For example, the combine controlled by Sir Christopher Furness and William Gray encompassed a diverse range of companies including Gray's Shipyard, South Durham Iron and Steel and Teesside Bridge.



its highly personalised form (see for example Benwell C.D.P, 1978).¹¹ In particular, there was no substantial movement towards the formation of public limited companies and wider share ownership. Thus the North East's capital structure remained immature in the 1930s and as a result was unable to generate the financial capital required for large-scale restructuring, characteristic of its giant competitors overseas. Although a certain degree of rationalisation and restructuring occurred within shipbuilding during the 1930s, the organisation of capital remained somewhat parochial and outdated in relation to other sectors of the economy (notably the emerging chemical industry). There were several factors behind this backwardness in organisational development. Firstly the upturn in demand occasioned by the the acceleration towards the First World War from 1910 onwards. Undoubtedly this stimulus rescued many of the region's firms from bankruptcy and slowed demands for both technological and organisational restructuring. Secondly, and more significantly for the structural engineering sector than for shipbuilding, the empire constituted a stable market for products at a time when traditional areas of development (such as South America) were increasingly threatened by foreign competition. Thus the umbrella of empire provided a partial shelter, from the increasingly dynamic world market, for the North East's engineering companies.¹²

¹¹For example the shares of the Teesside Bridge Company were owned entirely by the Peat family after the First World War, whilst the board at Dorman Long continued to be dominated by members of the Dorman and Long families as late as 1926.

¹²The prime example of this came in 1929 when Dorman Long acquired the Edinburgh based engineering firm of Redpath Brown, as part of its merger with Bolckow Vaughan. Notably there was no attempt to incorporate Redpath Brown within Dorman's own structural division. Instead the former continued to operate as a separate entity in its traditional markets (predominantly the

A further factor behind the stagnation of British capital, it has been suggested, was the pervasiveness of Victorian liberal ideology which precluded government involvement in industry in the interests of the national economy (Dickson and Judge, 1986). Again the contrasts with Germany and Japan are striking (ibid, 1986: 5):

"In Germany and Japan, for instance, the state and industrial capital combined resources not only to protect and subsidise domestic industry but also to foster close links between the banks and heavy industry; to provide and manage a basic infrastructure; to encourage cartels; and to mobilise strong national ideologies."

Although the devastating consequences of the 1930s for many British industries were eventually to alter these attitudes bringing an acceptance of forms of government intervention in the traditional industries, there was never a wholehearted ideological conversion. The attitude of many British managers continued to reflect a laissez-faire mentality, rather than a willingness to use the apparatus of the state to construct a more efficient industrial infrastructure. Underlying this was a refusal to accept contemporary economic realities and a desire to return to a "Golden Age" of liberal capitalism. Such thoughts were encapsulated in an address made by Sir Ellis Hunter, Chairman of Dorman Long, to shareholders at an Annual General Meeting in 1948 when speaking out against nationalisation plans in the steel industry:

"It is a melancholy thought that political obsessions have caused the future of the iron and steel industry to become a political issue. The Directors of Dorman Long are unanimously opposed to nationalisation and are determined to support to the full the efforts of the British Iron and Steel Federation in its resistance to

supply of fabricated steel for industrial and commercial plant). In fact there was virtually no restructuring within the structural engineering division until the nationalisation of the steel industry in 1967.

the Bill..... This is a serious matter. All who are anxious to see our country restored to full economic health and her traditional place in world affairs must hope that this Bill will never be put into effect."

Thus the North East's capitalists had failed to comprehend changes within the structure of the global economy, allied to Britain's declining (but still significant) imperial position. Against this background, the continuing immaturity of the capitalist framework within the North East resulted in the failure to make the transition to a more interventionist form of industrial economy, essential to overcome the declining rate of profit (Jessop, 1983: 279).

3.4 The development of the employment system in the coastal districts 1850-1939

Not only do shipbuilding and structural engineering industries share similar characteristics in their product markets and industrial structure, but to a large extent the systems of labour organisation in the two industries developed through a common process. The result was an employment system along the North East coast, where production was dominated by a craft division of labour, and recruitment depended heavily upon an externalised labour market.

The link between product markets and employment structure is, of course, intentional. The emphasis of this chapter so far has been upon the nature of product market development and industrial structure, the implication being that these are central to understanding the nature of an employment system. Having established the role of these components as providing a dynamic environment, it is necessary to re-emphasise that these forces operate in conjunction with the very same employment features that they impinge upon. It is with this central tenet in mind that we examine the development of the employment system along the North East coast.

3.4.1 The forging of a craft identity: labour process development, local labour market structure and craft regulation

The origins of the employment system along the North East coast extend further back than some of the markets it served, having its precursors in the guild system of the medieval period, whereby the rules of apprenticeship and "tramping" were first laid down. By the eighteenth century a system of "friendly benefit societies" existed that were in many ways the forerunners of trade unions (Hobsbawm, 1984).

This was reflected in their aims and conditions, principally to insure workers against injury and ill health, and to protect the "journeyman's" position within the labour market. This latter issue was also the single most important feature of the early trade union movement, along the North East coast, which was predominantly skill based. The key strategies pursued to serve this end were the control of apprentice numbers and strict job demarcation rules.

This early craft labour force constituted a relatively minor segment of the region's labour market prior to industrialisation. In 1851 agriculture was still the largest employer in the North East, although mining had become firmly established as the principal occupation in the coalfield areas.¹³ Shipbuilding was still a small scale activity at the regional level, employing less than 5,000 men in predominantly small firms (see Table 3.5), although it was becoming increasingly important to local economies; in particular there were over 1,000 shipwrights in Sunderland. Engineering remained a fledgling industry (with only 3,000 engine makers or boilermakers) confined to localised pockets and predominantly based upon small workshops, manufacturing and repairing engines and rolling stock for the railway expansion of the 1840s. Within sixty years this situation had been transformed and the North East had become one of the world's core industrial regions with 44,670 directly employed in shipbuilding and 58,277 employed in "General Engineering and Machine Making" (1911 Census).

The growth of this employment system was all the more significant for its degree of concentration within particular coastal districts, employing 50 per cent or more

¹³There were 38,801 miners in Durham and Northumberland according to the 1851 Census.

of the male insured population (e.g. Jarrow, Hartlepool, Hebburn and Wallsend). Even in areas with traditionally more diverse local labour markets, such as Newcastle and Stockton, shipbuilding and engineering employment had begun to account for a sizeable proportion of the labour force (with 24 per cent and 33 per cent respectively).

Accompanying this growth in employment was a huge population explosion partially accounted for by demographic changes, but there was also a net in-migration of 150,000 between 1851 and 1911, primarily from Ireland and Scotland. The latter was a particularly important source of skilled labour often at the instigation of aspiring entrepreneurs:

"Another difficulty was the scarcity of local labour and he [Andrew Leslie] was forced to import skilled men from his own town, a movement that gave Hebburn the name of "Little Aberdeen".

(Dougan, 1968: 45)

On Teesside there was also a movement of both workers and companies from the iron industry into the heavy engineering and shipbuilding sectors.

Aside from the growing importance of these sectors to the regional labour market, industrialisation brought with it radical changes in the organisation of work, through the labour process, and in the nature of the labour market itself.

Labour process development and new divisions of labour

The overriding characteristics of the labour processes that developed in both industries up to the 1930s were: firstly the extent to which they remained labour intensive and under craft control; and secondly the reconstruction of the labour force into a multiplicity of newly skilled categories. The latter was particularly true of shipbuilding, which during

the nineteenth century was transformed from a wood-based industry dominated by a single trade; shipwrights, into a complex division of labour working with steel (Dougan, 1968; Harrison, 1986; Pollard and Robertson, 1979).

As shipbuilding became a more sophisticated industry, the production process became more complex; the changeover to iron led to the incorporation and transformation of trades from the iron and engineering industries. The iron workers that entered shipbuilding became subdivided into platers, angle-iron smiths, caulkers, riveters, holders-up and their assistants. Similarly the original engineering workers were transformed into fitters, turners and drillers. Additionally trades were brought in that had no previous associations with any sectors of engineering, such as plumbers, brass moulders, coppersmiths and other specialised outfitting trades. The creation of new job categories tended often to overlap traditionally defined trade boundaries. This was the cause of intense sectional conflict and juxtapositioning amongst the various unions during the latter years of the nineteenth century, particularly between the plating sections of the Boilermakers' union and the Shipwrights. The outcome of the majority of these disputes tended to favour the Boilermakers, whose strength in numbers often proved decisive.

As the scope of engineering widened, the mid-nineteenth century industry based upon small workshops, employing versatile artisans engaged in aspects of general engineering, was transformed into a number of diverse and often unrelated sectors. For the structural sector, with its emphasis on larger scale, single unit product markets, this meant a new division of labour into flexible specialists working in iron and later steel. This also involved the geographical division of the labour process between the

fabrication shops and the construction sites. In the shops, the same basic trades held sway as in the shipbuilding industry, but obviously without the conflict associated with the displacement of the shipwrights. The growth in steel construction also led to the development of new trades on construction sites, such as steel erectors and riggers (this led to the formation of the Constructional Engineering Union) who tended to coexist uneasily with the traditional building trades.

This new division of labour was further accentuated by forms of subdivision within craft categories. This involved methods of team working, whereby skilled workers would preside over groups of semi-skilled assistants and labourers or trade assistants. This reflected an extension of the gang system, whereby the "piecemaster" acted as an intermediary between capitalist and worker. As the system evolved in the twentieth century, the piecemaster was replaced by the foreman, who became the overseer of both skilled and unskilled workers. But the position of foreman was not synonymous with coercion in the Taylorist sense. Although the foreman retained his supervisory function, he was a skilled worker himself, rather than a lower rung of management (Melling, 1983: 59), and his position represented the apex of a craft hierarchy. The ambiguous role of the foreman is one of the more obvious examples of the failure of the labour process in British shipbuilding and forms of engineering to make the transition to a Taylorist or Fordist production regime.

Another feature of the labour process in the North East was the extent to which it remained craft-based and labour intensive. There was little attempt to substitute capital for labour and utilise the new technology for control of the labour process in either the shipbuilding or structural

engineering industries. This is in direct contrast with the mainstream of British engineering which was undergoing a significant, albeit not completely successful, deskilling process.¹⁴

The explanation for this again lies with the combination of product market structure and the early development of a strong craft unionism that managers were confronted with in the North East. In shipbuilding, Pollard and Robertson (1979) have suggested that this situation was largely due to the fluctuations in the product market, which deterred investment in fixed capital, that could be idle for long periods. Additionally Lorenz (1984) points out that the one-off nature of production does not allow the substitution of capital for labour. His argument is supported by evidence from the United States, where capital substitution (in the face of greater manpower shortages than in the United Kingdom) occurred in the less skilled and more peripheral areas of production.

In the North East, it was only the larger yards such as Swan Hunter and Wigham Richardson that were to make large investments in this type of additional capital (the main instruments being electrical haulage cranes and covered berths).

Whilst mechanisation was introduced in the nineteenth century (in all yards) in the form of machine tools, it was as an aid to the worker rather than as a means of achieving

¹⁴The most notable example in the North East was Armstrong's factory at Elswick, operating in the mass production of shells for the armaments industry and more able to develop a capital intensive Taylorist method of labour organisation (Zeitlin, 1983: 28). This type of organisational ethos became associated with engineering in areas such as the North West and the Midlands (Holbrook Jones, 1981).

control over labour in the production process:

"Shipyard machine tools, then, evolved from rather simple beginnings as adopted from boilershop practice to an increasingly specialized and heavy class of machine tools designed to manipulate large and extremely heavy steel sections. While these machine tools were specialized to the methods of shipbuilding, they were by no means single purpose tools, designed for the mass production of identical components. This point cannot be stressed enough."

(Lorenz, 1984: 31)

The introduction of machinery into structural engineering was similarly constrained by the diverse range of projects that firms became involved with. Although there was a standard method of shaping iron and steel, undertaken by the basic trades in the fabrication shops, the diversity in output precluded the introduction of heavy machinery for the purpose of series or assembly line production.

There were exceptions to the general situation. Whessoe, specialising in the construction of relatively uniform process plant for the chemical and energy industries, pioneered the development of shop built modules during the First World War. But even here, although worker control of production was diluted, it was not usurped by management. During the 1920s, after the introduction of American capital and ideas the company attempted to introduce a new production system, loosely based around Fordism, and centred upon the new welding techniques. Although the new techniques were largely accepted, they did not alter the existing relations of production and tended to be incorporated within traditional demarcation boundaries.

Production remained labour intensive, and capital investment in the form of new technology was minimal. This is illustrated by the failure of semi-skilled categories to displace skilled workers in the labour process, unlike in

other manufacturing areas dominated by industries such as clothing and electrical engineering (Anderson, 1982). Whilst on the one hand this reflected the uncertain and cyclical nature of the product market and the fragmented capital structure of the industry, it also indicated the strength of craft unionism within this realm of engineering.

At the same time the evidence suggests that the maintenance of worker autonomy was in the employers' own interests. Not only was the emphasis placed upon skilled workers to supervise the gangs working under them, but the system was also useful in maintaining profit levels for the employer. It was standard for an engineer or shipwright to work as a contractor on a piece rate, whilst hiring labour from the lower echelons himself on time rates. Thus during a trade slump, reductions in wages were usually passed onto the lower echelons by the piecemaster, whilst in a boom period the latter received any additional revenue accruing from a contract. Clearly this type of activity further enhanced the divisions within the labour force, creating an intermediary layer of prosperous workers between the capitalist and the lower layers of the working class.

Local labour market development

Whilst there were significant divisions between the working class in the production process, the dynamic character of the product market impinged upon all individuals, independent of skill. Thus the position of craftsmen within the employment system was fundamentally undermined by the severe fluctuations in product markets. To counteract this situation, companies continued to organise their demand for labour not through an internal labour market, but through the casualisation of the bulk of the workforce. The prevalence of this system of labour market regulation was in contrary to the general trend in other sectors of the

British economy, where more stable forms of employment, less susceptible to trade fluctuations, were increasingly becoming the norm (Southall, 1988: 254). Its preservation was dependent upon the high number of yards through which this mobile workforce could circulate. This was borne out by the situation that existed in shipbuilding areas abroad, characterised by a single large employer and a lack of alternative opportunities. Under such circumstances workers were often guaranteed security of employment in return for flexibility in the labour process (Lorenz and Wilkinson, 1983: 114). In contrast few of the North East's manual labour force were in what by today's standards we would call permanent employment.¹⁵

In practice there were differences in status between individuals based upon employment longevity, which in turn was a reward for loyalty to individual firms. For some, loyalty to a particular company was rewarded with greater employment security, whilst others would move between companies "chasing" money. Mess describes how this labour market system operated in his survey of Tyneside during the inter-war period (1928: 52):

"Employment in the shipbuilding and ship-repairing industries consists for most men of a series of jobs, which may last anything from a few hours to a few months. Usually men are engaged by the day. The methods of engagement at shipyards are roughly as follows. In each shipyard there are recognised places, where men of the different occupations assemble; these are known as "markets," the "drillers' market," the "riveters market," and so on. The foremen go there twice a day, at 7.30 a.m. and 1 p.m., to engage such men as they

¹⁵In structural engineering, employment stability varied to a greater extent. In the fabrication shops the majority of craftsmen tended to be longer-serving and there is evidence to suggest the semblance of an internal labour market. But sitework was probably more casual than many sectors of shipbuilding. Indeed the constructional engineering trades were subject to similar labour market conditions as the building trades.

require. In most crafts there are "royals," i.e. men who are taken on before others when work is available. Usually the list of royals is kept in a definite order...

Many men follow a particular firm, and often a particular department of a firm; that is to say, that they work for that firm when there is work to do, but they do not normally expect or try to get work elsewhere if their firm is slack. Other men move about the river a great deal. In the main the men of the former class are the "royals"; they get the pick of the work, and they probably do the bulk of the work; they are the men to whom heads of firms refer to as "our men," and they have often long records of service. In the main the men of the second class get the extra work of yards at their busy times; their livelihood is more precarious, and they tend to be inferior men."

Up until the 1920s, despite short term fluctuations, the overall growth conditions of the economy within the North East ensured a relatively high continuity of work and living standards for skilled workers and their assistants. This was reflected in the high wage levels, earned by craftsmen especially, relative to other sectors, as Table 3.6 illustrates. The large number of firms operating within the region ensured a steady supply of work for the labour force. As such, this employment continuity was achieved not through a single firm dominating and stabilising its product market, but through the diverse range of production stages within which the totality of firms in an individual district were located at any one moment in time. This allowed the plethora of trades that comprised the local labour markets of the region to move with their respective skills from yard to yard as the production process dictated.

In this sense a craft identity was forged not through a shared experience of regular and stable employment within individual firms but rather through a high level of consciousness based upon a local labour market identity.

The development of craft regulation

At the same time there did not develop a wider class consciousness, a factor that was borne out by the often sectional nature of industrial relations conflicts. Certainly during the last two decades of the nineteenth century the majority of disputes were concerned with the protection of craft positions within the labour market rather than class conscious movements for radical social reform. This trend became the hallmark of craft unionism in the North East, in contrast to the newer engineering areas that developed in the twentieth century, which were often more concerned with the greater political issue of piece rates (Croucher, 1977).¹⁶ It is also noticeable that the more radical "New Unionism" never gained a strong foothold in the North East, indeed a large percentage of the workforce within the North East could be defined within Hobsbawm's labour aristocracy (1964: 272-315). This largely reflects the union background and social divisions within the regional labour force in the North East that were highlighted earlier.

Despite the privileged position enjoyed by craftsmen within this employment system it would be misleading to suggest that industrial capitalists accepted craft unionism and its precepts from the outset. The technological advances of the industrial revolution offered the opportunity for the reorganisation of production, involving the erosion of craft autonomy in pursuit of greater surplus value. In this sense the establishment of a strong union tradition along the

¹⁶This is not to suggest that craft unionism was apolitical; the sponsorship of the early Labour party refutes this. But the attempt to gain political representation reflected the desire to improve the work environment through legislative change after setbacks to union development from several disputes with employers, notably after the Engineering Lockout of 1898 (Hinton, 1982).

North East coast was initially the result of a series of struggles with employers over the recognition of worker representation. Ironically the landmark in this struggle was the successfully fought movement for a Nine Hour Week by engineers in 1871, whose inspiration was not the nationally based ASE, but a local coalition of skilled and unskilled workers, the majority of whom were not unionised (Allen et al, 1971: 101). From this point until the 1898 engineering lockout, unions were able to make steady progress in establishing themselves (the Boilermakers had 80 per cent coverage in their areas of control by the end of the century).

By the beginning of the twentieth century the craft unions were strongly organised both at the local and national levels. From this point onwards, conflict between employers and unions tended to be confined to a terrain of compromise. Whilst to a large extent unions were able to preserve worker autonomy in the labour process, managers were able to instigate piecemeal changes when circumstances favoured them. The outcome of these bilateral struggles tended to hinge upon the balance of power in the labour market. Employers were more able to impose their will during recessions, but trade unions could make substantial inroads under boom conditions, e.g. the unions agreed to the Edinburgh Agreement during the recession in shipbuilding in 1907. This gave employers the right to use overtime and apprentice labour at their discretion. In 1909, with unemployment amongst the Boilermakers reaching 21 per cent nationally, a 'procedures' agreement was established that allowed employers to implement changes in production at the local level without union consent. Such agreements were unpopular with "rank and file unionists" and were rescinded by the Boilermakers' executive when economic conditions improved in 1912. Similarly the ASE were forced to allow the

employers to implement crucial manning changes after the 1897-8 Lockout. This led to the replacement of the executive by a more radical central committee, committed to defending craft principles in 1912.

Although there was substantial conflict between employers and unions, the North East was not witness to the battles over deskilling and job content that occurred in other industrial regions.¹⁷ No wonder therefore that the North East coast was lauded for its exemplary labour relations in a contemporary report:

"On the whole, we formed the opinion that unrest arising from delay in settlement of disputes is less evident in the North East area than it seems to be in other districts... The employees collectively do not advance any demands that are extravagant or incapable of being met by friendly cooperation between Employer and Employee."

(1917 Commission of Inquiry, Cmd. 8662; quoted in Eldridge, 1968: 156)

This also explains the absence of growing state involvement in employment regulation, which was apparent in other areas of the country in the first quarter of the twentieth century.¹⁸ The North East coast (excluding the mining districts) appeared to represent the prototype of a self-

¹⁷Instead the majority of conflicts between employers and workers tended to be over wage rates, which fluctuated severely with the trade cycle, especially in shipbuilding.

¹⁸The old liberalist views of the labour market were in retreat during this period. The growth of a more radical unionism appeared to threaten the very fabric of British capitalism, particularly in the period from the end of the Great War up until the General Strike in 1926. Against this background a new hegemony was emerging (Hall, 1984: Jessop, 1983), most obviously represented by the social reform programme of Lloyd George, which proved to be the precursor of welfare capitalism. This involved accepting the validity of unionism and embracing the more moderate labour leaders (Wrigley, 1982).

regulating employment system.

The consequences of The Depression for employment relations

The onset of a depression in shipbuilding and to a lesser extent structural engineering in the inter-war years was to have a significant impact upon all aspects of the employment system. The customary fluctuations in the shipbuilding market were supplanted by a period of severe secular decline from the 1920s, and the North East for the first time registered unemployment figures consistently higher than the national average. Declining orders in the shipbuilding and engineering industries shifted the balance of power in the labour market towards the employers, who initially were able to impose wage reductions on the labour force. Worker acceptance of pay cuts in the period from 1920 to 1922 reflected the belief amongst many union leaders that the doubling of wage rates during the war had contributed to the decline in competitiveness of British shipbuilders. Further cuts in wages accompanied the downward spiral into recession and the employers were to remain in the ascendancy until the late 1930s.

Although structural engineering companies fared better than the North East's shipbuilders during this period, their policies were often directed at expansion overseas, and in particular at the establishment of subsidiary operations. Whilst such activities usually secured existing jobs, they ran contrary to the needs of the increasing numbers of unemployed people in the region. There was implicit recognition of this sharp conflict of interest between domestic capital and the regional labour force by Sir Arthur Dorman, the Chairman of Dorman Long, in his annual report (1928) to shareholders, when commenting on the Sydney Harbour Bridge Contract:

"In our part, we have had to depart from the policy we

had in view when we decided to establish branches in these countries. Our object then was to provide or increase already existing outlets for our production of finished materials. As local production has increased, we have had to modify this policy, and in an increasing degree we have had to recognise that these markets have become valuable for purposes of investment, rather than as a means of absorbing a portion of the output of this country. On the whole, we cannot but congratulate ourselves that we were early enough in this field to take advantage of altering conditions and to adopt our policy in the best way possible in the interests of our shareholders. Unfortunately, every ton of steel manufactured overseas means to all intents and purposes the loss of a ton to British works."

Despite this, the position of structural engineering craftsmen, in work, in the region, during this period remained relatively strong, and they were not subject to the same scale of wage erosion as their counterparts in shipbuilding. (This reflected the relative growth of the sector during the inter war years.) They emerged from the Depression with their labour market position unscathed, and significantly, a comparison of wage rates, at the time of rearmament reveals that these workers continued to be amongst the best paid in the country (Table 3.7).

The decimation of employment during the 1930s weakened the bargaining power of unions in the labour market, particularly in shipbuilding, where wage levels declined in relation to other trades (compare Table 3.6 with Table 3.7). But significantly there was no great change in the organisation of labour in production. This was despite considerable technical changes, especially the introduction of welding and prefabrication.

By the early 1930s it was obvious that welding would gradually replace riveting in the fabrication of structural steel. With this in mind, the SEF established a committee to investigate the implications of the introduction of welding

on the labour process. Their principal recommendation was that a new class of skilled worker, the shipwelder be recruited and trained from the existing workforce, but not necessarily from the ranks of the displaced workers. This involved a five year apprenticeship in all aspects of construction. Behind these changes it was hoped that the role of the platers would also be undermined, restricting them to skilled work only, allowing platers' helpers to replace them in the task of plate straightening. By undermining the key role of platers and others within the production process it was hoped to erode the "gang system.

The unions were against these changes, which were viewed not only as a means with which to undermine the existing craft arrangements, but also to reduce wage levels. A united front presented by the CSEU forestalled the changes by fighting the employers on a yard by yard, shop by shop basis (Mortimer, 1982: 231). As a result the majority of welding work passed into the hands of the Boilermakers.¹⁹

Once again the experience of labour organisation in the North East was at odds with other, newer forms of industry, notably food processing and chemicals, where watered down forms of scientific management were being introduced in the form of the Bedaux system (Littler, 1982: 139-43). The failure of the North East's companies to restructure the labour process in a similar fashion not only reflected the unwillingness of management to challenge craft unionism even

¹⁹The advent of welding did cause sectional conflict within the unions however, notably between the drilling section of the Shipwrights and the plating section of the Boilermakers on the structural side. There was also conflict between Boilermakers and metal working shipwrights over prefabrication. This involved the removal of part of the production process to the fabrication sheds, where the plater operated a closed shop, and was to be a bone of contention through to the 1960s (Lorenz, 1983).

during the advantageous labour market environment provided by the depression years, but also the absence of sufficient capital (Lee, 1982: 154). Thus the shipbuilding and structural engineering industries entered the Second World War with capital structures and methods of labour organisation little changed from those in place at the start of the First World War.

3.5 The erosion of an employment system, 1939-1970

The Second World War and its immediate aftermath was a period of great activity for the region's shipbuilding and engineering industries. The increased demands of a wartime economy followed by the peace time reconstruction programme provided a huge market of diverse products for capital goods industries. In many ways this boom period only served to paper over cracks in the region's industries that had first surfaced in the inter war years. The situation in the North East was symptomatic of British industry as a whole. The old problems of fragmentation, technical inefficiency and archaic production systems were still present. Added to this manufacturing industry faced greater competitiveness in both the world and home markets, both from traditional rivals and new producers. Against this background the post war boom encouraged a mood of complacency in the existing industrial order, and to a large extent the lessons of the 1930s were forgotten (Armstrong et al, 1984: 96-104), whilst victory in the war dispelled doubts about the existing political economy (Price, 1986: 214).

3.5.1 Shipbuilding

The demands of post war reconstruction brought full order books to the North East's shipyards and relative prosperity throughout the 1950s. Under such circumstances, little thought was given to the issues of restructuring and modernisation, whilst the government was unwilling to

sponsor this type of programme in an industry that was superficially healthy (Hogwood, 1979: 40). But beneath these surface trends the industry was being substantially undermined, particularly with regard to export markets. Up until 1960 its share of the world market declined, but it continued to dominate the home market. It was only when British shipping companies began to desert domestic shipbuilders during the 1960s, that profits fell and the underlying structural problems of the domestic industry become fully apparent.

The doubts about the industry were occasioned not only by a fall in market share, but also due to the low rises in productivity (less than 1 per cent between 1951 and 1961 compared to 3.5 per cent in manufacturing industry as a whole).²⁰

The quantity and structure of the world market altered dramatically between 1950 and 1970; whilst production increased from 3.25 million to 21 million gross tons. The increase in demand was accompanied by a growing share for standardised tanker output, compared to a decline in specialist cargo vessels. Under these circumstances, the North East's yards continued to place emphasis upon diversity in production. As a result the tanker market was increasingly dominated by countries such as Germany, Japan and Sweden. During the 1930s, Sweden in particular had developed the production of tankers, built to a standardised design. This enabled the development of series or batch production, based upon assembly lines with considerable cost reductions. The failure of North Eastern firms (and British firms in general) to capitalise on the new market after the war was surprising given the destruction of the

²⁰See Hogwood (*ibid*: 46).

infrastructure of many of their overseas competitors. Paradoxically however, countries such as France, Germany and Japan were forced to build facilities from scratch, incorporating new production techniques such as prefabrication and welding. In contrast technical improvements in North Eastern yards were undertaken by modifying existing facilities, that were ill-suited to the demands of the new tanker age.

The absence of productivity gains was partly the consequence of the industry in the North East's inability to adopt new construction techniques in anything more than a piecemeal fashion. But the situation also reflected deteriorating labour relations and the entrenched position of the unions on the subject of demarcation. Even with the introduction of the new welding techniques from the early 1930s, production continued to be dominated by a craft division of labour, which remained a counterbalance against the unstable nature of employment.

With the decline in orders in the early 1960s, the extent of the crisis facing shipbuilding became apparent. Amongst the more notable casualties were Gray's shipyard at Hartlepool, closing in 1962 and the Wearside firm of Short Brothers in 1964. The remainder of the shipyards were only rescued through government intervention, firstly through the shipbuilding credit scheme in 1964 and secondly through the restructuring engendered by the Geddes Report (1966). The former represented a short term palliative in the form of an interest free loan to shipowners. Whilst it did serve to stimulate commercial demand, it did not cure the industry's long term problems. But the Geddes Report was much more significant in this respect.

The report recommended the amalgamation of firms and the

concentration of production into regional groupings. These regional combines would specialise and become expert in particular types of vessel. It advocated two centres for the North East coast; one amalgamating the Tyneside firms with the two remaining Tees yards, Furness' and Smith's Dock, and a second based on the Wear. In the event, the Tyne and Tees block amalgamated into Swan Hunter, but continued to produce a diverse range of vessels (e.g. warships at the Walker Neptune yard and oil tankers at the Furness yards on the Tees), whilst the two firms on the Wear; Austin and Pickersgill, and Sunderland Shipbuilders preserved their independence (Todd, 1983: 61-2)²¹.

3.5.2 Structural Engineering

The period from 1945 to 1960 was one of almost unprecedented boom for the sector, benefiting from increased demand in various segments of the market: firstly from new investment in local steel production, notably the construction of two new steel works at Hartlepool and Lackenby; secondly from the government's power station construction programme, and thirdly from a major refinery construction programme. The bridge and civil construction markets also remained profitable throughout this period.

Construction contracts were often shared out amongst the large number of firms on Teesside. In certain cases this meant the alliance of companies for the purposes of specific projects, in 1938 a company called Bellman Hangers was formed to build hangers for the Ministry of Defence on a contract basis. Amongst those firms participating were the Teesside based Cleveland Bridge, Head Wrightson and Teesside Bridge. In the post war period Cleveland Bridge and Dorman

²¹The closure of one of these groupings and the difficulties facing several others eventually led to nationalisation in 1977.

Long regularly collaborated on bridge projects, notable examples being the Auckland Harbour Bridge contract in 1954 and the Forth Road Bridge in 1958. At other times there was covert collusion amongst firms over individual contracts. This was a reaction to a period of intense competition and price cutting during the 1920s. From the late 1930s onwards it was common for there to be an exchange of information between contractors over tenders to ensure that the eventual price quoted was not below a certain minimum level. In this sense the contractors would decide between themselves, beforehand, who would undertake which parts of the contract.²² This system prevailed into the 1960s despite the 1951 Restrictive Trade Practices Act. An example is provided by Tighe (1979: 128) of his experience at Teesside Bridge:

"I remember a contract for some repetitive work in which six companies appeared on the file as having received the enquiry to quote for the business, but one glance was enough to convey the message that four of them were not really fitted for it and could not be seriously interested, and thus there was but one real competitor. A very keen estimate was prepared with a 5% profit margin, but it so happened that I met a Director of the opposing company and there was a conversation. In the event we added 20 per cent to our bid to give a reasonable margin and a decent profit on at least one job and only quoted for half the work. Our competitor quoted for the other half, at a price remarkably close to ours. The customer was quite happy, he had two sources of supply which was safer than one, he got the job on time and there were no complaints. Half a loaf at a better price, than the whole at a potential loss."

Such informal channels of communication were the norm in structural engineering, but were the closest the sector came to amalgamation. Although companies liaised frequently on contracts and over industrial relations procedures, existing structures were rarely called into question. Instead, this

²²This informal apportioning of market share between producers was commonplace throughout British industry (Armstrong et al, 1984: 101).

egalitarian approach to the distribution of major contracts, during boom conditions, perpetuated the anachronistic structure of the industry.

At the start of the 1960s this boom was dissipating, the steel reconstruction programme was drawing to a close, whilst work on refinery and power plant was increasingly of a small scale nature. In addition, technical advances in the use of reinforced concrete had given it a competitive advantage over steel in construction. This allowed the large civil constructors such as McAlpine to undertake more of the work themselves without subcontracting to steel specialists.

Apart from these changes in the product market, companies were increasingly constrained by the age of existing plant and a lack of capital to modernise facilities. Teesside Bridge's yard dated back to the nineteenth century with extra bays added as the company moved into newer markets. At the same time, the structural engineering sector was still traditionally the poor relation of the steel industry. Profits from Dorman Long's structural division were usually invested in the expansion of iron and steel producing facilities.

3.6 Employment change in the post-war era

The importance of the employment system (associated with shipbuilding and structural engineering) to the regional labour market was substantially diminished by the events of the 1930s, although as we noted at the beginning of the chapter, it continued to represent a considerable segment of the labour market up to the 1970s. Additionally, the post war era witnessed considerable diversity in the fortunes of the local economies of Tyne and Wear, and Teesside. Teesside experienced boom conditions stimulated by the growth of the chemicals industry, which attracted engineering and former

shipbuilding trades (Beynon et al, 1986b), whilst the area comprising Tyneside and Wearside came to be regarded as a problem area and was the recipient of regional aid from central government. This had the effect of diluting the labour market away from the dominance of shipbuilding by bringing new forms of industry into the area.²³

These changes also reflected the contradictory aims of government regional policy and its effects. For whilst governments explicitly sought to diversify the labour market of Tyneside away from shipbuilding and heavy engineering, Teesside was allowed to remain a dominated labour market in the interests of the chemicals and steel industries (Beynon et al, 1985).

In contrast to the inter-war years, the balance of power in the labour market was tipped in favour of the workforce during the post war period. Two factors were important in explaining this reverse. Firstly, the ravages of the 1930s had produced a new consensus amongst governing circles, centred upon Keynesian economic principles and a commitment to full employment (Crouch, 1982). In addition the overwhelming weight of employment legislation was directed at protecting and securing the position of the worker in the labour market. Secondly, within the North East itself, the outflow of workers from the shipbuilding and engineering industries into other industries and away from the region itself since the 1930s had produced considerable skill shortages by the 1950s, resulting in a more stable working environment for those remaining and creating what the contemporary Labour politician, Tony Crosland, was to refer

²³These new forms often drew from sections of the labour market not previously associated with industrial development in the area, e.g. Findus Foods employing predominantly unskilled, part-time female workers.

to as a "seller's market for labour" (quoted in Coates, 1990: 20).

These altered power relations within the labour market constrained management attempts to restructure the labour process in both shipbuilding and engineering.

Although the production process had been transformed in shipbuilding during the late 1930s (the old practice of shaping individual plates and joining them piece by piece at the berth was replaced by a three dimensional construction indoors followed by the transfer to the berth for welding) the ascendancy of skilled labour was not challenged. In time, the new tasks of welding and burning became established as skilled trades in their own right.²⁴ Consequently, as Lorenz notes, skilled workers continued to account for almost 70 per cent of the workforce as late as 1968 (1983: 169).

Similarly in structural engineering, the organisation of labour in production had changed little in sixty years, still revolving around the requirements of individual contracts and involving a dichotomy between short term contract work on site and a more stable type of employment in the fabrication shops (though the latter was contingent upon the continuity of orders). Craftsmen retained their hegemony here, despite the introduction of limited forms of new technology during the early 1960s (in the shape of semi-automatic welding machines in the 'shops and mobile cranes which speeded up the erection process on site).

²⁴Indeed the welders adopted all the traditional baggage of sectionalism in protecting their labour market status, i.e. strict apprenticeship and demarcation controls (McGoldrick, 1983: 202).

In particular employers attempts to overcome skill shortages, through raising the ratio of apprentices to craftsmen and the upgrading of semi-skilled workers during the 1950s, were largely thwarted by unions, still nervous of demarcation boundaries, although there were examples of union acceptance under certain conditions, providing they were consulted (Eldridge, 1968; Lee, 1979: 36). But notably, productivity in shipbuilding only increased by one per cent in the period 1951-61 prompting Hogwood to remark that:

"... production control in the industry was primitive, work-study non existent and personnel management old fashioned, and there was too little contact with other industries whose techniques might benefit the yards. On labour relations there would be little hope of an end to demarcation troubles unless the workers were given security of employment, and the unions some kind of financial inducement to cooperate."

(1979: 46)

By the middle of the 1960s there had been something of a seachange in the attitudes of both employers and workers to labour relations, occasioned by the beginning of a rapid decline in shipbuilding fortunes, which coincided with a downturn in the structural engineering market. Management had begun to accept that more flexible working practices would only be acceded to if employees were guaranteed greater employment stability. In shipbuilding the Geddes Report helped in this respect by encouraging the amalgamation into larger organisational units, whereby a more stable employment regime was made possible.²⁵ At the same time there was a growing acceptance amongst unions that some form of restructuring was required, if traditional forms of employment were to survive in any form in the region. In particular this was reflected in a more relaxed

²⁵There was no similar trend in structural engineering, although the nationalisation of the steel industry in 1968 was to lead to the reorganisation of the structural division of Dorman Long.

attitude towards job control and demarcation, particularly amongst the basic trades, aided by the amalgamation of Boilermakers, Blacksmiths and Shipwrights in 1962 and the relative security of existing crafts within the labour process by this time. As McGoldrick (1983: 213) notes:

"The "problem" of demarcation had diminished in importance by 1969. In fact this was due to reduction of friction fostered by the ASB amalgamations, but it was also related to the settled nature of the organisation of the division of labour after the initial negotiation of prefabrication and sub-assembly methods of work."

In fact what was steadily emerging in this employment system by the end of the 1960s was a transformation of the social relations that had underpinned it in the preceding 100 years. With the increasing globalisation of the wider capitalist economy in the post war period, the traditional parochial conflicts between employers and employees were gradually being supplanted by concern over the region's status and survival in the wider world economic system. This trend was accentuated by the arrival of North Sea oil activity, which served to highlight the region's peripheral position in the new global economy. Although, as we shall see in subsequent chapters, there have continued to be old style disputes between local managements and workforces, these have tended to be subsumed, especially during the 1980s, by a new set of relationships, which marked the incorporation of this employment system into a global economic framework. In this sense, the stances of both management and workforces have been radically altered in the past twenty years, to the extent that in certain instances, the two parties have acted in common purpose, thus defining a regional interest that overrides traditional class boundaries.

3.7 Concluding Comments

This chapter has shown how the North East developed into one of the world's economic core regions through a particular sphere of industrial accumulation. Its subsequent demise during the twentieth century has been explained by its failure to attract a substantial portion of the new growth industries. Up until the early 1960s the regional economy (outside the coalfield areas) continued to be dominated traditional industries, centred upon the production of capital goods for characteristically dynamic markets. In essence here was a sector of industrial accumulation that never made the transition to a regime of stable mass production and the accompanying restructuring of the labour process with its consequences for the local labour market.

Under these circumstances an employment system common to shipbuilding and structural engineering developed, that was dominated by a form of craft regulation. This represented the incorporation of pre-industrial forms of work organisation into an capitalist industrial setting, but also reflected the unwillingness of managers to introduce more modern methods of labour organisation, based around capital intensive production methods against a background of market uncertainty. In this sense, capital did not seek to dominate labour through subservience in the labour process, but rather through a strategy of casualisation in the local labour market. Thus many areas of the North East coast developed large segments within the local labour market where casualisation and insecurity were endemic features of the employment experience.

It was against this background that oil was discovered in the North Sea, opening up a new market for the North East's beleaguered industries, but at the same time bringing about a transformation in the social relations underpinning the

employment system.

Table 3.1
Employment Structure in the Northern Region, 1971

<u>Sector</u>	<u>Numbers employed (%)</u>		
	<u>Male</u>	<u>Female</u>	<u>All</u>
<u>Primary</u>	77,628	4,904	82,532 (7)
<u>Manufacturing</u>	340,833	120,279	461,162 (38)
<u>Construction</u>	79,120	4,145	83,265 (7)
<u>Services</u>	272,575	306,746	579,321 (48)
<u>Total</u>	770,206	436,074	1,206,280

(Source: NOMIS database)

Table 3.2
Shipbuilding Output in the North East 1870-1900
(gross tons)

Year	Newcastle	Sunderland	North East Coast
1870	86,000	70,084	---
1871	77,628	81,903	---
1872	83,672	134,825	---
1873	87,913	99,371	---
1874	110,000	99,371	---
1875	98,000	79,904	---
1876	---	55,041	---
1877	87,968	87,587	---
1878	126,307	112,602	---
1879	139,843	87,432	---
1880	149,082	108,626	---
1881	177,165	130,862	---
1882	208,406	183,350	---
1883	216,573	212,313	---
1884	124,221	99,597	---
1885	106,447	61,761	---
1886	82,760	56,699	---
1887	104,296	84,254	---
1888	213,203	142,508	---
1889	281,710	217,383	---
1890	235,062	194,307	---
1891	185,367	188,715	---
1892	181,508	186,440	570,296
1893	144,261	118,317	431,405
1894	190,601	168,257	544,768
1895	161,476	125,266	497,564
1896	200,746	215,956	611,727
1897	169,585	174,496	498,594
1898	238,551	268,754	763,825
1899	249,038	242,611	766,282
1900	265,142	244,371	794,300

(Source: Lloyds List)

Table 3.3
Industrial Concentration in British Mercantile Shipping

	Percentage gross tonnage				
<u>Year</u>	<u>Top 2</u>	<u>Top 5</u>	<u>Top 10</u>	<u>No. Firms</u>	<u>No. Yards</u>
1920	19.1	34.4	45.5	109	126
1930	25.8	40.4	46.4	60	80
1938	24.5	46.4	65.8	47	54

[Source: Lorenz, E. (1984: 125)]

Table 3.4
Tees Side Bridge and Engineering Works Profits (000s)
1920-29

Year	Engineering	Foundry
1920	- 8	22
1921	14	13
1922	17	9
1923	- 2	21
1924	7	3
1925	6	10
1926	-11	23
1927	1	11
1928	18	8
1929	8	3

(Source: Tighe, 1980: 54)

Table 3.5
Size of Shipbuilding Works in 1851 (Northern Counties)

No. Men Employed	Shipbuilders
1-9	10
10-19	13
20-29	7
30-39	6
40-49	4
50-74	10
75-99	2
100-149	2
150-199	5
200-249	1

(Source: Dougan, 1968: 237)

Table 3.6
A Comparison of Wage Rates in Shipbuilding
against Other Selected Industries, 1914

Industry/Occupation	Rate per week (s. d.)	
Shipbuilding:		
Shipwrights	41	7
Shipjoiners	40	5
Labourers	23	0
Engineering:		
Fitters and turners	38	11
Labourers	22	10
Printing:		
Compositors	35	8
Building:		
Carpenters and joiners	39	11
Labourers	27	0

N.B. Figures are for the United Kingdom average, calculated from district rates.

[Source: British Labour Statistics, Historical Abstract, 1886-1968]

Table 3.7
Wage Rates of Structural Engineering Trades on Teesside
and Darlington compared to Other Selected Workers 1938-9

Industry/Occupation	Weekly Wage Rates (s.)
Structural Eng. (Teesside)	
Platers	91
Burners	83
Rivettters	104
Shipbuilding	
Shipwrights	68
Mechanical Eng.	
Fitt/Tune	67
Printing	
Compositors	74

N.B. Figures for Teesside represent average of seven major companies: Dorman Long, Ashmore Benson Pease, Head Wrightson, Whessoe, Cleveland Bridge, Tees-Side Bridge, Cargo Fleet Iron Co. Other figures are for U.K. average.

[Source: BSC Archives, British Labour Statistics, *ibid*]

Figure 3.1 The British Share of World Shipbuilding 1892 - 1914



[Source: Lloyd's List]

CHAPTER 4

THE ROLE OF THE NORTH EAST IN OFFSHORE OPERATIONS

Having established the historical background to the arrival of North Sea oil operations in the North East, this chapter begins to examine the impact of oil development upon the region. Initially North Sea oil was regarded as a much needed fillip for the region, bringing a new market for its industries at a time when its traditional markets were experiencing substantial decline and competition from overseas. This was represented by full order books and rising wage levels for firms and workers engaged in aspects of oil activity, particularly in the halcyon days of the middle 1970s. On Teesside especially, this was a boom period; the area received 21 per cent of all oil-related investment, in the U.K, in industrial plant prior to 1976 (M.S.C. report, 1974). Not only was the engineering workforce fully employed in the construction of facilities for the upstream sector of the oil market, but there were also other important construction projects taking place simultaneously, most notably the building of the Phillips and Shell oil refineries.

But at the same time, the region has not received any long term strategic benefits from oil operations in the past twenty years. The region is increasingly peripheral to the main areas of decision making, both within the United Kingdom and at the global level (Austrin and Beynon, 1980), a position is likely to worsen during the 1990s with the advent of greater European economic integration.

The following three chapters consider the actual nature of the oil impact and what the effects of this have been for the restructuring of employment within the region. As a

first stage in this process, the following chapter examines the structure of the oil supplies market in the British sector of the North Sea and the role of North Eastern firms within that market. In doing so we will be elaborating upon certain themes arising in Chapter One.

4.1 The nature of the oil supplies market in the North Sea

The significance of the offshore market in the North Sea stretches far beyond the limits of the oil industry. For it would be no exaggeration to describe the offshore oil and gas industry as the biggest area of economic growth, in the United Kingdom, since the 1960s. This is true whether measured in terms of manpower, or capital investment. At its peak, during the middle years of the 1970s, it directly employed approximately 100,000 individuals (Hamilton, 1978: 132), whilst expenditure on capital equipment between 1974 and 1978 consistently accounted for over 40 per cent of all manufacturing investment and 7 per cent of all United Kingdom investment (Department of Energy "Brown Books").

But aside from these quantifiable aspects of the offshore supplies market, it is characterised by certain generic features, which are essential to explaining the structure of the industry itself. The first and probably most important of these is its dynamic nature. The upstream segment of the oil industry is probably the sector of the industry most directly affected by changes in the price of oil. Thus in the twenty year period between 1970 and 1990 the supplies industry suffered fluctuating fortunes, roughly corresponding to price movements in the oil market.

A second distinguishing feature of the supplies market is in the degree of importance it holds for firms engaging in aspects of offshore activity. Another feature of market diversity is in the extent to which the activities of supply

companies can be defined as offshore-specific rather than locationally-specific. As we shall illustrate later this has important consequences for the strategic position of firms.

The market is further characterised by the nature of demand, which is based around single unit contracts with specific requirements. This is especially the case for exploration and development contracts, whilst the market for offshore support services tends to be more recurrent in nature.

4.1.1 The fluctuating fortunes of the offshore supplies industry

Given the prevailing political economy in the United Kingdom, the fortunes of the indigenous offshore supplies industry have been hostage to the price of crude oil on the world's spot markets in the past twenty years. During the early 1970s, the development of the Forties Field and other subsequent finds, coupled with the price rises emanating from the OPEC revolution, produced boom conditions in the market for offshore supplies.

Despite this, in the intervening period, the oil market has been characterised by severe fluctuations. In particular it has been subjected to four major price shocks: the initial dramatic price rises associated with the OPEC revolution; further increases in price in the period 1979-80, stimulated by renewed political uncertainty in the Middle East following the Iranian Revolution; the fall in oil prices in 1986, a consequence of the collapse of OPEC control and the Iran-Iraq war; and the most recent upsurge in prices following the invasion of Kuwait by Iraq. In between shocks, the oil price displays a tendency towards a slow, but

significant movement in the reverse direction.¹

The implications of changes in the price of oil, as suggested earlier, are borne directly by the oil supplies industry (McLin, 1988). The middle years of the 1970s represented a boom time for the industry in the United Kingdom. In addition, a large number of British companies became involved in North Sea operations for the first time. With the decline in the real price of oil (Figure 4.1) in the period up to 1979, and the subsequent reassessment of the viability of North Sea oil, the supplies industry experienced a downturn and many firms left the industry, as expenditure was reduced and the exploration effort became less intense.

A further surge in oil prices in the period of 1979-80 led to dramatically increased expenditure on North Sea developments during the first half of the 1980s. Whilst part of this undoubtedly reflected the spiralling costs of development resulting from a high rate of inflation, a substantial proportion highlighted the increased perception, on the part of the multinational oil companies, of the North

¹This pattern in price movement demonstrates two fundamental features of the oil market since 1970. Firstly, the full capitalisation of the oil industry (described by Bina, 1985), inherent in the development of the spot market, has transformed oil into just another commodity to be traded on the world's commodity markets. As such, the price of oil is subjected to the endemic fluctuations that typify commodity markets. But paradoxically, oil cannot be regarded as just another commodity. As we stressed at the beginning of Chapter One, it is central to the functioning of the global capitalist economy and its market circumstances are therefore unique. Thus, political upheavals, in areas close to major oil production regions, are likely to bring extreme reactions in crude oil markets; reactions that reflect the unique importance of oil to capitalist development.

Sea as a stable political environment, relative to other producing areas.

Despite this, the fact remains that, in the long term, the North Sea is a marginal oil province; average costs for field development are far in excess of the equivalent for Middle Eastern oil. At the same time, its resources pale into insignificance when compared against the vast riches of the Arabian Peninsula. Hence, when the oil price plummeted from November 1985 onwards (from approximately \$30 per barrel to under \$10 at one point), capital expenditure was reduced dramatically and many supply firms were forced to close or leave the industry.

Apart from these general trends, the effect of price fluctuations on the supply market has tended to be uneven across upstream activities. In the North Sea, and in other offshore areas, the operating costs are far lower in proportion to the initial field development costs. As a result, a fall in price does not necessarily lead to a corresponding reduction in the level of production. This is reflected in the relatively stable nature of operating costs, compared to those for exploration and development as Figure 4.2 illustrates. As a result, those firms engaged in maintenance and service activity in the North Sea are less prone to market fluctuations.

Conversely exploration and field development costs are particularly sensitive to oil price movements; expenditure in these areas having a strong positive relationship with the market price. This was vividly illustrated during the oil market downturn in 1986. For exploration drilling rig operators the situation was particularly severe. Many had been attracted to the North Sea during the 1970s by the high rates of hire, in what was described as a "sellers' market"

(Select Committee on Energy, 1987). By 1986 however, rates were at levels 20 per cent of those in 1981, with only 22 rigs out of 66 active (ibid, 162).

But new field development projects represent the area of offshore activity most susceptible to price fluctuations. This is indicative of the large proportion of total capital expenditure accounted for by this sector (Table 4.1). Hence following the falling price levels of the mid 1980s, the situation with regard to field developments was described as follows:

"No entirely new oil development had occurred between May 1986 and March 1987 and only three developments had taken place earlier in 1986."

(ibid, xiii)

Within field development contracts, the bulk of the expenditure is usually upon the fabrication of offshore structures. Consequently this sector bears the brunt of oil market dynamics. This situation is compounded by the fact that the major fabrication firms have often specialised in offshore work (though this varies between firms as we shall see later), in contrast to the manufacturers of process plant, for whom oil operations represents one segment of their product market:

"The effect of the drop in oil prices on the fabrication and manufacturing industries has been very uneven. The major fabrication yards, set up to produce modules and other structures for offshore platforms have naturally been hardest hit because their opportunities for diversification are most limited. There has been a substantial number of closures, and it is difficult to see how further closures will be avoided..."

Manufacturing industry is less hard hit. As an example, while a major manufacturer of equipment has seen its throughput for the worldwide oil and gas industry reduced by almost 60 per cent over the past three years, this has been offset with considerable success by increased activity in the combined heat and power

(C.H.P.) market."

(ibid, 248)

4.1.2 Varying degrees of dependence upon offshore operations

Following on from the last point, the varying degree of involvement of companies in the offshore market is another important feature of the oil supply sector. The evidence suggests that for the majority of companies, the North Sea offers only a small proportion of their total product market. A study commissioned by Shell noted that 62 per cent of firms in the supplies industry derived less than half their business from the offshore market (E.I.U, 1984). This point is further emphasised by the fact that 48 per cent of companies depended upon the market for only one quarter of total demand for their products. Meanwhile only 25 per cent of companies claimed that their North Sea activities accounted for over half of their business. Paramount, amongst this group are the major offshore fabricators, for whom the dependence is almost complete. A large proportion of these companies were established solely for the purpose of exploiting the offshore market.

The downturn in the oil price in 1986 provided pertinent evidence of the reliance of these companies on the offshore market with several companies being forced to close or mothball their yards. In particular the Scottish yards of Howard Doris (Kishorn), Kestrel Marine (Dundee) and Motherwell Bridge (Edinburgh) and I.T.M's² Teesdale site (Peppin, 1990) were closed in the immediate aftermath of this fall in price. Howard Doris also sold their Hadrian yard on the Tyne to Press in 1987 having failed to establish themselves in the fabrication industry. Additionally, during the period 1987-8 the remainder of the offshore fabrication

²International Transport Management of Middlesbrough.

industry was running at only 35 per cent capacity (M.C.A. circular). The dependence of the fabrication sector on the North Sea was matched only by that of the drilling companies.

4.1.3 The nature and longevity of offshore contracts

The offshore market is characterised by a series of individual contracts, for which the demand requirements are almost always unique, corresponding to the idiosyncratic nature of each oil field. At one end of this spectrum are the giant oil fields; Brent, Forties, Piper, or Ekofisk in the Norwegian sector. These usually entail huge investment projects and a complex linkage network of suppliers. The Forties project, installed during the period 1974-5, the forerunner of this type of development, involved almost every major contractor in the British North Sea (Table 4.2). In addition, its exploitation required further rounds of investment, beyond the initial production stage, most notably the installation of an unmanned steel platform and a pipeline linking it to the main Forties field development, installed in 1984. In contrast, the less grandiose field developments require smaller levels of investment more analogous to gas requirements. This can often be achieved through the conversion of existing offshore vessels, such as Charlton Leslie's last contract for Amerada Hess's Rob Roy field. Even where specialist equipment needs to be built, this is usually small-scale, in the case of the SWOPS (single well oil production system) vessel constructed by Harland and Wolff for B.P.'s Cyrus field.³

³The wide range of fields under development in the North Sea is indicated by the costs of two recent projects; Marathon Oil's North Brae development (installed in 1987) cost £1,373 million to develop, whilst the equivalent figure for Mobil's Ness field has been estimated at £60 million (Leitch, 1987: 387).

The majority of the larger scale contracts were completed by the early 1980s, the implication being that the most profitable fields had been discovered and were in operation. The B.P. Miller construction contract, estimated development costs for which were £1.16 billion (Leitch, 1989: 385), starting in 1990 was heralded as the last of the "old style" contracts. The conventional wisdom (EIU, 1984; NEDO, 1985; Segal Quince Wicksteed et al, 1986) suggested that future developments would involve the exploitation of smaller and more marginal fields (dependent to a larger extent on the oil price) than previous discoveries. The fall in the oil price tended to reinforce these views, and although it was noted that the size of the market was likely to exceed past investment,⁴ there were important changes in the nature of demand, as a Financial Times article (23.8.88) noted:

"Any oil company faced with the prospect of developing a billion barrel field, with oil prices at \$30 a barrel and a strong dollar, would not worry excessively about minor details, such as cost over-run of a hundred million pounds.

But if looking at less than 100m barrels, with oil at \$15 a barrel and a weak dollar, every bit hurts.

This is the sort of regime that many oil companies now find themselves operating under, and it has provoked a much more self-conscious approach toward the science, or art, of project management.

...This is a problem that the oil industry is now coming to grips with and many projects under way, or at the planning stage, have in effect tried to collapse the stages so that the final project comes out faster."

In particular, emphasis would move towards a greater research and development input, and in terms of capital equipment towards smaller and more integrated structures. This was likely to involve fewer suppliers than previously,

⁴An estimated £60 billion at 1982 prices compared to £30 million in previous developments according to an EIU report (1984).

encouraging greater competition and rationalisation within the supplies sector. Such structural changes to the market favoured the larger and more integrated companies, such as McDermott's, Highland Fabricators and Press, over the smaller, more specialised firms, such as Davy and Whessoe.⁵

In addition the smaller size of offshore projects reduced the length of contracts. Allied to improved methods of production and labour organisation, the oil companies were able to make considerable savings through the reduction of the time lag between the award of a contract and the installation date. There were also important consequences for employment as we shall see later.

4.2 The structure of the offshore supplies industry

The chaotic and unstable nature of the offshore supplies market explains the oil companies' pursuance of a strategy of vertical disintegration; preferring to maintain independent suppliers, rather than absorbing upstream activities (Williamson, 1975; Vatne, 1986). This is in contrast to the downstream sectors of the oil industry, which were characterised at an early stage by integration.

The offshore supplies industry can therefore be described in general terms (although we challenge this assumption with regard to the North East region in Chapter 5) as a loose

⁵A key development in this sense has been the advent of the EPIC production system. This stands for engineer, procure, instal and commission, and effectively represents a trend amongst oil companies to award whole projects to fabrication companies on a turnkey basis. Often this has involved the collaboration of companies in joint ventures, e.g. Shell awarded its recent £100 million Sole Pit gas development to a combination of the U.S. project management firm Brown & Root and Wimpey Highland Fabricators.

network of primarily small firms,⁶ supplying an inner ring of larger contractors, centred upon the oil companies. Through this form of industrial organisation, the oil companies are able to reduce costs upstream and maintain profits downstream in an unstable oil market. Thus price reductions in the oil market are offset by encouraging fierce competition amongst suppliers.

This position is complicated however by the North Sea industry's position at the boundary of a range of diverse activities, many unrelated except for their interest in exploiting the oil market. Thus although the major oil companies have become ascendant in the North Sea, their control over any one supplier is itself contingent upon the supplier's dependence on the oil market for orders, a dependency that tends to increase towards the core of this network.

At the same time, multinational oil companies have developed special relationships with certain American supply companies that dominate the core offshore supply activities of design work, project management, and research and development. The contemporary importance of American supply companies is explained by the early growth of the oil industry within the United States. The initial size and diversity of the American market encouraged individuals with experience in the oil industry to start their own companies supplying the major oil companies (Vatne, 1986: 187). Non-American oil companies such as B.P. and Shell were also forced to use American suppliers, later on, due to the lack of indigenous suppliers. Moreover foreign supply companies were precluded

⁶A survey by the EIU (1984) found that 68 per cent of firms employed less than 50 workers, whilst only 16 per cent of companies employed more than 100.

from becoming involved in the oil industry in the Gulf of Mexico as a result of the Jones Act (Arnold, 1978: 212) which prohibits non-American vessels from working in that area.

Consequently close linkage networks were forged between the major oil companies and American oil supply firms, which were transplanted into the North Sea sphere. The desire to use long-standing and trusted suppliers was a major reason behind the lack of early local involvement in North Sea oil.⁷ The evidence since has suggested growing levels of involvement of domestic firms in all areas of activity, although the success with which a local capability has been transmitted into a viable export sector has reflected the contrasting levels of government involvement in Norway and Britain respectively.⁸

Whilst government policy (see Chapter 1) has been instrumental in persuading oil companies to use more native suppliers, foreign supply firms continue to dominate the core areas of the industry.⁹ These trends are illustrated by

⁷This also applied to the Norwegian sector, with domestic firms only capturing 28 per cent of the market in 1975 (Berrefjord, O. and Heum, P. 1983: "Olje-Politikk. Oljepolitikken og Leverenseporsmaelet" Tiden, Oslo) as well as the much quoted example of the United Kingdom (see Chapter 1).

⁸The lack of government involvement in the offshore supplies industry was consistent with a long-standing tradition in British political economy. As Chapter 3 illustrated, British capitalists, even in the post war era, remained vehemently opposed to any forms of government intervention in industry. This was in direct contrast to other countries' industrial traditions, particularly in this case, France and Norway (Cook and Surrey, 1983).

⁹In particular British firms have been unable to establish themselves in the strategically important drilling sector. Drilling rig firms' importance within the industry

reference to B.P.'s earliest and latest North Sea field development projects. For its first North Sea venture in 1965, that of the West Sole gas field, the initial exploration drilling contracts were awarded to the American firms: Santa Fe, SEDCO, Rowan Drilling, Transocean and Reading and Bates. The jacket design, fabrication and installation were undertaken by the Dutch firms Heerema and IHC Gusto. In comparison, for the development of the B.P. Miller field 25 years later Santa Fe was again the main drilling contractor, whilst British based companies; Highland Fabricators, Press Offshore, Redpath Offshore and SLP; had replaced their Dutch counterparts in the fabrication activities. Notably however the topside design was undertaken by the American firm of Humphreys and Glasgow, whilst Heerema had maintained its role as the installation contractor.

In practice, foreign companies have been able to circumvent government legislation aimed at improving the strategic role of British firms by using "indigenisation" strategies. The most obvious means is through the establishment of British subsidiaries, which are then recognised as domestic establishments.¹⁰ Typical examples are McDermott's fabrication yard at Ardersier and the project management firm of Brown and Root. Another method has been through the formation of joint ventures with British companies, typified by the formation of Laing Bechtel and Worley Santa Fe (Noroil, 1986). Although there is some technical gain for British industry through such activities, the long term

is second only to the oil companies themselves, largely due to their position as a client for equipment suppliers (Jenkin, 1981: 14).

¹⁰This definitional flaw in government legislation, itself serves to question successive government's commitment to establish a viable long term British supplies industry.

strategic benefits for domestic firms remain bleak. Many joint ventures are one-off affairs, marriages of convenience, an appropriate example being the formation of the Miller Engineering Consortium for the engineering and design of the jacket for the Miller platform; this involved the collusion of Brown and Root, Vickers and John Brown.

There have been exceptions to this general rule, notably in the case of North East England, the firm of Press Offshore, which has benefited from the support of its huge parent organisation, AMEC construction. But even here, although it is expanding its reputation as a hook-up operator and supplier of technical staff offshore, the main focus of its operation remains its fabrication division. Whilst Press now operates, to a limited extent in export markets outside the North Sea, it will have difficulty establishing itself in the core oil supply areas currently dominated by the giant U.S. and Dutch contractors at the global level. At the same time non-American supply firms face difficulties in penetrating "the good old boys club in Houston" without the positive discrimination of their domestic governments (H.O.C. Energy Committee, First Report, 1988-89: 19).

For a host of reasons therefore British firms have largely been excluded from the more specialised core areas of oil activity, such as project design and management, offshore installation and exploration drilling. Thus, although British firms have recovered ground in most sectors of the market, to the extent that they are now obtaining the lion's share of contracts, they have been unable to corner the market in these offshore specific areas. British companies now dominate location-specific activity, a fact that limits the benefits accruing from the North Sea experience to the immediate requirements of the North Sea province.

As a result of this strategic disadvantage, British firms are unlikely to share in the rapidly expanding offshore markets of the Far East, Australasia and Latin America.¹¹ Instead the fortunes of British firms are tied to North Sea developments as Cameron (1986: 27) notes:

"Although the UK industry probably ranks second or third among the world suppliers of offshore goods and services by oil companies, it has so far failed to become a large-scale exporter. This is indicative of the extent to which UK firms have been successful largely in the "locationally-determined" elements in the offshore supply industry, but not in the area of high technology exports."

Nowhere is this situation more prevalent than in the fabrication division of the supplies industry, for whilst it is the archetypal example of a location-specific industry, it is also by far the highest beneficiary of capital investment within the upstream segment of the oil industry, as Table 4.3 illustrates. It is also the principal area of activity for the North East's offshore companies.

4.3 Operating at the margins: the fabrication industry in the North Sea

The fabrication division's position within the offshore industry is somewhat anomalous, for whilst it is the beneficiary of the largest sums of expenditure from the oil companies, it is also (as we noted earlier) the most vulnerable to oil price fluctuations.

Not only are fabrication companies in a dependent relationship with the oil companies, regarding contracts, but also, the development programme itself is controlled by

¹¹This is an especially galling point, considering the extent to which the North Sea has been "a veritable proving ground for advanced technologies" (Delacour, 1988: 474) that are likely to be used elsewhere.

the oil companies in tandem with overseas project management teams. Under these circumstances, the role of British companies has largely been confined to that of final assembly.

The nature of the relationship between fabricating firms and the oil companies is usefully illustrated through reference to Transaction Cost Theory (Williamson, 1975, 1985). This suggests that industrial structure is determined by the nature of the transactual relationship between the various parties.¹² In the case of the oil fabrication market this relationship is characterised by a continuous transaction process, reflecting the nature of demand for single unit rather than mass products. The realities of this situation are that each product requires a fresh round of capital investment, in contrast to mass production or even batch production industries, where once the initial fixed capital has been employed in restructuring the production process, forms of series production can take place. In this sense, mass production industries face a decreasing marginal cost curve, which tends to encourage vertical integration.

In contrast, the offshore fabrication market precludes mass production and is characterised by a more even cost distribution. Cost reductions are therefore achieved by encouraging vertical disintegration, maintaining a list of approved contractors in competition for each individual project. In practice this requires a complex and often

¹²Care should be taken over the use of Transactions' Cost Theory. Like other theories emanating from the neoclassical school it neglects the centrality of power relations to the organisation of production, and assumes decisions are made on the basis of efficiency under competitive market conditions (see Littler, 1990 for a useful critique). Nevertheless it provides a useful insight into organisational structures.

politically contentious tendering procedure (e.g. the recent Occidental contract for the Piper Alpha replacement).

In addition, fabrication contracts usually operate under what Vatne describes as a "trilateral governance system" (1987: 182). This refers to the tendency amongst oil companies to appoint a specialist project management firm to oversee production and rationalise costs wherever possible once production is under way.

Through this strategy, the fabricating companies and their subcontractors are marginalised from downstream oil operations. Their role is confined to contractors on site, in the civil construction sense.¹³ Although the entire assembly process, of modules or jackets, takes place at a yard leased by the principle fabricator, production is in effect directed by project management specialists. In addition, the oil company owns all the major inputs of capital required in construction, buying directly from suppliers, whether it is steel tubing (typically from British Steel¹⁴ or Nippon Steel) or advanced electronic systems (from Ferranti). Fabrication companies operate with the bare minimum of fixed capital assets, a fact that reiterates the transient nature of offshore work. This is an important point to bear in mind when understanding the power

¹³In fact the status of an offshore yard is more akin to that of a construction site, than a traditional engineering fabrication shop. The principal difference in offshore work is that completed structures are towed out to the North Sea, rather than built for that site.

¹⁴ British Steel's North Sea contracts have been spread comparatively evenly throughout its various U.K. plants, reflecting the diversity of demand occasioned by the oil market. A specific company, Progress Chasers Ltd, based in Middlesbrough, was established in 1973 to coordinate the supply of steel to the offshore industry.

relations not just between the oil companies and their contractors, but also the direct nature of the dependency of the local workforce on the power of the oil companies. This was borne out by the speedy resolution of a local dispute at Charlton Leslie's South Shields yard during a contract for Amerada Hess, described by Brian (a pipefitter in his fifties):

"Here we have been on strike and we had genuine cause. I still say that! And we've just been knuckled down by them [Amerada Hess] saying "Right we're going to tow that [rig] away." Let's face it, you don't want it towed away, because the money is good for a start. You'll never get money in the area like this again."

From this premise, locational factors undoubtedly account for the high level of British activity in this sector. This is borne out by Figure 4.3 which shows the clustering of fabrication sites in the northern and eastern areas of the British Isles. Whilst the areas involved have benefited from the extra employment and income generated, the fact that many have been located at the site of redundant shipyards has only served to reinforce the historical trend in these areas towards peripheralisation from the main centres of decision making within the United Kingdom and abroad.

In practice, offshore fabrication can be subdivided into two key functions: jacket fabrication, and module construction. Whilst the former activity (in common with most other oil supply sectors) has become concentrated within Scotland, and more specifically at greenfield sites in remote areas of the Scottish Highlands, the North East of England has become an important area for module construction. There are three factors behind this dichotomy. Firstly deep water sites are the preferred location for jacket fabrication, excluding most of the Tees and Tyne yards, and favouring the estuarine areas of North East Scotland. Secondly, module fabrication requires a more sophisticated set of skills and more complex

input of materials than jacket construction. The North East, with its highly skilled engineering workforce, network of engineering shops, and background in module fabrication for other industries is therefore an ideal location.¹⁵

4.4 The role of the North East within the offshore industry

The relationship between the North East and oil operations in the past twenty years has been radically different from the oil impact in other areas. For whilst, as the preceding section has shown, British firms have largely remained in a subservient relationship to established foreign oil companies and their inner circle of suppliers, and London (itself a corporate outlier of the global oil industry) has remained the key decision-making centre for oil operations in Europe, the role of other areas affected has noticeably changed within the global division of labour. Thus Aberdeen, for example, whilst not the capital of the European oil industry that many of its more partisan adherents have claimed, has nevertheless benefited from the influx of new higher managerial functions and the establishment of several leading local companies. This has transformed the status of the city into:

"... a northern urban outlier of southern based growth - a "sun-belt" city in the "frost belt", where the new scientific, high technology, capital intensive industry of the North Sea has stimulated economic growth and social change."

(Bonney, 1986: 190)

Similarly the incorporation of remote rural areas of Scotland into the global oil economy transformed the social relations underpinning many local labour markets (Parsler

¹⁵The corollary to this is that the lower degree of sophistication involved in jacket fabrication, largely a metal bashing activity, has allowed the establishment of offshore construction sites in rural areas of Scotland, devoid of a tradition of strong labour organisation.

and Shapiro, 1980).

In the North East, whilst the impact of oil has been substantial in terms of employment gains¹⁶ (although it might be argued that oil has merely preserved existing jobs) and income generated, a transformation of the employment structure and underlying social relations is less discernible. Thus in many ways the oil impact represented part of a historical continuum, rather than a break from past activity, although this point should not be exaggerated.

For whilst the type of work provided by oil development has been characterised by its similarity (in terms of job content) to existing and previous forms within the region, the particular context of oil impact on the North East is an important point to stress at this juncture. North Sea oil represented one of the few avenues of employment growth during the 1970s and early 1980s, against a background of terminal decline in the region's shipbuilding and engineering industries. But these events at the regional level need to be interpreted as the outward manifestations of underlying processes of global capitalist restructuring. Thus, whilst many companies went to the wall with their employees (particularly in shipbuilding) during the recession (both within the North East and U.K as a whole), for many others (usually larger and more internationally-

¹⁶Unfortunately, unlike Scotland, there are few figures available on the employment impact of North Sea oil in the North East. A consultancy report released towards the end of the second boom in offshore-related work estimated that 12,600 jobs in the region were completely dependent upon the sector. It is likely however that this figure was considerably higher during the 1970s, when an estimated 8,000 people were employed in the mechanical engineering sector on Teesside alone, at the height of the first offshore boom.

oriented) it represented another round of capital restructuring, directed at disinvestment at home and expansion overseas (Beynon and Wainwright, 1979; Beynon, 1987). Conversely, and somewhat ironically, new forms of oil-related employment in the region were linked to a period of global restructuring within the oil industry.

From this perspective, it could be claimed that to a certain extent, the North East has exchanged peripheries within different spheres of capital accumulation. The principal motive for oil capital to invest in the North East (apart from the obvious locational advantages) has been the availability of a made to order, highly skilled, craft based employment system.

4.4.1 The magnitude of oil impact

The 1970s were years of deepening recession throughout the United Kingdom in many areas of industry. Whilst the same applied to the North East, the development of oil activities provided a short term stimulant, and the deterioration of the manufacturing base was markedly less than in other regions of the United Kingdom as a consequence (Townsend, 1983: 38). In particular, declining employment trends were arrested in those industries associated with the employment system in the coastal districts (Figure 4.4). Although the region's shipbuilding and marine engineering complexes never fully embraced the offshore market, they did participate in marginal activities such as rig repair (notably Swan Hunter), which filled in the gaps between their mainstream contracts. The impact upon the mechanical engineering sector was more pronounced. In the years of greatest oil development, between 1972 and 1976, there was a net growth within the industry of over 6,000 jobs.

But the biggest short term impact was felt outside the

indigenous engineering industry, within the construction sector where over 12,000 jobs were created between 1971 and 1976.

This boost to the construction sector was centred upon the growth of Teesside as an oil and petrochemicals complex. During the middle years of the 1970s the area attracted over 20 per cent of the total national investment in industrial plant construction. Of particular importance was the decision by Phillips to construct a refinery to service its Ekofisk field in the North Sea at Seal Sands, near Hartlepool. In addition Shell had commissioned a refinery at an earlier date, at Teesport, (1964) that was in operation by the early 1970s. Further construction work was occasioned by the decision to build a new B.S.C. plant at Redcar, and the restructuring of the chemicals industry on Teesside, associated with the existing I.C.I. plant at Wilton, but also with new production units built by Grace, Monsanto and Rohm and Haas (both of these at Seal Sands).

But the ephemeral nature of the construction industry resulted in a short term and destabilising employment scenario. The construction boom brought rising employment and wage levels, but also skill shortages and industrial relations' conflict. The impact of these circumstances upon the local labour market are analysed more fully in Chapter 5, but at this stage it is worth noting that by 1978 the jobs boom was over and the region's construction sector was experiencing severe disinvestment and increasing levels of unemployment. In April of that year for example, Phillips shelved its plans for a £280 million expansion at Seal Sands, that would have provided an estimated four years of work for the existing site workforce, blaming poor labour

relations and inefficient subcontractors.¹⁷ It was a bitter irony for the area that these alleged failings were themselves the result of overinvestment in the recent past.¹⁸ As a consequence, the long term employment impact of refinery development on Teesside was restricted to 750 maintenance and production jobs at the Phillips and Shell plants.

In other parts of the region the gains from oil development were not as great as the early euphoria had suggested. Many of the intended developments did not materialise. On Wearside for example, the attempt by the marine engineering sector to enter the rig fabrication market; in the form of a consortium between George Clark N.E.M. (owned by Richardson Westgarth) and the Hertfordshire based firm of International Management Contractors; was shelved at the planning stage. Another long established marine engineering firm, Hawthorn Leslie, which facing a decline in its traditional market had paid off 120 workers in the first half of 1972 ("The Journal of Commerce", 4.12.1972), was also unable to break into the offshore market. Generally speaking there were few successful attempts by the region's machinery manufacturing specialists to enter the offshore supply industry. A notable

¹⁷ In fact a more plausible explanation for the cancellation of Phillips' plans was the chronic overcapacity in the United Kingdom refinery market, the consequence of rising oil prices and a subsequent decline in demand for refinery products.

¹⁸ As we have suggested the huge levels of investment directed at Teesside by the oil and chemicals industry in the period from 1964 to 1976 were to have a profound effect upon the local economy. The higher wage rates offered by these activities attracted labour from existing industries, undermining the position of many of Teesside's long-standing companies. The underwriting of this construction boom by central government as part of its regional development strategy was doubly ironic (Beynon et al, 1986; H.M.S.O, 1963).

exception was the firm of Clarke Chapman (later absorbed within NEI), which was able to carve a niche for itself in the new offshore market having received a contract to produce heavy duty mooring windlasses for the semi-submersible drilling rig "Ocean Endeavour" ("The Journal", 29.10.1974).

In fact the oil boom of the 1970s was to herald a false dawn for the region's economy. To a certain extent, the very mention of oil development conjured up visions of increased wealth within the North East, that were not easily dispelled by harsh realities.

The impression, derived from the high levels of oil-related activity, reported by the media during the 1970s, was that the North East was about to become a major player in the international oil industry. Entry into the offshore market was stimulated by false perceptions, amongst the region's various newspapers, concerning the North East's role in oil affairs. "North can be new Texas" (Evening Chronicle, 31.3.1972) was a recurrent theme expounded by the local media. Striking a similar note, following the announcement that William Press was to establish an offshore yard at Howdon on the Tyne, the Newcastle Journal suggested that (18.4.1972):

" The location, the facilities and the men with the right skills added up to just what was needed. When work begins in August, 300 men will be required. But the rig gear makers are confident that this figure will quickly grow to 1500.

It is to be hoped this scheme will be just one part of a healthy trend, with the river that prospered and declined with the fortunes of the North East coal trade being helped by the new fuel discoveries."

A second related feature of the response to the arrival of oil activity was the identification of the North East as the

region within the U.K. most suited to the needs of the oil companies. This was a marketing effort that cut across class barriers within the region, most notably illustrated by the comments of Dan Edwards, then Tyne district secretary of the CSEU, also remarking on the new Press yard (The Journal, 18.4.72):

"This is great news. It is just the kind of new industry we need on the river. Although there is fairly full employment in shipbuilding at the moment, we can still provide the kind of skilled labour this company will need.

This uncritical acceptance, and indeed acclaim, of the new North Sea developments overlooked the new relations of oil dependency that were being introduced to the region. In particular this applied to attempts by local authorities within the region to establish supply bases to rival those of Aberdeen and Great Yarmouth. There have been various attempts at this in the past twenty years. During the early 1970s the North East Development Council constantly pressurised the government to set up a regional offshore office. Oil development was seen as crucial to the revival of the North East's economy. An N.E.D.C. report (1972) suggested that Tyneside and Wearside could become important centres within the North Sea oil services network, whilst smaller towns such as Blyth and Seaham would serve important roles as supply vessel bases. In reality it has been difficult to challenge the hegemony of established service centres. The principal successes in the area of offshore supply have been for individual field develop projects, e.g. Blyth was the location for the support base for Hamilton Brothers development of the Esmonde field, 130 miles off the Northumberland coast from 1984 onwards.

In the 1980s a new phase of local policy development in vogue with Thatcherite planning principles and linked to the

development corporation philosophy has been the attempts on both Tyneside and Teesside to establish "offshore technology parks". On the Tyne the manifestation of this has been the Newcastle Offshore Technology Base (established in 1988) at the former Walker naval yard, whilst its equivalent on the Tees has been the Tees Offshore Base (set up in 1987 at the site of the former Smith's Dock shipyard at South Bank). Both of these initiatives are aimed at increasing the level of the region's technological development in North Sea developments, implicitly recognising the peripheral role of the North East in past activity. Whilst it remains too early to assess the success of these new developments, the early portents are not encouraging. Although some 350 jobs had been "created" at the Tees Offshore Base by 1989, it was significant that almost half of the firms involved had relocated from other areas of the United Kingdom to be closer to the North Sea, whilst three of the firms had actually transferred from other areas on Teesside.

It is also significant that those enterprises, developing new technologies are often reliant upon outside capital. Notably, the Tees Offshore Base's flagship company, Northern Ocean Services, attempting to break into the market for subsea oil and gas technology, has had to surrender its independence in return for a large capital investment¹⁹ from the Cable and Wireless group.

4.4.2 The development of the offshore fabrication industry in the North East

Thus, the efforts of local authorities to widen the scope of the region's offshore involvement, in a non-interventionist domestic political environment, have largely proved

¹⁹ An estimated £7.5 million according to a recent Financial Times estimate (21.3.89).

ineffectual. The oil impact has largely been limited to traditional activities and employment structures. This is borne out by Table 4.4, which illustrates the breakdown of offshore activity into sectors from a survey in the mid 1980s.

By far the most important area in this respect has been the fabrication of equipment for modules.²⁰ Companies that became involved in this type of work were either incoming firms, taking advantage of the large number of heavy engineering trades, or local firms, whose main activity had already been in aspects of steel fabrication and process plant construction. For this latter group, oil development was a lifeline at a time when their more conventional product markets were suffering saturation, stagnation or decline following the end of the post-war boom.

The North East's earliest experience with fabricating offshore structures predates the development of North Sea oil and gas. In 1952 Cleveland Bridge was commissioned to build a drilling rig for the National Coal Board for exploration beneath the Firth of Forth (Company archives). By the same token, certain of the region's engineering companies had long-standing relationships with the multinational oil companies for the supply of oil and gas equipment. Whessoe, as we noted in Chapter 3, had been a supplier to the industry since the early decades of the century, whilst for other companies such as Ashmore, Benson, Pease and Head Wrightson, involvement in the oil sector arrived with the post war refinery construction programme

²⁰In 1975 for example an estimated 6,700 were working upon rig fabrication contracts in the region, both directly and in a subcontracting role (The Guardian, 17.7.75). This compares with a figure of approximately 7,000 at the end of the second oil boom in 1985 (Segal et al: 1985: 69).

(Peppin, 1990).

Despite this early history of involvement in offshore related work, the region's firms seemed to share in British industry's general diffidence towards North Sea oil developments during the 1960s. Shipbuilding companies across the region were preoccupied with retaining their share of traditional markets and the reorganisation engendered by the Geddes Report. On Teesside, the structural engineering sector remained aloof from offshore developments until the early 1970s, apart from an unsuccessful attempt by a consortium of companies under the auspices of North Sea Marine Engineering (including Cleveland Bridge and Redpath Dorman Long) located at Redcar, to enter the market for the construction of offshore drilling rigs.

As a result of the reluctance of the more established firms to engage in offshore fabrication, the early oil-related developments in the region tended to be either from smaller local companies or incoming firms, and often of a transient nature. The first of these was Wilson Walton (Smith, 1978: 8), a Middlesbrough company that established a site at Normanby, on the Tees in 1965, and was initially involved in piecemeal repair work for gas installations off the Yorkshire and East Anglia coast. But in 1971 it received a contract to build modules for the Shell Leman gas field project. Overnight the status of the company and the area was transformed in terms of oil developments, as one observer noted in retrospect:

"Wilson Walton were only a small outfit, sending people down to Great Yarmouth to work on the gas lines. At that time, they were only a single shop employing maybe 10 or 15 men. Then suddenly they turned into an oil rig company and were building a shell, paying £100 when the going rate in this area was £50."

But the most significant development for the future of

offshore fabrication on Teesside was the decision taken by Laing's to locate their huge contract to build the jacket for the Forties Field at Graythorp, near Hartlepool. Not only did Laing's employ 2,200 men at the peak of their offshore activities in 1975, but various local companies became involved in this project in a subcontracting role. In particular, the engineering firms of Foster Wheeler, George Robinson and John Brown were important in supplying Laing's, operating within the limits of existing plant capacity. At the same time a large number of firms and workers were being absorbed by downstream oil development projects taking place on the Tees. In particular the Phillips and Shell refinery construction contracts were to have a huge impact upon the locality in terms of employment and industrial relations.

On Tyneside the growth of oil developments was less spectacular, starting in 1972, when William Press established a fabrication facility, at Wallsend on the site of a former shiprepair yard, purchased from the Port of Tyne Authority.

As the market for offshore construction work continued to expand during the 1970s, several firms attracted contracts, directly from the oil companies, in their own right, and thus entered the league of major fabricators. On Tyneside: the locally based firm of Charlton Leslie (which had formerly been a supplier of pipework and pressure vessels on a subcontract basis to the oil companies) established a yard at Davy Bank, near Wallsend. Similarly Whessoe converted a yard at Dock Point, on the south bank of the Tees at Middlesbrough (that had previously been used for the completion of Polaris Submarine hull sections in the 1950s) at the cost of £1 million. Redpath Dorman Long, the structural arm of British Steel, established a yard at Linthorpe, whilst Cleveland Bridge built an offshore site at

Port Clarence on the north bank of the river.

With the large amount of work available, firms tended to specialise in different areas of offshore activity: Redpath developed expertise in accommodation modules, Whessoe in power generation equipment, and Charlton Leslie in compression vessels. These forms of specialisation ensured the continuation of two important linkages with past forms of activity. Firstly they discouraged rationalisation within the region's engineering industry and ensured the continuation of the cooperative approach to tendering identified in Chapter 3.²¹ Secondly the specialisms of individual firms were often related to their traditional forms of activity, particularly in the case of Charlton Leslie and Whessoe.

As a result of the large average size of fields under development (and the accompanying scale of the structures required) during the first wave of North Sea oil exploitation, the market for the region's fabrication firms remained buoyant during the period from 1972 to 1978. In particular the discovery and subsequent rapid development of the Murchison, Ninian and Thistle fields provided the continuity for the North East's structural engineering firms to establish themselves within particular segments of the fabrication market.

From 1978 to 1982 there was a significant downturn in the number of fabrication contracts awarded to North Eastern companies. Whilst this reflected a hiatus in North Sea activity following the huge expenditure round several years earlier, there was also a feeling abroad that the region was

²¹The role of the Module Constructors Association, formed in 1974 was important in this context.

being punished for its poor industrial relations' record. In particular Laing's yard at Graythorp, which had developed a notorious reputation for wildcat disputes, was effectively closed following the float out of the jacket for the Thistle field in 1976.²² Wilson Walton also withdrew from the offshore market following the completion of a contract for B.N.O.C.'s Beatrice field at the end of 1979.

In retrospect, this period represented a lull in orders rather than a depression. Of the two firms that left the offshore industry, Wilson Walton were facing acute financial problems, whilst Laing's demise reflected chronic overcapacity in the fabrication of jackets,²³ rather than the malaise of the offshore market as a whole. Although workers were laid off in all firms, many of which were reduced to their baseline employment levels, the majority of companies had orders in the pipeline.²⁴

²² Labour relations problems were not limited to incoming firms such as Laing's. Other long-standing companies in the region, with a tradition of relatively harmonious industrial relations, were blighted by sporadic outbreaks of strike action. A typical example was reported in Refinery News (7.7.76) from Whessoe's offshore yard, where 450 workers walked out over a claim for increases in wage rates. These surface pressures on the labour market were the manifestations of changing currents within the regional employment system, most clearly expressed on Teesside but present throughout the region as Chapter 5 elucidates.

²³Ironically, this situation had been brought about by an ill-considered government policy initiative to encourage firms into offshore work. The result was a rapid influx of construction firms into jacket fabrication (Table 4.5) and subsequently saturation of this particular market.

²⁴A good example of this again comes from Whessoe, which reduced its workforce from over 500, to 67 blue collar and 38 white collar, following the completion of 3 drilling modules for Conoco's Murchison contract in August 1979, and despite the company's impending order for the British Gas Corporation's Rough field redevelopment. Similarly Charlton

Despite these impending orders, the period from 1976 to 1979 did represent one of reappraisal of oil company strategy towards the North Sea as a sector for accumulation. In the period immediately prior to 1979 the British sector of the North Sea had become less attractive as a focus for longer term development. A fall in the real price of oil coincided with a period when the majority of larger and more profitable fields were thought to have been discovered and undergoing development. Simultaneously, the growing involvement of the state oil entity, BNOC, in North Sea oil developments, despite its initial collaboration with the private sector, represented a potential threat to the hegemony of the international oil companies in the North Sea.

But in the short period 1979/80 the perception of the North Sea as a long term sector for accumulation received a timely boost; the result of a further upsurge in the world oil price from 1979 onwards and growing political instability in the Middle East, coupled with the election of a radical Conservative government committed to the dissolution of BNOC. The government also relaxed the taxation regime in the North Sea during the early 1980s to encourage the development of previously marginal fields. Consequently some form of new oil development was inevitable, although the extent and timing of future contracts (often critical to the survival of individual firms) remained at the whim of the international oil industry, particularly with the dismantling of B.N.O.C.

Leslie were on the verge of laying off 250 workers, almost half the workforce, prior to obtaining a £20 million order for British Gas's Morecambe Bay field in October 1982.

4.4.3 From Boom to bust: the fabrication industry in the 1980s

The oil market developments of the 1980s took place against a fast changing wider economic environment. The slow growth scenario of the 1970s was replaced by the no-growth realities of recession in the period from 1979-83. At the national level, the early 1980s were witness to the worst depression in fifty years for British industry. There is not the space here to fully examine the nature of this decline, which is comprehensively documented elsewhere (Massey and Meegan, 1982; Townsend, 1983). It is sufficient to note that between 1979 and 1983 over 2 million jobs were lost nationwide, 1.5 million of which were in manufacturing industry. Whilst this devastation gave way to slow growth within the national economy as a whole during the latter part of the decade, the mechanical engineering industry entered a period of protracted decline. Between 1978 and 1988, the sector shed 385,549 jobs; representing almost 43 per cent of total employment.²⁵

Within the North East, the process of overall decline in mechanical engineering was complicated by the arrival of North Sea oil. For those companies supplying markets in the non-oil sector, the experience of contraction and closure was consistent with the major part of British manufacturing industry. For the structural engineering sector, the trough of the early 1980s represented the culmination of a long period of decline in traditional markets. The experience of the Stockton based firm of Head Wrightson was typical. The contraction of its role as a supplier of materials to the coal and steel industries coincided with its takeover by the Davy Corporation in the 1970s, rationalisation and restructuring during the early 1980s, the sale of its assets

²⁵EITB Statutory Returns.

to a fledgling offshore company (I.T.M.) in 1984, and eventual closure in 1986 (Peppin, 1990: Chapter 9).

With the long term decline of traditional markets, the fabrication industry became increasingly dependent upon the offshore oil sector. In this way, the industry in the North East was hitched to an oil rollercoaster during the 1980s. As a consequence, the fortunes of the large fabricating companies in these latter regions, during the 1980s, reflected the cyclical behaviour of the oil market, rather than the performance of the wider economy.

At the beginning of the 1980s, despite the withdrawal of Laing from the offshore market and the closure of Wilson Walton, there remained five major fabricating yards with proven capability in offshore construction: Charlton Leslie and William Press on the Tyne; with Cleveland Offshore, Redpath Offshore and Whessoe on the Tees. Whilst these companies, to a varying extent, continued to serve their more traditional markets, their survival as major employers within the North East had become largely dependent upon their ability to obtain contracts from North Sea related activity. It was somewhat ironic therefore that it was British Gas's decision to develop the Morecambe Bay gas field (at a cost of £1.3 billion) from 1982 onwards that secured the future of several of the region's existing yards.

It was not until the end of 1983 that greatly increased levels of expenditure on oil related projects led to a period of renewed prosperity for the North East's

fabricators.²⁶ Of particular importance were the contracts emanating from the development of Marathon Oil's Brae field and Shell's decision to develop the Eider and Tern fields in December 1985. These latter developments brought £87 million in orders for the four remaining Teesside yards and largely secured 2,680 existing jobs (Sadler, 1986: 3). This upsurge in activity encouraged other companies to enter the offshore sphere. Howard Doris, already established in Scotland, leased yards on the Tyne (from Wallsend Slipway and Engineers) and in East Anglia in expectation of contracts emanating from the southern sector of the North Sea. Another development at Hartlepool was the setting up of M.M. Oil with Dutch backing from the huge project management specialists Heerema. But the most significant development was the establishment of Davy Offshore, the marriage of a breakaway management group from Press with Davy Corporation's delayed decision to move into the offshore market.

Davy's immediate future in the offshore market was secured when the company was awarded a substantial portion of the Marathon Brae contract,²⁷ whilst M.M. Oil was awarded

²⁶This also coincided with a period when the major oil companies were attempting to project an image of the North Sea as a long term market for industrial goods. Shell U.K., for example, commissioned a report by the E.I.U. suggesting that the future size of the offshore supplies market was likely to be double that of previous total expenditure. In the North East, the company's promotional activities even extended to the sponsoring of a conference at Middlesbrough (14/15th October 1985) entitled "The Offshore Challenge for the North East (the £100 billion market on the doorstep)". Behind these activities, the strategy was clearly to encourage greater competition in the offshore market through the entry of firms, that had previously been either disinterested or had disengaged from the oil market during the 1970s.

²⁷This involved over 7,000 tonnes of module work.

contracts from the Dutch sector, the result of its links with Heerema.

Significantly, this upsurge in confidence in the future of North Sea oil brought an increased amount of capital expenditure in facilities at the fabrication yards. During the 1970s the fabrication companies had largely treated the offshore market as a subsidiary sector to their main operations. The oil supplies market, as we have suggested previously, was regarded as a short term palliative to compensate for inactivity in traditional markets. As such the levels of investment committed to offshore projects by the fabrication companies tended to be relatively minor.²⁸ The total collapse of other markets had radically altered this situation by the early 1980s. With the advent of a second phase of development, North Sea oil itself had become the principle market for structural engineering employment within the North East. The heightened importance of the offshore market was clearly illustrated by an unprecedented wave of capital investment in the upgrading of facilities in fabrication yards throughout the U.K. (Table 4.6)

But the character of those companies involved in offshore fabrication had also changed during the course of oil operations and the industry in the North East was subject to

²⁸Cleveland Offshore's yard at Port Clarence, for example, has been described as an "open site" when it first opened in 1975. Indeed it was not even intended for complex offshore work, but as a loading out facility for Cleveland Bridge's Thames Barrier contract. Similarly, RDL's initial movement into the offshore sector was considered to be a transient operation:

"It was a temporary site to start with. As far as RDL were concerned it [oil fabrication] was a third rate activity. The company was still concentrating on power plant, and whatever, and there we were trying to build modules."

(quoted in Sadler: 1986: 7)

the same processes of capital centralisation that have characterised much of the United Kingdom economy since the 1960s (Massey, 1984; Cowling, 1986). As a result of a succession of acquisitions and takeovers, decisions concerning the continued involvement of the North East in oil operations have largely been removed from the region. Charlton Leslie, for example, which had been controlled by a Hexham based family for 100 years was bought by B.T.R, the huge industrial conglomerate, based in London, in 1972. Similarly the merger between William Press and the Fairclough group of companies in 1982 resulted in the formation of AMEC Construction with its headquarters in London.

Behind this trend was the desire on the part of multinational capital to partake in the benefits to be derived from the North Sea oil boom during a period when other markets were contracting. For the fabrication firms, the loss of independence was offset by access to greater levels of finance. This was to be particularly important during the middle of the 1980s when the second oil boom necessitated high levels of capital investment. At the same time, the response of parent companies during slump conditions has also been critical. It is certain that several yards would have closed without this backing during the early 1980s. The takeover of Redpath Dorman Long and Cleveland Bridge by Trafalgar House in 1982 ensured the survival of these companies' respective offshore facilities on the Tees, as well as R.D.L.'s jacket fabrication site at Methil in Fife. By the same token, corporate backing was increasingly viewed as essential to attract the confidence of the oil companies. With the large round of investment initiated in the middle 1980s on field development projects that were increasingly marginal compared to previous developments, the oil majors became increasingly concerned

with reducing risk factors, which required guaranteed deliveries from suppliers.

The changes in the nature of ownership in offshore related firms were to lead to a radically altered decision making framework. For offshore investment strategies became increasingly balanced against other avenues of accumulation, often outside structural engineering altogether. This was borne out by the different responses of companies to the slump in the oil supplies market, following the fall in oil prices in 1986. The subsequent cancellation or postponement of a large number of field developments was to lead to a major process of restructuring within the offshore fabrication industry.

To a certain extent the immediate term survival of firms in the offshore industry depended upon their contract status at the moment of the oil price collapse. Thus those actively tendering for contracts were in the worst possible situation. Howard Doris's recently opened yard on the Tyne was forced to close, the most obvious early casualty of the slump in the supply market. I.T.M. was another firm caught without an order on their books. Although both these companies withdrew from offshore operations, their fabrication facilities were partially absorbed by remaining companies, anxious to extend existing plant capacity whilst prices for oil plant were at their nadir; Davy took over I.T.M.'s Normanby yard, whilst Press's purchase of the Howard Doris yard greatly enhanced its capacity and was an important factor in its successful joint bid (with McDermott's) for the second phase of the Morecambe Bay gas field contract commencing in 1987. Elsewhere in the region other companies had been fortunate in recently securing

major contracts that ensured their short term survival.²⁹ In this sense the greatest immediate effects of oil price disintegration were felt in the Scottish yards.

Nevertheless the continuing depressed state of the oil supplies market for the remainder of the 1980s (see Table 4.7) was to lead to further major restructuring and concentration within the North East's fabrication industry as companies reassessed their commitment to oil operations in the longer term. This was both a reflection of the changing nature of the offshore supplies market (described earlier), and the strategic corporate interests of the parent companies involved. For despite the fact that with the recovery in the oil price after 1987, an upturn was confidently forecasted during the 1990s, it would be preceded by another period of inactivity. Clearly this required a certain amount of capital remaining dormant in temporarily inactive offshore yards. This factor was to be crucial in the decisions made by Whessoe and to a lesser extent B.T.R. to close their respective offshore yards in 1989 (a detailed account of these events is given in Chapter 6). In contrast, Davy's persistence in the search for contracts around the same time resulted in them obtaining the Amethyst contract, employing 800 men at its peak.

Thus by the close of the 1980s there were four firms still active in the region with the capacity and expertise to fabricate modules for the offshore industry. Of these, Press appeared to be in the strongest position, a fact reflected in the size of its turnover. For the financial year 1988-89

²⁹For example, Charlton Leslie secured a 14 month conversion contract from Amerada Hess in August 1987 (worth approximately £30 million), following the completion of work for Marathon Oil which forestalled its owner, B.T.R.'s decision to withdraw from the offshore market until 1989.

it was the tenth highest ranking company based in the North East, in terms of this criterion (Table 4.8). Its situation was further enhanced with the withdrawal of Charlton Leslie from offshore operations in 1989, allowing Press to lease the latter's Wallsend yard and also making it the only major offshore employer on the Tyne. The strength of Press's situation was reflected in its obtaining the lion's share of contract work in 1989 and 1990. In particular, Press's market position was enhanced when Occidental awarded it the entire topside fabrication contract for the £580 million redevelopment of Piper Alpha, and a follow up contract for the £350 million Saltire field development. With its extensive facilities and the substantial backing of the AMEC group, Press is able to achieve a considerable amount of work continuity.

The remaining firms are to varying degrees hostage to the fluctuations of the oil market. Redpath's offshore order book has been supplemented during recessions in the oil market by other forms of construction work from its parent company Trafalgar House, whilst Davy Offshore is almost totally reliant upon offshore orders for its survival. T.H.C's (formerly M.M Oil) operations are contingent upon the requirements of its Dutch parent company, receiving sporadic contracts without offering any form of employment continuity.

The current situation facing the fabrication division in the region, and indeed the British supplies industry as a whole, is highly ironic in the light of a forecasted upturn in the offshore supplies market during the 1990s. With the closure of various yards, the British industry no longer has the capacity to meet this upsurge in demand. The next decade is likely to witness a reversal in the trend, since the middle 1970s, for British companies to receive an increasing share

of orders emanating from the North Sea. As a recent issue of the F.T. North Sea Letter has noted (30.1.91: 2):

"A perceived shortage of capacity in the U.K. means operators are increasingly looking abroad for fabrication capability. Chevron is finishing bid documents for fabrication of its 15,000 tonne Alba Northern eight-legged steel jacket. The bid list is expected to include an overseas element. Contract award for the 18,000t integrated deck, expected to go to Grootint in Holland because of the shortage of yard capacity in the U.K, is "imminent". Bids for the 1,600t, 124-bed accommodation module and helideck close in late February. The bid list here is expected to be BAM, Consafe, Heerema, Leirvik, Redpath and SLP."

As if to confirm this trend a more up to date article in The Independent noted (25.3.91: 14):

"Early this month Shell U.K. awarded two offshore platform fabrication contracts, marking a small but noteworthy watershed in the current U.K. North Sea oil and gas scene. Both were for the Nelson oilfield - one of the largest recent British North Sea finds - which Shell is developing with partners Enterprise Oil and Esso. One contract, worth about £31m, went to the leading Norwegian company Aker for the platform drilling equipment module and derrick. The other, worth about £22m, also went to Norway, this time to the offshore accommodation specialist Leirvik Sveis for the living quarters and helicopter deck.

Although not outstanding otherwise, these awards made their mark as the first construction contracts of this size won by Norwegian industry for a U.K. North Sea project in about a decade. They followed a string of contracts awarded to Continental European yards for U.K. offshore projects in recent months, and further underlined the pressure on capacity in U.K. yards from the current activity boom."

4.5 Concluding comments

We have shown in this chapter how the North East's interest in North Sea oil developments originated during the 1970s, partly through the government's "Full and Fair Opportunities" legislation, but primarily through the oil companies' strategy to persuade firms into the sector to

stimulate competition.³⁰ The initial contracts awarded to the North East's structural engineering sector during the middle years of the 1970s need to be reassessed in this context. In this sense the offshore fabrication sector in the North East was the creation of the international oil companies themselves.

Subsequently the offshore supplies industry became characterised by vertical disintegration with the North East's fabrication firms occupying peripheral positions in relation to field development decisions.

Having established this offshore capability (both within the North East and the U.K. as a whole) the oil industry has attempted to maintain, and even increase, competition by encouraging new firms into the industry.³¹ This has been particularly important in minimising costs for smaller and more marginal field developments during the 1980s.³² Whilst

³⁰During the 1960s and early 1970s the lack of British involvement in the North Sea was not merely a problem for the British government, but also for the international oil companies. For under these circumstances, they became dependent upon a small number of (primarily Dutch) engineering contractors with experience in offshore work. In particular the firms of De Groot and IHC Gusto monopolised the early fabrication contracts.

³¹The establishment of Davy Offshore on the Tees was a result of positive noises emanating from the Chairman of Shell, Bob Reid, concerning the future potential of the offshore market ("£100 billion market on the doorstep"). Significantly, the influential EIU report (1984) which had first suggested the likelihood of an extensive second phase of oil-related developments was also commissioned by Shell.

³²In fact, this policy led to a spate of under-bidding by fabricators during the latter part of the 1980s. In December 1987 for example, Davy agreed to convert a drilling rig to a fixed production platform for Shell's Emerald field

the oil companies can manipulate their suppliers during boom periods, their abilities are severely constrained by slumps in the oil market, when their range of suppliers is curtailed often by the disinvestment strategies of the latter's parent organisations. In this sense, oil companies are ultimately faced with a trade off in the North Sea, between maintaining competition amongst their suppliers (by releasing a regular number of contracts to encourage firms to remain in the offshore market) and only developing those fields that are profitable in the highly fluctuating oil market environment.

With the unprecedented slump in the offshore supplies market, following the fall in oil prices during 1986, the oil companies have found it increasingly difficult to foster a competitive environment through a vertical disintegration strategy. To a certain extent, the "chickens have come home to roost" for the oil companies, the decision by various parent companies to close their offshore operations, particularly in the module fabrication sector has accentuated a trend towards a rationalisation of production. On the other hand, with the changing nature of topside technology and the movement towards more integrated structures, these trends within the offshore fabrication industry might well be compatible with oil company interests. In this sense, a lower cost operating environment is more likely to be achieved through the integration of upstream operations within larger production complexes (and the increased use of EPIC management strategies) than the earlier strategy of encouraging competition through disintegration.

at a fixed cost of £120 million, a decision that was to result in an overall loss of £127 million and place the entire corporation at risk.

We also identified the role of the North East of England within this framework, which has been primarily in the fabrication of equipment for oil and gas rigs, and especially in the fabrication of modules. The oil companies found within the region a ready-made employment system, tailored to the manufacture of industrial plant for basic process industries and suited to the vagaries of single unit production. Not only did the structural engineering sector fully embrace the new opportunities, but with the decline of traditional markets, the oil sector gradually became the main focus of activity for structural engineering in the North East. In this way, a new oil-related dependency was subtly forged.

This dependency is all the more pronounced for the fact that the region's engineering companies have been unable to enter into the core activities of the offshore supplies market, remaining firmly entrenched in peripheral "location-specific" fabrication activity. This applies equally at the national level, and it is significant that, although British owned firms have obtained traditional style contract work from the recent round of orders, the newer subsea developments are still being awarded primarily to overseas based firms.

During the 1980s the offshore industry was subject to boom-bust conditions with severe fluctuations in the oil market replacing the growth environment of the 1970s. The market crash of 1985-6 led to a rationalisation of the industry with a withdrawal of many of the smaller and less committed companies, unable or unwilling to fall back upon non-oil related work. Thus firms have become increasingly dependent upon the vagaries of the offshore market, and largely hostage to the fluctuating oil price.

This situation has been accentuated by the general centralising tendencies of British industrial capital in the past twenty years, to the extent that key strategic decision-making has largely been removed from the North East's indigenous engineering industry.

In the following two chapters, the consequences of these processes for the organisation of employment within the North East are examined. In particular it will be noted that the dynamic nature of the oil market has compelled companies to maintain fluid strategies, with regard to their labour requirements. But set against this, labour organisation varies from company to company, reflecting the diversity of corporate circumstances and power relationships that companies are embroiled within.

Table 4.1
The Extent of Offshore Supplies Contracts in the U.K.

Value of orders placed (£m)

Year	Exploration	Development	Maintenance/support
1976	301	1507	- -
1977	375	1556	- -
1978	261	1709	- -
1979	241	2012	506
1980	379	2374	699
1981	550	2759	1004
1982	875	2911	1309
1983	993	2822	1495
1984	1395	3054	1773
1985	1450	2801	2248
1986	1042	2365	2144
1987	816	2008	2104
1988	1129	2104	2061
1989	1166	2640	2312

[Source: Department of Energy Brown and Blue Books]

Table 4.2
Initial Capital Requirements for the Forties Project

- 4 steel production platforms to stand in depths of up to 128 metres of water [Jacket Fabricators = Highland Fabricators and Laing Offshore; Topsides = Cleveland Offshore, De Groot, Foster Wheeler, Humphreys and Glasgow, Press, Redpath Dorman Long]
- A submarine pipeline 32 inches in diameter from the field 169 kilometres to Cruden Bay.
- A buried landline 36 inches in diameter from Cruden Bay 209 kilometres to Grangemouth.
- An oil stabilisation and gas processing plant at the Kerse of Kinneil, adjacent to the B.P. refinery at Grangemouth.
- A tank farm at Dalmeny with capacity to store 3.6 million barrels of oil.
- Another landline 30 inches in diameter from the Kerse of Kinneil 19 kilometres to Dalmeny.
- A new tanker loading terminal at Hound Point in the Firth of Forth.
- A pipeline 48 inches in diameter from Dalmeny 5 kilometres to Hound Point.
- An office and control centre at Dyce, near Aberdeen, with a communications system linked via Brimmond Hill to the Forties Field

[Source: B.P. company document]

Table 4.3
Expenditure on Fabrication Projects Compared to
Total Development Costs on North Sea Oil and Gas Projects
1981-90

Year	Expenditure (£m)	
	Total	Fabrication
1981	2759	1544
1982	2911	1737
1983	2826	1793
1984	3052	1903
1985	2800	1799
1986	2391	1622
1987	2008	1126
1988	2172	996
1989	2799	1426
1990	3520	2109

[Source: Brown Books]

Table 4.4
Offshore Turnover in the North East 1985

	Number of Firms	1985 Turnover £000m
Exploration	2	505
Development		
Design Eng	3	750
Large Fabricators	8	220,300
Fabricators	10	19,036
Plant & Equipment	9	7,930
Install. & Hook-up	2	9,200
Other	4	1,790
TOTAL	36	259,006
Operations		
Maintenance	6	8,993
Transport Services	2	6,505
Subsea Services	-	-
Personnel Services	1	-
TOTAL	9	19,998
OVERALL TOTAL	47	279,509

[Source : Segal & Wicksteed et al, 1986: 69]

Table 4.5
U.K. Based Companies Competing for Oil/Gas
Platform Contracts 4.4.74

Firm	Owner	Location
ANDOC	Balfour Beatty/Dutch Consortium	Burntisland
Richard Costain	Costain	Hunterston
Howard Doris	John Howard/C.G. Doris	Loch Kishorn
Highland Fabricators	Brown and Root/Wimpey	Nigg Bay
Laing	Laing/EPTM	Graythorp
McAlpine/Sea Tank	McAlpine/Sea Tank	Ardyne Point
McDermott	Oceanic Contractors	Ardersier
Lewis Offshore R.D.L.	Fred Olsen Redpath Dorman Long/ Microperi/Saipem	Glumag Bay Methil
Sea Tank	Cementation/	Rudhe Mor,
Constructors	Royal Netherlands Harbour Works	Loch Fyne
Taywood Selhurst	Taylor Woodrow/ Selhursttion	Drumbuie
Weldit Engineering	Weldit	Jarrow/ Barrow

Notes

- a) Oceanic Contractors is itself a subsidiary of the New Orleans based corporation J. Ray McDermott
- b) Cementation is part of Trafalgar House
- c) Weldit were attempting to develop the old Palmer's shipyard.

[Source: Construction News: 4.4.74]

Table 4.6
Investment in the Upgrading of Yard Facilities
During the mid 1980s by U.K. based Fabrication Firms

Company	Yard Location	Nature of Upgrading	Cost
Charlton Leslie	Wallsend	- New load out quay for modules of up to 7,500 tonnes	£1m
Highland Fabricators	Nigg Bay	- Construction of new assembly halls for all weather fabrication	£8m
Howard Doris	Kishorn	- Conversion of machining shop to new assembly hall	£0.5m
Kestrel Marine	Dundee	- Enlargening of facilities to create 2 separate construction areas	n.a
		- Installation of computer aided draughting system	n.a
Lewis Offshore	Glumag Bay	- Increase in load-out quay capacity and extension of fabrication hall	n.a
		- Purchase of 1,200 tonne rolling machine	n.a
McDermott	Ardersier	- Extensive upgrading of all aspects of yard	£25m
Press Offshore	Wallsend	- Conversion of Hadrian Shipyard to accommodate offshore structures up to 10,000 tonnes	£2.5m
Redpath Offshore	Middlesbrough	- Upgrading of 3 module assembly halls	n.a

Table 4.6
Investment in the Upgrading of Yard Facilities
during the mid 1980s by U.K. based Fabrication Firms
(continued)

Company	Yard Location	Nature of Upgrading	Cost
T.H.C. Fabricators	Hartlepool	- Developing new 16 acre site to accommodate structures up to 10,000 tonnes	£9m
Whessoe	Middlesbrough	- Enlargening yard capacity to build modules up to 9,000 tonnes	£2.5m

Table 4.7
Capacity in Offshore Fabrication Yards, June 1988

Company	Capacity (%)
Charlton Leslie (Wallsend Yard)	0 (C & M)
Davy Offshore	75
Hi - Fab	100
Lewis Offshore	0 (C & M)
McDermott	100
Press Offshore	50
Redpath	60
THC Fabricators	80
UIE	0 (C & M)
Whessoe Offshore	0 (C & M)

C & M = care and maintenance

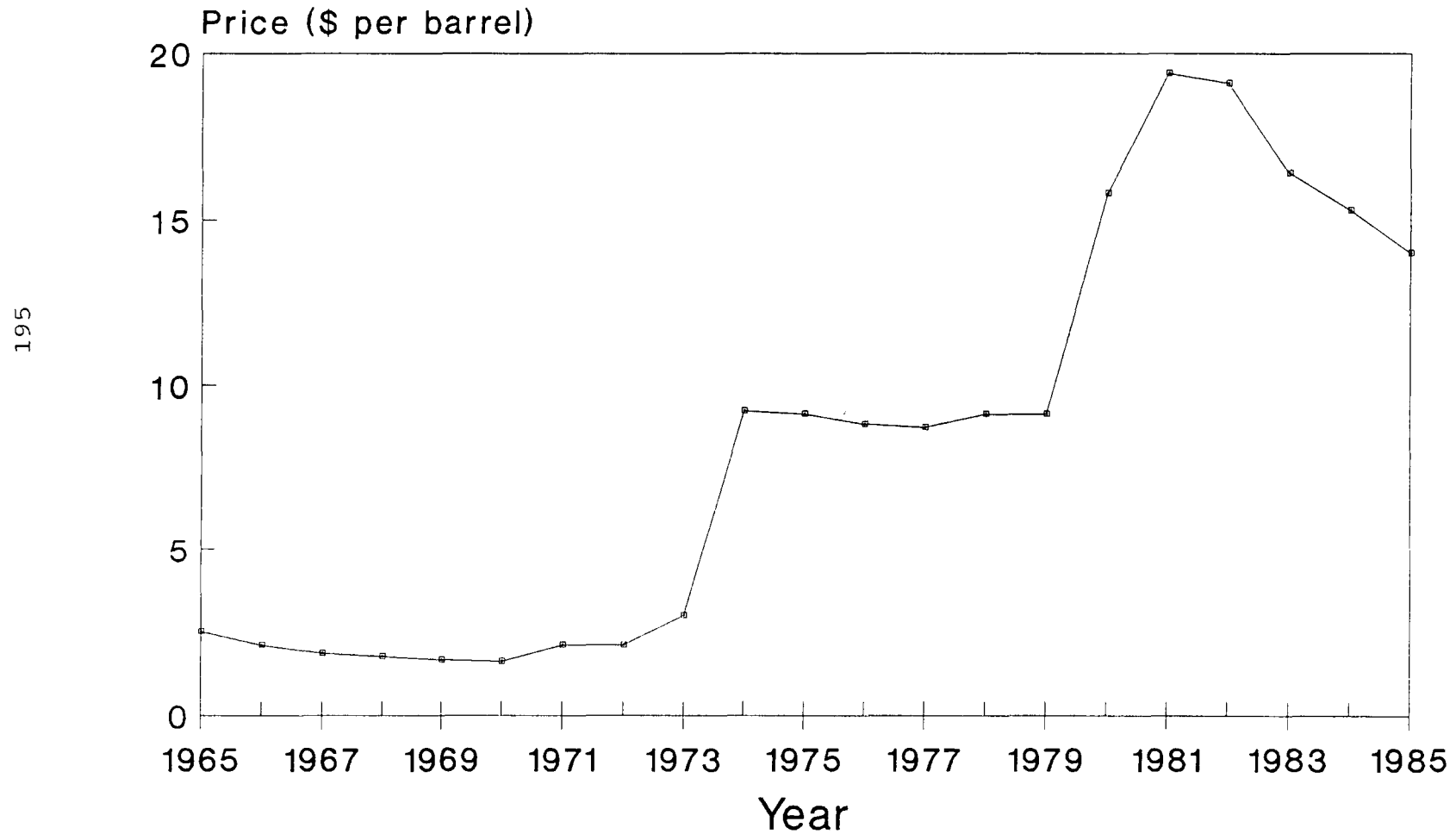
[Source : Various Management Interviews]

Table 4.8
Turnover for Selected North Eastern Companies, 1988-89

Company	Rank	Turnover
Northern Engineering Industries	1	£804m
Proctor and Gamble	2	£630m
Press Offshore	10	£111m
Whessoe Heavy Engineering	13	£99.6m
Darchem Engineering	16	£86m
Swan Hunter	17	£81m
Charlton Leslie Engineering	30	£53m
Cleveland Bridge	41	£45m

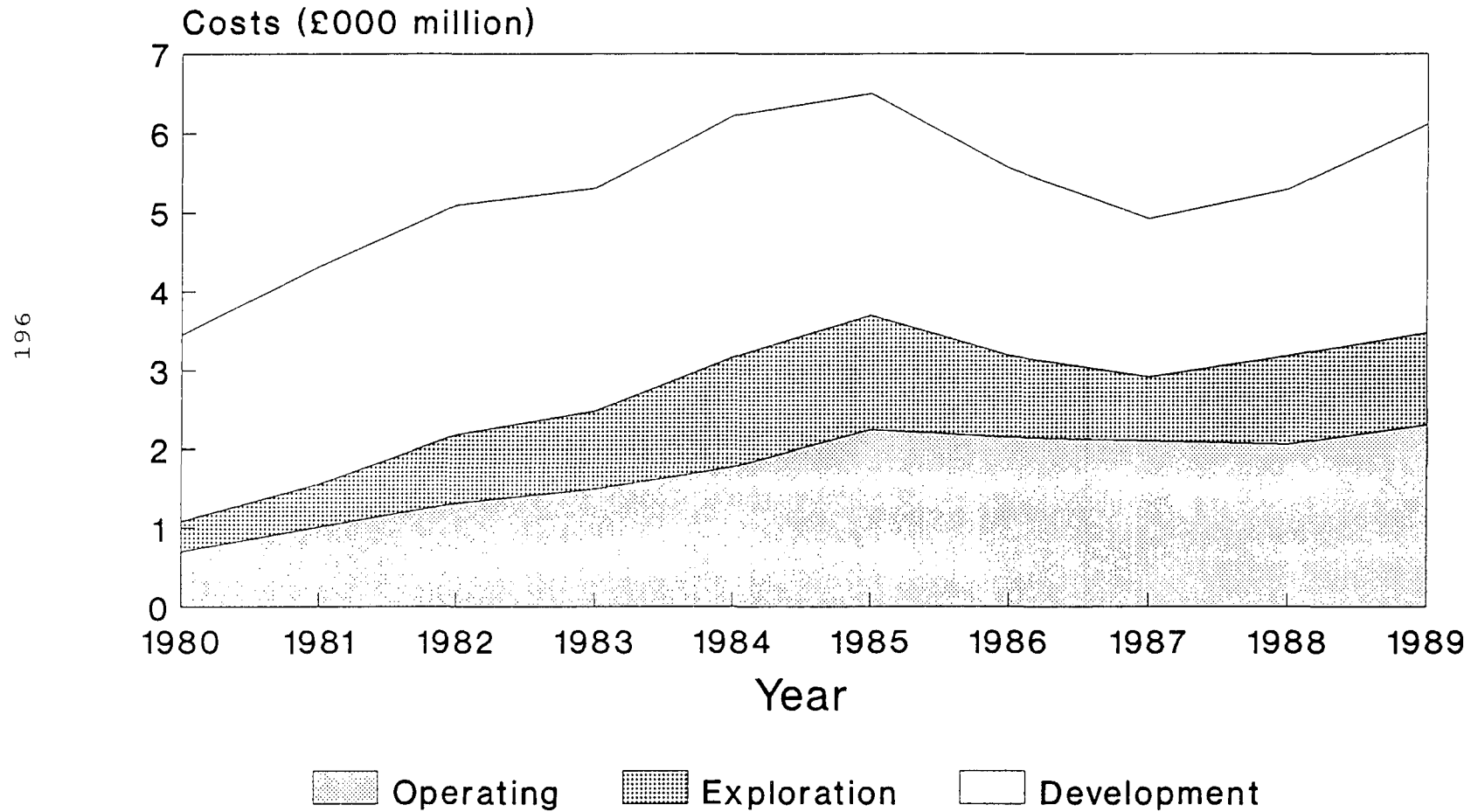
[Source: The Journal: 22.2.89]

Figure 4.1 The Real Price of Oil
1965 - 85 (at 1974 prices)



[Source: Odell, 1986: 142]

Figure 4.2 Expenditure Costs in the
North Sea 1980 - 89



[Source: Brown Books]

Figure 4.3
The Location of U.K. Fabricators, 1986
 [Taken from Sadler, 1986: 34]

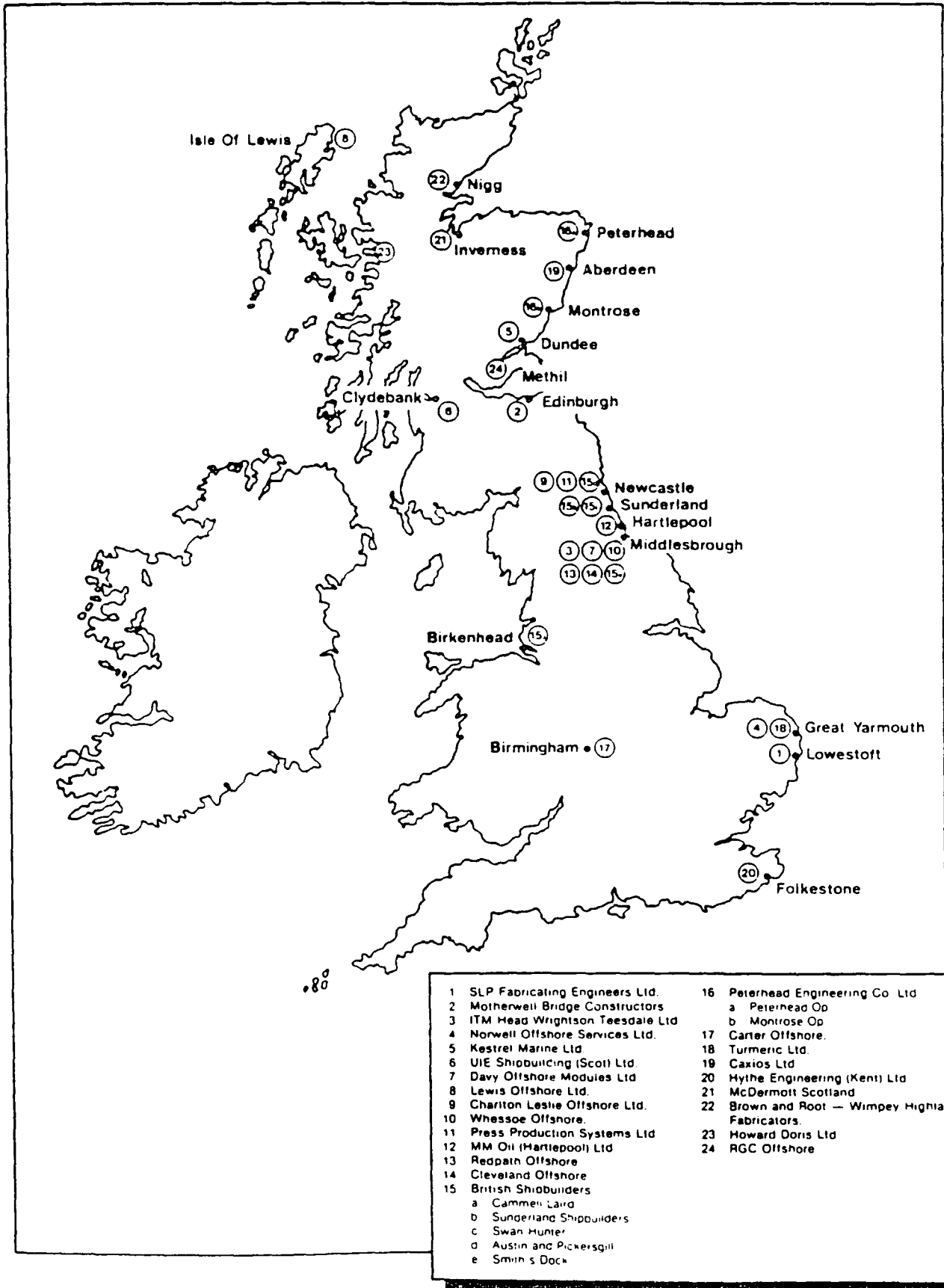
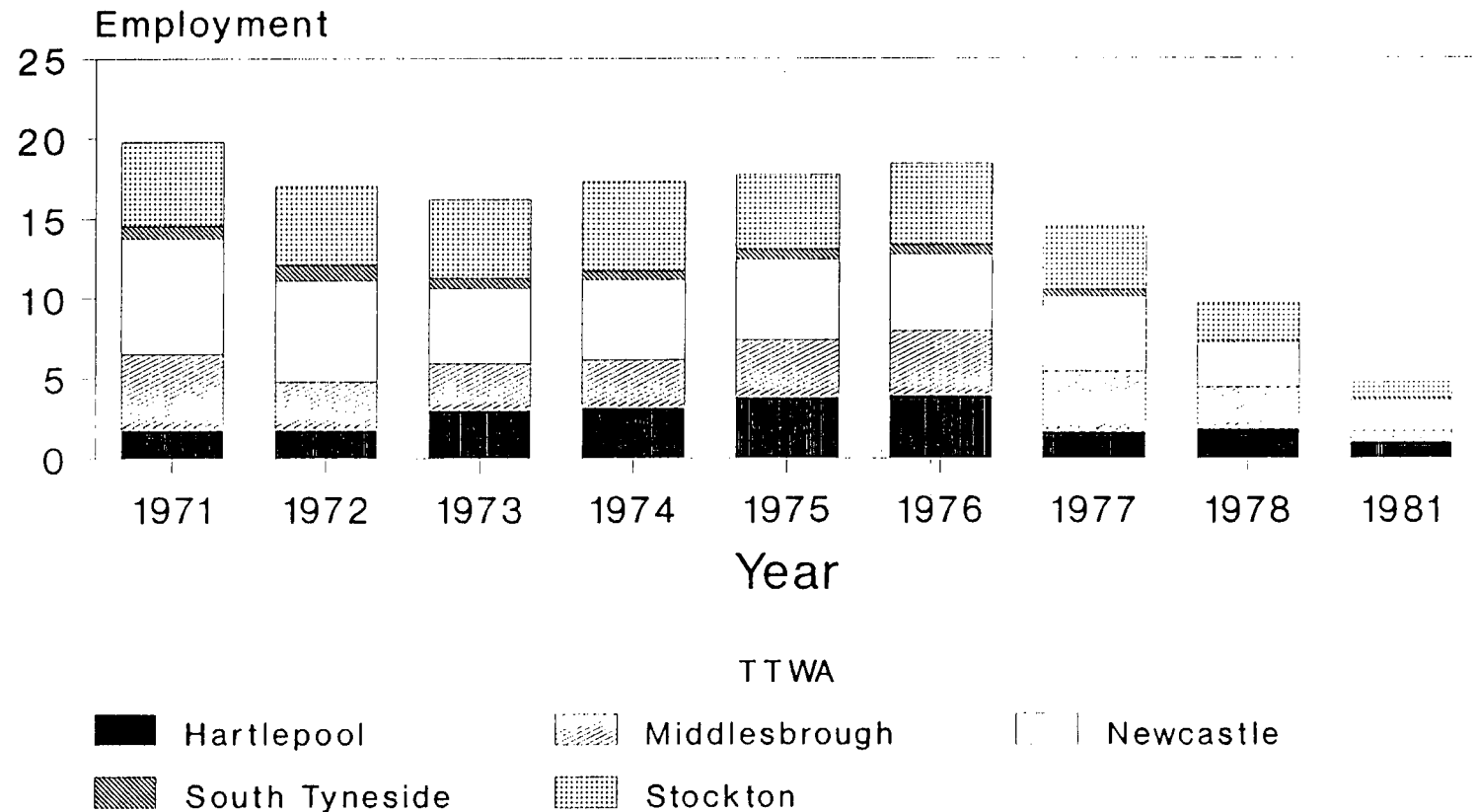


Figure 4.4 Employment Change in Industrial Plant and Steelwork in the North East's Coastal Districts

198



(Source: NOMIS)

CHAPTER 5INTEGRATION AND ACCOMMODATION: THE RELATIONSHIP BETWEEN THE
OIL INDUSTRY AND THE EMPLOYMENT SYSTEM IN THE NORTH EAST¹

"When I first started work in the early 1970s, there were 40 jobs per month - there were that many available. You could go from one job to another. Chuck one in the morning, start another in the afternoon. Then, if you were unemployed for any particular length of time it was because you didn't want a job. Now, it's different."

"When I think about the rundown of the shipbuilding and ship repair yards I often wonder what the situation would have been if the offshore work hadn't been here. It would have been hell."

"If it hadn't been for the rig yards, you would have seen the end of engineering by now. We would all be looking for some other line of work."

These comments, expressed by workers at offshore fabrication yards in the North East during the late 1980s, in many ways encapsulate the role of North Sea oil developments, within the context of labour market change in the North East of England. For most of the 1970s oil-related employment represented one of the better paying of many alternatives for individuals in the region's labour market. But, with the decimation of the traditional engineering and shipbuilding industries during the recession of the 1980s, offshore work increasingly became the only form of employment open to workers trained in the field of structural engineering. As a result, the oil industry has become an increasingly important agent in structuring employment change within the North East, both in its pattern of labour recruitment and in

¹The material used in Chapters 5 and 6 is primarily drawn from interviews, undertaken with the management, workforce and union officials from the offshore fabrication industry in the North East of England and Scotland. A brief methodology of this research is given as an appendix.

the organisation of work in production. It is these developments and their inter-relationship with wider employment trends that are the focus of this chapter.

5.1 The post war employment system

As Chapter 3 demonstrated, prior to the arrival of oil-related activities, the coastal districts in the North East were the focus of an employment system, supplying the labour requirements of the shipbuilding and structural engineering industries. Its principal characteristics were a highly skilled, craft-based and unionised workforce, a large degree of casualisation to compensate for irregular demand in the product market, and a strongly developed local labour market identity.

The post war period witnessed a degree of implicit change within this system. The reduction in the number of shipyards and engineering works within the region, facilitated the gradual decline of the externalised local labour market, as a mechanism for labour allocation, on all three of the North East's industrial rivers. It was becoming increasingly more difficult for the multiplicity of trades to rotate between different workplaces, in tandem with the needs of the production cycle. By the same token, employers were increasingly aware that the pool of skilled labour available to them within the region was shrinking. Since the 1930s, the combination of outward migration from the region, allied to the influx of new manufacturing and service industries (especially on Tyneside) had served to undermine the traditional sources of labour in the coastal districts. Attempts to overcome labour shortages through increasing apprentice numbers and the upgrading of semi-skilled workers had only resulted in numerous localised industrial disputes during the 1950s.

With the shift in the attitudes of both employers and workers during the 1960s, in response to declining markets, the nature of employment relations began to change; greater employment stability was guaranteed by firms in return for a more relaxed attitude amongst the unions regarding working practices.

These changes, however, represented no more than the accomodation of the local employment system to altered economic circumstances, rather than a more fundamental shift in the nature of labour organisation. Firms did not construct sophisticated internal labour market structures, but rather internalised elements of the existing external labour market. As such there was no marked development of a vertical division of labour based upon job ladders and clearly defined career paths, but rather the incorporation of the more traditional, horizontal demarcations between crafts, with the continuing dichotomy between skilled and unskilled workers. Similarly there was no change in the nature of the labour process, which continued to be characterised by informal systems of control, rather any movement towards "bureaucratic control" (Edwards, 1979; Clawson, 1980). Supervision continued to be personal and direct, corresponding to "responsible autonomy" (Friedman, 1977).

The absence of these internal forms of labour organisation was also a reflection of the extent to which an individual's work experience remained outside the firm and rooted within a craft identity. Robertson's observations about shipbuilding on the Clyde, in the immediate post war period, remained equally pertinent as a description of the employment system along the North East coast's industrial districts in the late 1960s:

"Shipbuilding is therefore a tradesman's industry. The

community of purpose and homogeneity of status of a mass production factory are lacking."

(1954: 9-10)

Although the apprenticeship system had been formalised (with the creation of the various Industry Training Boards² in 1963) and reduced to a four year training period, the practice of releasing newly qualified craftsmen onto the local labour market endured and this, in turn, encouraged the persistence of a "journeyman" mentality within the labour force. Thus although a large proportion of the latter would immediately find work in the company that had trained them, substantial numbers opted to choose the alternative of "chasing money" elsewhere. During the early 1970s this continued to be an option both inside and outside the North East. The gradual rundown in employment numbers within the region had encouraged an increasing number of skilled workers to travel away from the region in search of work. Many were absorbed, as site labour, in the numerous oil refinery and terminal developments that underpinned the post war boom throughout Western Europe. In this sense it became something of a grotesque irony that the outflow of capital from the region in the first half of the twentieth century should be succeeded by the export of its skilled labour in the second half. But there continued to be substantial opportunities for employment at home, not just from the larger shipbuilding and engineering employers, but also from

²These boards were established to ensure a more stable training environment within British industry, through a levy system. In the case of the Engineering Industry Training Board, all firms with over 40 employees were required by mandate to pay the organisation 1.7 per cent of their total pay roll, receiving back 1 per cent if they trained to E.I.T.B. standards. This system however is in the process of being disbanded as part of the Conservative government's drive towards free enterprise based forms of training (see Ashton, Green and Hoskins (1989) for an historical account of these developments).

a multitude of small supply firms, that formed an extensive subcontracting network.

5.2 The introduction of the oil industry to the employment system in the coastal districts during the 1970s

5.2.1 The labour market situation and developments in labour relations during the 1970s

The arrival of North Sea oil in the late 1960s brought a new source of demand for the labour skills of the North East, that was initially in direct competition for labour with established industries. For, despite the long term malaise of the traditional industries in the coastal districts, the advent of oil operations happened to coincide with a period of brief economic revival.

On the Tyne an upturn in the world shipbuilding market produced a situation of full employment amongst the various trades, although this dissipated as a result of subsequent OPEC events. Meanwhile, Teesside was in the throes of the construction boom described in the previous chapter.

The ensuing tight labour market conditions encouraged companies into intense competition to attract labour, which in turn led to a spiralling of wage rates. This inevitably resulted in a situation of wage inflation, in which the higher wages associated with oil activities tended to pull labour away from long established local firms. Of particular concern were the poaching activities of Laing's, the civil construction firm that established an offshore yard at Graythorp, near Hartlepool in 1972 specifically for the B.P. Forties contract, offering vastly inflated wage rates:

"Laing's, in order to attract labour that perhaps had a lot of service with other companies offered enhanced rates of pay, and as a result there was a mass exodus from large engineering companies in this district. I'm certain that a lot of them closed as a direct result of

that happening. They were starved of labour, not only my members, but engineers, superintendents and works managers opted for the El Dorado. The place I worked in the seventies couldn't tender for the traditional work they had done for thirty to forty years, because they did not have the skilled labour. A lot of people went to the wall: Whessoe in Stockton, the Britannia Works and all those others."³

[Tony Finn, Regional Organiser, GMBATU]

Laing's was aided and abetted in its activities by B.P, through the offering of bonus payments, which served to destabilise the local labour market and industrial relations environment on Teesside as **Lee**, the present EETPU shop steward at Redpath's Port Clarence yard remembers:

"The actual pay-off payments were paid by the oil companies. After that the [local] companies, such as Cleveland Bridge, got their heads together and said "this has got to stop - we can't afford to pay what Laing's are paying". They had the backing of union officials, who did not want big lump sum payouts (redundancy payments). That put a stop to it."

The industrial relations' problems associated with bonus payments at Laing's Graythorp yard in the mid 1970s soon spread to other more reputable companies. Ian, a foreman with Cleveland Bridge at the time, describes a particular situation at the company's Port Clarence yard:

"In 1977/8 we did some salination plants, which involved load-outs. They (the work force) wanted load-out money for it. What had happened was that Laing had paid thousands of pounds to get a specific oil rig onto a barge at a specific date in 1974 [Forties project]. They paid two shifts for every shift worked, and a promise of so many thousands if they got it out. It was for the Forties Field. That happened and everybody made a lot of money, which is unusual in this field

³This situation was especially galling in the light of recent restructuring by certain engineering companies, stimulated by the I.R.C., to improve the competitiveness of British industry.

[engineering construction]. You normally make just a living. Quite a few of those people came here and wanted payments, "lumpers" for putting the desalination plants on the barges for Dubai."

The difficulties encountered within the fabrication yards were exacerbated on Teesside by other construction work.

Tony Finn describes the situation:

"At the time we had 42 per cent of total U.K [construction] investment centred in a 12 mile radius: the Redcar complex, Seal Sands and the Monsanto complex, then we had all the module construction yards, Laing's and Wilson Walton."

The sheer weight of development meant that a large number of "travelling men" were brought into the area to offset local labour shortages. This served to fuel the already inflammatory industrial relations scene:

"There was an awful lot of discontent at the time. We had 15,000 travelling men in the district, the scousers and that. They don't care what they do when they are working away from home. They walked off on Fridays just to let you know what they thought of you."

There were major skill shortages - nobody was prepared to hold back on their investment, British Steel wanted their Redcar complex, the oil companies wanted their rigs, etc. So they had to bring a lot of people in from outside the area. Teesside lived with a scar on its character after that."

With the balance of power firmly in the hands of the work force, stoppages became commonplace. Much of the credit for the disturbances was given to the incoming workers, by both managers as well as unions:

"This area got a bad reputation when Redcar was being built. They brought a lot of men in to build the site who were just there to cream the situation. It was virtually warfare between managers and workforce."

[Comments made by local management in Sadler (1986: 5)]

But Bob Wright, personnel manager at Whessoe from 1976 to 1989, and supervisor prior to that, suggested that the high wages on offer were another contributory factor:

"In this area the men used to strike on Wednesday's. Clubs were open all day in Stockton then, and they didn't have anything else to spend their money on. North Sea oil was just starting to happen and they were paid a lot of money. Instead of going for bigger and better cars, houses and holidays, a lot of them just got a bigger and bigger wad in the back pocket. Getting some free time was the best way of spending money. The way of getting free time was to cause a problem. They used to come in the next day [Thursday] and there was no problem. But that day it was blood and guts. They would deliberately set a situation up."

Although the Tyne was not subjected to the intensity of industrial conflict experienced on the Tees, similar conditions prevailed as Brian, a pipefitter with forty years of experience in offshore and shipbuilding yards, noted:

"In past years, we would have been out of the gate for the slightest things. At one time, Monday was your favourite day - "half-day Monday". Everyone knew it was Monday on the drink."

Bob Wright suggests that such unrest was down to a few ringleaders, whom he described as "barrack room lawyer type of people, who shout you down." In doing so, like many representatives of management, he is adhering to a unitary view of industrial relations (Palmer, 1983: 10-12) which fails to recognise the potential for conflict in work situations. Indeed other evidence, from the employees' perspective, puts such events in a different light, highlighting in this instance the adverse working conditions that workers were subjected to. Boom conditions and labour shortages, allied to firms' requirements to meet stringent deadlines set by clients, meant that the labour force was under intense pressure in terms of hours being worked and the pace of production. As Arthur Garth, branch secretary of the EETPU on Teesside notes:

"In those days people were working seven days a week, 52 weeks of the year and it did have its own problems. At the first excuse, that was it. It wasn't just individuals taking time off, but the whole yard. A nice sunny day, say Derby Day, and that would be it. They

would have some reason for it, a reason to give. Even the lads would admit that. If you think about it, rather than taking half a day off as an individual and then being under the microscope from then on, it was better if the whole yard went out."

This type of worker mentality seems to have been the result of the particular pressures and attitudes fostered by the demands of site contract work in the engineering construction industry, rather than a general upsurge in industrial unrest throughout the industrial districts during the 1970s (ibid):

"You wouldn't see it within establishments such as British Steel and I.C.I. or even in engineering shops such as Cleveland Bridge. But the fellow, that does the major construction on a contracting job is a different animal altogether.

Laing's was where it all started, it set the scene for some of the other yards. Before they even started the job, strikes were taking place, arguing over completion rates and early finish jobs."

In fact the most significant underlying explanation for much of the industrial conflict, that centred around the fabrication yards during this period, lies in the unstable nature of the industry itself. The level of employment discontinuity is such that workers will strike for the best pay deal during a tight labour market situation to compensate for the inevitable periods of unemployment that usually follow. A recurrent theme of conversations with workers in the industry is that:

"Peaks and troughs are always a problem in the construction industry. When there is work around you get as much money as you can for it."⁴

The strategies employed by both management and workforce

⁴This situation is similar to the longstanding tradition that used to exist within shipbuilding in the region, where workers would make increased pay claims at times when their skills were in greatest demand with employers (Cameron, 1964).

tend to reflect the dynamic tendencies of the product market. This is another point neglected by personnel managers, when they erroneously blame "ringleaders" for worker disturbances. As Beynon has noted (1973: 187):

"Yet recourse to the idea of a "ringleader", a "trouble maker", focuses attention away from the examination of the position of the shop floor leader within the factory and in particular the nature of his relationship with his members. To understand the shop steward is to understand this relationship."

Workers' and indeed, employers' representatives are usually selected for the demands of each particular situation. During the 1970s, the need to extract the maximum benefit from an advantageous labour market situation produced a more belligerent type of unionism in the offshore yards.

5.2.2 Regulating the offshore industry in the aftermath of the oil boom

Although by 1978 the boom was largely dissipating and the labour market had become more stable, irreparable damage had been done to the region's employment infrastructure and industrial relations reputation, particularly on Teesside. David Clarke, industrial relations officer at Charlton Leslie, provides a typical anecdote:

"In the mid 1970s on Teesside, the situation was particularly bad. There is a story going around that the guy who is General Manager of Phillips Petroleum in this country has a map in his London office with a big red ring around Teesside. It is indelibly printed on his mind that Teesside was hell in the mid seventies. Now whether we ever get into that situation again, I don't know. I think we are better prepared for it this time. In the meantime we have got agreements in that are thorough, and have better communications for disputes than the free-for-all we had then."

The problems associated with the offshore developments in the 1970s had revealed serious defects in the system of labour regulation. Being a relatively new industry, offshore

fabrication tended to fall between stools, drawing labour from a variety of different industrial traditions and encompassing a wide range of regulatory arrangements. Whilst the large majority of trades belonged to the CSEU, for which the Bridlington Agreement (1939) was supposed to be the structure for arbitration over spheres of work, the latter had long since become redundant in the resolution of disputes.⁵ The post war period had witnessed a trend back towards district and plant level bargaining, resulting in the growing influence of shop stewards (Marsh and Coker, 1963; Clegg, 1979). Despite the amalgamation of the numerous trades throughout the region into three principle craft unions and two general unions by the mid 1970s,⁶ the practice of having a representative of each trade on the Joint Shop Stewards Works Committee continued to be an important feature of collective bargaining arrangements. Thus as Stan Jackson, the present union convener at Redpath Offshore's Port Clarence yard remembers:

"In the seventies we used to have 30 odd stewards and now we've got 7. There used to be 10 Boilermaker

⁵The industrial relations landscape was dominated by informal plant and district level practices which tended to override, national or federal agreements.

⁶The largest engineering and shipbuilding union in the North East is the General, Municipal, Boilermakers and Allied Trades Union. During the mid 1970s the GMB accounted for approximately 125,000 men, 30,000 of which were involved in various forms of structural steelwork. In the offshore industry this group included burners, chippers, platers, template makers and welders. A close second was the EETPU (with 80,000 members in the region, mostly in the electrical and pipefitting trades. The third major craft union was the AUEW (Amalgamated Union of Engineering Workers), which represented the amalgamation of the main engineering construction union the C.E.U. with the old A.S.E. in 1970. This union embraced the mechanical fitters, erectors and riggers. Labourers and other general workers were divided between the G.M.U. (which merged with the Boilermakers in 1978 to form the aforementioned GMBATU) and the Transport and General Workers Union.

stewards alone, and every steward had a deputy that was practically full time".

This was perceived as a major problem for union officials, at the district level, as well as management, as Tony Finn recalls:

"At one time we used to go to a meeting, and there would be 26 shop stewards. You couldn't get a consensus. But now we have 2 shop stewards at Davy Offshore and those men have looked after 1,000 workers at the peak."

The high levels of representation led to numerous demarcation disputes, not so much between the skilled categories, but over the status of work outside of the core stages of production. A typical example comes from a dispute on the Tees in 1975, between the C.E.U and the Boilermakers over the control of metal preparation work, i.e. the assembly and positioning of components prior to fabrication. In the shipyards, this type of work had been traditionally associated with semi-skilled riggers, who were affiliated to the Boilermakers Union. But within engineering construction this role was filled by the erector, a skilled category in its own right, and a mainstay of the C.E.U. The fact that this dispute was eventually decided in favour of the latter, reflects the support of the A.E.U.W and the structural engineering heritage of the area.⁷ But disputes did not always take such a course. On another Cleveland Bridge site upstream, there was a dispute over the manning of cranes between the C.E.U. who had traditionally done the work on site and the T&G crane drivers from the general construction industry. The CEU saw this as a defence of their trade against unskilled labour and appealed to the Boilermakers as

⁷By the same token, it is significant that for the offshore yards of Charlton Leslie and Press on the Tyne, where shipbuilding traditions have left such a dominant legacy, riggers undertake the majority of metal preparation work.

a fellow skilled union for support. This was not forthcoming; crane driving was not considered to constitute a proper trade. As a result, the company sacked striking CEU men, thus allowing the T&G to gain the upper hand in this line of work.

The rationale behind these latter disputes was distinct from some of those described earlier, representing the teething problems of a new industry, rather than the expression of worker power in the labour market. But the common denominator for both forms of dispute was the breakdown in existing regulatory arrangements between employer and union organisations within the offshore industry. It was this situation that the National Joint Council for the Engineering Construction Industry was established to redress on 10th September 1981. Its principle concerns were to establish a procedures' system, to limit the incidence of wildcat strikes and to control wages issues:⁸

"As a result of what happened in Teesside in the seventies, a large investment now comes under the N.J.C. They decide whether it is going to be a nominated project, and the procedures required. Projects are all so different, from the construction of a petrochemical complex to the relining of a blast furnace. The refinements have to be gone into in fine detail. The client come to the first meeting and tells us [the unions] what he wants. We agree with the client what the money should be and the N.J.C. authorises that. Then we go into the procedures.

The blast furnace [at B.S.C. Redcar] was a nightmare as regards procedures. Wherever a problem arose, the field officer [a trade union official] and a representative from the employers had to go there and look at the conditions, then agree that a "condition" existed - in your pyjamas; the lads used to get you out of bed at midnight. We would agree that a "condition" existed that warranted new monies, etc that had been unforeseen. Then we would return to the client and he

⁸Though notably it did not include activities on rigs in the North Sea, where unions remained largely excluded.

would agree to the changes, providing they had been authorised by the N.J.C."

[Tony Finn]

Thus, whilst the new agreement had its drawbacks it was supported by both management and unions, who considered it preferable to have an organised forum for debate, rather than the more spontaneous situations in the 1970s, where "people would have just downed tools".

Spiralling wage rates, and the use of bonus payments had been the primary source of discomfort for fabrication firms during the boom years. In an attempt to eliminate a recurrence of this situation, the employers agreed to a series of assurances over conditions. These included: a guarantee of at least 39 hours employment per week for each individual and a minimum contract of at least six weeks, with a limit of 8 hours per week on overtime (although this tended to vary between firms); up to 25 days of annual paid holiday, dependent upon length of service; and severance pay for up to a maximum of 103 weeks worked.⁹

But this agreement was flying in the face of labour market realities. An unstable and disorganised employment environment was further undermined by the sheer weight of recession in the period from 1978 to 1981. This situation, allied to an incoming Conservative government intent upon an assault on union power in the labour market, was to transform the balance of power, away from the individual worker, away from organised unionism and towards the employer.

⁹A similar severance agreement had already been introduced into the shipbuilding industry in 1979.

5.2.3 The organisation of labour in production

Thus the industrial relations' conflicts of the 1970s were linked to specific labour market conditions, rather than a concern over the organisation of labour in production. In fact, the production requirements for the fabrication of offshore modules were notable for their similarities to shipbuilding, a result of the irregular pattern of demand in the product market that prevented the development of forms of mass production.¹⁰ Under these circumstances the fledgling activity was able to utilise existing forms of labour organisation at the point of production. As a consequence, disputes over demarcation, which were regular features of the local industrial relations environment in the past, have been uncommon in the history of offshore operations. Those that have occurred were usually over some minor infringement along rigidly defined craft boundaries, and need to be viewed in the context of the chaotic labour market situation described above, rather than as the defence of craft positions.¹¹

¹⁰In addition, the unwillingness of firms to commit large amounts of capital to offshore fabrication activity provided a constraint upon any attempt by management to transform the labour process through technical changes in production.

¹¹This is not to deny the existence of some forms of craft erosion. Since the 1960s the roles of some of the traditional shipyard trades in production were being implicitly undermined, resulting from a tacit agreement between management and unions concerning overmanning. This was usually achieved through increased flexibility in the roles of core trades. The advent of offshore work, for example, saw the virtual disappearance of the chipper; a welder's mate whose chief task had been to clean up a weld after cooling. In the offshore yards, welders were increasingly encouraged to do their own cleaning and scaling. On Teesside such small-scale transformations presented few problems, although on Tyneside, the legacy of shipbuilding brought a greater degree of worker resistance. This was illustrated in a remark made to the local press by Bob Glass, chairman on the CSEU as recently as 1986

Reflecting the similarities with previous forms of work organisation, the production of offshore modules has been centred upon a series of clearly defined stages, requiring a changing composition of labour. The first of these is the metal preparatory stage ("prepping"), involving burners, platers and template makers in the shaping, bending and planing of materials prior to assembly. Welders are then employed in significant numbers, alongside these other trades, in the fabrication of the shell or basic framework of the module.¹² In doing so they receive support from trades specialised in the servicing and maintenance of the ongoing structure, such as erectors, riggers and scaffolders. The peak employment level for a contract is usually reached during this stage. This is followed by the shotblasting and painting stage, probably the least significant stage in terms of manpower recruitment, but crucial in terms of quality control as one manager at Press

following a walkout at Howard Doris's yard on the Tyne, precipitated by the firm's attempt to bring in pipefitters to undertake work traditionally done by platers in the locality:

"This is something which could have been avoided....

The management is new to the area and it seems they have a lot to learn."

(Evening Chronicle, 17.6.86: 3)

But levels of worker resistance should not be overstated. The mechanisms used for this process, natural wastage and the reduction of apprentice numbers, ensured that there were no significant outbreaks of sectional conflict, although evidence of underlying bitterness has been evident in the research. The implications of this on-going process with regard to the 1980s are discussed later in the chapter.

¹²These trades experience the greatest fluctuations in employment levels, fluctuating within the course of a contract as much as between contracts. The nature of their work, whether welding, plating or burning is such that they can be called in for small "touch-up" and repair jobs after the main fabrication stages.

noted:

"Blasting and painting are important in this business, you've got to get that right. That can cause you a lot of problems. I think people tend to look towards the blasting and painting as unimportant, but it is very important from an engineering point of view. If they don't get it right there is trouble. If the painting is not right, then there is a lot of stripping back to be done, which can cost a few weeks."

After the completion of the structural stages, a contract enters the pipefitting stage, although in practice there tends to be a great deal of overlap between these stages. In particular versatile welders are often capable of welding pipes as well as structural steelwork. Platers and pipefitters lack such diversity, possessing highly specialised skills.

In the final stages of a contract, the outfitting trades are brought in to install electrical, mechanical and other more sophisticated equipment. Most firms use a mixture of direct and subcontract labour for such work, the ratio being indicative of the degree of sophistication involved. Charlton Leslie were exceptional in having their own electrics division, whilst other firms such as Press and Redpath have used sister companies from within their own parent organisations.

The similarities with traditional forms of work in the region fostered a conservative attitude amongst employers towards technical change. Working practices were not altered radically for the specificities of offshore activity during the early 1970s.¹³ The changes in production that did take

¹³But management attitudes were also influenced by the uncertainties surrounding the future of offshore work. In this sense, firms were particularly unwilling to undertake massive capital investment in new production systems.

place need to be viewed in the context of much longer term trends within existing industries, as we suggested earlier (see footnote 6). The predominant change to the organisation of labour in production came within the semi-skilled and unskilled segments of the work force. Offshore related companies had inherited an overmanned system of unskilled support labour from shipbuilding and engineering traditions. In this system, every tradesman not only had a semi-skilled assistant such as a chipper or gouger, but also a mate to do menial tasks. This system was abolished almost immediately, with craftsmen increasingly forced to undertake the work themselves, as John, a welder who had served on Davy's Shell Amethyst project in 1989 remembers:

"When I first started each tradesman had a mate. This industry was just taking off then so you had more mates than elsewhere. Gradually however the tradesmen have taken over the mate's side of the job. You do a lot more "humping" and "pulling". But that took off fairly quickly. When I was here in 1975 you did about the same as you do now."

Under these circumstances, the role of the unskilled within production was transferred from the specific to a more general plane, involving greater functional flexibility. Thus trade assistants operated between trades, "as and when required".

Thus the early changes to the nature of work led not to any form of technical restructuring, but rather an intensification of work within existing craft boundaries, through the reduction in the number of service trades.

Undoubtedly the most significant transformation of the employment environment, as a result of oil developments, came, not in the nature of the labour process itself, but in the changing composition of the labour force. As a reaction to the uncertain, short term nature of oil developments in

the North Sea during the 1970s, fabrication companies began to rely more heavily upon a casualised workforce and the extensive use of subcontracting firms. Both these trends represented a significant reversal in the post war pattern towards a more stable working environment within firms.

The greater use of subcontractors reflected the lower level of expertise within offshore fabrication companies compared to shipbuilding. For whilst, shipbuilding firms were largely able to undertake the entire production of a vessel from the basic fabrication stages to the outfitting stages using their own contract labour, fabrication firms have used subcontracting firms to a greater extent.¹⁴ Thus, the actual construction effort, although taking place on one site is more vertically disintegrated between firms.

Fabrication firms only employ their own direct labour in the structural phases of each contract. Other activities are subcontracted out to a varying extent:

"Effectively the people we employ, the portion of the offshore work that we do with our own resident/permanent labour force is the steelwork structure, the frame of the module. That's all we do, all the other supplementary requirements to complete the module are done by subcontractors. Some of the subcontracting is done by companies that are part of Trafalgar House, e.g the electrics are done by Redpath Engineering Services."

[Lou Casson, Personnel Manager, Redpath Offshore]

It is difficult to estimate the quantitative employment impact of subcontracting activity, or its change over time,

¹⁴This is also a response to greater market uncertainty.

given the confines of the present study.¹⁵ Generally speaking, employment levels within these subcontracting firms probably fluctuate in line with the firm's role in the offshore production cycle. But at the same time, subcontractors' involvement in the offshore market has tended to vary wildly, both between individual firms and over time. An attempt to discern these patterns was attempted in 1988, when a survey of the 20 principle local subcontractors used by the major fabricators was undertaken. The 17 that responded, employed 3119 in the middle of 1988, although significantly, 13 of these firms declared that on average, offshore work accounted for less than 25 per cent of their overall market. Unfortunately firms were unable (or unwilling) to state what proportion of their workforce was employed in the offshore sector at any one point in time, or

¹⁵The conventional wisdom when describing the relationship between offshore fabricators and their suppliers is to think in terms of a network of primarily small firms based upon an inner ring of contractors, within which, the oil companies are the "bullseye" of the "darts-board" and also project managers in each case (E.I.U, 1983). This is far too simplistic a description of a complex set of arrangements, which probably vary in proportion with the very different nature of each individual contract. The "small firms" myth is exploded by subcontracting firms such as Darchem, which regularly employs more people than the largest fabricator, Press (over 2,000 nationally in 1988), and is engaged in a diverse number of fabricating operations (ranging from insulation to pipe fabrication), rather than having a specialised product or service. Broadly speaking three types of subcontractor have been recognisable during this research: firms, for whom offshore activity is the principal market, with employees based at the construction site, supplying an on-going service, an example being Barrier of Wallsend (whose headquarters are located adjacently to Press); secondly, firms, for whom offshore work is not the principal market, although it forms an important part of their overall portfolio, supplying materials manufactured at their own site; and finally highly specialised firms that are called on to the construction site for a particular production stage, such as electrical wiring or insulation.

to supply figures relating to individual contracts. These figures were not available from the offshore fabricators, who only keep records relating to their own direct employees and agency staff.

However, it should be obvious from this discussion that a sizeable proportion of the labour process within offshore fabrication is undertaken outside the remit of the principle fabricator, although as we have already noted such estimates for the industry as a whole disguise considerable variations between firms in their use of subcontract labour. This is a theme taken up in Chapter 6.

A point touched upon in the previous paragraph was the use of subcontract labour by the fabricating company itself. Although not great in terms of employment numbers, it is significant in terms of a growing trend, both within the offshore industry and the labour market as a whole. The source of this type of labour is usually a specialised engineering employment agency, typically supplying highly skilled project managers, engineers and draughtsmen, i.e. white collar staff. This was a development inextricably linked with the arrival of offshore work. Traditionally such categories of employment represented the only permanent members of the workforce in shipbuilding and engineering within the North East. As we suggested in Chapter Three, the marketing effort used to be the only continuous process within a shipbuilding or structural engineering production system, and these employees were critical for that effort. Recruited from the local labour market, these people represented a small professional elite, with employment guarantees and access to job ladders within firms.

But with the arrival of offshore work, growing numbers of these people chose the option of leaving permanent

employment and chasing the oil money in the same manner as their blue collar counterparts. Undoubtedly part of the spur for this had been the decline in the opportunities provided by the shipbuilding industry within the region, although the offshore related firms were of course themselves developing a more transient employment environment. Not only did these people work in the locally based oil developments, but in all types of contract work throughout the U.K and abroad. The specialised employment agency developed to reflect this new tendency.¹⁶ Thus the break down of the locally oriented employment system was complete, the geographical link between work and home had been fractured within all segments of the labour market.

5.3 The restructuring of the employment system: on the market in the 1980s

The marginalisation strategies of companies probably enhanced the short term financial prospects for workers during the buoyant labour market conditions of the 1970s. As we saw earlier, increasing numbers of men left stable employers to chase money in the oil industry, the "El Dorado" of black gold. A typical example was Ralph; who served his time as a caulker burner on the Tyne:

"When I was shipbuilding here [McNulty Marine], 10.00, in the morning I got a pass out and I went across the road to Fox's where I heard there was a better job going and I was off to Holland at 4.30 the same day."

By the end of the decade however this ephemeral working environment was disintegrating; labour market conditions

¹⁶A typical example is the firm, Bordax, based at Glenrothes in Fife (and established in 1971 with the specific intention of benefitting from these changes in employment patterns), which supplies, not only highly skilled personnel such as Planning Engineers, Quantity surveyors and Welding Inspectors, but also skilled tradesmen to companies facing local labour shortages.

were altering radically throughout the region, as the end of the North Sea oil boom coincided with recession in the wider economy. With the continuing rise in the numbers unemployed, (Figure 5.1) those who had decided to follow the tune played by the oil piper found themselves having to wait increasingly longer and search increasingly further for work. This situation was encapsulated in the experience of Allen, a pipefitter with a history of working for a whole plethora of employers in engineering and construction site work (including Charlton Leslie, I.C.I, Monsanto, Taylor Woodrow and Wimpey).

Up until 1982 he had been unemployed on numerous occasions, but only for six weeks at the most. But after finishing a job at the St Fergus oil terminal, he spent 16 months out of work. Naturally it had a big impact upon him:

"I've been off before - four weeks, six weeks - but never 16 months like that. I must admit, that was the worst time I've ever had in my life."

He talked with great feeling about the transition in status from being "on the dole" to "on social" experienced by many of the long term unemployed:

"It's not too bad on the dole because I had money to start with obviously. After I got paid off it was great for a few months. Once the dole runs out, you've got to start going to these social people; they look down upon you as if it's your fault, everything is your fault. You've got to go and beg and scrape. I just don't like doing it, but you've got to haven't you?"

When he did eventually find work, typically enough it was outside the North East, and indeed when interviewed at Charlton Leslie's South Shields yard, he was working in his first home-based job for 10 years.

But the dole queues were also composed of those who had stayed put during the oil years, in companies whose fortunes

had declined as their traditional markets had dried up. For, whilst the temporary migration of skilled labour from the North East had been a steadily increasing phenomenon in the post war period, the dislocations to local industry in the late 1970s and 1980s transformed the scale of this process, and decimated the employment base of the prevailing system (see for example Table 5.1). From being an option pursued by the more adventurous within the local labour market, it became an absolute necessity for many of those who wished to preserve their own living standards, whilst remaining in the occupations they had been trained for.

With the majority of offshore firms within the North East also reduced to their baseline employment levels (see for example Chapter 4, Footnote 21) individuals were forced to look for work outside the sector. Inevitably, for many this usually meant a spell of inactivity on the region's dole queues. At first there were scraps of work around for those with good social networks, typically short term contract work of up to 5 weeks on site, or in the smaller fabrication shops that remained, though wage rates were much reduced in this kind of activity. However as the recession deepened, even this option was removed for the majority of workers. New job opportunities for skilled craftsmen within the region were virtually zero, until the upturn in offshore work from the middle of 1982 onwards. Under these circumstances, those laid off were faced with several less than appetising alternatives: remaining "on the dole" at home, in the hope that an upturn in activity would not be too prolonged; "getting on their bikes" and travelling away from the region (and often abroad) for work; or leaving the industry altogether.

An individual who has been through all three experiences at one time or another is Peter, a plater who served his

apprenticeship at a firm called W.T.C. at Billingham, between 1976 and 1980. After being made redundant, due to company cutbacks in July of 1981, he spent 9 months "on the dole". It was this ordeal that encouraged him to leave the trade, and undertake a range of jobs: insurance sales, setting up snooker tables, driving jobs; all for low wages. These jobs often took him away from the North East for weeks, and then (as time drew on and the likelihood of employment at home receded) months at a time.

During one of these periods away he returned to plating work on a range of contract jobs: in module yards abroad, and "down south" on construction work during "bad times". 1986 was a particularly "bad time" when he was unemployed for a total of 9 months, after which he returned to the region to work, belatedly, in 1987 for Whessoe, and following the closure there for Redpath, on the B.P. Gyda contract until December 1989. During the 1980s, he estimates that only three years have been spent working in the North East.

As the 1980s progressed, increasing numbers of men experienced this kind of employment perspective. Unfortunately it is difficult to accurately assess the growing number of workers who left the various trades for other work, because official statistics were not designed to represent this type of labour migration. The best estimates have tended to come from the trade unions themselves. The EETPU, for example, lost half of its membership between 1979 and 1989, being reduced to 40,000 in the North East region (an area from York to Berwick). But notably, the vast majority of those lost were in the semi-skilled categories, such as in the assembly of components. For the large numbers of electricians, plumbers and pipefitters, who make up the skilled sections of the union, the 1980s proved to be less cataclysmic, reflecting the fact that these skills are

highly transferable not just between different industrial sectors, but also within the informal economy, typically in the form of domestic, maintenance and repair work.

In contrast the old Boilermakers' union, (A.S.B.) whose trades were highly reliant upon the pattern of work in shipbuilding and structural engineering, was decimated by the economic downturn. Of those workers remaining in the basic trades (especially on Tyneside where the tradition of shipbuilding is stronger) many are still tied to whatever work is available in the local district as Arty (a caulker burner on Charlton Leslie's Amerada Hess project) illustrates:

"The repercussions of finishing here are different between the trades; because joiners, electricians, fitters, plumbers and pipefitters finish here and there are jobs for them outside of this industry. Now the only place boilermakers can go is on the river and when that finishes you rot. You're dependent basically upon what comes to the river [whether shipbuilding, ship repair or offshore work]."

Although for structural steel workers there has often been the option of working on the rigs or in nuclear related work, these forms of employment are regarded by many as last resort options, due to the safety hazards involved. In fact many of those interviewed during this research claimed that they wouldn't consider this type of work, although attitudes are likely to change according to the length of time spent on the dole, as Geordie (a pipefitter with Charlton Leslie):

"I wouldn't say a lot of them wouldn't work on the rigs. A lot of them would prefer not to. I can say here and now that I wouldn't go offshore because I'm in a job. Three months on the dole, phone me up for an offshore job and I'll be away."

The Piper Alpha incident has probably pushed the average threshold further back again as Ralph (a burner with Charlton Leslie) says:

"A lot of lads are actually starting to think two or three times before going out there. The majority of people sitting in the house don't realise the dangers involved in actually working out there. It's a dangerous business, you walk out the front door and step towards the oil rig knowing that it'll easily blow if anything happens."

"Piper was the catalyst for bringing a lot of smaller incidents out into the light. It's (oil) a dangerous industry and the worst environment of all is offshore."

But it is not just the safety aspects of rig work that are of concern to the workforce, the refusal by the oil companies to acknowledge unions, and subsequently the former's ability to cut wage rates at the drop of a hat has been a constant source of rancour with many workers.

Initially, during the "hook-up", offshore work wage rates for working in the North Sea are higher than anywhere else, but when rigs move into the production phase ("first oil" or "first gas") there ceases to be any union recognition and rates are negotiated individually. As a consequence, rates drop drastically as Table 5.2 illustrates, adding up in some cases to wage reductions of almost £100 per week. As Bob Eadie, Offshore Organiser of the EETPU, notes:

"After the hook-ups, it's the law of the jungle, and you'll be paid what the oil companies want to."¹⁷

¹⁷ The situation was manipulated even further by the oil companies following the slump in oil prices in 1986 as Bob Eadie explains:

"When the oil price dropped in 1986 there was a terrible situation, because you'd start off on £5.90 an hour, for example. You'd be working the contract, maybe for Press Offshore (services division) and the oil company would re-bid it. Then a new company, say P.O.C. would arrive and say, "Well, the contract has been re-bid and we've won the job, but the bad news is, we've had to re-bid it at £5.50 an hour, so you can work for us at £5.50 or you are redundant - and the guys didn't have another job, so they had to accept it."

This situation would often be repeated with a third, or even

Nor does offshore rig work provide the same type of opportunities that it did in the 1970s.¹⁸

In effect, for those remaining within their chosen trades, the labour market during the 1980s had become increasingly segmented into those who chose to travel for work and those who preferred to wait and hope, as Lou Dobson (Personnel Manager at Charlton Leslie) explains:

"I think that since the offshore industry has been going in the North East, the labour force has become divided into two groups. The one group, who won't go offshore for family commitments or whatever, and have long periods of unemployment mixed with periods of highly paid work. Then you have the other group, who will go offshore, down to Fawley, do anything to keep themselves working - and they are usually the younger ones."

fourth contracting company.

By 1989 however the situation was showing signs of improvement. With a great deal of other engineering construction work available, especially for the electrical trades (e.g. the Channel Tunnel project, Canary Wharf, in London's Docklands and the St Fergus oil terminal construction) the balance of power in the labour market had shifted slightly in favour of the workforce. Workers were successful in obtaining a post construction agreement of £6.36 and there was a concerted lobbying campaign for union representation, given publicity by the Piper Alpha tragedy and manifested in the formation of the Offshore Industry Liaison Committee.

¹⁸Improvements in module technology have reduced the number of man hours required in the hook-up stage, as Bob Eadie of the EETPU explains:

"In the early days, if you want to get a historical perspective, you could make a very good living moving from one hook-up to the next. There were men constantly moving from one hook-up to the next, enjoying in relative terms, good wages and conditions. But now, at present (16.6.89), everything can be done in modules, and that means, for people who used to work constantly on hook-ups, they can now look forward to getting maybe 8 or 9 weeks work out of a hook-up."

But this itself is too simplistic a view of the employment situation. Though, for many people a migratory existence with no ties fitted their own personal aspirations and philosophy,¹⁹ the majority of travelling men did so through necessity rather than choice. Nor was it a simple monetary choice. Examples abound of individuals who have taken work rather than remain on the dole, even though there was little monetary gain. The longer the period of unemployment, the greater the frustration and the lower the acceptable wage. Indeed for many, the decision to work away from the region often resulted in a financial loss as this anecdote from Geordie illustrates:

"There was a bad run in the area [Tyneside] a couple of years ago when there was just nothing about. I had 4 months off around about Christmas and I was out of my head. I took a job in Holland which was really financial suicide for me because I'd be better off on

¹⁹Indeed there are many advantages in a migratory lifestyle, particularly for younger men, as Tony Finn notes: "The younger element of highly skilled people don't think twice about "upping and off", because their philosophy is "it's 2 years work, £800 per week." You can go home every other weekend for a long weekend. You can get the wife down there every weekend if you want. In the mean time you are earning twice or three times the amount you can earn here [the North]. So you can earn 6 or 7 years earnings in 2 years, and start looking around..."

By the same token, the work by its very nature is unstable and unemployment remains an occupational hazard. Ralph's maximum period of unemployment was 6 months in 1982. If he hadn't been prepared to travel, this would have been much longer:

"If you're prepared to sit and wait, a job does come along (like this) but who knows where the next one is coming from - this one's nearly finished now. It's a case of sitting and waiting or packing your bag. It's hard to work running into two years. Nine times out of ten you finish before that so you don't qualify for redundancy payments. That's what's accepted. Everyone knows the score."

the dole. It was a ridiculous situation to be in. But I took it anyway just to get out of the house."

Inactivity and the danger of drifting into the ranks of the long term unemployed is a constant threat for offshore workers. Thus for those remaining at home, the situation is rarely clear cut. A long period of unemployment would weaken a man's resolve to "sit it out" on the labour market. In practice it is only the oldest sections of the work force that are unwilling to travel abroad or work on the rigs.²⁰

Although a second oil boom was experienced in the middle years of the 1980s, the continuing decline in employment opportunities within the former shipbuilding and engineering districts, throughout the region, during the decade has reinforced this situation. It was this changing employment environment that redundant shipyard workers were forced to confront, a fact brought home by the comments of Les, a redundant shipyard worker following the closure of Smith's Dock on Teesside in 1987 with the loss of 1,400 jobs:

"I think when I was first unemployed, I was living in the past. Years ago, you could just go down to British Steel, knock on the window, and say "Any vacancy?" They'd say yes or no. If they'd got any vacancies, you

²⁰Though for many older workers, a well developed personal contact network affords them some protection from the dole queues. Arty for example, picks up piecemeal work from the various ship repair yards still operating on the Tyne. Faced with the dole queue after 15 months with Charlton Leslie, he didn't envisage any problem in finding a job. He thought the Tyne Ship Repair company was a good bet. Because of the nature of their work, they have a small core workforce, supplemented by casual labour. The pay is good and it is possible to get 8 weeks work followed by 2 weeks off, then maybe pick up some more work. He thinks that many older workers are glad of the respite:

"The older hands, men in their 40s and 50s don't really mind that because it's a hard, dirty, grafting industry. You can earn a few "bob" - keep hold of it - get a few day's rest and go back again."

could start on Monday. But that's not really the situation now. They're losing jobs all the time. We're losing industry all the time, so the whole situation's changed, and the sooner I face up to it, which I'm starting to do now, the better it'll be all round. I don't know whether it'll help me with that outlook to get a job, but that's the situation. Times have changed, and they've changed so radically that you must adapt. If you don't adapt, you're just going to get left in the dark."

(Withington, 1989: 55)

In 1988, the closure of North East Shipbuilders, the last major shipyard on the Wear, also brought this salient point home to the people of Sunderland:

"Mr Downes, 46 is one of 2,400 shipyard workers losing their jobs with the closure of North East Shipbuilders. After 21 years as a welder in the same yard, he should come away with £15,000: enough, he says to last him two years on the dole.

He faces two options. He can stay in Sunderland and retrain or he can leave his family behind and work away during the week.

The maps were out on the Downes's lounge floor the day after the NESL closure was announced, when Vickers ran a television announcement for skilled workers for its yard in Barrow-in-Furness, Cumbria."

(Financial Times: 20.12.88: 9)

Evidence from a survey of those interviewed for this research provides us with a resounding picture of this increasing trend towards labour mobility. Of 80 blue collar interviewees (interviewed whilst in employment in offshore firms on the Tyne and the Tees) it was discovered that 52 (65 per cent) had worked away from the North East at some point in their lives. In addition there had been almost a 50 per cent increase in those working away from the region during the 1980s.

These figures are supported by union records that show an increasing number of branch members travelling away from the

region in search of employment, as Tommy Brennan (Regional Organiser of the GMB on Tyneside and) notes:

"Our travelling membership is amazing, especially since the demise of shipbuilding. The members who stay nowadays, do travel for work, when local oil-related work is not available. They travel to Sellafield, Vickers (Barrow), Cammell Laird, etc. So, when I say we have a working membership, they are not working in the North East."

Out of 15,000 Boilermakers registered in the Tyne and Wear district in 1989, Tommy estimated that approximately 7,000 were probably working outside the area.²¹ Many were working abroad in Germany, Holland and the Middle East:

"Some of our members were actually repairing tanks during the Iran-Iraq war."

Although on Teesside, the proportion of Boilermakers working away was far lower, due to the availability of work with British Steel, I.C.I. and Rolls Royce, as well as the remaining offshore yards, it was still a significant number: 1,500 out of 7,000.

Geordie's attitude summarises the philosophy of this growing number of contract workers:

"We just take it in our stride. You'll find that 99 per cent of people employed here on this site are contract in the respect that they just come and go. But there are a few here, with it being such a big job, that have been absorbed from other companies closing like North East Shipbuilders. They've probably been there since day one and they don't know anything but that. Now redundancy to them would be a different situation than to me. I would just say to myself, "straight down the dole, get the kit bag out and away", no hassle, it's the trade I'm in. I wouldn't have as much as I've got if it wasn't for contracting, and being prepared to go to the other side of the world at the drop of a hat. That's my outlook. You'll probably find the average

²¹This was after the culmination of Charlton Leslie's Amerada Hess contract, for which an extra 1200 union members were employed locally.

contracting man is like that - very easy going, very laid back."²²

What pertains for the skilled worker does not hold for the increasing number of unskilled workers that constitute the local labour market, largely the result of the decline in apprentice numbers as a consequence of recession. Without a craft base to distinguish them from the "reserve army of labour" these workers are able to exert little influence in the employment system, either in terms of job security or through a favourable power balance in the labour market. They are also unable to benefit from labour shortages elsewhere, in the same sense as their skilled counterparts for the former reason. In the casualised offshore environment, unemployment has therefore become an unavoidable occupational hazard for the majority of unskilled workers. This applies even to those individuals, who through a long period of time in offshore-related employment have acquired low order semi-skills, such as crane driving. A good example was Bernie, an occasional employee of Redpath Offshore.

After leaving school in 1971 without formal qualifications, he learnt most of his skills on a succession of building sites throughout the North East. He hasn't been abroad, for as he says there isn't much scope for non-trades overseas.

²²The closure of NESL at Sunderland offered a comparison of the traditional work experience in the North East with the new form of work brought by oil developments, as a quote from Tommy Brennan illustrates:

"The difficulty and difference between oil-related and shipbuilding is that shipbuilders work at home within a community, and are far less likely to want to pack their bags and work elsewhere compared to oil-related workers. So there is a conditioning process to undergo."

When he was interviewed (9.12.88) he had been with the company for 9 months, before which he was unemployed for over one year. On average he expects to be unemployed for 6 months out of every 30. Redpath alone have employed him on 8 separate occasions since 1975. In between times he has done various stints on building sites. His employment experience in offshore work tends to range between six months and two years. He was laid off in July 1989.

Although there are opportunities for unskilled workers to find well paid work within engineering construction outside the region, their catchment area is limited to the United Kingdom. In a sense, their greatest strength is also their greatest weakness: the lack of a specialised skill and the accompanying willingness to take various forms of work.

This point was brought home by the example of Kevin, a semi-skilled trade assistant who had just started in offshore work with Redpath when interviewed (29.6.89) after a six month spell "on the dole". He has experienced a particularly colourful employment history.

After leaving school at 16, he trained for clerical work in Middlesbrough for 1 year. Following this, he spent another year as a trainee manager at a newsagent's, before spending five years in a warehouse. Having left the warehouse, he did some casual work as an engineer's mate. The common denominator for this variety of jobs was extremely low wages. He determined to switch away from white collar to blue collar work for the better wages and working conditions.

Kevin compared the job at Redpath to warehousing work, fetching and carrying for other people. He was expecting anything up to six months work during the period in which he

was interviewed. He was particularly pleased with the rate of pay, £5 per hour, immeasurably more than anything he is used to. The other bonus is that he expected to pick up "on the job" skills.

This is the route for many of the unskilled away from employment insecurity, although as Bernie's example illustrates the chances of attaining a similar status within the labour market as a craftsmen are virtually zero under existing employment conditions. This difference in status levels is graphically illustrated in the treatment of migrant workers during buoyant labour market conditions.

Colin, a labourer with Whessoe prior to its closure in 1989, had found himself out of work in the North East in the period 1983-5 and travelled down to London to take advantage of the construction boom during the summer season. The recurring problem was that:

"...there was plenty of work but the accomodation was too expensive."

The contrast with the value placed upon craftsmen during periods of skills shortage is striking. Craft unions on Teesside are increasingly inundated with requests from companies working on construction projects in the South East offering high wages and guaranteed accomodation in bed and breakfast establishments, or even in purpose built dormitory settlements²³:

"We get regular calls from all parts of the country - Fawley [petrochemicals] - my counterpart there said they wanted as many platers and welders as they could get. He sent me about 500 application forms. The highly skilled guy has got no problem at all, provided he's prepared to travel. I've got boilermakers on £800 per week on the tunnel."

[Tony Finn, GMBATU]

²³In the case of the Channel Tunnel project.

Not only are skilled workers increasingly prized outside the region, but also within it. Companies such as Davy and Redpath are concerned enough now about long term labour recruitment to notify unions in advance of a layoff. In this way, they can keep in touch with certain individuals, and perhaps even keep them in the area. Another growing practice is for local firms to collaborate over local labour market issues. On Teesside for example, Davy will contact Redpath and T.H.C. to recommend men who are finishing a contract with the company.

By the end of the 1980s, continuing and even accelerating skill shortages were widening the traditional gulf between the skilled and unskilled within the North East's employment system. But to understand the nature of these skill shortages and the accentuated divisions of labour, it is necessary to examine the restructuring of the supply side, through the labour strategies of fabrication companies during the 1980s.

5.4 The role of fabrication firms in the changing employment system

Within the shrinking employment system of the 1980s, the offshore fabrication firms increasingly came to represent the last vestiges of structural engineering activity in the North East. From a skilled worker's point of view, these became almost the only source of regular (albeit unstable) demand for their skills remaining in the North East. But at the same time, these firms have become increasingly important (as a result of the decline in other forms of engineering activity) in an active sense, in structuring the local labour market during the 1980s, both through changes made in working practices and in their recruitment policies. These two aspects are intertwined, particularly with regard to the reproduction of the supply side of the labour market

through firms' activity, most clearly manifested in the changes to the training regime during the past decade. It is these two processes and their on-going repercussions that we focus upon in the remainder of the chapter.

5.4.1 Changes in working practices during the 1980s

The 1980s have become associated with wide ranging changes in the organisation of labour in production. The combination of a right wing government, committed to the destruction of union power in the labour market, and high levels of unemployment presented managements with the opportunity to transform the very basis of productive relations. But whilst both management and the state have enforced the new employment legislation, to undermine union strength within particular industries, this has not been a trend throughout the entire economy (MacInnes, 1987:92-135; Rubery, 1986).

Indeed in sectors of industry with strong collective bargaining systems (at both the national and local levels), particularly in heavy engineering and shipbuilding, employers have often been unwilling to supplant existing arrangements, preferring to introduce changes on a "softly-softly" basis through (nominal) discussions with union representatives. As Rubery notes (1986: 108):

"Available evidence suggests that collective bargaining institutions may not in fact have posed a major problem for management in the 1980s; in many cases they have been used directly to bring about changes in working practices that management has sought in response to the recession. Most of the changes in working practices have probably intensified the pace of work and might have been more actively resisted in earlier periods."

This type of inter-relationship between management strategy and the state of the economy is particularly important to bear in mind when considering the development of working practices in the offshore fabrication industry during the

1980s. This problem was graphically illustrated at Redpath Offshore's Port Clarence yard in 1984, when the company was able to impose a more flexible agreement on the workforce, involving complete interchangeability and mobility between the trades against a background of recession and redundancies in the local area.

Indeed as a result of this latter point, unions have been more conciliatory towards changes in working practices. Although the AEUW and the EETPU are often pilloried as the unions who have done most to collaborate with employers and hence undermine collective solidarity in the labour movement, the role of the GMBATU in the offshore industry contains interesting parallels. With the knowledge that core areas of Boilermaker activity, such as plating and welding are unlikely to be eroded under the prevailing product market conditions, the GMBATU has taken a relatively conciliatory stance over flexibility issues.²⁴ In this the

²⁴Indeed the union has long since discarded demarcation as a strategy for the protection of its interests, as Les, a plater with twenty five years experience of working on the Tees notes:

"They're pushing it [demarcation] because progress has to be maintained. The GMB used to carry platers, chippers, burners, welders, gougers, all sorts. Now if they can condense them into two trades [welder and platers] without any animosity so much the better."

"I don't think they'd be bothered if everyone was just a Boilermaker, as long as they don't lose their membership. They realise it's in their interest as well as everyone else's to thin the spectrum."

Les even suggested half-seriously that the union were attempting to do the latter by "knocking off" one trade every year.

In fact, a new strategy aimed at maintaining and increasing the size of the membership, rather than adhering strictly to the defence of craft positions has been emerging. The subsequent acceptance by unions of changes in working

union has been aided by the fact that management's principal aims regarding flexibility do not correspond to a willingness to transform the role of the worker through functional flexibility (Atkinson, 1984; 1985), but rather have reflected the need to reduce costs, through the intensification of production within existing structures (Massey and Meegan, 1982: 18).

On the other hand, the nature of this type of work is so highly skilled and specialised that management are not, and in fact have never been interested in complete flexibility as Tommy Brennan suggests, drawing from his own experiences as a Boilermaker during the 1960s, when he was required to be flexible in his work:

"I went to the job with the burning gear, I cut up everything, I made it, fabricated it, and put it back together again. I did the rivetting as well. Yes! There was flexibility then. But, to talk of flexibility, is bloody nonsense in most cases; a welder, for example, he's got miles and miles of welding to do, so from 07.30 to 4.30, he's head down, and he is welding. Who the hell wants him to do something else. The particular trades have sufficient work full time. But, when flexibility was required, there was flexibility - there were negotiated and signed agreements for complete flexibility, but the demand never arose. The flexibility issue is a myth."

At the same time, flexibility issues need to be considered within the product market context of offshore fabrication. Production, as we have continually stressed, has never been

practices had caused consternation amongst certain sections of the workforce, particularly in the peripheral trades, who have not only found that their traditional roles within production are being undermined, but also that their levels of representation within the union framework and, as a consequence, in workplace bargaining discussions have been reduced. For example, at Charlton Leslie's South Shields yard platers and burners were represented by the same union official.

geared towards a mass production ethos and therefore arguments about the transition from fordism to post-fordism are irrelevant. Whilst management has continued to strive for more efficient ways of producing modules, particularly given the intense competition that has characterised the offshore market, the nature of demand has remained fundamentally the same; contracts are centred upon single unit production.

Nevertheless the 1980s have seen significant changes in the type of structure produced by the fabrication sector. As a result of improved technologies and the exploitation of more marginal fields, there has been a movement during the 1980s away from the stereotypical fixed production platform towards smaller and more sophisticated structures for the extraction of oil and gas, ranging from floating production vessels to subsea manifold systems. This trend has reduced the number of contracts available to fabricators and as such intensified competition. In the module market, for example, there has been an increasing propensity for fully integrated deck structures to be awarded to companies on a single contract basis, compared to the established practice of assigning specialist firms to complete different segments of the contract.²⁵

However these developments do not entail technological change at the fabrication stage. Most of the technology input occurs upstream of the assembly yards, where the

²⁵This has benefited Press in particular, which has maintained a diverse capability in the fabrication market, whilst expanding its experience in hook-up and installation work, in contrast to firms which have specialised in particular types of module construction. This has been reflected in the company's increasing domination of the topsides market, e.g. 45 per cent in 1988, rising to over 50 per cent by 1990.

actual composition of a module has changed radically since Cleveland Offshore started to produce "little boxes" for the drilling company Loffland. In the contemporary, sophisticated modules:

"The technology that's inside them, electrically wise and computer wise is unbelievable. But as far as it goes for us it is still just a matter of picking it up and dropping it in."

[Lee, shop steward, EETPU, Port Clarence]

Thus in comparison, the nature of fabrication work has not altered radically since the advent of oil operations, as Bob Wright at Whessoe confirms:

"We still put things together in the same old antiquated ways. There are opportunities to change. But the biggest problem in our industry has been getting rid of the overmanning and blurring the edges of demarcation. I don't say sweeping it away completely, because you really want your skilled man to spend most of his time at his best skill, whatever that is. It's flexibility round the edges and doing away with bits and pieces."

In this sense new technology and flexibility, during the 1980s, have not been used to implement new production systems and transform the existing divisions of labour, but rather to reduce costs, in an increasingly competitive environment.

Indeed, the most significant technological improvements in the past twenty years have been made not on the shopfloor but in the area of office automation, although conspicuously not in the drawing room.²⁶ Shopfloor improvements have been

²⁶Here, the nature of the product market once again limits the usefulness of computer aided techniques, as Ian a draughtsman with Redpath Offshore noted:

"The increased use of computer technology has been not so much on the drawing side, but rather the documentation side. The drawing side is still done, purely on the drawing board. If there are one-off projects all the time, it's not really cost effective

confined to the upgrading of specific tools rather than the introduction of new production systems. A prime example has been the introduction of the computer welding machine. In addition Mig welding sets are being introduced more and more and inner shield welding systems have been introduced since 1984. The important point about these forms of welding are that they are continuous process instruments, whereas conventional welding techniques required constant changing of "sticks" as Davy explains:

"The only reason inner shield and mig are being introduced and they rave about them is because they represent a continuous process and the operator does not stop. Every time you use a stick you stop for 3 seconds or whatever to change the stick."

A further advantage with mig welding is that it requires less cleaning up afterwards, again beneficial to management.

Another technological change has been the new computer burning machine. Previously to "burn" a piece of metal required two stages of "cutting" and "prepping". The computerised machine will do both at the same time [Davy]:

"Anything that will get us working longer in our given eight hours they [the company] will invest money in."

By the same token [Lee]:

"Anything that takes men off the job for three days, where they can sit down and go through the theory and working practices of another trade is unprofitable for them, so they are reluctant to do it. They let you pick up the skills as you go along with the job."

Thus technology has been used without exception to speed up and increase the efficiency of the production process rather than to benefit, or even displace, the worker. Similarly

to use [C.A.D.]. If you've got a lot off, then it becomes more effective to do it on a computer."

increases in flexibility are geared to intensifying the work effort, through encouraging interchangeability between trades.²⁷ Welders for example are allowed to burn, although they do not spend much time doing so, because it is against the employers' interests; the existing work force within the region remains craft based. The welder can now do his own piecemeal burning rather than having to stop work and call a specialist burner over but lacks the sophisticated level of skill to replace the burner. A similar situation characterises the relationship between welders and platers, as Mark, formerly a plater with Whessoe notes:

"A welder can put a nut and bolt down, but he can't do the intricate part of our trade [plating], same as I might be able to burn a rod down, but I can't do it as well as a welder. So it gets to the point where it is absolutely pointless for the manager to have me doing anything other than the trade I'm skilled in".

Underlying this erosion of craft boundaries is the ever constant need for companies to remain competitive in a dynamic market environment, a point borne out by a conversation with Ken, a plater with forty years' experience including a spell in the Norwegian sector, but who had spent the last 13 years at Redpath's Port Clarence yard:

"When I first started here it was every man to his trade..... Now we are allowed to do burning and also welding up to 4 inches. It had to come because of the competition with the Norwegian yards. If we didn't have

²⁷It is important at this juncture to reiterate that the gradual erosion of craft boundaries has been an on-going process since the 1960s. The major development in the offshore yards during the 1980s has been the speeding up of this process, with management taking advantage of favourable labour market conditions to push through agreements on flexibility that would have taken longer during the employment boom of the mid 1970s. For example, Redpath Offshore's management was able to negotiate a new agreement with the unions in 1984, against a background of recession, which guaranteed complete flexibility, interchangeability and mobility between trades, although this has never been put into practice to its full extent.

the flexibility we were waiting - costing money and hours."

But flexibility continues to be around the edges, especially when companies are not prepared to retrain the existing workforce, given the short term economic environment. Although further erosion of craft boundaries seems inevitable, some form of craft division of labour is likely to persist within fabrication work. The high level of training needed to acquire the skills of each trade for the more sophisticated work will ensure that some divisions remain.²⁸ The likelihood is that in time there will be just fabricators and welders (a situation that already exists in some Scottish yards). The fabricators will be the platers who can also undertake pipework.

Significantly, changes to the apprenticeship scheme are moving in the direction of multi-skilling. Accompanying the gradual shift away from the old style "on the job training" methods to a more formalised training environment outside the work place has been the extension of an individual's

²⁸This is not necessarily the case with all types of fabrication work. Traditional bridge and construction fabrication work which does not require the high levels of quality and complexity of offshore module work is probably more prone to the introduction of multi-skilling. But the standards required for offshore work require extremely high standards of craftsmanship which in turn limits the ability to achieve complete interchangeability between jobs, as Stan, a planning engineer, who originally started work as an apprentice with Ashmore Benson and Pease in 1943 notes:

"Basically the philosophy of build has remained the same with traditional work. With modules, the philosophy has altered slightly. If you are building a bridge, you build it differently to a module. The structural sequence has stayed the same, but the structures have become more complex."

"In an industry like this one [offshore], where the quality of the structure is paramount, I don't think you can interchange too much."

range of skills, a point noted by Arty, a burner on Charlton Leslie's Amerada Hess contract:

"When I did my time (late 1940s in the shipyards), on my card I was a caulker burner and I'd do nothing else except caulk and burn. Today you've got a bloke who, on his card, is a Boilermaker-caulker/burner; but he'll also do a bit of welding, a bit of plating, etc. If the money's on the job he'll do it. We still do our jobs, but we're flexible."

Andrew, a 21 year old plater one year out of his apprenticeship with Redpath, epitomises this newly flexible generation of craftsmen now coming through the system. His first year was spent entirely at the company's training school at Darlington doing "a bit of everything - plating, welding, template making, etc." In the second year, apprentices are divided into the basic and outfitting trades. He did the former which involved plating and welding in roughly equal parts, but no electrical work or 'fitting.

During his third and fourth years he gradually did more plating and:

"..the welding that you have to, to hold the job together."

With the decimation of the craft apprenticeship scheme within the North East, in tandem with the decline in engineering²⁹, in the past twenty five years, those individuals like Andrew, that are able to secure a skills based qualification, are likely to become a privileged group within the employment system. This illustrates how firms' recruitment strategies, in response to their wider economic circumstances, are active in reconstituting the supply side

²⁹ In an interview with Arthur Dalton, Regional Training Officer of the E.I.T.B. (31.7.89) it was discovered that the number of North Eastern apprentices on the Board's books had fallen from 30,000 during the late 1960s to a low of 8,500 in 1987.

of the labour market. It is this issue that we consider next.

5.4.2 Recruitment strategies and the reconstitution of the supply side under offshore fabrication

As the earlier part of this chapter demonstrated, offshore firms' manpower strategies during the 1970s were singularly characterised by an absence of any semblance of forward planning. In a tight labour market situation, the problems of labour supply were, more often than not, solved by outbidding rival companies, through higher wage rates, and poaching from existing firms. Recruitment was therefore something of a "fire-fighting" operation.

As the early boom dissipated and labour supply problems largely disappeared with the growth of high levels of unemployment during the early 1980s, it was significant that firms continued to put a low level of emphasis upon labour recruitment strategies. Indeed there was a high level of continuity with past practices, which relied upon informal social networks, operating at two levels: firstly with new recruits, family networks continued to be the usual route into the industry; and secondly, intra-industry networks were relied upon for the uptake of existing labour on new contracts. For most of the 1980s these informal channels of recruitment served the needs of the fabrication firms in the North East.

The practice of using family networks to recruit new labour is one that is as old as craft-based industry itself. This is a tradition that persists strongly to the present day. At its narrowest definition it expresses the tendency for sons to follow fathers into the same trade. Prior to the 1960s, in the ship yards and engineering shops throughout the North East, it had been virtually impossible to secure an

apprenticeship unless your father was himself a craftsmen with a particular firm. Though this practice had become less institutionalised through time, the majority of apprenticeships taken up today are usually the result of existing family ties within firms. At Press, for example apprentices are still only given to boys with a relative working for the firm.

Even blue collar workers employed from outside these family networks are always recruited from a highly localised area: Charlton Leslie and Press drew upon a catchment area extending from the Wear to Blyth Valley. For Redpath Offshore, the catchment area has traditionally been even smaller confined to the north bank of the Tees; only two of the workforce (including white collar) at Port Clarence are from outside the Stockton area.

The ability to exist without more formalised recruitment systems in the past reflected the availability of labour locally, and the strength of the informal social network. Similarly, throughout the 1980s, offshore firms discovered that it was unnecessary to use the conventional channels of newspaper advertising columns and employment agencies to recruit labour. Once an offshore contract had been announced in the local media, firms became engulfed with enquiries. Lou Dobson, personnel manager at Charlton Leslie until the recent closure provides us with a typical anecdote:

"When Amerada Hess was announced we had 10,000 written applications in the first three weeks....a huge mound of c.v.'s. I can't ever remember advertising for blue-collar labour."

A similar pattern emerges from other accounts:

"Any suggestion (of work) in the press and then you're inundated. You don't have to recruit at all."

[Mike Smith (Training Manager, Press Offshore)]

Whessoe used to rely heavily upon two sources for the recruitment of labour: the informal social networks that surrounded their longer term employees and the list of former employees on their books from previous contracts (usually running into thousands).³⁰ At the announcement in the press of a major contract, the company receives "a flood of telephone enquiries". On each new labour intake, only 10 - 15 per cent represent "new blood".

Redpath also continue to keep over 3000 c.v.s on record, mostly of former employees, but unless they require a very large number of men (probably over 1000) they rely on the social networks of their foremen and other key workers. In short, information is adequately circulated "by word of mouth". Les, a plater formerly with Whessoe, was taken on by Redpath (on January 8th 1989 on a six week contract) on the recommendation of a friend of his, an existing employee of the company:

"I didn't know there were actually jobs going here. I knew there were jobs in the area in either these sites or the small shops. I didn't expect to be out of work very long at that moment in time. I had four weeks off over the Christmas period when there wasn't much on anyway. Then one of my mates who works here told me they were looking for people and luckily I walked straight in here."

He thinks that he was lucky with his timing, being laid off after the worst of the recession in the area:

"I was lucky because it's been depression for quite a few years, and then all of a sudden there is a change and there seems to be a build up. I get paid off when the build up comes along."

Thus the system used is a highly informal one, with firms being reliant upon individual contact, usually amongst

³⁰Similarly, Davy Offshore have 7,000 blue collar c.v.'s on their records.

certain key workers, what Mess would have identified as "Royals", for access to these networks. Such networks exist for individuals at all levels, even extending into management, as David Clarke's recent success in obtaining employment illustrates:

"In this game, it's contacts. We all know each other, even though it's a fair size industry, because we all move around. The guy I'm going to work for, I first met on my third day as an industrial relations officer. I was working for Monk, he was the Project Relations Officer, that was 11 years ago. Two years ago, I nearly went to M.W. Kellogg because he was leaving them to go back to Costain and leaving them with a vacancy at Saltend, Southend. I was in for that, but I didn't take it. I'd just come back to Charlton Leslie. So, we all know or know of each other. Initially, when I was made redundant, I flagged up that I was available and Wimpey's made me an offer, initially at Sellafield. However I preferred Costain. There were other companies interested, but it comes down to a skills' shortage - in all areas. So companies are always on the lookout."

What pertains for management is doubly the case for manual workers, further down the scale of job security. For offshore workers, an extensive network of personal contacts; an established place upon the grapevine; is essential for regular employment.³¹ In practice, names, addresses and

³¹In fact, offshore fabrication (and indeed the engineering construction industry generally) is insular almost to its own detriment. This point was brought home by the experience of Michael, a trainee engineer, who had been unemployed for three months between March and June 1989, having completed an HND at Sunderland Polytechnic, before he was given a position at Redpath Offshore. He was slightly critical of engineering companies for not advertising positions outside the "inner circle":

"I was looking about, in the newspapers, for offshore work, and there's nothing there. This is the first job I wrote off for speculatively, and I ended up at the interview and came straight in. So I don't know whether these firms are crying out for engineers. They don't seem to let the outside world know that they are looking for them. It was only because I wrote in that I found out there was a desperate shortage."

phone numbers are readily exchanged at the culmination of each individual contract, widening the network, extending the arena of job opportunity.

Thus firms' recruitment policies have been more distinguished by what they don't do, in contrast to the norm elsewhere, rather than what they do in any active sense. The continuation of the apprenticeship scheme has been the only area where formal recruitment procedures are pursued, although even here the level of recruitment has been much reduced from past activity in the region (see footnote 29). Such reduced levels of training are beginning to have an important effect upon the constitution of the supply side of the labour market, not just within the offshore fabrication sector but within British engineering industry as a whole. As such it is worthy of special consideration here.

The high cost of training skilled labour against the background of a severely fluctuating product market within offshore fabrication has been the major factor behind these reductions in apprentice numbers. At the same time, recession in other more conventional markets within mechanical engineering and shipbuilding has led to a reduction in the number of craftsmen trained in other sectors. The skills base of the engineering labour market as a whole has therefore been shrinking rapidly during the 1980s. At the national level, within the industrial plant and steelwork sector (which encompasses offshore fabrication activity) the number of skilled trainees fell from 1189 in 1978/79 to just 292 by 1985/6. This represented a decline in those receiving training of over 75 per cent, compared to a reduction in the total number of skilled employees of just over 40 per cent (see Figure 5.2). Thus levels of training were falling more rapidly than corresponding levels of employment, reflecting the old adage that training costs

face the most severe cut backs during recession.

If it was possible then, this situation was compounded in the North East, where offshore-related firms, with an extremely low proportion of trainees, were replacing more stable forms of employment as the mainstays of the craft-based employment system. Of the six major firms operating in the offshore sector in mid 1988, only three ran apprenticeship schemes (Davy, Press and Redpath) with a total of 57 craft and technical apprenticeships out of a total workforce of 2840, a mere 2 per cent of the workforce. Contrast this figure to the heady days of shipbuilding within the North East during the 1960s when trainees would have accounted for almost 10 per cent of the workforce. At the same time even those more reputable firms such as Redpath that do provide training, only do so in those areas where it is impossible to acquire the skills elsewhere in the local labour market, i.e. in the structural trades. Offshore companies can still poach labour directly from larger organisations, mechanical fitters for example are directly recruited from B.S.C. and I.C.I. Notably Redpath have only trained 2 fitters in 14 years.

By the late 1980s, the consequences of this process were just beginning to be felt by offshore firms. Demographic factors were beginning to put the skills shortage situation into perspective as Lou Casson at Redpath noted:

"British industry is presently existing thanks to a work force largely trained between 1950 and 1970. Since that period there has been a steep absolute decline in the number of men to receive trade training."

He said that he himself was constantly trying to persuade his superiors at Redpath, and in the Trafalgar House group generally, to increase the number of apprentices.

In fact the offshore fabrication industry has come in for special criticism from governmental training agencies for its attitude towards apprentice training. Although the three aforementioned firms do their own "fair share" of training, the majority of other firms have been reliant upon the higher wages on offer in oil-related work to draw employees away from larger established firms such as B.S.C and I.C.I. in the first instance, or as we have seen, later as a result of the 1980s recession have been able to pick and choose from a growing number of unemployed on the external labour market. In effect individual companies were able to use the over supply of skills in local labour markets to satisfy their manpower requirements when contracts had been awarded. In doing so firms were utilising a communal segment of the local labour market. Thus, on Teesside, as Davy, a shop steward at Redpath acknowledges there is a shifting labour force that moves between companies:

"In this area it is basically the same men who do most of the work. It might be a different yard. There is a nucleus of workers in each yard, and the rest go from yard to yard, wherever the work is. Getting paid off is an occupational hazard."

Similarly with reference to Tyneside, Lou Dobson of Charlton Leslie notes:

"If they are not working for us they are working for Press. If they can't do onshore they go offshore - doing hook-ups, at Blandford or somewhere like that. We are fishing in the same labour pond, Scott's fish in the same electrical pool, we fish in the same structural pool as Press."

The problem for offshore companies is that the pool is now evaporating. The decline in training levels, the exodus of skilled workers from the North East to work on construction sites elsewhere, and the further exodus of workers from the engineering and shipbuilding industries altogether are likely to present companies with labour supply problems in the 1990s. In addition the reduction in the number of firms

operating in the industry has further reduced the potential labour supply. Between 1978 and 1987 the industrial plant and steelwork sector within the region was reduced from around 100 to 63 establishments.

A secondary, but for future labour market structure, no less important change to the training regime within mechanical engineering as a whole has been (as hinted earlier) a qualitative shift in the type of training provided for craft apprentices. All major companies, training under the auspices of the E.I.T.B, now engage in a formalised four year apprenticeship scheme. Changes to this regime in the past five years signify the shift away from a single craft to a multi-skilled based training environment.³² In addition the long established companies such as B.S.C and I.C.I. that saw many of their newly trained craftsmen absorbed by the oil boom of the 1970s have increasingly structured their training schemes to their own firm-specific requirements. This has had the effect of limiting an individual's marketability within structural engineering, given the high standards required in offshore work. Tony Finn describes this development:

"There are a lot of companies now training for their own needs, not for the needs of others. If you are a

³²Initially the training scheme was referred to as the "Module System", reflecting the fact that trainees undertake two modules in a first year training programme. For example an apprentice welder would undertake two units: one in basic welding techniques supplemented by a subsidiary unit in the other aspects of basic structural work such as burning and plating. This was replaced by the "Module Segment System", under which greater emphasis was placed upon the supplementary skills during the first year. The most recent change to the "Segment System" represents a further shift towards multi-skilling: the first year now consists of six segments; broadly based packages of equal content; so that structural trainees will now learn something about electrical and mechanical installation skills.

boilermaker in I.C.I and British Steel, they can train you and channel you into being an expert in coke oven and blast furnace technology, so that you know that piece of equipment inside out. It's going to be there for as long as you've got steelmaking on Teesside, so that you're guaranteed a job for life. But you are very vulnerable to an open market. Even though you are a fitter or an electrician, or a boilermaker, you've been trained for the needs of that business. I.C.I and British Steel, because of the lessons from the past are training for their own needs...³³ Of course, when we say this to them, they say, " Nonsense, our workers could get a job anywhere." But that's not the case. They've got this new mechanical-electrical-fabricating concept; that you go on and do a complete job. In other words, you could be mainly be mechanically biased, but picked up a bit of training on electrical work or welding. That's alright in a steelmaking environment, when you are maintenance on that type of work, which only requires utility welding and burning. But when you

³³There is a widely held belief amongst trade unionists and personnel managers connected with the offshore industry that the competition over skilled labour between these two large employers and the module yards on Teesside has been responsible for fabrication contracts going elsewhere. This was particularly thought to be the case when the topside component of the Piper Alpha replacement project were awarded in its entirety to Press Offshore, as one prominent local unionist remarked:

"When Laing was here, I.C.I. couldn't go ahead with the construction of a refinery because of the skills shortages. They were losing all the "tippies" to the highest bidder. Rates fluctuated from week to week to secure workers. I.C.I. said they would never allow that situation to return. Now, we happen to know that I.C.I. and British Steel have a very powerful political influence. I am very suspicious, because we did attend a meeting with I.C.I. to launch a new safety campaign. Their construction manager said, "We can't afford these module constructors to be picking up all our skilled labour." If Davy Offshore secured the Occidental order, it would have been a disaster for I.C.I.'s future capital project work.

I.C.I. suffered immensely as a result of the 1970s. They don't want travelling men if they can avoid it. They see that pool of skilled labour as labour they have trained, and they don't want to see it going to what they think are fly-by-nights."

get to the up-market stuff, the module yards, and you've served your time at British Steel and they say what job have you applied for? They've advertised in the gazette for platers, welders, template makers and electricians - and I'm your man sir, I can do it all. They don't know, haven't a clue."

The high standards required by the module yards have also been a barrier to entry for many former shipyard workers; an example of this situation was provided recently when a number of recently redundant platers from NESL applied for positions on Charlton Leslie's Amerada Hess contract at South Shields, but as David Clarke remembers:

"We put quite a number of them through through the trade tests, and many couldn't do them, either the work or read the drawings."³⁴

He notes that this is largely a fault of the older apprenticeship schemes and said that younger more recent apprentices are usually more capable:

"So what you have then are two types of platers: jobbing platers and fabrication platers. Jobbing platers will work solely on the fabricated product, whereas fabricators will work in the shop fabricating the sections themselves - the younger ones can do that but there aren't enough of them."

Thus by the close of the 1980s the problem of skill

³⁴The standards required in the construction of offshore platforms necessitate the testing of each individual craftsman for every project undertaken. As such just surviving within a trade at the high standards required by the offshore industry is difficult in itself. Companies are required by law to test workers up to the maximum of 6gi even when a worker has just completed a job satisfactorily. Tony Finn explains:

"There's no other trade or profession I know where people have got to be continually tested out for their own job. The lads could be welding, and doing a maximum job for Arco, everything is "spot on", 100 per cent. Then they start another job for Esso, and they have to be tested again. It's a legal requirement."

shortages was once again on the agenda for offshore fabrication firms within the region: a problem likely to be accentuated with the acceleration of existing trends. In fact the cumulative effect of recession and stagnation; the removal of a large part of the manufacturing base and with it a significant chunk of industrial employment; throughout the 1980s was to change the nature of labour market power relationships in those industries that were experiencing an upturn in activity by the close of the decade. The structural engineering industry and more particularly offshore fabrication was one such example.³⁵

5.5 Concluding remarks on the nature of the labour process, power relationships in the labour market and the reshaping of the employment system in the North East

The portends of this development, when considered against the other processes at work within the labour market during the 1980s in the context of oil-related development are for an increasingly polarised employment system within the North East's coastal districts during the 1990s and into the next century.

In essence, the labour process in offshore fabrication during the past two decades has not been characterised by a

³⁵Indeed industrial disputes involving workers on offshore rigs and in London's Docklands development represented the crystallisation of this worker power. Tony Finn describes the success with which erectors were able to achieve their goals in the Docklands during the summer of 1989:

"In London the've bumped the rates up. The National Agreement [Blue Book] for engineering construction has fallen into disrepute as a result of London. The lads screwed them at the right time. They've doubled the lodging allowance; it's £85 per week in the Blue Book. They've doubled it. The maximum bonus they could earn was £1.60, they've put that up to £2.50 per hour."

trend towards deskilling, or a movement towards the multiskilled craftsmen, as identified in other sectors of engineering. Whilst the diverse requirements of each project, accompanied by the unstable product market have precluded mass production and therefore the substitution of capital for labour in the former case, the stringent requirements of offshore work impinge upon the ability of employers to introduce forms of the latter. Instead, the industry is moving towards flexible specialists in the true sense. The erosion of demarcation lines is occurring within stages of the production cycle rather than between them. Recent changes in the training syllabus reflect this process. Whilst this means that certain of the more peripheral trades are being undermined, the gradual nature of these developments has meant that the effects upon individuals are less pronounced. Instead it is future generations of school leavers that suffer the consequences. These are double-edged: on the one hand the number of job opportunities are likely to diminish in offshore-related work³⁶; whilst alternatively the reduced number of individuals with a diverse range of skills are likely to be highly prized within the labour market and capable of holding down more secure and better paying positions than at present.

The greatest effects of changes in working practices have come in the unskilled areas of production, with job tasks formerly performed by labourers and trade assistants increasingly incorporated within craftsmen's roles. In

³⁶This is worth illustrating through the example of Redpath Offshore. When the Port Clarence yard opened in 1975, the company employed 70 chippers/burners and 84 riggers/erectors at the peak of the first contract. In contrast, at the peak of the Gyda contract in 1989 the corresponding figures were 2 and 24 respectively.

effect, craftsmen and their unions have tacitly accepted an intensification of the work process in return for greater employment security. For the unskilled portions of the labour market (growing as a consequence of declining levels of industrial training) this represents shrinking job opportunities, accompanied by an absence of bargaining power in the labour market.³⁷ This group is the one to which the term "marginalisation" can most effectively be applied as the consequence of North Sea offshore operations. Whilst it is true that craft labour has always held the ascendancy within the North East's coastal districts, previous adherence to demarcation lines protected the position of the unskilled in the labour market to a much more fundamental degree than the skilled elements. The unskilled position in the labour market is therefore the one most at threat from new working practices.

The precise consequences of this for the structuring of the employment system remain unclear at this juncture. Wide differentials between highly skilled specialists and unskilled marginal workers are already apparent, with the former achieving a certain power status within the labour market. But the extent to which firms' strategies are changing to reflect the state of the labour market is still open to question. It is with this in mind that we examine the activities of three firms and their recent labour strategies in the following chapter. Having established this, we then draw together the revised conclusions on the changing nature of employment under offshore fabrication.

³⁷Given the present nature of union organisation in structural engineering and the growing tendency amongst the GMB and EETPU towards single union deals.

Table 5.1
Employment change in shipbuilding and offshore construction
on the Tyne, 1981-7

Company	1981	1987
<i>Shipbuilding and repair</i>		
Swan Hunter	c.10,000	3,300
Tyne Ship Repairers	2,500	c.340
Clelands	500	- (closed)
Clark Kincaid	1,400	- (closed)
Wallsend Slipway Engineering	250	-
Tyne Dock Engineering	c.100	c.100
Smiths Shiprepair	1,300	c.200
<i>Offshore construction</i>		
Charlton Leslie Offshore	c.500	c.800
Wm Press Production Systems	c.1000	c.1300

Note: Wallsend Slipway was sold to Howard Doris Offshore in 1985, opened briefly for a £12 million contract to supply jackets to Conoco employing 650 at its peak, but closed in 1986.

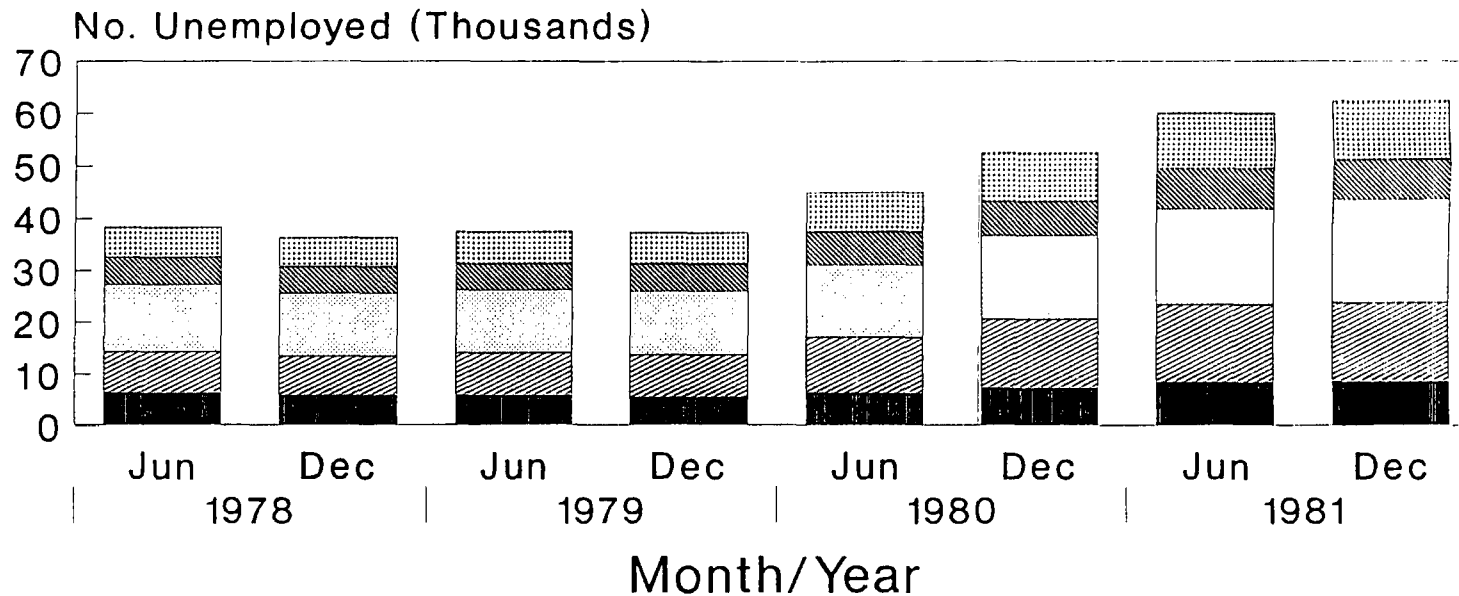
[Source: Robinson, 1988: 26]

Table 5.2
Wage rates from selected companies and offshore average
for skilled workers, June 1989

Company	Rate/hour (£)
Offshore (prior to "first oil")	7.70*
Offshore (after "first oil")	5.90*
Charlton Leslie (Amerada Hess)	6.00
Press	6.75
Redpath	6.64
R.G.C.	5.90

* Offshore averages supplied from an EETPU survey

Figure 5.1 The Rising Number of Unemployed in the North East's Coastal Districts June 1978 - Dec 1981

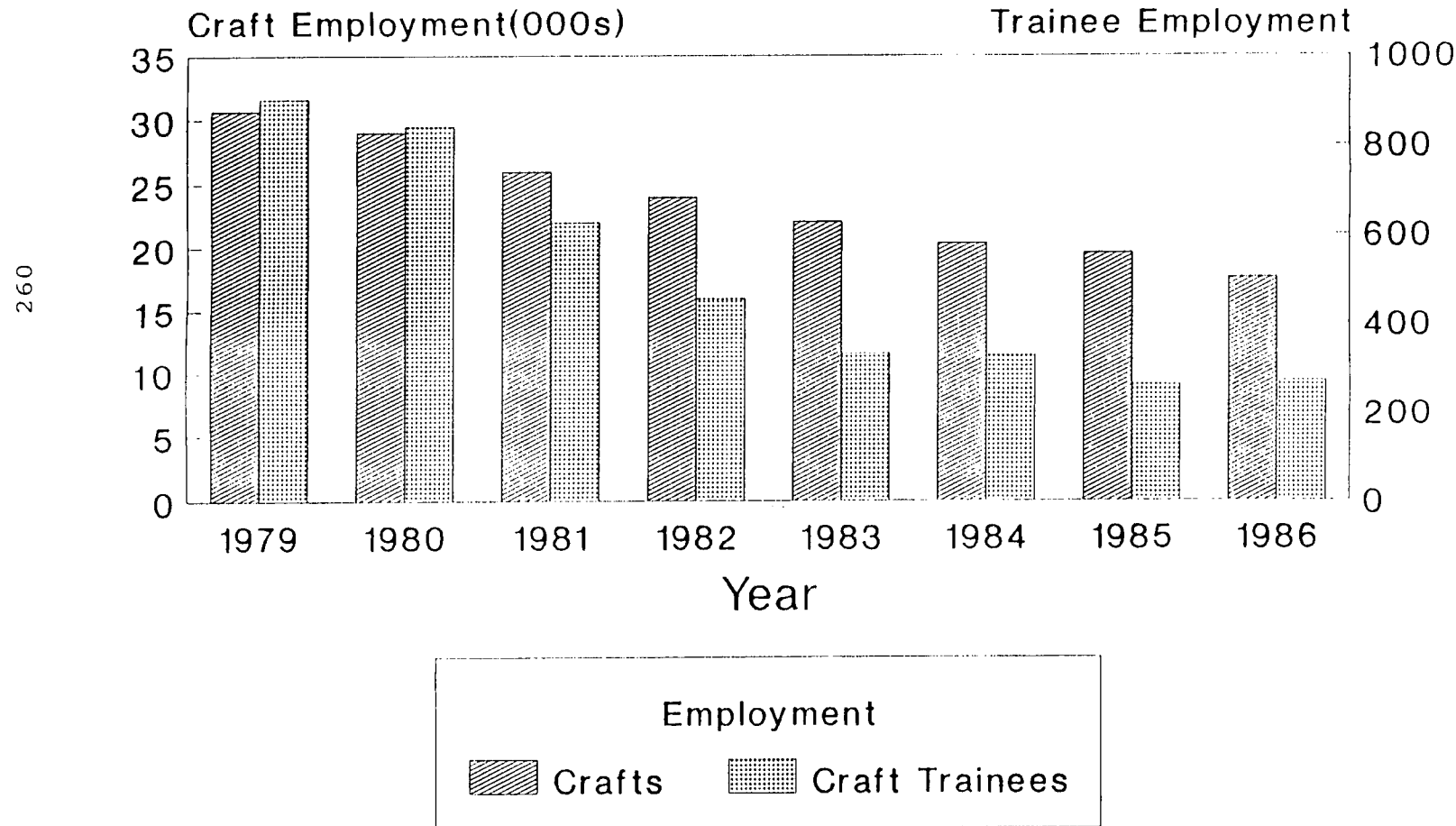


JCAOA

Hartlepool	Middlesbrough	Newcastle
South Shields	Stockton	

[Source: NOMIS]

Figure 5.2 Number of Trainees compared to Total Skilled Employment in Industrial Plant/Steelwork in G. Britain



(Source: EITB statutory returns)

CHAPTER 6THE RELATIONSHIP BETWEEN FIRMS AND WORKERSIN OFFSHORE FABRICATION

"Within a year I would think that every yard will be healthy until that round of work goes out. Then confidence drops and someone else might go to the wall. It wouldn't be so bad to go that way, but we've gone for different reasons. That's what is so galling. We were doing alright. You are up there and running, and bang... someone hits you from behind and your gone."

[David Clarke, Industrial Relations Manager at Charlton Leslie, talking about the closure decision: 4.7.89.]

The approach adopted in Chapters 4 and 5 was narrowly focused to a certain extent, in that an analysis of the development of the offshore industry, in the North East, was offered largely in isolation from wider economic events. This was intentional; the focus of this thesis has been to explain the impact of oil and gas developments upon employment structures in the region. As such, the principal controlling factors on a firm's employment strategy have been identified as the nature and scope of the product market, and the character of existing employment relationships within an area (themselves reflecting the nature of earlier forms of production linked to traditional markets). But as we noted in Chapter 2 this remains a partial analysis of employment change. Offshore firms themselves do not operate in isolation, but are increasingly part of a global accumulation system that transcends both geographical boundaries and individual sectors of the economy. For the absorption of offshore related firms during the 1970s and 1980s (see Chapter 4) within larger capitalist institutions has meant that the decision making framework, within which individual capitals operate, is no longer focussed upon the situation in one

particular market or segment of a market¹, but upon a dynamic portfolio of interest. Offshore activity has become one small part of a diverse balance sheet, rather than a major element.

In turn, the employment strategies of offshore-related firms are not merely contingent upon the state of the oil supplies market, but also upon their location within this wider sphere of global capital accumulation. In this sense the structuring of employment within a firm is influenced by the activities of the parent company and its perception of the oil market as an arena for capital accumulation.

With this in mind this chapter sets about examining the organisation of labour in three of the North East's fabrication firms. The central theme to emerge from this chapter is that there exists a relationship between a firm's position within its own corporate network and its ability to construct a stable employment regime. The first company studied, Charlton Leslie, was extremely peripheral to its parent, B.T.R's normal area of operation. This resulted in a lack of long standing financial commitment to offshore work, which in turn entailed a marginalisation strategy by the board at Charlton Leslie, with respect to its offshore workforce. In doing so the company was able to take advantage of a favourable local labour market environment.

Whessoe Offshore's situation was markedly different, although the implications for the organisation of labour were similar. Its development was set against the context of its parent company, Whessoe Engineering's disengagement from its traditional manufacturing operations during the 1970s and 1980s. Ultimately this

¹For offshore fabrication represents part of a wider market for structural engineering products.

was a process that was to leave the offshore subsidiary out on a limb during the latter half of the 1980s. With a reduced commitment from its parent company the offshore division was increasingly forced to marginalise its workforce to cope with the market downturn of the late 1980s, although some hallmarks of permanent employment remained.

The third company under study represents a further movement along this continuum. Redpath Offshore has remained heavily integrated within the structural division of Trafalgar House and as such has benefitted from parcels of onshore work and the redeployment of staff within other companies of the group during periods of inactivity in the offshore market. As such it has been possible to maintain a more stable employment regime and more of the features associated with an internal labour market.

6.1 A marriage of short term convenience: B.T.R, Charlton Leslie and the offshore industry

B.T.R. is a London based holding company, whose size of operation can be gauged from its turnover of £4 billion in 1987. Its principal interests have always been in consumer goods markets (for example it owns Dunlop, Pretty Polly, Slazenger and Tilcon) although it displays no loyalty to any particular sector of the economy, buying and selling companies at the global level and dedicated to the pursuit of a high rate of return on investments.

In June of 1989 the B.T.R. group management made the decision to withdraw from the engineering construction sector altogether, resulting in the closure of Charlton Leslie Offshore. This development was totally at odds with the situation in the offshore supplies market, which was undergoing a renaissance after a considerable slump.

The situation was all the more galling for Charlton Leslie's management and workforce in the light of the recently completed Amerada Hess contract, which was widely acknowledged to be an outstanding success:

"We did a first class job on Amerada Hess, everyone acknowledged we did a first class job. We burnt over 2 million man hours in 18 months. That is phenomenal. Everyone says you can't do 1 million man hours in 1 year; we did 2 million in 18 months! And yet, all for nothing. All the publicity that went with it, first of its kind etc. It's left a lot of people disillusioned, but these things happen. I suppose the people at Whessoe felt the same way, they'd always done a good job."

[David Clarke, Industrial Relations Officer, Charlton Leslie]

"That contract went out on the completion date, the exact time, everything was perfect. That was an exceptional accomplishment, because after the Piper Alpha tragedy, there was a hell of a lot more operations needed to be done, resulting from Department of Energy regulations, blast walls, etc. Despite all the extra work it went out on time. There were more man hours worked on that contract than ever before. The lads worked around the clock, 12 hour shifts, back to back. That project was a tremendous success, in terms of quality, workmanship, and achievement. That message did not really get across."

[Tommy Brennan, Regional Organiser, G.M.B.]

"There is an opportunity to get one jump ahead and I believe the North East is uniquely placed for growth. I have been very impressed with the quality of work done for Rob Roy and Ivanhoe."

[Sam Laidlaw, Managing Director, Amerada Hess (U.K.) in The Journal, 17.1.90]

Indeed as a result of the success of this contract, Charlton Leslie was well placed for the next round of orders; the company had been a leading contender to pick up work on the Piper Alpha replacement project, together with the power generation module for B.P.'s Miller field and Amerada Hess's next project; a "floater" for the Scott field.

But B.T.R.'s decision had little to do with the state of the offshore market, except in its relation to other sectors of accumulation. Indeed it was specifically about the pursuit of profits elsewhere, and the low returns on investment that characterise the offshore market, a point taken up by Lou Dobson, Charlton Leslie's Personnel Manager:

"Anybody can make a bigger return than contracting. We were making 10 per cent, twice the average and still going under."

A comparison of Charlton Leslie's profitability record with that of the other Tyneside firm, Press Offshore, for that period suggests quite convincingly that it was developments outside the offshore sector that were instrumental in B.T.R.'s thinking. Press made a profit of £750,000 from a turnover of £67 million in the financial year through to April 1988 and remained in business, whilst Charlton Leslie made £7 million from a turnover of £77 million and closed:

"It's galling at the individual level, but that's business. It's like the Godfather syndrome. Our closure is not connected with the state of a particular market. It's a decision taken by the parent company, about a market they don't want to be in, at whatever level. It just does not generate (even when you are doing relatively well) the sort of turnover you can get from traditional manufacturing."

[ibid]

In fact the original decision to buy Charlton Leslie in 1972, represented a departure from B.T.R.'s normal sphere of operations, reflecting an attempt to capitalise on the growing market for offshore supplies, at a time when other sectors of the economy were experiencing stagnation or decline. Continuing prosperity in the offshore market, against the background of economic recession elsewhere in the economy, enhanced the position of Charlton Leslie within B.T.R. In this respect it was the coincidence of the consumer boom of the second half of the 1980s with

the downturn in oil prices in 1986 that undermined the company's importance to B.T.R's operations.

6.1.1 The development of Charlton Leslie Offshore

Charlton Leslie's original contact with the oil industry had been in a subcontracting role, supplying pressure vessels and pipework to fabricators from the late 1960s onwards. However the scale of the offshore market, and in particular the successful tendering for a compression module for Shell's Leman gas field in 1975, encouraged the company to establish its own fabrication facility, on a reclaimed site at Davy Bank, near Walker. With the completion of similar module work, notably for British Gas's Rough field, Britoil's Ninian field and Amoco's Indefatigable Compression Complex, the company had established itself as a major supplier to the oil industry by the end of the decade.

The takeover by B.T.R and the change in the focus of company activity led to a drastic restructuring of operations at Charlton Leslie. This involved the relocation of the company's headquarters from Ashington to Davy Bank and the closure of several of the smaller specialist workshops. At the same time, the group's management structure was streamlined to bring the various operations under a single administrative regime, with the integration of the offshore division within the company's onshore operations. This ensured that the company could compete successfully for offshore contracts, but at the same time was in a position to survive without one.

Under the new management structure, the firm retained a small core permanent management and administrative staff serving the Charlton Leslie group of companies, whilst at the same time casualising the remainder of the workforce. The new organisational structure effectively allowed the company to switch key white collar staff between the

different parts of the group according to the levels of activity at any one time.

In 1979 the company strengthened its position in both offshore and onshore markets by purchasing one of its own supply companies, Campbell Isherwood. The latter had at one time been one of the largest marine electrical installation companies in the world, but by the late 1970s was suffering from the general decline in the shipbuilding market. A severe rationalisation programme resulted in the transformation of Campbell's into a small, specialist installation outfit. Not only did this complement Charlton Leslie's offshore activities,² but the new electrical division also diversified into the burgeoning market, resulting from the out-of-town shopping centre boom of the 1980s.

Despite the downturn in the oil market during the 1980s, Charlton Leslie was able to obtain a regular flow of offshore orders in the period up until 1986, although it remained specialised in the fabrication of compression modules. With the occasional onshore contract,³ particularly for British Nuclear Fuels and the small but significant growth in electrical work, Charlton Leslie

²The acquisition of Campbell and Isherwood, added to the comprehensive nature of existing in-house facilities, was cited as a distinct, competitive advantage in a newspaper profile of the company during the mid 1980s:

"A major factor in the chances of success for Charlton Leslie will be the fact that it can do 90 per cent of the work on each contract itself, using in-house facilities from draughting right through to painting, mechanical and electrical fitting out. Only insulation tends to be sub-contracted to outside firms."

(The Journal, 22.8.84: 17)

³Interestingly enough, one of these contracts actually involved the construction of a service centre at Blyth for Hamilton Brothers' development of the Esmonde Field, 130 miles off the Northumberland coast (The Journal, 26.4.85: 7).

appeared to be an island of hope in the sea of gloom, that represented the North East's industrial landscape during the 1980s.

6.1.2 Declining fortunes and a false dawn: the post 1986 environment

The cataclysmic fall in the oil price from December 1985 onwards, although responsible for the withdrawal of many companies from offshore operations, did not, at first, appear to threaten the survival of Charlton Leslie. Having just won the order for the compression module on Marathon's Brae "A" development, the company had succeeded in avoiding the worst effects of the initial oil market downturn. But with the completion of this project and the continued market slump throughout 1987, Charlton Leslie found itself with an empty offshore order book, forcing it to reduce its workforce to just three security guards at one point, compared to the 750 employed at the peak of the Marathon contract in 1985. Although the company's short term future was assured with the fourteen month contract to convert a drilling rig into a semi-submersible oil production platform for the American company, Amerada Hess, the situation had called into question Charlton Leslie's role in future B.T.R corporate strategy.

Initially it appeared that the Amerada Hess contract might prove to be the saving of Charlton Leslie, for it was a significant boost to the company's status within the offshore industry, beyond short term financial considerations. In the first place, it represented a positive move into what was commonly regarded as a new market within the fabrication industry. The demand for floating production vessels was expected to increase with the development of more marginal fields. As Peter Wilson, the then Managing Director of Charlton Leslie remarked (The Journal, 30.10.1987: 5):

"Having won the contract to convert the first of these vessels we will be in a good position to win the many follow-on contracts as demand for floating platforms increases.."

It also marked the diversification of the company away from its traditional activity fabricating compression modules, at a time when the trend in the market was towards integrated deck structures.

Aside from these aspects, the contract was significant for the degree of sophistication and the amount of work required. The platform itself was described as "the largest floating object ever to enter the Tyne" (The Journal, *ibid*), its sheer size⁴ requiring Charlton Leslie to lease the South Shields yard of McNulty Marine, rather than use its own facility at Wallsend. It was also unique to the offshore industry in both the scope and the intensive nature of the work involved. As Ray, an EETPU shop steward noted at the time:

"You couldn't get a bigger job than this..... the only way it would be bigger is if the rig was bigger. They've used every amount of space possible. You're looking at a total system all on one semi-submersible."

Apart from the actual physical requirements of the job, it was almost exceptional in the demands made of the work force by the client. In doing so Amerada Hess was exploiting both the depressed situation in the offshore industry and the high level of unemployment amongst Boilermakers on the Tyne at that time. As a result, the company, work force, and in a wider sense local labour market were held to ransom by the oil company.⁵ The

⁴325 feet long, 245 feet wide and weighing 16,500 tonnes, compared to Charlton Leslie's usual business of fabricating 2,000 tonne modules.

⁵This was a situation that highlighted the underlying power relations within the political economy of North Sea oil.

winning of the contract therefore entailed certain sacrifices, that went against local industrial relations traditions, as we shall see later.

However in spite of the fact that the Amerada Hess contract had resulted in a record turnover for Charlton Leslie in 1987 (Table 6.1), it did not alter the situation that the offshore sector was not a high profit earner even during boom conditions. This was problematic given the lack of familiarity of B.T.R. and its shareholders with the industry.⁶ Most of their companies make an annual return of 20 per cent on investments, compared to 7 per cent at Charlton Leslie in an average year.

The problems in the offshore market were matched by an absence of orders on the onshore side. Taken together the decline in structural engineering markets had been responsible for a fall in Charlton Leslie's total workforce from 3,000 to 800 between 1984 and 1987.

The intentions of the main board of B.T.R had been signalled in its decision to close Charlton Leslie's

⁶This is a salient point and is illustrated by the actions of the AMEC group, owners of Press Offshore, for whom the structural engineering industry is their primary area of activity. AMEC are more interested in a high volume of work than a high rate of return, as David Clarke notes:

"Press are quite happy to make £5 million out of a £100 million project. B.T.R. will be looking to make a lot more than that. All AMEC's investors are used to their situation. This industry is high risk-low return, it always has been and always will be. It's very competitive."

The commitment of AMEC to offshore construction was amply illustrated in 1983, when most of Press's main board quit the company to establish Davy Offshore. Senior management from other parts of the AMEC group were transferred to Press within a matter of days, thus enabling the company to stabilise its offshore operations.

onshore fabrication facility at Sunderland in 1988. In-house fabrication capacity was reduced to the site at Davy Bank (although ironically this facility was never again used by the company).

With the culmination of the Amerada Hess contract the offshore division was also closed down, a decision that, although surprising to the local management in its suddenness was not completely unexpected. Lou Dobson had suspected that bad news was on the way, because there had been less urgency and supervision from the parent company for several weeks beforehand:

"Everybody was too relaxed. Nobody was asking questions like; "Why aren't you doing this?" and "where's the money for that?" Everything became very gentlemanly all of a sudden. That's not normal. Once they stopped asking about the money, we thought something was up."

Nevertheless in the aftermath of the Amerada Hess project, there had been reasons for optimism; the business development manager, G.B. Collingwood was quoted as saying to the local press that:

"This puts us at the forefront of offshore engineering"

[From an interview with Lou Dobson]

only to be made redundant himself within two weeks. The euphoria created within the firm by the successful completion of the Amerada Hess contract had instilled a renewed sense of hope that the company's survival would be prolonged, strengthened by the knowledge that the industry was experiencing an upsurge in offshore work. In fact, the company had been in "pole position" to obtain part of Occidental's Piper Alpha replacement contract, as well as being at an advanced stage of negotiations for several onshore contracts.

Ironically, the first inklings of B.T.R.'s closure decision came when Occidental withdrew from negotiations with the firm. It is likely that B.T.R. had been planning

the move for some time, although the management at Charlton Leslie had been kept in the dark over developments, only learning of their fate approximately two weeks after the end of the contract at South Shields in May 1989. This breakdown in communication between local management and senior group management is possibly the most poignant indicator of the extent to which normal everyday productive activity in this situation had been peripheralised from real decision making powers.

6.2 Labour force structure and the nature of employment relations at Charlton Leslie

The takeover by B.T.R. in 1972 and the subsequent relocation of Charlton Leslie within the arena of production relations was also to have significant implications for the structure of employment. From being a relatively stable employer, consisting of a network of small firms, it became a largescale, albeit fluctuating source of demand for labour. This restructuring of the employment regime had the effect of removing any semblance of an internal labour market structure and accompanying occupational hierarchy within the firm and replacing it with a system of complete numerical flexibility (Atkinson, 1985).

The pattern of offshore employment however has to be set in the context of the company's onshore activities. With the closure of the Sunderland onshore fabrication facility, the company effectively became a wholly site based employer, with only 40 permanent employees (administrative and senior management) based at the Wallsend headquarters. Although the company maintained a large drawing office at Davy Bank, the 100 draughtsmen employed were all on short term contracts, supplied by an agency on a week-by-week basis. The company's electrical installation division also employed 450 contract workers at various construction sites throughout the U.K., so

that the total number employed in January 1989 was 2030 out of which only 40 were permanent.

But in adopting this manpower strategy Charlton Leslie was taking advantage of trends within the external labour market (Chapter 5: section 5.2). In common with other fabrication firms, Charlton Leslie was able to capitalise on (and indeed later through its recruitment policies was instrumental in) the decline of the traditional employment system, along the North East coast, by poaching labour from traditional sectors through the lure of higher wage rates during the 1970s. With the subsequent decline in alternative forms of employment, and in particular shipbuilding on the Tyne, Charlton Leslie found itself in a "buyers" labour market, with respect to white collar as well as blue collar labour, by the beginning of the 1980s; a situation that allowed it to rigorously pursue an "as and when required" strategy towards labour recruitment.

6.2.1 The "as and when required" principle

A common theme to emerge from discussions with both workforce and management at Charlton Leslie's offshore yard was the extent to which everyone described themselves as being "in the same boat". This reflected the fact that employment within the firm had been marginalised to such an extent that a heightened level of group consciousness, embodied in a contractor mentality, had built up across the normally antagonistic relations between management and labour (an important point that we shall return to later). In short, there were no permanent employees within Charlton Leslie's offshore division; even the project management team were on short term contracts for the Amerada Hess project.⁷

⁷The Amerada Hess contract, apart from being the last offshore project undertaken by Charlton Leslie, was also the largest in terms of manpower requirements. At its

company that has a no-strike agreement with the Boilermakers."

The company had also negotiated the removal of severance payments with the Boilermakers, and the other two unions, the AEUW and the EETPU, a situation that would have been unthinkable ten years earlier.

The contract was also remarkable for the extent to which workers were brought on site for specific tasks and then laid off again, before being brought back a few weeks later. Stan, for example, a rigger in his early twenties, had being employed on the contract on three separate occasions. He had been laid off for three and two months respectively. On the first occasion, he was able to find casual work with Wallsend Dry Dock, whereas on the second occasion he went offshore for AFC International.

Despite the transient nature of the working environment at Charlton Leslie, there were implicit divisions within the workforce. The company usually appointed a "core" group of tried and trusted workers at the outset of a contract, predominantly as project managers, foremen and supervisors:

"who've worked for us on and off over the years and, with their wide experience of the external labour market, are able to recommend the right kind of worker during the selection process."

[Lou Dobson]

A typical example was Frank, a plater in his early forties, who up until 1977 had had a stable job in a ship repair yard on the Tyne. However that year he left:

"..to chase money, this [the offshore industry] was the best."

Since then he has had about 40 jobs in offshore related work, a lifestyle that has taken him abroad for work on numerous occasions including: to Holland (onshore rig construction); W.Germany (petrochemical complex); Egypt (power station); and Norway (on the rigs plus seagoing

repair work). But he has always returned and found work with Charlton Leslie (on six separate occasions) during the 1980s.

Another "tried and trusted employee" was Michael, a burner in his mid thirties, who had entered the offshore industry after being laid off from Swan Hunter during a wave of redundancies in 1978. He had also been employed by Charlton Leslie on six different occasions, the first being in 1979 on the contract for Phillips' Maureen field.

But there was no hard and fast rule over labour recruitment, and the company's flexible manpower strategy meant that it was in a position to benefit from events on the external labour market. This was evident at the beginning of the Amerada Hess contract, when Louis Dobson was able to recruit 3 experienced superintendents, who had not worked for the company before, but had just been released by T.H.C. Fabricators at Hartlepool following the completion of a contract there.

In the rundown, following the peak of a contract the whole of the yard's workforce faced a "redundancy situation":

"When a job runs down, there is a redundancy situation until the end of the job when everybody is off site. If you've got bids coming in, then maybe you can hang on. If you haven't got any bid on, then you don't know what the gap is going to be..... We are at the stage now where we know there is going to be quite a gap."

[David Clarke]

The length of service for workers during this period did not conform to the usual "last in, first out" policy, but rather redundancies were issued according to the advice of foremen and supervisors. For those retained, in the event of further contract work, the main criteria was usually a clean industrial relations record, quality of work and ability to undertake a diverse range of tasks.

But there had been an increasing tendency to override the other factors in favour of flexibility, thus good quality structural welders were often released in favour of those who could also weld pipes.

By the loading out date, the entire offshore workforce was officially redundant. Although a further contract might be impending, the company made no attempt to hoard their key individuals, a policy aimed at minimising redundancy payments.⁸ In doing so, not only was the company exploiting its position in a depressed labour market, but it was taking advantage of changing worker attitudes towards employment, a point borne out by Ralph, a caulker burner and shop steward for the Amerada Hess project:

"If you're prepared to sit and wait, a job does come along (like this) but who knows where the next one is coming from - this one's nearly finished now. It's a case of sitting and waiting or packing your bag. It's hard to work running into two years. Nine times out of ten you finish before that so you don't qualify for redundancy payments. That's what's accepted. Everyone knows the score."

6.2.2 Easy come - easy go: a note about employment relations at Charlton Leslie

As we suggested earlier, employment relations at Charlton Leslie were coloured by the extent to which the employment had become marginalised with the site management for each contract being exposed to the same occupational uncertainties as the bulk of the blue collar workforce. In this sense, there was a collective experience of employment insecurity, bound up in the nature of the contract environment, that to a large extent tended to override the usual antagonistic class

⁸Under the existing N.J.C. agreement individuals are supposed to work continuously for a firm, for a minimum of 54 weeks before being eligible for redundancy payments.

relations that are a feature of more stable work environments.⁹ At the close of the Amerada Hess contract for example, the majority of white collar staff laid off received the statutory requirements and nothing more. Very few qualified for redundancy payments, due to the short duration of their employment; in fact the majority had only been with the company for the length of the A-H contract.

Employment relations were also aided by the fact that there did appear to be a certain type of person attracted to Charlton Leslie, a trend that was encouraged by management:

"A lot of the lads here have worked for us on and off over the years. You always try and go for the same people because once you've got a good workforce you try to maintain it. The problem is you can't maintain it with the work going up and down."

[David Clarke, industrial relations officer]

The fact of the matter was that the company was "tapping" a certain segment of the labour market, that had grown use to a migratory working existence.¹⁰ Thus whilst at

⁹This argument is supported by the evidence from Press, the most stable employer of all North Eastern offshore fabrication firms, which also has the worst recent industrial relations record.

¹⁰In contrast Press, with a greater continuity of work, offered a more stable form of employment, appealing to a different type of worker. In a meeting with shop stewards and David Clarke, during the Amerada Hess contract, the difference in employment relations between the two offshore firms that competed for labour on the Tyne was discussed. There was a widely held view that the working environment at Charlton Leslie was preferable to that at Press. This was despite the greater continuity of work available at the latter; many of the blue collar workforce have been there for over 10 years. David Clarke describes the atmosphere at Press as follows:

"We have our problems here, but we talk them out and solve them. There's an atmosphere in Press's yards and I don't think anybody can put their finger on it."

As Ralph put it:

one level, personnel managers could talk about the disadvantages of a lack of working continuity and the subsequent problems of manpower management, the workforce's acceptance of this casual form of employment clearly assisted the company in pursuit of its marginalisation strategy."

"The ones there are chasing a longer period of work."

This fact seemed to encourage a tenser, less congenial atmosphere. The shop stewards present preferred the more informal atmosphere characteristic of Charlton Leslie.

Underlying this scenario are two distinctive working mentalities; those individuals looking for secure employment and those content with the freedom accompanied by instability that underpins the life of the journeyman. This fact was borne out when:

"...15 welders left to go to Press because they thought they'd have a bigger run there. The same 15 returned a few weeks later trying to get back here because they couldn't work in that environment."

Thus although the two companies were nominally tapping the same portion of the labour market, in practice they were often drawing from different segments.

"This is not to suggest that the yard was devoid of conflict. Whilst there had been a resigned acceptance of the casualisation of employment, one should not be left with the impression that management was facing a docile labour force. Union discipline remained strong and a force to be reckoned with, a point borne out by the solidarity expressed in a complete walkout of the work force at the yard during a dispute over the Amerada Hess contract, when the oil company attempted to manipulate working conditions contrary to the pre-production written agreement. As Tommy Brennan noted on this point:

"When there is a stoppage, even the cat walks out. In fact, some of the men not employed by the company, subcontractors will walk out when there is a dispute on site."

However, it was significant and illuminating that during this conflict, the animosity felt by workers was not directed at their own site management, but at the higher levels of management and rather more accurately at the client oil companies, who are widely regarded as the real force behind power relations within the industry.

The withdrawal of Charlton Leslie from offshore operations has not had an immediate employment impact, other than to reduce the number of employment opportunities for the migrant worker within the North East. Closure in this sense has not had the connotations that it would have had with a more stable employer; the gradual rundown of the work force during the Amerada Hess project tended to dilute the impact upon the local labour market.

An upsurge in construction activity during 1989, epitomised by the Channel Tunnel project and the Docklands development, as well as increased demand for labour locally by Press and yards on the Tees¹² absorbed much of the labour released by Charlton Leslie, reinforcing a comment made by David Clarke at the time of the closure:

"Welders, pipefitters and electricians can all walk into jobs, there is that much work around. Most of the trades are so scarce."

But nonetheless the lessons to be learned from the Charlton Leslie experience are particularly salutary for the future of employment in the North East and other peripheral regions. Here was a company and work situation that could have been cast as the new model of Thatcherite employment relations in the 1980s; the marriage of total flexibility in production with (relatively) harmonious industrial relations. In fact its success drew praise from the Minister of State for Energy himself, Mr Alick Buchanan Smith during a visit to the company in the mid 1980s:

"It [Charlton Leslie] has won work worth £150 million not only on the U.K. continental shelf but

¹²Notably Redpath and Davy have found it increasingly necessary to recruit pipefitters from the Tyneside area due to shortages in the local labour market, a situation departing from Teesside's industrial relations' traditions.

also in the Norwegian sector. I would like to see other British companies emulate that."

(The Journal: 27.3.85: 25)

But the company's sad fate was a particularly poignant reminder of the workings of capital under the present conditions of accumulation. As the management and workforce at Charlton Leslie discovered, it is not enough to be competitive within one industrial sector. In this sense, the closure decision was not linked in any way to events or performances in the offshore market itself, but to the latter's position relative to other sectors of accumulation.

6.3 Strategic withdrawal at Whessoe

The experience of Whessoe Offshore and its workforce serves as an interesting and appropriate comparison to the situation at Charlton Leslie. For whilst both companies went out of business in the aftermath of the 1986 oil price crash under similar circumstances, the corporate background at Whessoe was markedly different to that of Charlton Leslie. In particular, Whessoe was well acquainted with the vagaries of the structural engineering sector, which had been the principal area of company operations for almost one hundred years. Whessoe had been a relatively stable and regular employer within the region during this period. However with the decline of the sector during the 1970s and 1980s, a reorientation of the company's operations followed that was to lead to a contraction in its traditional manufacturing activities and a movement into the higher quality end of engineering. It is within this context that the development of the offshore division must be placed.

Whessoe's origins date back to the late eighteenth century, although its growth into an important local employer was associated with its emergence as a supplier of storage vessels to the oil, gas and chemical

industries during the early part of the twentieth century (see Chapter 3). In the period up until the second world war, Whessoe established a solid reputation within these markets, both at home and abroad, escaping the worst effects of the depression through its overseas contract work in various corners of the British Empire.

Whessoe was also heavily involved in the reconstruction process that swept Western Europe in the aftermath of the second world war, primarily in the design and fabrication of steel plant for the oil refinery and nuclear power station programmes.¹³ As these developments slowed during the 1960s the company began a small but significant diversification away from its traditional activities. In particular this process involved the purchasing of Ashmore Benson Pease's South Works in Stockton in 1968 for the design and construction of process heaters in collaboration with the Econ-Therm Corporation (a U.S. based corporation) and the procuring of Aiton & Co. of Derby in 1967, a company with a well established record for manufacturing high pressure pipework on the international market. Indeed the overseas orientation of these developments was significant in view of the decline in domestic demand for heavy engineering work.

In contrast the movement of Whessoe into the offshore supplies sector of the North Sea in 1972 represented an attempt to move into a new market, serving a traditional form of activity. This involved the establishment of a production facility at Dock Point, Middlesbrough with the capacity to load out structures of up to 5,000 tonnes. At first, this facility was used purely as an assembly point for shop built sections from the heavy engineering plants

¹³Whessoe, in conjunction with other North Eastern contractors such as Head Wrightson, became part of the Nuclear Power Group, which was involved in the construction of the Bradwell, Dungeness, Oldbury, Hinkley B and Hunterston B power stations (North, 1975: 92).

at Darlington and Stockton, but as the perception of the offshore market changed towards a longer term sector for accumulation the offshore yard became a fabrication plant in its own right.

The 1980s saw a further shift in the outlook of the Whessoe group that was to have a significant impact upon the offshore division. The direction of this change in policy was away from the manufacturing side of heavy engineering, which appeared to be in terminal decline, towards the higher quality end of production, primarily into design engineering, project management and systems analysis.¹⁴ This coincided with the downturn in the oil price during 1986 and a distinct absence of offshore orders, a situation that was expected to continue until the early 1990s. It was this perceived lack of continuity of offshore work, and the continuing poor performance of the wider market for heavy engineering work (this led to the group as a whole recording an overall loss in 1987 as Table 6.2 illustrates) that were the catalysts for the restructuring of the group in 1988.

Although Whessoe plc returned to profit in 1988, the heavy engineering division continued to suffer from a "lack of demand and intense pressure at the margins" (Annual Report, 1988: 3), a situation that prompted the board to close the fabrication facility at Brinkburn Road, Darlington with the loss of the 260 remaining jobs in July 1989 (Darlington and Stockton Times, 22.7.89).¹⁵ The remaining design, project management and construction activities of the division were merged with the company's successful overseas operation to form Whessoe Projects.

¹⁴Indeed the closure of Whessoe's Stockton works in 1979 was a precursor of this trend.

¹⁵There had in any case been a gradual decline in employment since the early 1970s.

The name of the new division was symbolic in capturing the essence of Whessoe's reorientation during the 1980s; i.e. from being a primarily home based manufacturer to an overseas project management contractor, geared towards higher rates of profit at a reduced turnover. As such, the new strategy involved a withdrawal from U.K. manufacturing operations and a greater emphasis upon penetration into overseas markets. Certainly this policy appeared to have been effective in the short run, as this item from the Chairman's statement in 1990 demonstrates:

"We were encouraged by the achievements of Whessoe Projects. It completed the phasing out of its heavy engineering fabrication activities and was awarded a number of substantial contracts. The most notable of these is a £25 million contract for the design, project management and construction of a cryogenic liquid natural gas storage facility for the Greek Gas Authority."

(Annual Report, 1990: 3)

The commitment of the company to move into more "up-market" activities overseas was further illustrated with its acquisition of the Atlanta based company Coggins Systems in January 1990, a specialist in computer systems equipment for the petrochemical industries, and the purchase of Elcon Instruments of Milan, a manufacturer of industrial safety equipment. Indeed it was the familiar theme of jobs at home being replaced by a higher level of profits abroad, a trend that has characterised the actions of British capital throughout the twentieth century.¹⁶

¹⁶Under these conditions it is remarkable that the company should receive the backing of the local Conservative M.P. Michael Fallon:

"The heavy engineering side has not been doing well and it makes sense for Whessoe to concentrate on what they do best, which is project management, computer systems and light engineering."

(Darlington and Stockton Times, 22.7.89)

At first, it appeared that the restructuring of the company would have little impact on Whessoe Offshore, and in a direct sense it did not. For most of the 1980s, offshore activities had operated as the most successful part of the heavy engineering division. Indeed the then Chairman of Whessoe, Lord Erroll, was quoted in the local Press, describing the offshore division as:

"one of the most prosperous parts of our business"

(The Journal, 16.10.85)

Furthermore the company was attempting to move into more up-market activity by forming a company, with another Middlesbrough based firm Haden Moore, Whessoe Haden Offshore to compete for hook up and repair work.

Since the establishment of the offshore division in 1972, the company had received a regular workload (apart from a period in the early 1980s when there had been a delay in impending orders (see Chapter 4). Up until December 1985 there was a belief that the offshore supplies sector would continue to be a growth industry for some time to come and Whessoe was likely to become a market leader. Such a notion was not dispelled when the company won £32 million out of a total of £87 million worth of investment from Shell's Eider and Tern projects, against severe competition from the other major module yards on the Tyne and the Tees (The Journal, 11.12.85). In 1985 this degree of success was reflected when Whessoe Offshore was established as a limited company in its own right.

But there was also a hidden agenda to this development, for whereas when the offshore division had been part of the engineering group it had received a considerable degree of financial backing for the tendering of

contracts¹⁷, its new independence effectively meant that it had been given the freedom to "sink or swim", more than ever reliant upon its ability to obtain a degree of working continuity from its offshore orders.

A full order book from 1986 through to the first half of 1988, allowed the company to ride out the initial effects of the oil price collapse (indeed the number of direct, as opposed to subcontract employees, actually rose from 115 to 216 in the period 4.1.88 to 9.5.88), but with the culmination of the Shell Eider contract in August, it found itself facing an unprecedented period of inactivity in the offshore market, with little prospect of work in the immediate future. Subsequently, in October 1988, the main board at Whessoe took the decision to run down the offshore division and just keep it "ticking over". With the dearth of orders, it was decided to mothball the yard in Middlesbrough and assess the situation in the industry; a decision that was to prove fatal to the offshore division.¹⁸ Although in the early part of 1989, the company made a half-hearted attempt to pursue orders, most of that round's potential contracts had already gone elsewhere to companies who had maintained a strong

¹⁷The offshore division had also benefitted from various parcels of onshore work subcontracted out from the rest of the heavy engineering group, notably in the traditional market for process plant (see Table 6.3).

¹⁸To illustrate this point, it is worth examining the actions of Davy Offshore, the other Middlesbrough based fabricator, under similar circumstances. Like Whessoe, Davy had been involved in Shell's Eider and Tern developments, which culminated during 1988, and, as a result, was also facing an empty order book. But significantly the offshore division was given the backing of Davy Corporation to tender for other contracts, despite the fact that the division had made a loss in two successive years: £4.41 million in 1987-8 and £2.82 million in 1988-9 (Financial Times, 27.6.89: 21). In the event, the company was awarded part of the Shell Amethyst contract in October 1988 which at its peak employed 800 men.

offshore capability during the downturn.¹⁹ Despite the promise of an upturn in the supplies market the company decided to close the offshore division on May 1st 1989.

Whessoe Offshore's demise reflected a lack of understanding amongst the main board of the requirements of (or perhaps an unwillingness to understand) the structural engineering sector. This approach was partly the result of changes in the composition of the board at Whessoe, causing Bob Wright (personnel manager) to remark that (4.11.88):

"Our board is now filled with accountants instead of engineers."

Although this was said in a slightly "tongue in cheek" manner, it did account for some of the changing attitudes of senior management within British engineering companies during the 1980s. Whessoe Offshore, and the structural engineering industry in general are, in part, the victims of changes within financial markets during the decade; the movement away from cartelisation towards a more competitive environment. Finance capital has become even more volatile as a result, favouring those sectors of the economy that yield the highest returns. Under these circumstances, the rationale behind production within engineering has changed from high turnover-low profit to low turnover-high profit, with a subsequent shift in to more up-market activity. Accompanying this process, the increased concentration of control within the economy has transferred real decision making powers away from managements specialised in the workings of particular industries to corporate planners specialised in maximising the rate of return from capital investment.

¹⁹Indeed it was heavily ironic that the remaining contracts were too large for the offshore division in its diminished state, despite the fact that the Dock Point yard in Middlesbrough is one of the few in the United Kingdom to have the capacity for large integrated deck structures.

This situation applies directly to Whessoe, and whilst the offshore division remained competitive throughout the 1980s the board was willing to leave it well alone. It was the onset of a pronounced period of inactivity that prompted the closure decision.

6.4 The organisation of labour

At Whessoe, the structure of the workforce reflected both modern and more traditional influences within the employment system. For whilst, on the one hand, the demand for labour had become increasingly dependent upon the requirements of individual offshore projects (there was no opportunity to switch labour into the onshore engineering division during slack periods in the offshore sector), at the same time there remained limited forms of employment stability in the organisation of labour at the firm, the latter largely attributable to the prevalence of past practices in the employment system.

As a result of this dichotomy, the constitution of the work force comprised a curious mixture of employment forms: a core permanent management and administrative staff of approximately 40 personnel, supplemented by white collar technical labour supplied by manpower agencies during a contract. In contrast to Charlton Leslie, Whessoe was far more reliant upon specialist subcontracting firms in production. At the peak of the Shell Eider contract in June 1987, for instance, the company employed approximately 1,000 subcontract employees compared to only 535 direct blue collar workers. Whessoe's role in production was solely restricted to the fabrication of structural steel work, with most of the outfitting work being done externally.²⁰

²⁰The principle firms used by Whessoe in production at its offshore yard were Tinklers (Middlesbrough) - pipe fabrication; Vaudales (Stockton) - electrical installation; Steels (Sunderland) - pipework systems ; Deborahs (Stockton) - scaffolding.

Although in a formal sense the only permanent positions were in the white collar sections of the work force, in practice there were implicit divisions within the blue collar labour segments, based upon the length of time served. Thus the blue collar labour force was effectively divided into a "maintenance" staff of retainers with a history of employment continuity at the firm, and a majority of "journeymen" employed on a single contract basis.²¹

In practice, this maintenance or skeletal workforce consisted of a handful of key individuals, either retained by Whessoe, or by a regular subcontractor, during a slack period. Brian for example had been the maintenance electrician at Whessoe for 15 years up until the yard's closure in 1989. During a contract he was consigned as foreman to a team (usually of subcontractors) to work either on insulation or module work.

An alternative example was Fred, employed by the scaffolding firm of Deborahs on site at Whessoe. Prior to the yard's closure in 1989, he had also been with the company at the Whessoe site for 15 years. His job security was inextricably tied in with the position of Whessoe rather than that of Deborahs:

"It's always the same.....it's not secure. My job is all right as long as Whessoe are here."

At the height of the Shell Eider contract, Fred was foreman for over 110 scaffolders (technically employees of Deborahs), although when interviewed (29.11.88) he was the only scaffolder at the site. The company's policy of

²¹Notably many of these core workers had been transferred from Whessoe's onshore operations, particularly the former Ashmore Benson Pease works at Stockton.

maintaining a skeleton work force meant that effectively he was a "core" worker despite being a subcontract employee on the books of Deborahs.

On the structural side, there is evidence to suggest that the company had a policy of hoarding teams of craftsmen for forthcoming project work. A good illustration of this occurred over the Christmas period in 1987 (see Figure 6.2). With the rundown in structural work on the Eider contract, the company had been laying off large numbers of welders, platers and chippers regularly, on a weekly basis from the beginning of October to late December. Significantly however the company chose to keep a constant number of such workers on their books between 21.12.87 to 8.2.88 even though there was no workload, because of a small fabrication contract due to start in late February.

Clearly Whessoe put a value on the maintenance of a certain form of employment stability, despite the dynamics of the market it was operating within. This was in keeping with the traditional methods of labour organisation in heavy engineering. Companies, such as Whessoe, built up a reliance on a tried and trusted element within the workforce to aid with recruitment and supervision during contracts. In return the company operated a restricted form of internal labour market, with the promise of permanent employment where possible,²² plus the incentive of limited forms of

²²This form of labour organisation had developed during the post war period, reflecting the prosperity brought by the construction boom. Clearly the ability to maintain such employment arrangements was dependent upon a continuous flow of orders. With the decline of the North East's traditional structural engineering markets and the arrival of sporadic oil developments, the ability of firms to offer such permanent forms of employment was increasingly limited to those who had linkages with other sectors of engineering, as we illustrate later in the case of Redpath Offshore.

promotion into lower management.²³

There was nothing philanthropic in this development; but rather it reflected a deep-seated belief within engineering construction that the best managers of men were recruited from within the workforce itself. The industry has always been introspective and distrustful of outsiders, who it is felt are unable to grasp the complexities of the industry, particularly with regard to labour organisation. Bob Wright puts this viewpoint forward from his personal experience at Whessoe:

"..in my opinion people like me are better [at I.R.]. My predecessor, for want of a better word, was more of an academic than I am. He was very good, an ex-chief commissioner of police, he had a lot going for him, he could do the paper work, but he couldn't do the I.R. side. On the I.R. side they kidded the socks off him, he didn't understand. I can't blame him, anyone else wouldn't. Very few can adapt, you have to know what you are about. You have to spot the subtleties of their argument or you're losing before you start."

Thus a tradition of co-opting various individuals from the workforce had developed within the employment system on Teesside.

A prime example (apart from Bob Wright) of an individual who had come up through the internal labour market system in the post war period was Stan, a materials controller who was interviewed whilst being employed by Redpath Offshore at Port Clarence in 1989. However up until 1979 he had progressed up the job ladder at Whessoe's engineering works at Stockton. After completing his

²³Evidence of the operation of this system comes from the backgrounds of some of the managers themselves: Bob Wright had come through the ranks at Whessoe, starting as an apprentice welder at the company's Stockton works in 1953. He was transferred to the offshore yard at Dock Point as a foreman in 1972. Similarly Jock McKinley at Davy and Lou Casson at Redpath were both managers who had progressed from craft apprenticeships to key positions in personnel management.

apprenticeship with the works' former owner, Ashmore Benson Pease in 1948, he remained with the company until its takeover by Whessoe in 1968, and stayed on at the site until its eventual closure in 1979. In between he was made a chargehand at the age of 21, a shift foreman at 28, and a shift superintendent in his middle thirties. From there, he became a production controller, and finally an assistant production manager, at the time of the closure. From 1979 to 1988 he led a migratory working existence as a project manager on various contracts for Davy overseas.

Whessoe's ability to maintain some form of employment stability was aided by a strict "last in; first out" policy, towards its blue collar work force. With a good continuity of orders during the 1980s, this policy ensured that individuals with the longest period of time served with the company were therefore at the back of the queue as far as redundancy was concerned. A good example was Peter, a welder who had rejoined the company in 1980 after having served his apprenticeship in the onshore division during the late 1960s and then left to chase oil money. At that time the company was reduced to its lowest point ever with only 9 welders on its books. With the upturn in activity, Peter found himself incorporated into the core in this way and was permanently employed until the yard's closure in 1988.

Employment stability at Whessoe Offshore had been severely undermined in the period prior to its closure, as a result of its isolation from the remainder of the group's activities, and in particular the lack of financial commitment. Significantly the offshore division had been forced to abandon its apprenticeship scheme after 1986, one of the clearest manifestations of stability in manpower planning.

6.5 Redpath Offshore: in the shadow of Trafalgar

Redpath Offshore is a subsidiary of Trafalgar House plc, a holding company with a diverse range of interests, from property to shipping, hotels to engineering. In 1987 Trafalgar House employed approximately 32,000 people with a turnover of over £2 billion. Offshore activities form part of the construction and engineering group (see Figure 6.3), by far the largest of Trafalgar House's activities, with a turnover of £1.3 billion and employment of 24,410 in 1987, and has been cobbled together from a series of acquisitions in the past twenty years.

Unlike the previous two companies studied in this chapter, Redpath Offshore's development has taken place within the context of a growth environment. The 1980s have seen Trafalgar House increase its involvement in offshore related work, attempting to become a player at the global level. This, as we shall illustrate later, has had important implications for the structuring of employment at Redpath.

6.5.1 The development of Trafalgar House's offshore operations

Trafalgar House's initial movement into structural engineering came in 1970 when it absorbed the Darlington based firm Cleveland Bridge, as part of its takeover of the Cementation group. This was a move that complemented its well established interests in the field of civil construction, providing it with an in-house supplier of fabricated steelwork. In 1975 Cleveland Bridge diversified into the offshore supplies market, when the company was commissioned to build a series of drilling rigs for the American company Loffland Brothers.

Initially the site at Port Clarence had been established

for the purpose of the A19 Tees bridge contract and as a load out facility for the Thames Barrier project, the latter involving a £60 million contract to manufacture and install flood gates and operating machinery. The yard at Port Clarence had been intended as a fabrication and load out facility for work that had been sub-assembled at Cleveland Bridge's Darlington plant. Originally offshore work was viewed as a bonus, but nevertheless a sideline to the company's main interests, which were firmly rooted in its traditional bridge and other constructional engineering markets. As such, it was commonly felt that the yard would be closed after the completion of the Thames project. However as Ian, a construction superintendent with the firm remembers, events took a different turn:

"This place opened in late 1975 with a massive order for a company named Loffland (drilling company) and Shell wanted an accommodation module. That was it, we were away into the oil industry. We were led to believe that this yard would be open eight years for the duration of the Thames barrier project and that by then the oil would be finished. But since then, they have found oil wells all over the place. We have had a few rundowns, but were fortunate that our mother company was Cleveland Bridge, through them we've managed to get non-oil jobs."

Consequently:

"We have been able to hold onto a few hundred men, otherwise there's many a time when we could have been on our knees."

Thus the link with the onshore sector was crucial in understanding the rationale behind the development of the Port Clarence yard. It was always intended as a facility for both onshore and offshore engineering projects and has remained involved in both sectors. As such it has been able to offer a high degree of working continuity, e.g. by 1977 the yard was employing approximately 1,000 people, of which 250 were permanent staff.

In 1982 Trafalgar House bought Redpath Dorman Long, the

structural engineering arm of British Steel for £10 million. Crucially this involved the takeover of the corporation's two offshore concerns, the Redpath Offshore module yard at Linthorpe Dinsdale on the south bank of the Tees (originally opened in 1975) and the R.D.L. jacket fabrication yard at Methil in Fife (in collaboration with the Dutch firm de Groot).

The addition of Scott Lithgow, a firm with experience in building semi-submersible vessels and acquired from British Shipbuilders in 1984, clearly signalled the direction of Trafalgar House's policy, as a feature article in the Financial Times recorded (9.3.84: 16) at the time:

"The second [point of significance about the Scott Lithgow purchase] is the clue it gives to Trafalgar's strategy to hoist itself into the international big league of all-purpose offshore contractors capable of doing everything from design, building, project management, commissioning and hook-up of offshore structures and competing on equal terms with the likes of McDermott, Brown and Root and Bechtel of the U.S.

"If we are not doing that in another five years time we will have failed," says Mr John Fletcher, head of Trafalgar's fabrication division."²⁴

In addition, Trafalgar House's commitment to the wider sphere of structural engineering was signalled by the construction of a new £26 million plant at Darlington in 1982.

6.5.2 The consequences of merger on Teesside

The acquisition of Redpath Dorman Long was particularly significant for offshore operations on Teesside. Not only did it bring together the two fabrication facilities at Port Clarence and Linthorpe Dinsdale, but also R.D.L.'s

²⁴With this in mind Trafalgar House also bought John Brown Engineering, the U.K. based design and project management outfit in 1986.

specialist installation outfit Redpath Engineering Services, established at Portrack Lane, Stockton in 1980. This has enabled the offshore yards to internalise much of their installation work, as Lou Casson the personnel manager noted recently:

"They [R.E.S.] have a permanent office on site. When we tender, the clients are aware that they are our preferred candidates as far as subcontracting work in that area goes. In fact, they support us at tender stage, they will price the part of the tender that deals with the electrical side."

It has also allowed the two offshore sites to collaborate on individual projects, e.g. the Port Clarence yard was used for the fabrication and sub assembly of the accommodation module on the B.P. Miller project in 1989, whilst most of the outfitting was undertaken at "Lin Din". However this remains the exception rather than the rule, both yards have retained full production capacity and the ability to tender for contracts in their own right. The rationalisation that has taken place was principally on the administrative side, bringing the yards together under a single management at Port Clarence with the loss of approximately 100 white collar jobs at Linthorpe Dinsdale.

The benefits of the Trafalgar House umbrella were brought home poignantly during 1984 when the yards on the Tees found themselves without an offshore order and reduced to baseline employment levels:

"If you go back to 1984 when there was no oil rig work coming in, this company was supposed to be in dire straits looking for a new agreement, a survival package. Because we belonged to Trafalgar House they were able (they'd just taken over Scott Lithgow on the Clyde) to bring some of the work that Scott Lithgow were getting bogged down with in here to keep the yard open. Nothing else kept the yard open. There was no other work."

[Lee, EETPU shop steward, Port Clarence]

Whilst the link with Trafalgar House was useful in surviving through the minor fluctuations in the oil

market, it could not completely compensate for the dramatic downturn in orders from 1986 onwards, leading to redundancy and reorganisation amongst the white collar sections of the work force (see later discussion). Nevertheless the link was crucial in the company's survival throughout 1988, prior to obtaining the B.P. Gyda contract in the Norwegian sector. At one point in July 1988 the Linthorpe Dinsdale yard was reduced to just 22 blue collar workers.²⁵ Similarly the Port Clarence yard was reduced to a low point of just 153 blue collar employees at the beginning of 1988. The retention of these employees was largely due to the company receiving "filling in work" from other members of the Trafalgar House group, as Lou Casson (Personnel Manager at Redpath) noted at the time:

"We've been doing a lot of traditional fabrication and construction work over the past fifteen months on this site. We've been doing work on Wondong, Cannon Bridge, the Dockland Development (supplementary steel work for Canary Wharf). We've also done a lot of work for the "Fast Lane" project - one hundred foot girders - in Glasgow. It's a project for the M.O.D. - a huge lifting framework for a submarine dry dock."

6.6 Getting by with a little help from our friends: the organisation of labour at Redpath

As the previous section illustrated, the offshore supplies industry became an increasingly important part of Trafalgar House's operations during the 1980s. In turn, the bolstering of the offshore division against fluctuations in the oil market was to have important consequences for the stability of employment at Redpath.

Labour organisation had been characterised by similar tendencies to those which had existed at Whessoe prior to

²⁵These figures should be compared against the company's peak employment levels during the first half of 1985 of 1500 at Port Clarence and 300 at "Lin Din".

1986, with a form of internal labour market operating in tandem with contractual employment. In the former however there was a greater emphasis upon employment stability. This undoubtedly was the result of the two yards' links with Trafalgar House (and with Linthorpe Dinsdale's earlier association with Redpath Dorman Long). For the greater degree of working continuity that resulted allowed Redpath Offshore to maintain not only a core of blue collar workers, but also a considerable white collar staff above and beyond the usual levels of management and administration.

6.6.1 The white collar internal labour market

In essence, the organisation of white collar labour at Redpath exhibited all the hallmarks of a stable employment regime: a comprehensive training programme, salaried and pensionable staff, profit sharing, company cars for higher and middle management and clearly defined opportunities for promotion. Notably however such opportunities were not merely confined to the offshore division, but also allowed individuals to switch to other parts of the Trafalgar House group. To capture the essence of this situation in terms of the type of employment available, it is worth citing the career profiles of several individuals highlighted in a company magazine:

"Tony Sullivan has been appointed CBE Operations Director at Yarm Road. Tony who has a wide range of experience in onshore and offshore work, began his career as an apprentice draughtsman at the old Teesside Bridge and Engineering Works in Middlesbrough. He left them to gain experience with Humphreys and Glasgow and then Furness Shipbuilding Co. before returning to TB & E as senior designer. After qualifying as a chartered structural engineer, Tony became senior contracts manager. The next ten years or so were busy and eventful. He was appointed the company's Project Manager at the Anchor steel plant in Scunthorpe, and after that Chief Projects Manager, which took him overseas. In 1980 he was appointed General Manager of the Linthorpe Dinsdale offshore yard. In the last three years or so he has acted as consultant for CBE and others in the

onshore and offshore industry.

Alan Gibson, 45, a chartered engineer, has been appointed CBE's Production Director, confirming the post which he has filled on an acting basis since April. Alan's career with CBE began in October 1986 when he was appointed Welding and Quality Assurance Manager. He had worked previously with RDL, whom he joined in 1969 at their Britannia Works in Middlesbrough as a Welding Engineer. In 1976 he moved into quality assurance and for the next five years was closely involved with all aspects of quality control, becoming Divisional Quality Assurance Manager. He was promoted to Works Manager at Warrington in April 1981, and was General Manager from May 1983 until he joined CBE.

One of the longest serving men in CBE's Yarm Road Works retired earlier this year. Eddie Peart began with the company on 3 February 1941 as a boy labourer in the Smithfield Road Works Template Shop, and in the following 48 years, with the exception of war service with the Royal Engineers, was involved in some way with every major CBE contract and most of its projects to modernise the plant. His last job was setting up the jigs and fittings in the Works for the Canary Wharf contract. Eddie served his time as a plater and worked as a contract plater until his promotion to Foreman plater in 1974. Four years later he was promoted to Works Superintendent and held this responsible job in the years leading up to, during and after the move from Smithfield Road to Yarm Road. He had two short breaks - as Preparations Manager and then while setting up a Methods department."

(Profile (9) [Trafalgar House company magazine], Winter 1989)

The point of emphasising these individual cases is to outline the extent to which a form of job ladder was open to individuals within the engineering industry on Teesside in the post war period up until 1970 and after this point, despite the onset of recession, within larger concerns such as Trafalgar House and Redpath Dorman Long at a national and even international level. In this sense these corporations were still able to offer protection from the hostile external labour market in "a job for life", career advancement, and opportunities for travel. Certainly in relation to much of the engineering sector

during the 1980s, companies within the Trafalgar House group did represent islands of employment security in a sea of uncertainty. But this point should not be over exaggerated, the Trafalgar House umbrella was only a partial shelter from wider recessionary forces as the 500 employees of Trafalgar House's steel fabrication plants at Glasgow and Manchester found to their cost, when the latter were closed in 1990 following a slump in the civil construction sector (The Guardian, 6.1.90).

Similarly the offshore division was susceptible to changes in the product market. Up until 1988 Redpath Offshore had enough working continuity to maintain a constant white collar staff of 332 at its two yards on the Tees. At this point, in response to a shortage of orders, in both onshore and offshore work, the company reduced this number to 202, with the main redundancies being in the drawing office at Port Clarence. This development involved a movement towards greater numerical flexibility, as the company became more reliant upon agency labour to meet its demands for specific contract work (see Figure 6.4).²⁶

Despite this setback the company was (and still is) able to offer careers for white collar staff, aimed at the 16 year old school leaver. In particular the company recruits 6 apprentice draughtsmen per year, on a four year training course equivalent to their blue collar counterparts. However in comparison to the blue collar employees, all the white collar intake are in salaried permanent positions, and are clearly earmarked for a different kind of future than the average skilled manual worker. A typical example of one such worker was Neil, an engineer in his late twenties. He started as an apprentice in the drawing office in 1977, at Redpath

²⁶In doing so Redpath was able to use Trafalgar House's own employment agency, Lawrence Allison Services.

Dorman Long's bridge construction division at the Britannia Works. When this closed in 1979 he moved to the drawing office at the Teesside engineering works (also part of R.D.L.). He was then transferred to Linthorpe Dinsdale in 1980 to work on the design of structural steel components. Since then he has been formally employed by Redpath Offshore South although he has been loaned out to other parts of the Trafalgar House group. He worked at Port Clarence on the Gyda project during 1989, and prior to that was employed for a brief period (9 months) in London by Cementation, a sister company within the T.H. organisation during a spell of inactivity in the offshore division. He has also undertaken work for Cleveland Bridge in the past on a construction project at Victoria Station.

Not only are white collar staff more highly valued by the company and as such guaranteed a certain amount of employment security, but as we suggested earlier there are greater opportunities for promotion. A typical career progression for an engineering apprentice is as follows:

Career Progression for Engineers at Redpath Offshore
(1989 wage rates)

Apprentice Draughtsman (4 years): Salary = £4,500

Junior engineer: Salary = £9,000 - £17,000

Engineer: Salary = £17,000 - £25,000

Project Manager: Salary = £25,000+ and company car

Technically the content of work involved does not change rapidly between the time an apprentice finishes his training and becoming an "Engineer" as Neil notes:

"When we arrived over the river from the drawing office, we were still apprentice draughtsmen. It took a couple of years to become a Junior Engineer, although we were still doing the same job. As you get more experienced, you become a fully fledged engineer. The only thing that alters is your salary.

You basically do the same job, once you are a junior engineer."

At 30 Neil is now in a position whereby he supervises others and is not directly supervised himself. On the north site, he has contact with the workforce, via superintendents, but on the south side, he has more direct contact. His route is typical of the majority of individuals in the lower echelons of management. Redpath (and indeed most of the structural engineering industry) does not recruit externally for its technical staff; at present there is only 1 university graduate working on the engineering side of operations (see also comments made in Chapter 5, Footnote 31). The point of entry into the restricted internal labour market is still the school leaver at 16.

In other firms, notably Whessoe, Charlton Leslie and T.H.C. Fabricators, this type of career pattern had virtually disappeared with the advent of offshore work. Firms such as Press and Redpath that did manage to maintain such forms of organisation did so through a high continuity of orders, and the support of their parent organisations. As such their activities were perceived as mainstream operations rather than being peripheral to the main organisation.²⁷ Other firms were more reliant upon project management specialists, supplied by agencies.

Apart from the skilled white collar workforce, Redpath (in common with all other offshore firms) also employ a permanent administrative and management staff. Apart from senior management, this included the secretarial staff,

²⁷In the case of T.H.C. Fabricators, although the parent company Heerema's primary arena of operations is in the offshore supplies industry, the Hartlepool yard remains marginal in the sense that the firm is largely given overspill work for the Dutch operations, plus smaller contract work on occasions, e.g. the company undertook subcontract work on Charlton Leslie's Amerada Hess project.

which is predominantly female and continues to represent the primary role of women in heavy engineering. Typically this work is low paid, and devoid of any prospects of promotion or career advancement. Occasionally women did enter the apprenticeship scheme, notably in the technical rather than craft grades, although this was very much the exception, at Redpath there had been 2 individuals in 15 years. The structural engineering industry is still considered to be a man's world and social barriers to female entry clearly persist, not necessarily at the level of the individual firm but externally, within the local labour market.

6.6.2 The uncertainty spectrum: blue collar labour organisation

Whilst there is a well developed internal labour market system within the white collar segment of the workforce, there is also evidence of hierarchical forms of job development amongst the blue collar employees. Although all non-supervisory blue collar workers are nominally categorised as hourly paid contract labour with legal guarantees of six weeks work and no more, a queue system operates within the firm that allows it to maintain a permanent core work force. To a greater extent than Whessoe, the company exhibits a form of internal labour market structure, through its adherence to a "last-in; first out" policy²⁸. Under these conditions there is a labour market queue in operation, that ensures that the company holds onto its longest serving employees. This was illustrated by a company survey in November 1989 that showed that there were 105 blue collar employees who had been with the company for over 12 years, and 595 who had been there for over two years. Nor was this situation merely restricted to the skilled worker:

"We've got a dozen trade assistants here now who we've employed since 1974-75. The rest here now have

²⁸This is enforced by the unions.

been employed since 1988 and will get more continuity through Gannet."

[Jon, T&G shop steward at Port Clarence]

But there is no rigid dichotomy between short term and long term employees, the queue system represents a spectrum of uncertainty within the blue collar work force, contingent upon the company's ability to maintain a steady work load. Doug, a maintenance electrician, has been at the Port Clarence site since 1977. He has never had to work away from the North East, although there was a point when he almost took a job overseas, because his position at the company was under threat. He explains:

"There was a time here when things weren't looking too bright (1981). It's last in, first out, and I was next to go on the payroll. I had the chance of another job in Saudi Arabia [advertised in a national paper], so I asked the senior shop steward what the scene was. He said, "If I were you, I'd take it." But I stuck it out and here I am."

But the majority of blue collar workers are still recruited for single contracts, although they have usually served with the company on past occasions (Stan, convenor at Port Clarence):

"When they [Redpath management] recruit labour they recruit the people who built the last module for them. The type of lads who were here last year, many of them have been here on 4-5 different occasions."

As Davy (a GMB shop steward) acknowledges there is a shifting mass of workers, who migrate from firm to firm, contract to contract:

"In this area it is basically the same men who do most of the work. It might be a different yard. There is a nucleus of workers in each yard, and the rest go from yard to yard, wherever the work is. Getting paid off is an occupational hazard."

Such workers have little chance of making inroads, into the queue at Redpath, or for that matter anywhere else (ibid):

"If you get a job at the back of a queue, you are first to go, if you get another job you're on

another queue and your first to go. On any job you're always used for a certain length of time and then you are finished."

Not only do these individuals find themselves at the back of a queue, but they are often poorly regarded by other employers, who tend to judge a person's reliability on the number and length of jobs on his c.v. Davy illustrated this situation by comparing his own situation with that of his next door neighbour who has had 53 jobs:

"If you look at my c.v. and my mate's, they'll [employers] say, "He chases money, he doesn't." It's not that easy. He's had jobs offered for six weeks".

Stan makes a similar comparison, in noting his good fortune at being cushioned against the uncertainty of the 1980s through his employment with the company:

"I'm 34 and I've had two jobs since I served my time. I served my apprenticeship across the river at Pexham's Engineering, then I came here. The only two jobs I've ever had. I've got a mate the same age as myself and he's had 50 jobs in 14 different countries."

This marginal element within the labour market is further disadvantaged because of the privileged status conferred upon those trained within the firm. The third and fourth years of the apprenticeship count as time served with the company, giving them an immediate advantage over travelling men, probably a measure used by the company to retain trainees, as the following remark from Alan Matthews, Labour Manager at Port Clarence suggests:

"As far as permanent is concerned we would like to think that the apprentices we take on are with us for a career."

This system is unique to Redpath, the majority of other companies still have a "paying off" policy, Stan Jackson describes its operation:

"The beginning of the third year of an apprenticeship starts in September. They have then got a cushion of two years. In the case of our

present fourth year apprentices, they came out in September 1988 and there were a lot of people that started before them that have now been paid off. So they've actually moved up above these people, many of whom were taken on again this year. This is one of the few places that does this."

Significantly, there has only been one instance of an apprentice being paid off in the sixteen year period of oil related work at Redpath.

Apprentices are still recruited from the local area (Port Clarence draws predominantly from the Stockton travel to work area whilst Linthorpe Dinsdale's catchment area is centred upon Middlesbrough) and are usually related to existing employees within the company, as Lee admitted.

"There is a lot of nepotism, which we don't mind."

Training at the rate of 10 craft apprentices per year, the company is clearly intent upon establishing and reproducing a core of loyal employees from this source. It is from this group too that the company eventually selects its foremen and supervisors, who are accorded permanent status, i.e. salaried employment, on a par with the skilled and managerial white collar workforce.²⁹ Another similarity with the latter is the extent to which, the supervisory ranks are often transferred to other areas of Trafalgar House on project management work.

As the examples of Eddie Peart at the beginning of the chapter and Lou Casson himself illustrate, the opportunities for the ordinary skilled worker to move upwards through the firm are real enough. One worker at present enthusiastically pursuing this route is Ian, the aforementioned superintendent. He is in charge of an

²⁹Press are the only other company where foremen are salaried permanent employees.

assembly bay at the Port Clarence yard, supervising "black trades", both direct and subcontract labour. The number of men he supervises varies, according to the stage of the contract, between 12 and 80.

He has been with the company for 17 years, joining Cleveland Bridge in 1974. Prior to this he had worked in various yards and 'shops on Teesside, after having served his time in Furness' Shipyard (later Swan Hunter) between 1954 and 1960 as a welder.

In 1975 he was made foreman and transferred to the new offshore site at Port Clarence. During his time as a foreman he also helped to teach new techniques to ex-shipyard workers. He was head instructor at the training school in Darlington from 1976 to 1980, given this position because his predecessor moved to Wilson Walton. He was then transferred back to Port Clarence as foreman, becoming a superintendent on the night shift, until in 1983 he became a day superintendent, a position he has held ever since.

Although the short term future of Redpath Offshore is secure, given the recent number of orders available and the withdrawal of other U.K. yards from the sector, it remains a company dependent upon the vagaries of the offshore market against the background of Trafalgar House's wider corporate strategy. At present it remains a stable employer, but in many senses it is the "last of the Mohicans". The decline in other forms of engineering activity, and problems currently being experienced by the onshore group³⁰ highlight the fragility of the sector and the difficulties inherent in guaranteeing forms of employment stability in the future.

³⁰For example Cleveland Bridge's recent failure to win the contract for the second Severn Bridge.

6.7 Concluding comments

This chapter has drawn attention to the role of individual fabrication firms in structuring the labour market. Crucially we have made the link between a company's relationship with its parent and its ability to offer forms of employment stability. Thus the continued existence of employment opportunities, in the offshore industry, within the North East is not merely contingent upon the region's firms' performance in relation to their competitors in the narrowest sense, but also (and increasingly) upon their position with the global accumulation network (across geographical and sectoral boundaries).

Added to the evidence presented in Chapter 4 there appear to be two key determining characteristics of the relationship between fabrication firms and their parent organisations: firstly the sheer size of capital organisation, larger firms are able to withstand the often substantial losses that are inherent in the contracting game;³¹ and secondly the centrality of offshore operations to overall corporate strategy.

In turn this diversity of corporate relationships engenders a range of employment circumstances within firms. Thus whilst at the global level employment has become increasingly marginalised, labour organisation within individual firms is underpinned by the specifics of each situation. Charlton Leslie, although part of the

³¹This point was brought home by the recent experience of Davy Corporation which, although committed to offshore operations, was not large enough to withstand losses from its disastrous Shell Emerald project intact:

"A larger group would have been able to withstand such shocks, and cope with the inevitable cost overruns which occasionally occur in this kind of contracting business. Davy was too small, and took excessive risks. Now it has paid the penalty."

(The Guardian, 21.6.91: 17)

huge industrial holding group B.T.R, had never been considered as a long term opportunity for growth, but merely an alternative avenue for profit during a recession in other markets. During the latter half of the 1980s, Charlton Leslie became increasingly peripheral to the latter's mainstream operations and unable to compete with the revival in consumer goods markets. As such, the degree of commitment by the parent concern was minimal (as events ultimately illustrated), fixed capital investment after 1986 was virtually zero, whilst labour organisation became completely casualised and open to the vagaries of the external labour market.

Alternatively Redpath Offshore has benefitted from both the extensive financial umbrella of Trafalgar House and the latter's continued involvement in the offshore sector, which is still viewed in terms of growth potential at the global level. Subsequently, Redpath is able to maintain forms of internal labour market both within the blue collar and white collar elements of its work force, through the support of the wider corporate network, which forms a bulwark against oil market fluctuations.

Whessoe Offshore suffered from the dual problem of belonging to a smaller engineering group (compared to its competitors), which was at the same time disinvesting from manufacturing operations within the U.K. to concentrate upon project management work overseas. This fostered a situation where the offshore division was no longer able to undertake work subcontracted by the onshore engineering division to counteract fluctuations in the oil supplies market. As a result its labour organisation was increasingly characterised by the replacement of a relatively stable employment regime with more short term and contractual forms of work.

"Islands" of stable employment opportunities, such as at Redpath and Press do remain within the engineering labour markets of the North East, but their importance to the overall employment environment are diminishing. The dominant trend within this system is the increasing marginalisation of work around a shrinking core work force, as outlined in Chapter 5. This has been brought about not just through the short term recruitment strategies of firms such as Charlton Leslie, but also through the intensification of the labour process and the changes, both quantitative and qualitative, in the composition of the supply side of the labour market (mostly clearly manifested by the decline of the training environment). It is these developments, and their importance in constructing present and future divisions of labour, that are at the crux of this study and therefore form the major part of the discussion in the following and concluding chapter.

Table 6.1
Charlton Leslie's annual turnover, 1987-88

Sector	Turnover (millions)	
Offshore	£30	[average = £15 - 20]
Onshore	£30	[average = £25]
Electrics	£12	
Bodyshop	£5	
Total	=	£77

Note: the figures were distorted from a normal year by the huge Amerada Hess contract to transform a conventional fixed rig into a "floater".

[Source: management interviews]

Table 6.2
Whessoe Plc: Turnover, Profits (pre tax),
Dividends and Employees 1985-1990

Year	Turnover (million)	Profit (million)	Dividend (per share)	Employees (average)
1985	99,981	5,025	5.5p	2,736
1986	94,619	4,748	5.5p	2,412
1987	93,093	-1,703	1.0p	2,218
1988	99,600	3,554	4.0p	1,510
1989	58,444	4,784	5.0p	1,120
1990	47,169	6,506	6.25p	929

Note: Profit figures are pre-tax
[Source: Company Annual Reports]

Table 6.3
Onshore Contracts undertaken at Whessoe's
Offshore's Yard 1979-84

Year	Client	Project	Structure
1979	Mobil/Kellogg	Coryton Refinery	Deisobutininiser Column
1979	ICI/Foster Wheeler	Wilton acid plant	3 stainless steel silos
1980	"	"	13 preassembled units
1980	BP/CJB	Sullom Voe	Onshore oil/gas processing facility
1984	CEGB/SSEB	Heysham & Torness Nuclear Power	4 roof liners & 4 gas baffle assemblies

Figure 6.1
Organisational Structure at Charlton Leslie, 1989

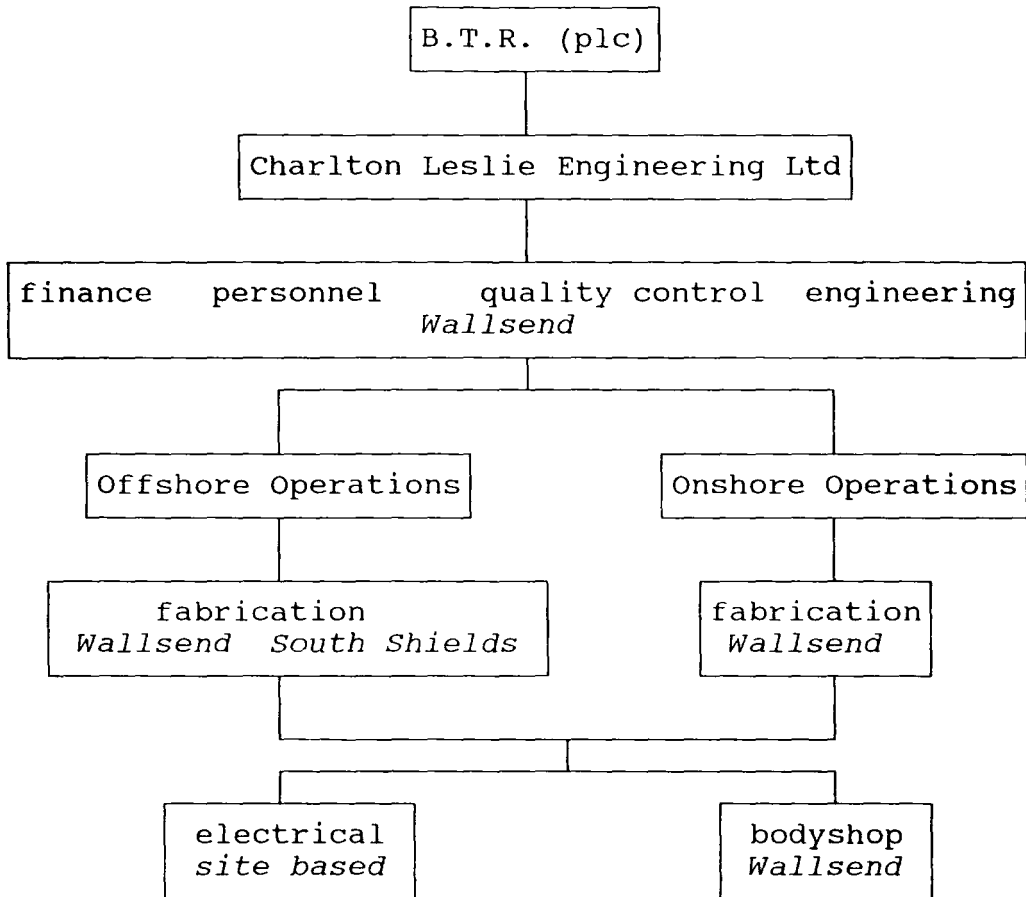
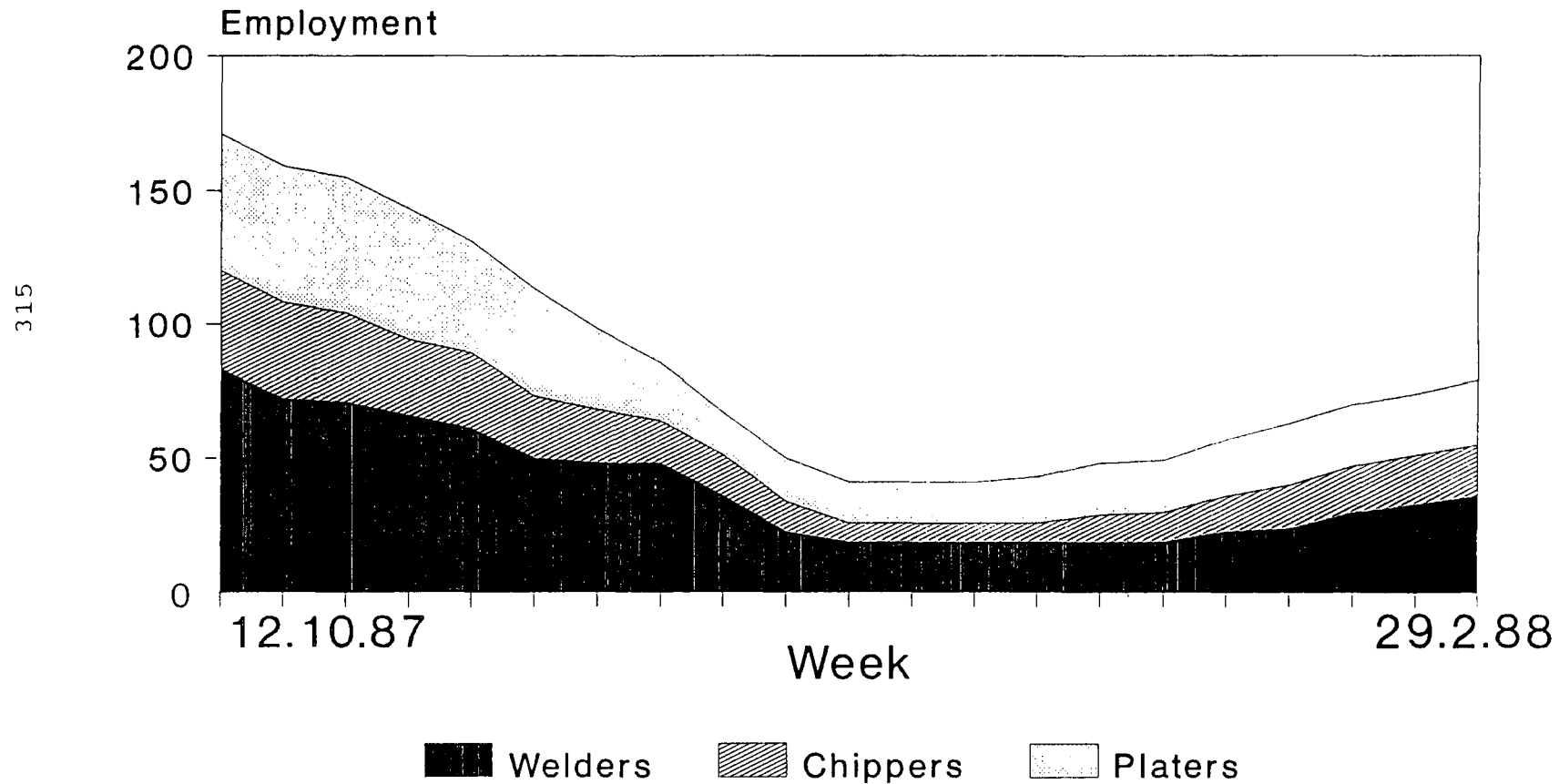


Figure 6.2 Employment change in the
basic trades at Whessoe: October 1987-
February 1988



[Source: Company Records]

Figure 6.3
The position of Redpath Offshore within Trafalgar House

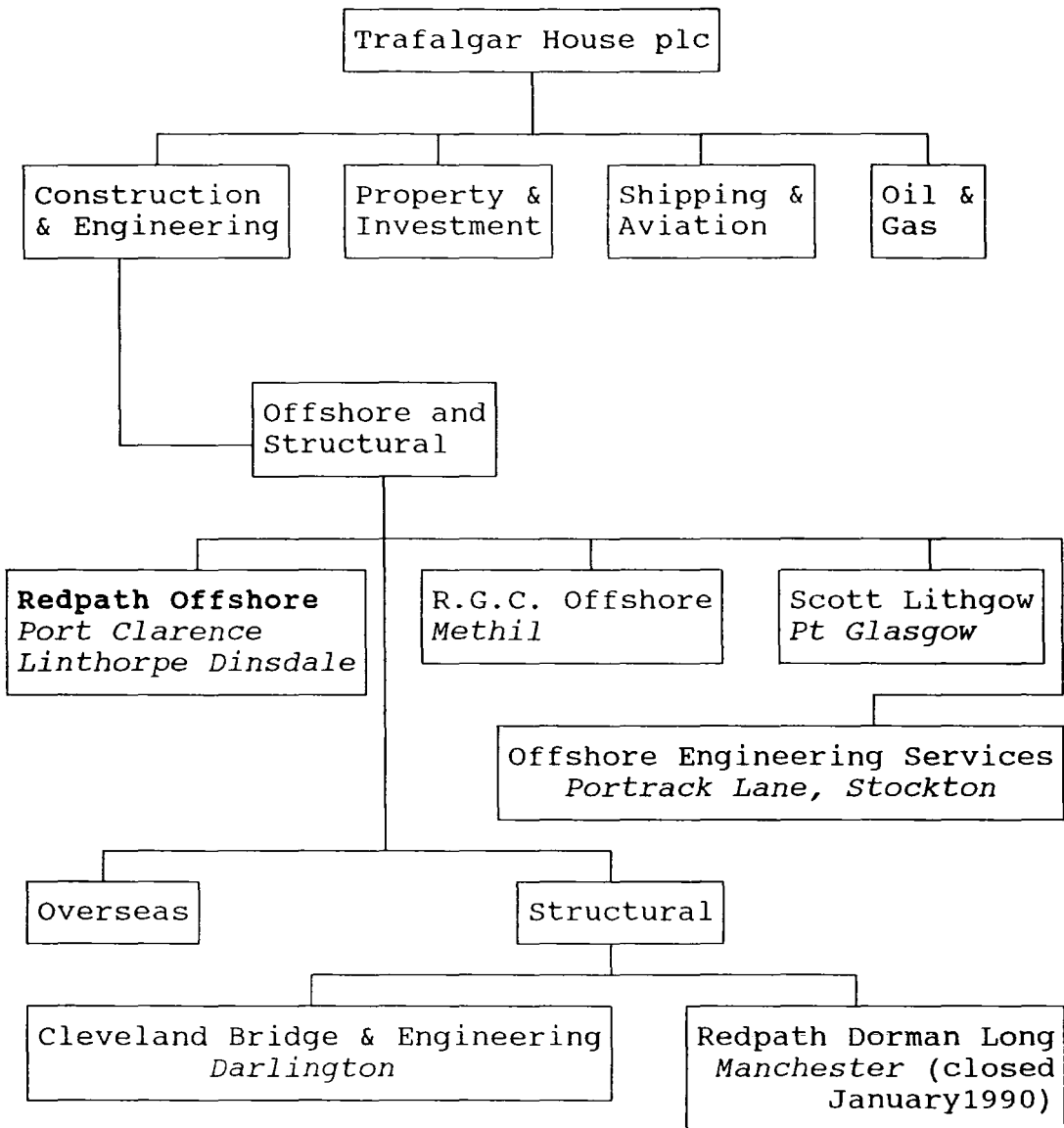
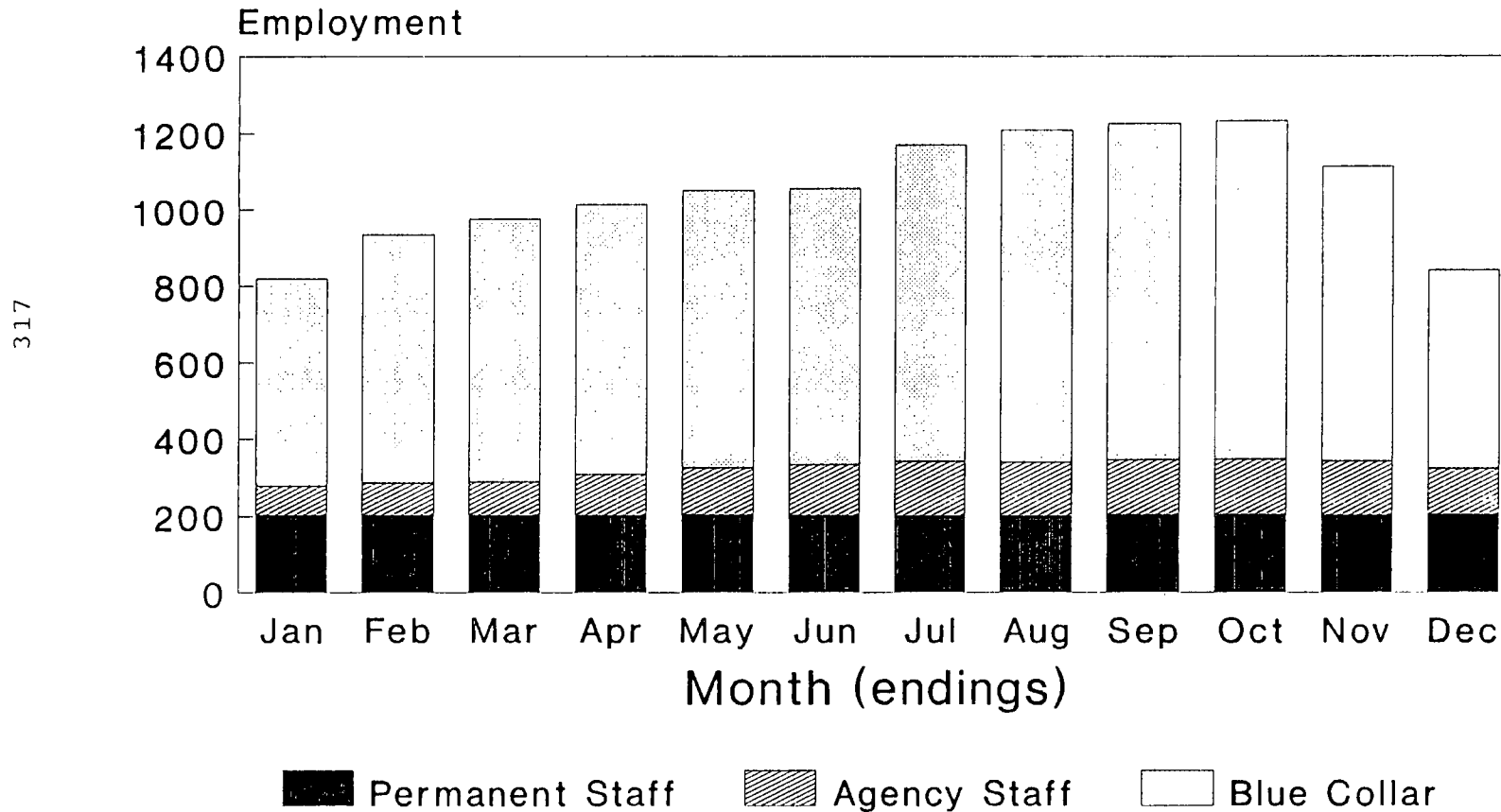


Figure 6.4 The dynamics of employment structure at Redpath Offshore (January - December 1988)



[Source: Company Records]

CHAPTER 7CONCLUSION: OFFSHORE FABRICATION AND DEVELOPMENTS WITHIN
THE EMPLOYMENT SYSTEM: 1970 - 1990**7.1 Introductory remarks**

One of the central tenets to this thesis has been that existing patterns of employment within a region can only be interpreted through an understanding of the specific nature of capitalist historical development within that region. In the North East, a particular form of employment organisation grew up to serve the single unit based capital goods industries of shipbuilding and structural engineering, centred upon a craft division of labour and a shifting workforce between the various yards and workshops in the region's coastal districts. Although as we have noted in Chapter 3 there were changes to this system in the post war period, particularly a movement towards more stable forms of employment as the number of firms within it declined and labour supply problems arose, there was no fundamental restructuring of the labour process in the region prior to the development of oil related activity.

The advent of offshore work has brought with it both continuity and change to the prevailing system. On the one hand, the production rationale for the offshore fabrication industry is similar to that for traditional activities, encouraging the incorporation of existing forms of labour process, whilst on the other, the dynamic nature of the offshore supplies market has encouraged firms to casualise large elements of the workforce and set in reverse the post war trends towards a more stable employment environment. It is the consequences of this process that form the main theme to this concluding chapter.

After firstly restating the nature of the political economy under which the employment system serving offshore fabrication has evolved in the past twenty years, we

consider some of the key aspects of change to the working environment during this period. We argue that the marginalisation of an increasing number of the workforce, has helped to bring about considerable changes in the role of trade unions within the labour market. This leads us to suggest that there are new divisions developing within the labour market, based upon levels of employment continuity and the ability to obtain a skills based qualification.

Under these conditions it is pertinent to examine some of the issues involved in the collapse of the apprenticeship scheme, the traditional mechanism by which skilled labour has been reproduced in the past. We illustrate that the breakdown of the training environment is as much the result of ineffectual government policy as the decline in a stable employment environment.

Finally, in the concluding sections of the chapter, we draw out the implications of this study, firstly in terms of theoretical developments in the study of employment, and secondly with regard to policy response.

7.2 The political economy of North Sea offshore-related developments in the North East

In the post war period (from 1945 through to 1970), the North East's structural engineering industry operated in markets that were primarily focussed at the national level (in for example, the construction of power and industrial plant, and refinery developments) as part of a government stimulated reconstruction process. With the decline of these traditional markets and the increasing importance of the offshore supplies sector during the 1970s and 1980s, engineering companies found themselves operating under entirely different circumstances, a decision making framework that operated at the global level and was contingent upon a dynamic market environment, rather than a strategic national interest. It was a system in which

(with the absence of effective state intervention) supply companies found themselves hostage to the demands of the international oil companies.

Although during the late 1970s and early 1980s the development of the independent sector in the North Sea briefly challenged the hegemony of the international companies, bringing marginal fields into production and some continuity to the offshore supplies industry, the oil market crash of 1985/6 precipitated a restructuring process which has reincorporated the U.K. oil sector into a global framework.

This situation has been exacerbated in the North East by the extent to which the majority of oil-related firms have remained in peripheral activities within the offshore supplies industry, such as in the fabrication of modules. Moreover even those that have attempted to move into the core activities, such as Press Offshore face an uphill struggle against well-established American and Dutch private contractors (often with special relationships with the international oil companies) or state supported entities from France and Norway.

Alongside these developments in the offshore supplies market, the North East's firms have also been subject to the general centralising tendencies of British industrial capital since the 1960s (Massey, 1988), and an accompanying process of rationalisation during the 1970s and 1980s that has decimated much of the region's engineering base.

7.3 The changing nature of employment under offshore fabrication

The most obvious feature characterising the employment system, serving shipbuilding and structural engineering, since the advent of offshore-related work has been the decimation of employment overall. Although as we noted in

Chapters 4 and 5, the region experienced a brief boom in this type of employment, related to oil-related developments, during the mid 1970s, the subsequent decline was severe and unrelenting. The number employed in shipbuilding and shiprepair work for the Northern region (including Cumbria) declined from 33,912 in 1978 to 8,029 in 1987 (NOMIS). Whilst the decline in Industrial Plant and Steelwork was less during this period, from 15091 to 7,709, the real decline of traditional work was masked by the creation of oil-related jobs.

Whilst the decimation of the shipbuilding industry was associated with the closure of individual firms, brought by nationalisation and the subsequent attempt to rationalise production in the face of a declining product market and stiff competition from overseas, the erosion of the employment base in structural engineering was a feature of a more complex restructuring process. This was geared towards disinvestment in traditional manufacturing activities at home and reorientation towards higher value added operations, such as project management, abroad (with Davy and Whessoe providing the two obvious examples).

In this sense, the replacement of traditional and more secure forms of activity with oil-related work represented a drift towards a more unstable working environment. From the outset offshore fabrication has been a more itinerant form of employment, recruiting labour by poaching from established companies through the lure of higher wage rates. The transition that this has brought about is best illustrated through the decline of the craft training system, which as we have stressed throughout is a clear indicator of stability within an employment regime. Between 1976 and 1985 the numbers achieving the Certificate of Craftsmanship awarded by the E.I.T.B. in the North East declined from 2,183 to 353 (see Table 7.1).

The decline in the opportunities available to the (male) school leaver, that this process has entailed, presents perhaps the most significant long term problem for those areas that have been traditionally dependent upon employment in structural engineering. In addition, these changes have taken place against the context of diminishing job opportunities elsewhere in the region as the recession deepened.¹ Individuals seeking work in the labour market since the late 1970s have found it increasingly difficult to find stable forms of employment in their local area and instead are forced to look outside the North East for employment continuity.

Whilst there have been profound changes in employment opportunities at the level of the labour market, as a consequence of recession, there has not been a similar widespread process of restructuring within production. The labour process introduced through offshore fabrication has not departed radically from traditional methods of work in shipbuilding and structural engineering. Production has remained labour intensive and skill based, and the absence of new technology has precluded the introduction of more flexible systems. Flexibility has been established within existing frameworks rather than supplanting them. Craft erosion and worker displacement has been confined to the more peripheral trades and the unskilled sections of the workforce. The skilled core workers, typically platers and welders have accepted increased flexibility in the knowledge that their highly specialised roles in production are not under threat, even given widespread technical restructuring. Indeed were there to be a technical restructuring of production in offshore fabrication, it would further strengthen the hand of this group of skilled workers, at the expense of other groups.

¹For an excellent empirical account of the problems facing young people seeking work in the North East, see Coffield et al (1986).

This point was borne out in 1982 when Trafalgar House spent £26 million constructing a new onshore steel fabrication plant at Darlington for Cleveland Bridge (Chapter 6), at the time described as the "most modern of its kind in Europe" (Northern Executive, 1982: 17):

"The new works employ roughly the same number of people as the old one although there has been an increase in skilled jobs with a commensurate reduction in semi-skilled and unskilled labour. The Unions involved have adopted a positive attitude and flexible working arrangements are being used in the new works."
(ibid)

These processes of change in the employment environment have also brought changes in the relationship between unions and employers, although there has not been the collapse of union bargaining power reported elsewhere. Despite the huge reduction in union membership during the 1980s the offshore fabrication industry (and structural engineering in general) remains dominated by the three major unions (A.U.E.W, E.E.T.P.U. and G.M.B.).

Employers seeking to introduce changes in production, even during the depths of the recession, remain aware of the need to seek union co-operation, whilst the "closed shop" still regulates the labour market for unskilled workers as well as trades. But on the other hand, the unions have increasingly collaborated with firms to secure offshore orders against a background of severe market competition, and in this sense their role within the labour market is less confrontational than it has been in the past. However at the same time, it would be wrong to suggest that such developments in union attitudes are solely the result of the scale of the recession during the 1980s or the new power relations brought by oil-related work. As we noted in Chapter 3, union awareness of the scale of the problem facing engineering and shipbuilding activities in the region, and the realisation that this problem was increasingly one of global dynamics replaced the traditional more parochial class conflicts with a concern

for the survival and reproduction of local employment structures. Thus local union officials will now applaud individual firms' decisions to increase apprentice numbers, whereas in the past this type of development would have been seen as a strategy to undermine the role of the craftsman in the production process.

Apart from co-operation over piecemeal changes within production, there have been two other directions in which union collaboration with management has been focused. Firstly unions have offered firms advantageous industrial relations' agreements to obtain contracts. The GMB for example co-operated fully with Davy's unsuccessful attempt in 1989 to secure the Occidental Piper Alpha replacement contract. The union, enticed by the possibility of the 2,000 jobs that would have accompanied it, agreed a 2 year "no strike" agreement with Davy that allowed the latter to approach Occidental, with an industrial relations coup. A similar deal was conceded by the same union on Tyneside for Charlton Leslie's Amerada Hess contract in 1987. But this co-operation between management and unions now extends both ways. With the worsening skill shortages during the late 1980s, it became commonplace for companies such as Davy and Redpath to notify the unions in advance of a major redundancy situation. Similarly companies were becoming concerned enough about long term labour recruitment to develop informal mechanisms for the transfer of labour amongst themselves.

Another growing trend has been the extent to which unions increasingly operate as informal employment agencies supplying skilled labour from the North East to areas of labour shortage both nationally and internationally. Recently for example Tony Finn, G.M.B. Regional Organiser on Teesside was approached by a firm in Canada.

"We've just had a phone call last week. They want 30 coded welders for Canada on a permanent basis, emigrating." (This is for the construction of a

petrochemical plant.)

This kind of package is still rare, although it does illustrate the extent to which the North East is becoming increasingly renowned, at the global level, as a region with a surplus of skilled labour. But more commonplace are transfers of labour at the national level on a temporary basis. For example, the R.G.C. yard at Methil, in Fife was facing acute supply shortages a few years ago (ibid):

"About 4 years ago at Methil [1985], they were desperate for boilermakers. My counterpart up there contacted me and said they had a shortage of boilermakers and couldn't recruit them. They used this office to get men up there."

The changes in the union role outlined above reflect to a certain degree the new realism of the leaders of labour during the 1980s. But what this more conciliatory and harmonious approach to industrial relations and work issues also denotes is the changing nature of class relationships. New divisions of labour are being established within the region. The old bipartisan politics of class conflict are being replaced by a more complex set of interest groups. Under these circumstances the craft unions in the North East no longer represent the wide constituency of labour interests that they did in the post war period. Whilst their basis has always been sectional, the decline of employment stability and the subsequent erosion of the membership has resulted in a significant change in emphasis, a return to a narrower role in the labour market, the protection and consolidation of a core group within the sphere of production. Policy has becoming increasingly reactive and defensive, on the one hand an alliance with local management to preserve existing forms of employment, whilst on the other seeking working continuity for its itinerant membership outside the local labour market. Thus the recent restructuring has brought with it new collectivities of interest, that are best described in terms of changing divisions of labour.

7.4 The changing employment structure: a declining core and widening divisions within the labour market

The advent of offshore related work has not radically transformed the basis of the employment system in the North East's coastal districts. It continues to represent a system based heavily upon an occupational labour market, horizontally segmented (although to a reduced extent due to the erosion of some of the more peripheral craft positions), and without the well developed internal labour market mechanisms that characterise labour organisation in other parts of the economy. Despite the ravages of recession and the increasing marginalisation within the employment system during the 1980s, a semblance of stability remained within the employment system during the 1980s. As the previous chapter has shown, for some individuals, both manual and non-manual, skilled and unskilled, the experience of North Sea oil developments coincided with stable permanent employment and relative prosperity, and even in a few cases limited forms of promotion. Thus whilst the labour market as a whole became increasingly composed of a shifting mass, moving from one contract to another, from one employer to another and becoming increasingly geographically dispersed in the search for work, there remained enclaves, pockets of permanency, within individual firms where a significant continuity of orders had allowed the development of a small core work force, around a peripheral majority.

The new divisions of labour are perhaps best understood in terms of a "growing trichotomisation of society" (Martin, 1988: 221; Therborn, 1986).² Increasingly contemporary

²Therborn introduced this concept in relation to the continued high levels of unemployment in western industrialised societies:

"... mass unemployment is likely to become a permanent feature of most advanced capitalist countries, somewhat reduced in years of boom, higher in years of recession and probably with a rising trend. This would produce a society like a richer and somewhat more

capitalism is divided into a high income professional and managerial elite with "real" decision making powers; a middle strata of stable employment forms, with a predominantly skilled basis and limited forms of promotion; and an unskilled and underemployed residue.

Within the North East's structural engineering employment system, the first group increasingly operate externally to the region, the result of the general process of the centralisation of capital in U.K. manufacturing industry, allied to the peripheralisation of employment within North Sea oil power relations.

The second group represents those "islands" of stable employment referred to in Chapter 6, although stability for this group is a relative concept as the redundant management at Charlton Leslie and Whessoe will testify. Included in this group are the middle and lower rungs of management in most fabrication firms, involved in the day-to-day production process but divorced from the corporate decision-making environment.

This developing schism within management is reflected in the pattern of recruitment at the two levels. As we saw in Chapter 6, production managers continue to be predominantly recruited from the traditional channels at the local level, i.e. white collar apprenticeship schemes, followed by a progression through the internal labour market. Those who succeed to higher corporate management status typically have a university degree and a grounding in non-productive forms of management such as accountancy, finance and marketing/sales.

humane Brazil, with increasing trichotomous socio-economic divisions."

(1986: 32)

against the background of a substantial training shortfall throughout British industry.

It is the unskilled elements however that are likely to suffer from the long term repercussions of employment decline and labour restructuring. This group is growing and demographically concentrated at the lower end of the labour market, i.e. the youth segments deprived of the training and employment opportunities of their forefathers.³

Individuals within this sub-group are in the most marginal positions in the labour market and are reliant upon picking up "on the job" skills such as crane driving that are valued by employers and are transferable between industries to improve their employment continuity and therefore life chances. At the same time, the opportunities open to the unskilled and semi-skilled are shrinking, as a result of the erosion of their role within the production process, through the acceptance of increased flexibility amongst their skilled counterparts. Under these circumstances their work experience is likely to return to the pre 1939 employment scenario of casual employment, "as and when required":

"It's just like the old labour markets in the shipyards. The "gaffer" used to come out every morning and say "Right, I'll give you work, you work and you work, the rest can go home." Here they say "I'll give you a day's work and you six months work, the rest we don't want." It is the same system."

[Davy, G.M.B. Shop Steward, Redpath Offshore]

7.5 Failing the training test: government policy and labour market realities

³This is not a problem that is specific to the employment system in structural engineering but is a feature of local labour markets throughout the North East as a result of the decline of the traditional industrial base (see for example Hudson et al, 1984).

Divisions of labour within the North East are greater today than at any time during the past sixty years. This is a division, not expressed in terms of differential wage rates⁴, but in the continuity of employment and subsequently the overall earnings potential. For those with, or in the process of receiving, a craft training employment prospects within structural engineering remain high in the light of current trends, whilst the unskilled in the labour market face an increasingly grim future of life at the margins:

"There is a growing hard core of unskilled people in this area, and especially the younger ones, who haven't had the apprenticeship scheme. The YTS doesn't replace it. So that type of labour still exists, although skilled men have been taken off the market. God knows how many electricians from Tyne and Wear are working in London. You can't go into a pub near Canary Wharf and not see someone you know. There are also a lot of pipefitters there. Others are working in the Southampton area [Fawley Refinery], where there is also a lot of work. But, you still have a hard core of unemployed, unskilled; there's no market for them. The problem is, how do you convert them into a level of skill that you can utilise in this industry."

[Lou Dobson, Personnel Manager, Charlton Leslie]

Indeed it is a savage irony that under contemporary labour market conditions engineering companies are having problems recruiting skilled labour following an upturn in production. Whilst during the recession of the early 1980s, there were enough unemployed craftsmen on the labour market to meet the short term needs of engineering companies, the long term structural effects of a crisis of supply are now being felt. To circumvent this problem, Redpath Offshore has even begun to retain certain key trades on its books even during slack periods, "laying off" employees at £4.13 per hour (as opposed to the basic rate of £6.64) rather than issue redundancies. Hence there is the apparent

⁴See, for example, the diversity in rates between the skilled and unskilled in shipbuilding in 1914 (Table 3.6), compared to those for offshore related work in 1989; at Redpath, £6.64 per hour for skilled and £5.15 per hour for unskilled.

paradox of labour shortages coinciding with high levels of unemployment along the North East's coastal districts.

Apart from the general effects of employment decline, the problem has been exacerbated by government policy towards youth training which, in brief, has been to disband existing forms of compulsory craft training, replacing them with schemes such as the widely derided Y.T.S. and self-regulating mechanisms, epitomised by the recently created T.E.C.s. This is a totally inappropriate response, for it substitutes well established industry level training procedures with watered down forms of basic training.

In particular, the two year YTS scheme is incapable of producing workers of the right calibre and is derided by both managers and shop stewards alike. Jock McKinley, Personnel Manager at Davy Offshore, had this to say on the subject:

"You're not going to train anybody in two years. The present government is being unrealistic; too busy trying to con people onto the YTS."

The underlying feeling of those in the offshore fabrication industry, both employers and unions, is that their requirements are not understood by either government ministers or educationalists, and therefore new schemes are proving deficient. In particular, such people could not grasp the concept that craft training extended beyond the formalised periods of apprenticeship:

"Employment Training is not touching the problem at all. Individuals are not of immense value to a company until they are 26 or 27, hence they still need some form of supervision after they have become qualified journeymen."

[Lou Casson, Personnel Manager at Redpath Offshore]

Similarly:

"If you talk to a lot of the module constructors and other people looking for up-market platers and burners, they know what they want, but it is difficult to define to government minsters or educationalists."

[Tony Finn, G.M.B. Regional Organiser, Teesside]

Overcoming the perceptions of outsiders about the skill requirements of structural engineering companies in the wake of the dismantling of the various industry training boards is a problem that is likely to intensify in the future. Tony Finn provided an amusing if rather extreme story, which depicts the depth of the misunderstanding between industry and governmental agencies:

"I had a crazy bloke coming here, who set up some Employment Training agency. He'd said he had an abundance of plating, welding people and he wanted me to use my influence to get these people placed in the module construction yards and at Rolls Royce, where they also do fabrications. I said, "It sounds interesting, who are these people? I can get tradesmen fixed up. We've got refresher courses such as NETA at Portrack and with the EITB, so if people are "ring-rusty", they've been out of a job for 12 months, we can get them pushed up."

He said, "Oh no. These are young people, 22 and 23 years old (and he has this girl with him, blonde, all rings, taking notes). I'm a school teacher, this girl is a civil servant. We've set our own business up and we've got to give them on-the-job training." So I said, "What qualifications have these people got? What market are you aiming at?" He said, "These are young people who have never had a job since leaving school." So I didn't understand what he was getting at. He said, "I happen to have known a lot of them at school; I taught them metalwork."

So he thought I was being awkward by telling him that he was wasting my time. Because if I phoned Davy Offshore and Redpath and said "I'm sending you some people, potential boilermakers down from this guy on the E.T. scheme", they'd think I was out of my mind. This bloke needs to see a psychiatrist! But you couldn't convince him."

The previous system of industrial training boards, whereby it was a statutory requirement for firms to train apprentices is still the one that has most support, not least because it was an internal regulatory arrangement. Indeed it is significant that the engineering construction industry is retaining its own independent levy system to

ensure that a minimal level of training is pursued. But a further problem in many of the North East's old industrial areas is that there is no longer the continuity of work to provide the experience to support a largescale system of trade apprenticeships. One possible solution is that currently being pursued on the north bank of the Tyne, where Press, Charlton Leslie (prior to its closure), Swan Hunter and North Tyneside Borough Council have opted out of government-led schemes altogether setting up a locality-based training system.

7.6 Reinterpreting employment change

The most important conclusion to be drawn from this research, on the subject of conceptualising employment change, has been to re-emphasise the importance of the specific over the general. This is not to encourage a movement towards naked empiricism, but rather to argue for a theoretical approach that is more empirically informed.

In Chapter 2 we warned against the dangers of abstracting a single unilinear model with which to chart the progress of capitalist production over the past 150 years. Thus both a conception of employment change, hinging upon a deskilling thesis (Braverman, 1974), or upon a movement from a fordist to a more flexible mode of work organisation (Piore and Sabel, 1984) are at odds with labour market realities. As Braverman himself has admitted capitalism "weaves a web of myriad threads"; there are a wide range of market conditions under which production can take place, which in turn has repercussions for the nature of the labour process. As such, it is necessary, for the present anyway, to reject approaches that view capitalist development in terms of a single form of work organisation.

There is evidence that this process is already under way; Lash and Urry's (1987) "The End of Organized Capitalism" is

a significant stepping stone in this sense, by noting differences in patterns of national development within an historical materialist framework. But this needs to be taken further, the criticism of Lash and Urry remains in that they still feel obliged to divide capitalism up into a series of epochs based upon a dominant type of production system.

The argument advanced here is not fundamentally opposed to such global approaches, but merely suggests that a great deal more empirical historical work needs to be done before such claims can be justified. What this study has shown is that in the North East of England, the driving forces behind capital accumulation were not fuelled by a fordist mass production system, but on a totally different rationale, founded upon single unit production, and a set of regionally and sectorally specific circumstances. To reach this conclusion is to reiterate Hudson's (1989a) remarks refuting the acceptability of a universal form of production under capitalism in peripheral regions:

"... Fordism (either in the narrow sense of a particular method of organising production, or in the broader sense of a regime of accumulation) has never established more than a tenuous hold in many of those regions."

Undoubtedly it is important that theorists become more circumspect in their terms of reference. It is necessary to be clearer about the level of analysis: plant, enterprise, industry, regional or national level; and the limitations that scale imposes upon our explanations. As Wood (1989) has noted:

"Too many theories predicting a major transformation of work seem to jump too readily from the production system to the basic structure of economies, or even capitalism, or vice versa."

Whilst it is important not to reject certain central tendencies underlying capitalist social relations; in

particular the profit motive, and the contradictory and unequal exchange relations between labour and capital, it is important to recognise the possibility for different outcomes. Thus students of the changing nature of work in industrial societies should avoid the tendency to extrapolate from a specific set of historically constructed circumstances at the local level, an all embracing account of employment change at the global level. This, in turn, has important implications for policy prescription, for solutions themselves can only come from an awareness of the specific problems of any one region under capital accumulation.

7.7 Stabilising the employment environment: reversing the decline in the North East

"...socialism, seen with the eyes of a realistic historical materialism, is not likely to be achieved in one blow on the day after tomorrow, but will be a complex and contradictory epochal transformation, which has already begun and which, if ever, will take a long time to be brought about. As long as a large part of the (potential) working class is unemployed and marginalized, no further advances are likely. People on the dole will not bring about socialism."

(Therborn, 1986: 36)

It is easy after a decade of inexorable Thatcherite progress to feel a sense of despair and despondency about the future of the working environment. The reversal of post war trends, towards greater protection of the individual worker and the participation of organised labour (albeit in a minor sense) in decision-making in the process of production, has been so severe and unequivocal as to encourage a climate of fatalistic pessimism amongst those who recognise free market capitalism for what it is.

But it is necessary to reject any notion that the development and spread of Thatcherism across the industrial and political landscape was inevitable, and that its achievements are set in stone. Tony Benn's recently published diary of the mid 1970s, in somewhat paradoxical

fashion, reminds us of this.⁵ Prior to the winter of discontent, the developing monetaristic nature of the Labour government's economic strategy was increasingly being questioned in the party's ruling circles, and a swing to a more radical approach was still a possibility. At the same time, the spread of industrial democracy was viewed as an inevitability even within those bastions of the mainstream capitalist press, The Times and The Financial Times.

From this perspective, the Thatcherite hegemonic project was an opportunistic one, seizing upon the long term structural problems of the British economy, so clearly manifested in the wake of the Oil Crisis and widespread global restructuring, and the short term difficulties of the Labour government. Its radical alternative to corporatist politics, and its ability to identify a scapegoat (in union power) for the country's problems struck a cord with large sections of traditional Labour voters, particularly skilled manual workers in the South East (Coates, 1989: 76), which ensured its electoral victory in 1979.

Despite repeated electoral successes in the 1980s, the basis for this project has been increasingly undermined. The continuing malaise of the British economy has brought home the point that a belief in free market forces alone is not enough to revive the patient in the present global climate. As Judge and Dickson note (1987:171):

"Thatcherite commitment to international competition rests upon the assumption that free trade is the dynamic of the international system. In practice this assumption does not hold. As witnesses from major manufacturing companies repeatedly informed the House of Lords Select Committee on Overseas Trade: "Free Trade... was a dead duck and it seemed as though only the United Kingdom had failed to recognise that fact".

⁵Benn, T. (1989) Against the Tide, London, Arrow Books.

With the recent developments in national politics and the wider European Community it is possible once again to envisage a more socially oriented future, and specifically with regard to this thesis, a reappraisal of policy towards the problems of industry and employment in peripheral regions.

The specific problem for the North East is its increasingly peripheral role in global capitalist accumulation, and as a result the continuing marginalisation of large elements of the active working population. Against this background, a "labour comeback scenario" (Therborn, 1986: 36) will initially involve some form of stability in the protection of existing jobs within the labour market as an immediate goal on the path towards full employment.

The North East has in the past been described as a "state managed region" (Hudson, 1989b: 380) reflecting government intervention in the post war period to maintain full employment. In the event of the obvious failure of such policies (largely through their inability either to recognise, or confront the realities of the changing dynamic of capitalism) the argument advanced here is for a dual approach to the problem, operating at the local and the supra-national level.

At the local level, the intention would be to save those remnants of traditional industry associated with the engineering and shipbuilding employment system within the coastal districts. This would take the form of locally based combines with fully integrated production complexes (see Byrne, 1989), from research and development to final assembly, with a commitment to largescale training programmes and a more permanent employment environment.

On the Tyne it is still possible to envisage a marine engineering combine centred upon Press Offshore and Swan

Hunter, whilst a similar entity committed to both onshore and offshore structural engineering based upon Trafalgar House's various operations is feasible on the Tees (enhanced by the recent bid by Trafalgar for the Davy Corporation's structural division).

This is not a nationalisation mark 2 scenario, but a form of "regionalisation" mark 1, and is contingent upon an accompanying process of political and financial devolution (presently under consideration by both the Labour Party and the Liberal Democrats).

The mechanisms for such development are already in place, through informal (but nonetheless strong) channels of communication between both individual firms and between firms and union organisations as we illustrated earlier in the chapter, whilst recent rationalisation within the offshore fabrication industry in the region also favours such a solution. Added to the shared sense of both an industry and regional identity amongst local management and workers, the time would appear ripe for this radical departure.

These changes in organisation at the local level need to be accompanied by intervention at the supra-national level, in this case through the auspices of the European Community. This would involve the regulation of the respective industries, through restricting production to existing complexes rather than allowing fly-by-nights to enter the market on "one-off" projects, and destabilise the employment environment.

Furthermore there is a good argument for a form of intervention to stabilise the capital goods' markets (given their highly cyclical nature) served by shipbuilding and structural engineering firms, geared towards the use of resources for a European strategic interest rather purely

in the pursuit of profit. Such measures would find greater support given the growing interest in environmental issues, whilst at the same time providing the opportunity for forms of production outside a capitalistic framework, and the possibility for a different set of employment relations that would involve greater worker representation at all levels of decision-making.

Although the solution offered above entails huge logistical difficulties, not least of which is the current political acceptance of such a programme, whilst at the same time it cannot hope to solve the wider problems facing peripheral regions, it does offer the potential for a reversal in the decline of a particular employment environment and an avenue of hope against a backcloth of terminal decline.

Andrew Cumbers (July 1991)

Table 7.1
Numbers achieving Certificate of Craftsmanship in North
East, 1976-85 (year of commencement of training)

Numbers	Year
2,183	1976
2,014	1977
2,105	1978
1,998	1979
1,826	1980
1,494	1981
1,038	1982
766	1983
657	1984
353	1985

[Source: EITB Annual Report and Statistics, 1987/8].

Bibliography

- Abrams, P. (1982) Historical Sociology, Shepton Mallet, Open Books.
- Ahrari, M. (1985) "O.P.E.C. and the hyperpluralism of the oil market" International Affairs 62(2).
- Allen, E. Clarke, J. McCord, N. and Row, D. (1971) The North East Engineers Strikes of 1871: the Nine Hours' League, Newcastle, Frank Graham.
- Almond, J. Harrison, B. Harrison, K. and Owen, J. (1979) Cleveland Iron and Steel: Background and Nineteenth Century History, B.S.C.
- Amin, A. (1989) "Flexible Specialisation and small firms in Italy: myths and realities", in Antipode April.
- Anderson, G. (1982) "Some aspects of the labour market in Britain, 1870-1914", in Wrigley, C. (ed) A History of British Industrial Relations 1875-1914, Brighton, Harvester Press.
- Andreasjan, R. (1989) "World energy crisis and the Middle East", in Ferrier, R. and Fursenko, A. (eds) Oil in the World Economy, London, Routledge.
- Anon (1981) "What became of the Energy Crisis", Petroleum Economist 48(1).
- Anon (1988) "The bid for Britoil", Shield 2.
- Aglietta, M. (1979) A Theory of Capitalist Regulation, New Left Books, London.
- Armstrong, P. Glyn, A. and Harrison, J. (1984) Capitalism since World War II: the making and breakup of the

great boom, London, Fontana.

Arnold, G. (1978) Britain's Oil, London, Hamish Hamilton.

Ashton, D. Green, F. and Hoskins, M. (1989) "The training system of British capitalism: changes and prospects" in Green, F. (ed) The Restructuring of the U.K. Economy, Hemel Hempstead, Harvester Wheatsheaf.

Atkinson, J. (1984) "Manpower strategies for flexible organisation", Personnel Management, August.

Atkinson, J. (1985) Flexibility, Uncertainty and Manpower Management, IMS Report No. 89, University of Sussex.

Austin, T. and Beynon, H. (1980) Global Outpost: the Working Class Experience of Big Business in the North East of England, University of Durham (Mimeo).

Baran, P. and Sweezy, P. (1966) Monopoly Capital, Harmondsworth, Penguin.

Benn, T. (1989) Against the Tide, London, Arrow Books.

Benwell Community Development Project (1978) The Making of a Ruling Class, Final Report (6).

Berger, S. and Piore, M. (1980) Dualism and Discontinuity in Industrial Societies, Cambridge University Press.

Berrefjord, O. and Heum, P. (1983) Olje-Politikk. Oljepolitikken og Leverenseparsmaelet, Oslo, Tiden.

Beynon, H. (1987) "Closures: the threat and the future for Labour" in Dickson, T. and Judge, D. (eds) The Politics of Industrial Closure, Basingstoke, Macmillan.

Beynon, H. Hudson, R. Lewis, J. Sadler, D. and Townsend, A. (1985) "Middlesbrough: contradictions in economic and cultural change", Middlesbrough Locality Study: Working Paper No. 2, University of Durham, Departments of Geography and Sociology.

Beynon, H. Hudson, R. and Sadler, D. (1986a) "Nationalised industry policies and the destruction of communities: some evidence from the North East of England", Capital and Class 29.

Beynon, H. Hudson, R. and Sadler, D. (1986b) "The growth and internationalization of Teesside's chemicals industry", Middlesbrough Locality Study, Working Paper No. 3, University of Durham, Departments of Geography and Sociology.

Beynon, H. and Wainwright, H. (1979) The Workers Report on Vickers, London, Pluto.

Bina, C. (1985) The Economics of the Oil Crisis, New York, St. Martin's Press.

Bluestone, B. (1970) "The tripartite economy: labour markets and the working poor", in Poverty and Human Resources 5.

Bluestone, B. and Stevenson, M. (1981) "Industrial transformation and the evolution of dual labour markets: the case of retail trade in the United States", in Wilkinson, F.(ed) The Dynamics of Labour Market Segmentation, London, Academic Press.

Bonney, N. (1986) "Aberdeen and Dundee: a tale of two cities in the oil era", in Cooke, P. (ed) Global Restructuring: Local Response, London, E.S.R.C.

- Braverman, H. (1974) Labour and Monopoly Capital: the Degradation of Work in the Twentieth Century, New York, Monthly Review Press.
- Brecher, J. (1979) "Roots of power: Employers and workers in the electrical products industry", in Zimbalist, A. (ed) Case Studies on the Labour Process, New York, Monthly Review Press.
- Burawoy, M. (1979) Manufacturing Consent, University of Chicago Press.
- Burawoy, M. (1985) The Politics of Production, London, Verso.
- Byrne, D. (1989) Beyond the Inner City, Milton Keynes, Open University Press.
- Cairns, W. and Rogers, P. (eds) (1981) Onshore Impacts of Offshore Oil, London, Applied Science Publications.
- Cameron, G. (1964) "Post-war strikes in the North East Shipbuilding and Shiprepairing industry", British Journal of Industrial Relations, 15.
- Cameron, P. (1986) The Oil Supplies Industry, a Comparative Study of Legislative Restrictions and their Impact, London, F.T.B.I.
- Carney, J. Lewis, J. and Hudson, R. (1977) "Coal combines and interregional development in the U.K.", in Massey, D. and Batey, P. Alternative Frameworks for Analysis, London, Pion.
- Chandler, A. and Daems, H. (1979) "Administrative coordination, allocation and monitoring: Concepts and comparisons", in Horn, N. and Kocka, J. (eds) Law and

the Formation of the Big Enterprises in the 19th and Early 20th Centuries, Gottingen, Vandenhoeck and Ruprecht.

Chapman, K. (1976) North Sea Oil and Gas, London, David and Charles.

Chevalier, J. (1975) The New Oil Stakes, London, Penguin.

Clarke, J. (1987) "Labour in Wearside shipbuilding", in Potts, A. (ed) Shipbuilders and Engineers, North East Labour History Society.

Clawson, M. (1980) Bureaucracy and the Labor Process, New York, Monthly Review Press.

Clegg, H. (1979) The Changing System of Industrial Relations in Great Britain, Oxford, Basil Blackwell.

Cleveland County Council (1975) The Economic Impact of North Sea Oil in Cleveland, Cleveland County Council Planning Department.

Clunies-Ross, A. (1986) "The United Kingdom's experience with North Sea oil and gas", I.D.S. Bulletin, 17(4).

Coates, D. (1990) The Crisis of Labour: Industrial Relations and the State in Contemporary Britain, Oxford, Phillip Allen.

Coffield, F. Borrill, C. and Marshall, S. (1986) Growing up at the Margins: Young Adults in the North East, Milton Keynes, Open University Press.

Cohen, S. (1987) "A labour process to nowhere?", in New Left Review, 165.

- Cook, P. (1985) "The offshore supplies industry: fast, continuous and incremental change" in Sharp, M. Europe and the New Technologies, London, Pinter.
- Cook, P. and Surrey, J. (1983) Government Policy for the Offshore Supplies Industry: Britain compared with France and Norway, S.P.R.U. Occasional Paper Series No. 21, University of Sussex.
- Cousins, J. and Brown, R. (1970) "Shipbuilding in the North East", in Dewdney, J. (ed) Durham County and City with Teesside, London, British Association for the Advancement of Science.
- Cowling, C. (1986) "The internationalisation of production and deindustrialisation", in Amin, A. and Goddard, J. (eds) Technological Change, Industrial Restructuring and Regional Development, London, George Allen and Unwin.
- Croll, D.O. (1980) "The Majors in transition" Petroleum Economist, 47(5).
- Crouch, C. (1982) The Politics of Industrial Relations, London, Fontana.
- Deakin, S. (1986) "Labour law and the developing employment relationship in the U.K", Cambridge Journal of Economics, 10(4).
- Delacour, J. and Champlon, D. (1988) "Offshore outlook: the European side", Revue - Institut Francais du Petrole 43 (4).
- Dougan, D. (1968) The History of North East Shipbuilding, London, Allen and Unwin.

- Dougan, D. (1975) The Shipwrights, Newcastle, Frank Graham.
- Earney, F. (1982) "Norway's offshore petroleum industry", Resources Policy, June.
- E.I.U. (1984) The North Sea and British Industry: the New Opportunities, London, Economist Intelligence Unit.
- E.I.T.B. (1988) E.I.T.B. Annual Report and Statistics 1987-88, Watford, Engineering Industry Training Board.
- Edwards, R. (1979) Contested Terrain, New York, Basic Books.
- Edwards, R. Reich, M. and Gordon, D. (1975) Labor Market Segmentation, Lexington, Mass, D.C. Heath.
- Elbaum, B. (1989) "Why apprenticeship persisted in Britain but not in the United States" in The Journal of Economic History, 49(2).
- Elbaum, B. Lazonick, W. Wilkinson, F. and Zeitlin, J. (1979) "The labour process, market structure and Marxist theory" in Cambridge Journal of Economics, 3(3).
- Eldridge, J. and Roberts, G. (1968) "An official dispute in the constructional engineering industry", in Eldridge, J. (ed) Industrial Disputes, London, Routledge and Kegan Paul.
- Elger, T. (1982) "Braverman, capital accumulation and deskilling", in Wood, S. (ed) The Degradation of Work? Skill, Deskilling and the Labour Process, London, Hutchinson.

Elger, T. (1989) "Change and continuity in the Labour Process: Technical Innovation and Work Reorganisation in the 1980s", paper presented at Anglo-German Conference, Manchester.

El-Mokadem et al (1984) O.P.E.C. and the World Oil Market, 1973-83 Surrey Energy Economics Centre, London, Eastlords.

Friedman, A. (1977) Industry and Labour: Class Structure at Work and Monopoly Capitalism, London, Macmillan.

Gallie, D. (1988) Employment in Britain, Oxford, Basil Blackwell.

Gamble, A. (1988) The Free Economy and the Strong State, Basingstoke, Macmillan.

Gately, D. (1986) "The prospects for oil prices revisited" Annual Review of Energy, 11.

Ghadar, F. (1977) The Evolution of O.P.E.C. Strategy, Massachusetts, Lexington Books.

Goodman, J. (1989) "Industrial relations and restructuring: three case studies in the United Kingdom", International Labour Review 128 (5).

Goodrich, C. (1975) The Frontier of Control, London, Pluto Press.

Gordon, D. Edwards, R. and Reich, M. (1982) Segmented Work, Divided Workers: the Transformation of Labor in the Twentieth Century, Cambridge University Press.

Gourvish, T. (1979) "Mechanical Engineering" in Aldcroft, D. and Buxton, A. (eds) British Industry in the Inter

War Years, London, Scolar Press.

Hall, S. (1984) "The rise of the representative/interventionist state 1880s - 1920s", in McLennan, G. Held, D. and Hall, S. (eds) State and Society in Contemporary Britain: an Introduction, Cambridge, Polity Press.

Hallwood, C. (1988) "Host regions and the globalization of the Offshore Supply Industry", International Regional Science Review, 11(2).

Hamilton, A. (1978) North Sea Impact: Offshore Oil and the British economy, Guildford, International Institute for Economic Research.

Hann, D. (1986) Government and North Sea Oil, New York, St Martin's Press.

Harris, A. Lloyd, M. McGuire, A. and Newlands, D. (1985) The Distributional Impact of Incoming Industry: A Case Study of Aberdeen, University of Aberdeen, Department of Political Economy Discussion Paper, 85 (06).

Harrison, R. (1986) "Technology and occupational change in the United Kingdom shipbuilding industry" in Chapman, K. and Humphrys, G. (eds) Technical Change and Industrial Policy, Oxford, Basil Blackwell.

Hinton, J. 1982 "The rise of a mass labour movement: growth and limits", in Wrigley, C. (ed) A History of British Industrial Relations, 1970-1914, Brighton, Harvester Press.

Hobsbawm, E. (1964) Labouring Men, London, Weidenfeld and Nicholson.

Hobsbawm, E. (1984) Worlds of Labour, London, Weidenfeld and Nicholson.

Homburg, H. (1983) "Scientific management and personnel policy in the modern German enterprise 1918-1939: the case of Siemens", in Littler, C. and Gospel, H. (ed) Managerial Strategies and Industrial Relations, London, Heinemann.

Hogwood, B. (1979) Government and Shipbuilding: the Politics of Industrial Change, Farnborough, Hants, Saxon House.

Holbrook Jones, M. (1981) Supremacy and Subordination of Labour: the Hierarchy of Work in the Early Labour Movement, London, Heinemann.

House, J.D. (1980) "Oil companies in Aberdeen: the strategy of incorporation", in Parsler, R. and Shapiro, D. (eds) The Social Impact of Oil in Scotland: a Contribution to the Sociology of Oil, Farnborough, Hants, Gower.

House, J.W. (1969) Industrial Britain: the North East, Newton Abbot, David and Charles.

House of Commons Select Committee on Energy (1987) The Effect of Oil and Gas Prices on Activity in the North Sea, London, H.M.S.O.

House of Commons Select Committee on Energy (1988) The United Kingdom Independent Oil Sector, London, H.M.S.O.

House of Commons Select Committee on Energy (1989) B.P./Britoil: Job Losses and Asset Sales, London, H.M.S.O.

- Hudson, R. (1988) "Labour market changes and new forms of work in "old" industrial regions", in Massey, D. and Allen, J. (eds) Uneven Re-Development: Cities and Regions in Transition, London, Hodder and Stoughton.
- Hudson, R. (1989a) "Labour-market changes and new forms of work in old industrial regions: maybe flexibility for some but not flexible accumulation", in Environment and Planning D: Society and Space, 7(1).
- Hudson, R. (1989b) Wrecking a Region, London, Pion.
- Hudson, R. Peck, F. and Sadler, D. (1984) Undermining Easington: Who'll Pay the Price of Pit Closures, Easington District Council, Easington, Co. Durham.
- Hudson, R. and Sadler, D. (1985) "The development of Middlesbrough's iron and steel industry, 1841-1985", Middlesbrough Locality Study, Working Paper No. 2, University of Durham, Departments of Geography and Sociology.
- Humphries, J. and Rubery, J. (1984) "The reconstitution of the supply side of the labour market: the relative autonomy of social reproduction", in Cambridge Journal of Economics, 8(4).
- Jacoby, N. (1974) Multinational Oil: A Study in Industrial Dynamics, London, Macmillan.
- Jenkin, M. (1981) British Industry and the North Sea, London, Macmillan.
- Jessop, B. (1983a) "The democratic state and the national interest", in Coates, D. and Johnston, G. (eds) Socialist Arguments, London, Martin Robertson.

Jessop, B. (1983b) "Capitalism and democracy: the best possible political shell?", in Held, D. et al (eds) States and Societies, Oxford, Martin Robertson.

Jones, B. and Rose, M. (1986) "Redividing labour: factory politics and work reorganisation in the current industrial transition", in Purcell, K. Wood, S. Waton, A. and Allen, S. (eds) The Changing Experience of Employment: Restructuring and Recession, Basingstoke, Macmillan.

Judge, D. and Dickson, T. (1987) "The British state, governments and manufacturing decline", in Dickson, T. and Judge, D. (eds) The Politics of Industrial Closure, Basingstoke, Macmillan.

Keegan, W. (1985) Britain Without Oil, Harmondsworth, Middlesex, Penguin.

Landes, D. (1969) The Unbound Prometheus. Technological Change and Industrial Development in Western Europe from 1750 to the Present, Cambridge University Press.

Lash, S. and Urry, J. (1987) The End of Organised Capitalism, Cambridge, Polity Press.

Lazonick, W. (1979) "Industrial relations and technical change: the case of the self-acting mule", Cambridge Journal of Economics, 3(3)

Lazonick, W. (1983) "Technological change and the control of work: the development of capital relations in the U.S. mass production industries", in Littler, C. and Gospel, H. (ed) Managerial Strategies and Industrial Relations, London, Heinemann.

Lazonick, W. (1990) Competitive Advantage on the Shopfloor,

London, Heinemann.

Lee, D. (1979) "Craft unions and the force of tradition: the case of apprenticeship", British Journal of Industrial Relations 17 (1).

Lee, D. (1982) "Beyond deskilling: skill craft and class", in Wood, S.(ed) The Degradation of Work? Skill, Deskillling and the Labour Process, London, Hutchinson.

Leitch, M. (1989) FT Guide to North Sea Operators: a Company by Company Review, Third Edition, London, F.T.B.I.

Lind, T. and Mackay, G. (1980) Norwegian Oil Policies, London, Hurst.

Lipietz, A. (1987) Miracles and Mirages: the Crisis in Global Fordism, London, Verso.

Littler, C. (1982a) The Development of the Labour Process in Capitalist Societies, London, Heinemann.

Littler, C. (1982b) "Deskilling and changing structures of control", in Wood, S. (ed) The Degradation of Work? Skill, Deskillling and the Labour Process, London, Hutchinson.

Littler, C. (1983) "A comparative analysis of managerial structure and strategies", in Gospel, H. and Littler, C. (eds) Managerial Strategies and Industrial Relations, London, Heinemann.

Littler, C. and Salaman, G. (1984) Class at Work, London, Batsford.

- Littler, C. (1990) "The Labour Process debate: a theoretical review 1974-88", in Knights, D and Willmott, H. (eds) Labour Process Theory, Basingstoke, Macmillan.
- Lorenz, E. (1983) The Labour Process and Industrial Relations in the British and French Shipbuilding Industries, from 1880 to 1970: Two Patterns of Development, unpublished PhD. thesis, Cambridge.
- Lorenz, E. and Wilkinson, F. (1986) "The shipbuilding industry", in Elbaum, B. and Lazonick, W. (eds) The Decline of the British Economy, Oxford, Clarendon Press.
- Loveridge, R. and Mok, A. (1979) Theories of Labour Market Segmentation: a Critique, Den Haag, Martin Nijhoff.
- MacInnes, J. (1987) Thatcherism at Work, Milton Keynes, Open University.
- MacKay, D. and Mackay, G. (1975) The Political Economy of North Sea oil, London, Martin Robertson.
- Mandel, E. (1968) Marxist Economic Theory, London, Merlin.
- Manners, G. (1984) "North Sea oil: benefits, costs, uncertainties" Geoforum, 15(1).
- Manpower Services Commission (1974) The Discovery of Offshore Oil and Gas: Manpower Implications. An Overview, MSC Unpublished Paper.
- Marsh, A. and Coker, E. (1963) "Shop steward organisation in the engineering industry", British Journal of

Industrial Relations, 1(2).

- Martin, R. (1988) "Industrial capitalism in transition: the contemporary reorganisation of the British space-economy" in Massey, D. and Allen, J. (eds) Uneven Re-development: Cities and Regions in Transition, London, Hodder and Stoughton.
- Marx, K. (1970) Capital, a Critical Analysis of Capitalist Production, Volume 1, London, Lawrence and Wishart.
- Massey, D. (1988) "Uneven development: social change and spatial divisions of labour" in Massey, D. and Allen, J. (eds) Uneven Re-development: Cities and Regions in Transition, London, Hodder and Stoughton.
- Massey, D. (1984) Spatial Divisions of Labour: Social Structures and the Geography of Production, Basingstoke, Macmillan.
- Massey, D. and Meegan, R. (1982) The Anatomy of Job Loss: the how, why and where of employment decline, London, Methuen.
- McBarnett, A. (1980) "The North Sea oil story: government, the oil industry and the press", in Parsler, R. and Shapiro, D. (eds) The Social Impact of Oil in Scotland: a Contribution to the Sociology of Oil, Farnborough, Hants, Gower.
- McClelland, K. and Reid, A. (1985) "Wood, iron and steel: technology, labour and trade union organisation in the shipbuilding industry 1840-1914", in Harrison, R. and Zeitlin, J. (eds) Divisions of Labour, Brighton, Harvester.

- McCord, N. (1979) "North East England: the Region's Development 1760-1960", London, Batsford Academic Press.
- McGoldrick, J. (1983) "Industrial relations and the division of labour in the shipbuilding industry since the war", in British Journal of Industrial Relations, 21.
- Melling, J. (1983) "Employers, industrial welfare and the struggle for workplace control in British industry 1880-1920", in Gospel, H. and Littler, C. (eds) Managerial Strategies and Industrial Relations, London, Heinemann.
- Melling, J. (1987) "Employers and the rise of supervisory unionism", in Wrigley, C. (ed) A History of British Industrial Relations, Vol. 2, Brighton, Harvester Press.
- Mess, H. (1928) Industrial Tyneside: a Social Survey, London, Earnest Bevin.
- Michon, F. (1987) "Segmentation, employment structures and productive structures", in Tarling, R. (ed) Flexibility in Labour Markets, London, Academic Press.
- Mikdashi, Z. (1986) Transnational Oil: Issues, Policies and Perspectives, London, Frances Pinter.
- Moore, R. (1980) "Northern notes towards a sociology of oil", in Parsler, R. and Shapiro, D. (eds) The Social Impact of Oil in Scotland: a Contribution to the Sociology of Oil, Farnborough, Hants, Gower.
- Moore, Robert (1981) "Urban development on the periphery of industrialised societies", in Harloe, M. (ed) New

Perspectives in Urban Change and Conflict, London, Heinemann.

Moore, Roger (1981) "Aspects of segmentation in the U.K. building industry labour market", in Wilkinson, F. (ed) The Dynamics of Labour Market Segmentation, London, Academic Press.

More, C. (1982) "Skill and the survival of apprenticeship" in Wood, S. (ed) The Degradation of Work? Skill Deskillling and the Labour Process, London, Hutchinson.

Morgan, K. and Sayer, A. (1984) A Modern Industry in a Mature Region: the Re-making of Management-labour Relations, Working Paper No. 39, Urban and Regional Studies, University of Sussex.

Morgan, K. and Sayer, A. (1988) "A "modern" industry in a "mature" region: the remaking of management-labour relations" in Massey, D. and Scott, J. (eds) Uneven Re-Development: Cities and Regions in Transition, London, Hodder and Stoughton.

Mortimer, J. (1973) History of the Boilermakers Society, Vol. 1 1834-1906, London, George Allen and Unwin.

Mortimer, J. (1982) History of the Boilermakers Society, Vol. 2 1906-39, London, George Allen and Unwin.

Motamen, H. (1983) Macroeconomics of North Sea Oil in the U.K., London, Heinemann.

NEDC (1972) Oilfield: the Market Place for Northern Firms, North East Development Council.

NEDO (1985) Offshore Supplies: Performance and Prospects,

London, National Economic Development Office.

Nichols, T. (1986) The British Worker Question: a New Look at Workers and Productivity in Manufacturing, London, Routledge and Kegan Paul.

Noreng, O (1980) The Oil Industry and Government Policy in the North Sea, London, Croom Helm.

North, G. (1975) Teesside's Economic Heritage, Cleveland County Council.

Odell, P (1979) British Oil Policy: a Radical Alternative, London, Kogan Page.

Odell, P. (1986) Oil and World Power, Middlesex, Penguin.

Okayama, R. (1983) "Japanese employer labour policy: the heavy engineering industry in 1900-1930", in Littler, C. and Gospel, H. (eds) Managerial Strategies and Industrial Relations, London, Heinemann.

Osterman, P. (1984) Internal Labour Markets, Cambridge, Mass, MIT Press.

Palmer, G. (1983) British Industrial Relations, London, George Allen and Unwin.

Parkinson, (1979) "Shipbuilding", in Aldcroft, D. and Buxton, A. (eds) British Industry in the Inter War Years, London, Scholar Press.

Parsler, R. and Shapiro, D. (eds) The Social Impact of Oil in Scotland: A Contribution to the Socioligy of Oil, Farnborough, Hants, Gower.

Pelling, H. (1987) A History of British Trade Unionism,

Basingstoke, Macmillan.

Penn, R. (1982) "Skilled manual workers in the labour process", in Wood, S. (ed) The Degradation of Work? Skill, Deskillling and the Labour Process, London, Hutchinson.

Peppin, T. (1990) Restructuring of the Demand for Labour: a Study of Labour Market Adjustment Mechanisms in Stockton on Tees, University of Durham, unpublished PhD thesis.

Piore, M. (1980) "Dualism as a response to flux and uncertainty", in Berger, S. and Piore, M. (eds) Dualism and Discontinuity in Industrial Societies, Cambridge University Press.

Piore, M. and Sabel, C. (1984) The Second Industrial Divide: Possibilities for Prosperity, New York, Basic Books.

Pollard, S. and Robertson, P. (1979) The British Shipbuilding Industry 1870-1984, Harvard University Press.

Pollert, A. (1988a) "Dismantling flexibility", in Capital and Class, 34 Spring.

Pollert, A. (1988b) "The Flexible Firm: fixation or fact", in Work, Employment and Society, 2 (3).

Price, R. (1986) Labour in British Society: an Interpretative History, Beckenham, Croom Helm.

Purdy, D. (1988) Social Power and the Labour Market, Basingstoke, Macmillan.

- Redclift, N. and Mingione, E. (eds) (1985) Beyond Employment: Household, Gender and Substance, Oxford, Basil Blackwell.
- Reich, M. (1984) "Segmented labour: time series hypothesis and evidence", in Cambridge Journal of Economics, 8(1).
- Robertson, D. (1954) "Labour turnover in the Clyde shipbuilding industry", Scottish Journal of Political Economy 1.
- Robinson, C. and Morgan, J. (1978) North Sea oil in the Future, London, Trade Policy Research Centre.
- Robinson, F.(ed) (1988) Post Industrial Tyneside, Newcastle upon Tyne City Library.
- Roncaglia, A. (1985) The International Oil Market: a Case of Trilateral Oligopoly, Basingstoke, Macmillan.
- Rubery, J. (1978) "Structured labour markets, worker organisation, and low pay", in Cambridge Journal of Economics, 2(1).
- Rubery, J. (1986) "Trade Unions in the 1980s: The case of the United Kingdom", in Edwards, R. Garonna, P. Todtling, F. (eds) Unions in Crisis and Beyond: Perspectives from Six Countries, Dover, Mass, Auburn House.
- Rubery, J. (1989) "Labour market flexibility" in Green, F (ed) The Restructuring of the U.K. economy, London, Harvester Wheatsheaf.
- Sadler, D. (1985) Born in a Steeltown: Class Relations and the Decline of the European Steel Industry,

University of Durham, unpublished PhD thesis.

Sadler, D. (1986) "The impacts of offshore fabrication in Teesside", Middlesbrough Locality Study, Working Paper No. 5, Departments of Geography and Sociology, University of Durham.

Salmon, A. and Walker, J. (1986) The Oil Price Collapse; Some Effects on the Scottish Economy", Royal Bank of Scotland, Unpublished Report.

Sampson, A. (1975) The Seven Sisters, London, Hodder and Stoughton.

Saul, S. (1968) "The engineering industry", in Aldcroft, D. The Development of British Industry and Foreign Competition 1875-1914,

Sayer, A. (1984) Method in Social Science: a Realist Approach, London, Hutchinson.

Schoenberger, E. (1991) "The corporate interview as a research method in economic geography", Professional Geographer 43 (2).

Shapiro, D. (1980) "The industrial relations of oil", in Parsler, R. and Shapiro, D. (eds) The Social Impact of Oil in Scotland: a Contribution to the Sociology of Oil, Farnborough, Hants, Gower.

Shapiro, D. (1981) "Industrial relations in the wilderness", in Harloe, M. (ed) New Perspectives in Urban Change and Conflict, London, Heinemann.

Shapiro, D. (1985a) "Explaining peripheral change", in The Lancaster Regionalism Group Localities, Class and Gender, London, Pion.

- Shapiro, D. (1985b) "Policy, planning and peripheral development", in The Lancaster Regionalism Group Localities, Class and Gender, London, Pion.
- Smith, N. (1978) "The offshore supplies industry: the British industry in its wider context", in The Business Economist, Autumn.
- Southall, H. (1988) "The origins of the depressed areas: unemployment, growth and regional economic structure in Britain before 1914", in Economic History Review 41 (12).
- Stark, D. (1980) "Class struggle and the transformation of the labor process: a relational approach", in Theory and Society, 9.
- Surrey, J. and Cook, P. (1983) Government Policy for the Offshore Supplies Industry: Britain compared with Norway and France, SPRU Occasional Paper Series, No. 31, October.
- Tarling, R. and Wilkinson, F. (1987) "The level, structure and flexibility of costs", in Tarling, R. (ed) Flexibility in Labour Markets, London, Academic Press.
- Therborn, G. (1986) Why Some Peoples are More Unemployed than Others, London, Verso.
- Thompson, P. (1990) "Crawling from the wreckage: the labour process and the politics of production", in Knights, D. and Willmott, H. (eds) Labour Process Theory, Basingstoke, Macmillan.
- Tighe, T. (1979) Tees Side Bridge: the Rise, Fortunes and Dissolution of a Private Company, B.S.C. Teesside.

- Todd, D. (1983) "Strategies of growth, diversification and rationalisation in the evolution of the concentration in British shipbuilding", in Regional Studies 18 (1).
- Towers, B. (1989) "Running the gauntlet: British trade unions under Thatcher, 1979-1988", in Industrial and Labor Relations Review, 42(2).
- Townsend, A. (1983) The Impact of Recession, Beckenham, Croom Helm.
- Tugendhat, C. and Hamilton, A. (1975) Oil: The Biggest Business Revised edition, London, Eyre Methuen.
- Turner, L. (1978) Oil Companies in the International System, London, Allen and Unwin.
- Vatne, E. (1987) "Organisational and regional changes in industrial systems: integration of the oil industry into an advanced economy" in Hamilton, E. (ed) Industrial Change in Advanced Economies, London, Croom Helm.
- Villa, P. (1981) "Labour market segmentation and the construction industry in Italy", in Wilkinson, F. (ed) The Dynamics of Labour Market Segmentation, London, Academic Press.
- Villa, P. (1986) The Structuring of Labour Markets: the Steel and Construction Industries in Italy, Oxford, Clarendon Press.
- Warde, A. (1985) "Spatial change, politics and the division of labour", in Gregory, D. and Urry, J. (eds) Social Relations and Spatial Structures, London, Macmillan.

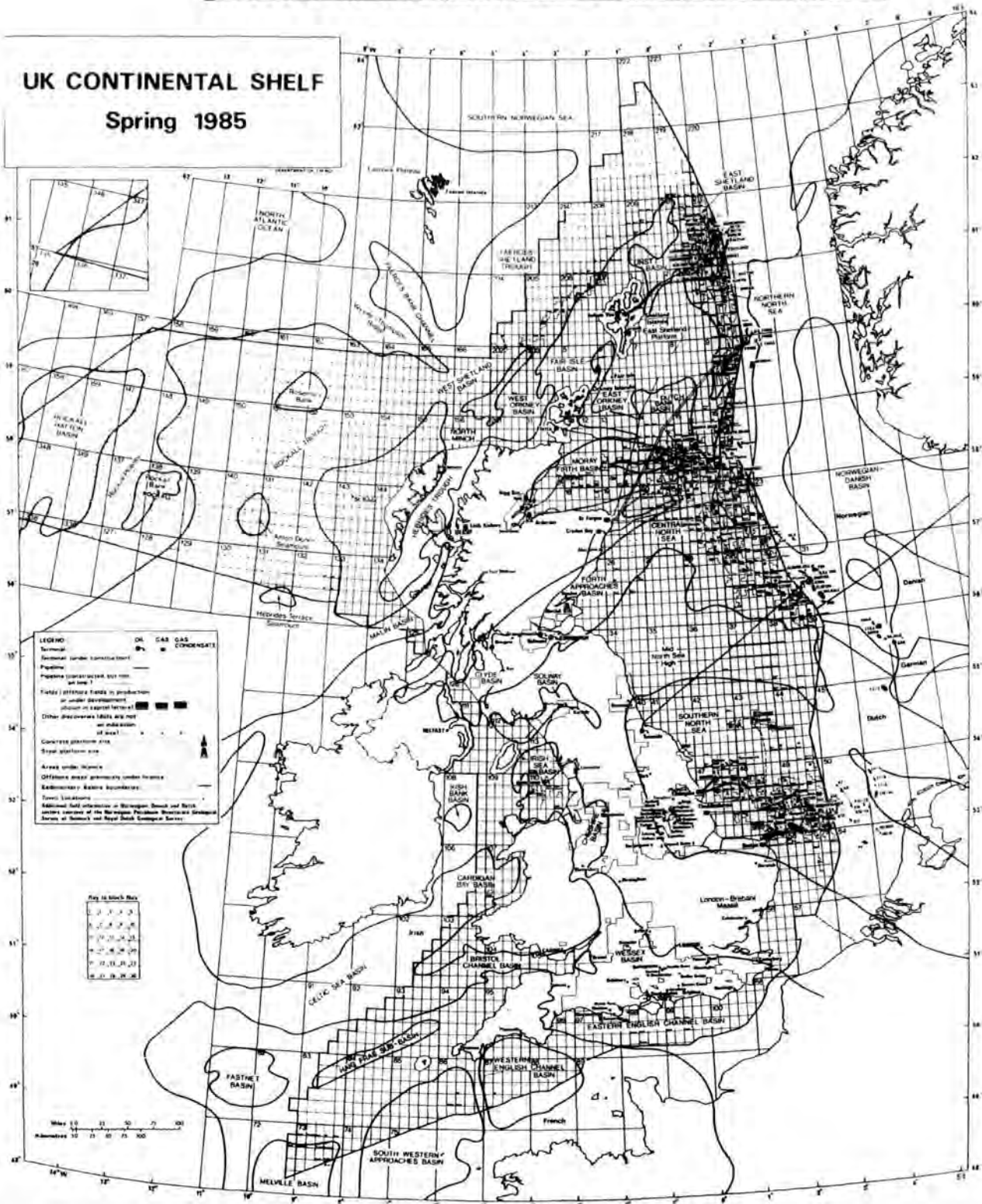
- Warren, K. (1979) "Iron and Steel", in Aldcroft, D. and Buxton, A. (eds) British Industry in the Inter-war Years, London, Scolar Press.
- Weinstein, B. and Cross, H. (1987) "Spatial and structural consequences of industrial change: the American Gulf Coast Petrocrescent", in Hamilton, F.E.I. (ed) Industrial Change in Advanced Economies, London, Croom Helm.
- Wood, S. (1982) The Degradation of Work: Skill, Deskilling and the Labour Process, London, Hutchinson.
- Wood, S. (1989) "The transformation of work? Skill, flexibility and the labour process", in Wood, S. (ed) The Transformation of Work, London, Unwin and Hyman.
- Wilkinson, F (ed.). (1981) The Dynamics of Labour Market Segmentation, London, Academic Press.
- Wilkinson, F. (1983) "Productive Systems" in Cambridge Journal of Economics, 7(4).
- Williamson, H. Andreano, R. Daum, A and Klose, G. (1963) The American Petroleum Industry, Northwestern University Press, Evanston.
- Williamson, O. (1975) Markets and Hierarchies: Analysis and Anti-trust Implications, New York, Free Press.
- Withington, J. (1989) Shutdown: the Anatomy of a Shipyard Closure, London, Bedford Square Press.
- Wright, E. (1978) Class, Crisis and the State, London, New Left Books.
- Wrigley, C. (1982) "The government and industrial

relations", in Wrigley, C. (ed) A History of British Industrial Relations, Brighton, Harvester Press.

Zeitlin, J. (1985) "Engineers and compositors: a comparison", in Harrison, R. and Zeitlin, J. (eds) Divisions of Labour, Brighton, Harvester Press.

Zeitlin, J. (1983) "The labour strategies of British engineering employers, 1890-1922" in Gospel, H. and Littler, C. (eds) Managerial Strategies and Industrial Relations: an Historical and Comparative Study, London, Heinemann.

Appendix 1 **Location of North Sea Oil and Gas Fields, 1985**



[Source: Brown Books]

Appendix 2

A Brief Geology of the North Sea Basin

Contrary to popular belief, hydrocarbons are widely distributed over the earth's surface. However most areas lack the geological conditions under which sufficient quantities, worthy of commercial exploitation, can accumulate.

Petroleum is petrified carbon in liquid form, resulting from the collection of organic matter between rocks. Under certain circumstances, this material moves along permeable strata until it becomes deposited in an "oil trap". These traps are created either by faults and intrusions or by anticlines, preventing further movement. Where such traps are large enough extraction becomes economically viable.

It is likely that the North Sea was created between 350 million and 2 million years ago during the Carboniferous, Jurassic and Tertiary periods. Essentially it is the submerged portion of a major sedimentary basin that stretches from Poland to Eastern England. But during these periods of geomorphological activity marked irregularities within the basin were formed creating the necessary oil-bearing strata.

The most significant of these features is the Mid North Sea High, extending from the Southern Uplands in Scotland to the Ringkobing Fyn High off the western coast of Denmark. This forms the barrier between the shallower waters of the southern North Sea and the deeper north.

In the south the area can be further subdivided into the Anglo-Dutch and German basins, whilst to the north there are a series of troughs and platforms which have provided the most favourable conditions for the large-scale oil deposits that exist. The most notable of these is the Norwegian Trench, over

200m deep, which prompted animated discussion regarding the maritime boundary between the U.K. and Norway during the 1950s, and was also an obstacle to pipeline developments from the Norwegian coast to the Ekofisk field.

Appendix 3

The Research Process underlying the Thesis

The practice of undertaking research in the social sciences is perhaps best described as an ongoing iterative process. This is because a methodological perspective is not merely informed by a priori knowledge of the "real world", but is in effect constantly reacting to, and being reproduced by, "real world" events. As a consequence the end product of a research programme seldom resembles its originally conceived form. Whilst empirical evidence may on occasions confirm and indeed strengthen the initial theoretical position taken by a researcher, it is more likely to require a degree of reformulation of his/her position. In addition, the more practical restraints involved in undertaking research in an uncertain world, the laboratory of the social sciences, present their own obstacles to the ongoing research process. In the following pages an account is given of the research process that lay behind the compilation of this thesis. The first two sections explain how its methodological perspective developed and changed as a consequence of both practical and theoretical considerations during the course of the research programme, whilst the final section describes and accounts for the research methods that were used.

1. The development of an early theoretical and methodological position

At the outset (October 1987) my terms of reference were set firstly, by the title of the E.S.R.C. sponsored "linked" award, that this thesis was based upon; "The Impact of the Offshore Industries upon the North of England"; and secondly by the geographical perspective that I brought to bear on the study. In essence the thesis was interested in questions to do with industrial location. The focus of the research project was the issue of regional development within capitalist societies, and more specifically the employment impact resulting from the development

of a significant offshore construction industry, as a result of North Sea oil and gas operations, within the North East.

At the time I was heavily influenced by the work of a radical strand within economic geography (exemplified by the work of Massey, 1984) which, departing from traditional neoclassical and behaviouralist theories, sought to link questions relating to industrial location within the context of wider processes of capital accumulation. Effectively this represented a marriage between geography and the traditional Marxist perspective on capitalist production in industrial societies; location decisions were recast as another variable in the inexorable search for surplus value. Through changes in technology and composition, capital was becoming increasingly mobile, so that to a greater extent than ever before, location decisions were made according to spatial variations in the quality and availability of labour. As Warde has remarked in his critique of Massey's work (1985: 196):

"The logic of Massey's account is that capital has come to use spatial differentiation as a resource in the competitive search for profit. There is a search for spatial advantage. Such advantage is most readily obtained by discriminating between available labour forces. This, a point of general agreement among recent structural accounts, acknowledges that capital is nowadays highly mobile."

In this sense the geography of production and subsequently employment was linked to changing spatial divisions of labour over time. Contemporary economic restructuring was associated with the emergence of a new international division of labour (clearly articulated by Froebel et al, 1980). Changes within the U.K. space economy, which Massey described as a new geography of production, were linked to this wider pattern of restructuring in the world economy. One of the features of this scenario was the extent to which older industrial regions, such as the North East, were becoming increasingly peripheral to the major centres of capitalist production. Generally speaking the implications of this for these

regions were twofold: firstly traditional manufacturing industries were in long term decline, being undermined by newer producing regions (using cheaper forms of labour) in the developing world, and secondly, the new industries that had developed were characterised by branch plant production and as such functionally separated from the decision making core.

It was with this type of perspective that I originally interpreted the arrival of the offshore construction industry in the North East of England. How had the establishment of a sizeable oil-related sector reversed the region's retreat into the periphery of the international division of labour? In answering this question, it was necessary to understand the role of those companies that became involved in North Sea oil operations, within the international division of labour. As a corollary to this, a second task was to locate the new jobs associated with North Sea oil within the functional hierarchy that constituted the spatial division of labour.

This was the main purpose of the empirical research during the thesis, but before embarking upon this course, it was necessary to account for the arrival of North Sea operations within the context of the international oil industry. This was achieved through a literature review during the first six months of the research, between October 1987 and March 1988.

During this period I was concerned with answering two related questions concerning the nature of the oil industry. The first of these was to understand the structure of the international oil industry, and the coincidence of events within it that spawned the development of North Sea oil. A second task was to develop an understanding of the political economy of oil in the U.K. sector of the North Sea, in particular aimed at the relationship between the government and the oil industry. This would then enable me to establish a conceptual framework with which to embark upon the two

central themes of the thesis: the role of the North East's firms within the oil industry (and the wider international division of labour); and the implications of this for the nature of employment developments. The bulk of this material eventually formed the basis for Chapter 1.

Having established the background to oil developments within the region, I was then faced with the more onerous task of developing a specific methodological strategy for the thesis. At the outset of the thesis I had been aware (from the examination of previous studies) of the basic structure of the offshore construction industry in the North East. In March 1988 the industry revolved around the activities of six large fabricators (Charlton Leslie, Davy Offshore, Press Offshore, Redpath Offshore, T.H.C. Fabricators and Whessoe Offshore) who as principal contractors to the oil companies represented the apex of a pyramid of suppliers and subcontractors.

At this juncture I was faced with the not uncommon predicament of having a whole array of interesting research questions that could have formed the basis for a thesis. These ranged between two poles.

- a) At one level there was a strong case for examining the offshore construction sector of the region as a whole, perhaps focusing upon the linkage network between the fabricators and their suppliers.
- b) Conversely, an equally useful thesis would have been to assess the role of a single firm and its workforce within the political economy of the oil industry. It was with the aim of resolving this impasse that I decided to undertake a period of preliminary empirical study (from March to August 1988) in order to define in more concrete terms the parameters of the offshore construction industry. This involved interviews with management at both the large fabrication firms and their leading suppliers and subcontractors.

The evidence that emerged from this piece of research reinforced my

perception of the large fabricators as the principal agents in the restructuring of employment within the offshore construction industry. It was the relative success of these firms, in obtaining contracts from the oil companies, that determined the degree and nature of offshore related activity in the North East. But, in addition, there was strong evidence to suggest that the level of employment in offshore related work was not merely contingent upon the ability of these firms to obtain contracts from the North Sea, but also upon their position within their own corporate framework. The first round of interviewing had not only revealed wide variations in the organisation of labour between firms, but also that the explanation for this was probably rooted in a firm's relationship with its parent company.

In the light of this evidence, I decide to embark upon a comparative study of selected companies as the principal focus for the thesis. In doing so, I was opting for a variant of b) by investigating the relationship between corporate background and the organisation of labour within the firm. With regard to this the six large fabricators were visited again in the first two weeks of October 1988, after which three firms were chosen for in-depth study, the main criterion being to reflect a diversity of corporate circumstances. The first of the three selected, Charlton Leslie, was owned by the multinational conglomerate B.T.R., for whom the offshore industry was a departure from its normal sphere of operations. As such the local management at Charlton Leslie had a large degree of control over the day to day production decisions, but was marginalised from strategic decision making. The second firm, Whessoe, was a locally based firm, largely confined to the engineering sector and with a tradition that dated back to the 1790s. The third company selected, Redpath Offshore, was owned by the huge property and construction group Trafalgar House. Although key strategic decision making within the group was external to the North East, the offshore construction sector represented one of Trafalgar House's core growth areas during the 1980s.

Whilst the diversity of corporate circumstances was central to the selection decision, it was also important that those firms chosen reflected the geographical concentration of offshore activity in the North East, as my remit was still to study the industry at the regional level. In choosing two firms from the Tees (Redpath and Whessoe) and one from the Tyne (Charlton Leslie) this aim was accomplished. In rejecting the other three firms the governing factor was one of practicalities. To a large extent all three would have been interchangeable with those chosen: Davy shared many features in common with Whessoe, the employment environments at Charlton Leslie and T.H.C. Fabricators were markedly similar, whilst Press and Redpath were both owned by parent companies with a strong degree of commitment to the offshore sector. Ultimately though, I was reliant upon managerial co-operation, and whilst this was forthcoming at Press Offshore, I had been the recipient of both obstruction and indifference at Davy and T.H.C. which did not auger well for future research opportunities.

The main thrust of the research strategy from this point onwards was to build up a comprehensive picture of labour organisation at each of the three firms, and in each case to relate a firm's labour strategy to its wider corporate environment. In this way I was hoping to open up the "black box" of managerial decision making, to shed new light upon the processes behind employment restructuring. The findings would then be interpreted in terms of their implications for the ongoing theoretical debate about the spatial division of labour.

1.1 The interview programme

The main phase of interviewing took place in a 14 month period from November 1988 to February 1990, the bulk of which occurred at the construction sites of the respective firms, through the auspices of management. Whilst this inevitably entailed problems of objectivity, it was probably the only way of obtaining suitable information given the time constraints and the ephemeral nature of

the offshore industry and the individuals who work in it.

The interview programme was based around three types of respondent: managerial, employee and trade union.¹

i) Managerial interviews

The original intention had been to interview the personnel managers from each of the three firms at the start of every two month period, concerned with ongoing recruitment strategies and past forms of labour organisation, both within the offshore industry and as far as possible in the period prior to oil-related developments. Respondents were encouraged to relate and explain manpower strategies, as far as possible, in terms of the wider corporate environment within which their firms were located.

ii) Interviews with employees

The interviewing of employees took place with the collaboration of management in the intervening period between managerial interviews. These interviews were undertaken with a representative sample of workers (on the basis of material supplied by management) to reflect the constitution of the work force in terms of age, gender and skill levels. The data from these interviews was used in two principal ways: firstly to corroborate and complement the managerial material concerning the organisation of labour within firms, and secondly to understand the experience of work for the various groups within the work force. For each firm the aim was to interview 20 - 25 individuals for a period of approximately one hour in each case.

iii) Trade union interviews

To obtain the view of organised labour and offset the problems of objectivity inherent in a company based study, interviews were

¹A more detailed description of the interviewing phase is given in the section covering research methods.

conducted with local trade union officials from the two principal unions (E.E.T.P.U. and G.M.B.). These interviews took place at two levels: firstly with local district officials for both the Tees and Tyne, and secondly with the relevant shop stewards and convenors at the individual firms. Typically these interviews lasted for between two to three hours. In addition, two group discussions were also held with shop stewards, one at Charlton Leslie's South Shields yard, towards the end of the Amerada Hess contract in April 1989, and the other at Redpath's Port Clarence yard in January 1990.

Unfortunately, the original interview programme was frustrated by the premature closure of two of the firms selected. This forced a reappraisal, not just of the research programme, but also of the methodological and theoretical framework behind it.

2. Changes to the methodological approach

In the period between January and May of 1989 both Charlton Leslie and Whessoe, for separate reasons outlined in the main text, withdrew from the offshore industry. Whilst this sequence of events undermined the ongoing comparative study, it was far from being a terminal blow to the research project. Plant closure had been a fairly characteristic feature of contemporary economic restructuring during the 1980s, and more especially had been a recurrent theme within the offshore construction industry. Furthermore I was presented with a unique opportunity to interview disgruntled and disillusioned managerial staff (having had their shackles removed) in a less wary and more relaxed climate, once closure decisions had been announced.

Nevertheless, there remained serious questions about the future direction of the thesis. At both Whessoe and Charlton Leslie I had been unable to complete the original quotas for workforce interviews, and in addition Whessoe's Middlesbrough yard had closed before contact with the shop stewards had been made.

Under these circumstances I was faced with several avenues for progress. There was the possibility of continuing some form of comparative approach by returning to two of the three discarded firms, although in practical terms this may have proved difficult. As I have already noted, the management at both Davy Offshore and T.H.C. Fabricators had expressed a large degree of hostility and scepticism to my earlier entreaties, whilst the latter firm was without an offshore order at the time. Whilst this situation was also in itself a characteristic feature of the offshore industry, it was inappropriate for my own purposes. Press Offshore, as the largest and most successful firm, would have been a useful comparison to make with Charlton Leslie or Whessoe, but was too similar to the remaining firm Redpath Offshore in its operational set up and labour recruitment practices, to merit a comparison in the terms in which the methodological strategy had been framed.

Alternatively it would have been possible to concentrate upon Redpath as an individual case study, perhaps investigating more fully its relationship with other companies within the Trafalgar House organisation. However this was rejected because it would have required the abandonment of much of the earlier empirical material, and also a great deal of additional interview preparation at an advanced stage in the lifetime of the thesis.

A third alternative (and the one that was eventually chosen) was to revert to an approach that was considered at the outset (a) by switching the emphasis away from the analysis of individual firms' behaviour, to a wider study of the fabrication sector within the North East as a whole. In doing so I was able to "make the best of both worlds", for whilst much of the information that had already been obtained had been firm specific, there was a significant amount of material relating to the organisation of labour within the industry as a whole. This was largely attributable to the fluid composition of those segments of the local labour market serving offshore construction, with a large mass of mobile workers

constantly moving between the different firms on the basis of individual contracts.

Given this situation, I decided to complete my sample of employee respondents by interviewing an additional number of workers at Redpath, thereby establishing a wider and more complete picture of local labour market dynamics than would be possible in a different industrial context. Thus, by focusing intensively upon the workforce resident at a single firm for a particular period, I was able to interview individuals who had worked for all the various firms in the area. For example, many workers taken on by Redpath on the Gyda and Miller contracts for B.P. during 1989 had just been released following the completion of contracts at Davy and Whessoe. There remained a problem of geographical representation, as the empirical research was now concentrated upon Teesside, to the detriment of Tyneside. This was partially overcome by a highly informative three hour group discussion with the six principal shop stewards just before the culmination of the Amerada Hess Rob Roy project at Charlton Leslie's South Shields yard, coupled with a substantive amount of additional information from the newly redundant managerial staff of the same firm. Although the interview data in Chapter 5 is still biased towards a Teesside perspective, I do not feel that this detracts from the overall value of the project. Alternative evidence, from media sources and other studies of Tyneside, tends to substantiate most of the material from my own interviews.

The decision to switch to a wider level of analysis required a reformulation of my epistemological position, and deserves a thorough explanation at this point. This thesis, before and after the changes that I have just described, has always been concerned with the subject of employment change. However, to reiterate my earlier remarks, at the outset the perspective, though incorporating some of the basic tenets of Marxist theories of employment relations, was essentially a geographical one, concerned

with questions of industrial location. Thus, employment restructuring was essentially viewed as a manifestation of the changing geography of production, driven by the imperative of capital to locate to the best advantage. In this sense the original thesis methodology was not an examination of employment per se, but was rather an examination of the role of firms and regions within the global division of labour, expressed through the medium of employment change.

In taking the emphasis away from one that was concerned with individual firm strategies towards employment, to one that focussed upon labour market change at a wider regional level, I was, in effect, deciding to study employment "for its own sake". This was a movement away from spatial relations towards an analysis of changing social structures over time, in this case the changes in employment within the region brought by North Sea oil developments. In doing so I found that it was necessary to draw more heavily upon other academic insights, because geographers (with the possible exception of Kevin Morgan and Andrew Sayer) have not as yet dealt satisfactorily with the issue of the impact of incoming industry upon existing employment structures.

In particular I was impressed by the analytical approach used by sociologists and economists working in the labour process tradition (e.g. the work of Friedman, 1978 and Littler, 1982 and more recently Lazonick, 1990), where greater emphasis is placed upon the historical development of employment structures. However, this should not be taken as a criticism of the approach used by Massey and others, who are well aware of the importance of an historical materialist approach to social scientific analysis. Massey's use of the geological metaphor explicitly recognises that contemporary spatial patterns are the result of past and ongoing rounds of accumulation. But Massey's central purpose is to demonstrate that (1988: 21):

"... class relations do not... exist on the head of a pin"

but are in fact organised over space.

But my emphasis however had altered, away from a concern primarily with spatial divisions of labour towards one of employment change within a particular location. In this sense I had become more concerned with changing employment structures in one location than with employment relationships between locations. This required a greater analysis of the specific historical development of work within the North East itself, for the present not only carries with it the imprint of the past, but is conditioned by it, and as such can only be understood with reference to it. As Abrams remarks in his appraisal of the historical materialist approach in social science, its importance lies in the recognition of the:

"..two sided dynamism of the relationship of action and structure and the consequent necessity of understanding that relationship historically."

(1982: 64)

Indeed the value of a more historically based approach was borne out by much of the evidence that emerged from interviews with both employers and workers as part of the ongoing research programme. For whilst the future of offshore related employment in the North East is ultimately dependent upon the strategies of contemporary capital (in the shape of either the oil companies or large conglomerates such as B.T.R. and Trafalgar House), the employment environment within which these agents operated was heavily influenced by traditional working practices and forms of labour organisation.

It was against this background of practical constraints, empirical revelations and ensuing theoretical reformulation, that I decided to pursue an approach which integrated incoming oil operations within the context of the historical evolution of work in the region. In doing so I was recognising that oil-related forms of employment were not imposed upon the region from outside, but were instead fundamentally shaped by existing employment structures

within the region. These employment structures in their turn were created by an historical process of incremental change. The impact of North Sea oil upon employment cannot therefore be understood without reference to this process.

The recognition of this fact required an explanation of the specific set of social relations, that shaped the employment environment in the North East prior to the arrival of North Sea oil. In turn this involved a much greater period of study into primary historical material in the region's various libraries and archive centres than was originally anticipated, and is manifested in the lengthy historical analysis in Chapter 3. Such a departure however did not represent the absolute demise of the comparative element within the thesis, but rather its diminishing importance to the overall project. Instead of forming the central thrust of the thesis, a comparative analysis of the selected firms' experiences with North Sea oil is undertaken in Chapter 6 to illustrate the reaction of individual actors when faced with a particular set of historically constructed circumstances (or constraints). As such it reinforces the interactive view of the relationship between structure and agency in the social sciences.

3. The use of research methods

Method in the social sciences is inextricably linked to the epistemological framework within which it takes place. By asking a particular set of questions, one is unavoidably setting the terms of reference in which an interpretation of the empirical world must take place. A methodology that is concerned with descriptive questions, the "what", "where" and "when" questions, is better served through quantitative techniques, than one which seeks explanation behind empirical events in asking the "how" and the "why" questions.

Throughout the study, despite the changes described above, my concern has been with what Schoenberger (1991: 181) has described

as "strategic interrelationships", in particular with a series of inter-locking relationships at different levels: inter-regional disparities, inter-firm and intra-corporate variations, as well as the relations between managers and workers, and finally different groups of workers within individual firms. This involves the theoretical recognition in the first place that such power relationships exist and are fundamental features of economic reality.

Not only does the identification of these strategic relationships require an explanation, involving questions of "how" and "why", but it also necessitates a research strategy that is centred upon elements of degree, rather than absolute magnitude. Under these circumstances the most relevant approach is likely to be one based predominantly upon qualitative interviewing techniques rather than numerical data gathering exercises. This is not to decry the importance of more formal, standardised techniques, but merely to define their limitations and put the case for a less rigid and more flexible approach to the research process.

Whilst much of the material for this thesis was obtained by using informal interviewing techniques, more standardised methods have been used where appropriate. In particular standardised interviewing predominated in the early phases of the research project, when the aim was to define the structure and extent of the offshore construction industry. Such questions were concerned with description rather than explanation, in identifying features such as: the contractual linkage networks between firms; corporate status of individual firms; and the proportion of temporary to permanent employees (similarly skilled labour to unskilled) within firms. Less structured techniques were used to untangle the complex workings of the industry. For whilst a series of standardised questions can provide us with details at a superficial level, this type of approach reveals little about the strength and degree of strategic relationships. This kind of information is best solicited

in a less structured interview scenario in which a key respondent is encouraged to think about his/her position within the workplace in a strategic sense.

During the early part of the research programme a formal interviewing approach was used, whereby key managerial respondents (in most cases the senior personnel managers) from the six large fabricators were asked a set of standard questions, relating to ownership, firm size, relationship with subcontractors, workforce composition, etc. It was therefore an exercise in "mapping" out the bare bones of the industry within the region, as a prelude to more in-depth investigation. To complete this "mapping" exercise, managerial respondents from the 20 principal "named" subcontractors (within the North East) were also interviewed, again being asked a set of standard questions. In doing so I used respondents from the commercial staff, rather than the personnel departments of the companies involved, for I was interested in establishing the degree of involvement of these firms in the offshore market and by implication the magnitude of the industry as a whole.

In the ensuing management interview stages the approach became less standardised as questions were directed at the experience of individual firms. Thus, although at the beginning of each interview, a standard set of questions would be asked, concerning matters such as levels of employment, prospects for new contracts, etc, as the research programme progressed the interviews were increasingly concerned with enterprise-specific matters. A similar situation pertained for the interviews with trade union officials; the first part of the interview would be taken up with issues of scale and scope, to be superseded by less quantifiable topics such as labour relations, working conditions and internecine conflict over matters such as job demarcation.

The same type of pattern was in evidence for the interviews conducted with individual workers. From the outset of these

interviews a central important objective had been to interview a reasonably stratified sample that was representative of the total labour force in terms of skill levels, gender, age and period of employment.² In doing so I was primarily interested in the qualitative experience of work for the individual, but I also used these interviews to build up an understanding of the magnitude of offshore operations. Thus although the bulk of the interview usually revolved around individual worker experiences both in the labour process and in the labour market I did ask a set of standard questions at the beginning of the interview about individual work histories.

The manner in which some of the interview material is presented in Chapters 5 and 6 may appear anecdotal, and might invite criticism for being both unrepresentative, and open to the bias of the individual researcher. In defending the approach adopted here, I believe there are two important justifications. The first of these concerns the issue of validity. In the first instance, it has already been noted that the interview material for individual workers was itself selected in a stratified manner, to emphasise the position of particular groups within the labour market. More importantly these comments are not used in isolation but as illustrative components of an overall theme. In each case the remarks of individuals form one corroborative part of an argument that is constructed using a variety of source materials.

A second question concerns the issue of interpretation. The accusation of bias implies that there exists the possibility for an objective social science; that the social world can be viewed in terms of one reality. This is self-evidently not the case. As Sayer (1984: 43) notes:

".. social science should not be seen as developing a

²This type of information had been supplied by management in earlier interviews either in verbal or written form.

stock of knowledge about an object which is external to us, but should develop a critical self-awareness in people as subjects and indeed assist in their emancipation. It does this by first remembering that its "object" includes subjects, that the social world is socially produced and hence only one of many possible human constructions."

The social world is a matter of individual interpretation, and explanations within social science should be treated as such. In this sense then the form in which evidence is presented in this thesis should be examined, in its own terms, for the extent to which it supports the overall argument.

Appendix 4
Index of Abbreviations

A.S.B.	Amalgamation of Shipwrights and Boilermakers
A.U.E.W.	Amalgamated Union of Engineering Workers
B.N.O.C.	British National Oil Corporation
C.A.D.	Computer Aided Design
C.E.G.B.	Central Electricity Generating Board
C.E.U.	Constructional Engineering Union
C.F.P.	Compagnie Francaise des Petroles
C.S.E.U.	Confederation of Shipbuilding and Engineering Workers
E.E.T.P.U.	Electrical, Electronic, Telecommunication and Plumbing Trades Union
E.I.T.B.	Engineering Industry Training Board
E.I.U.	Economist Intelligence Unit
E.N.I.	Ente Nazionale Idrocarburi
E.P.I.C.	erect, procure, install and produce
G.M.B.A.T.U.	General, Municipal, and Boilermakers Allied Trades Union
H.N.D.	Higher National Diploma
I.M.E.G.	International Management and Engineering Group
I.R.C.	Industrial Reorganisation Commission
Mig.	Metal inert gas (welding)
N.E.D.C.	North East Development Company
N.E.D.O.	National Economic Development Office
N.E.I.	Northern Engineering Industries
N.E.M.	North East Marine
N.E.S.L.	North East Shipbuilders Ltd
N.J.C.	National Joint Council (for the engineering construction industry)
N.O.M.I.S.	National Online Manpower Information Service
N.S.S.	National Shipbuilders Security Ltd.
O.P.E.C.	Organisation of Petroleum Exporting Countries
S.E.F.	Shipbuilding Employers Federation
S.S.E.B.	South of Scotland Electricity Board

T.E.C.	Training and Enterprise Council
T.G.W.U.	Transport and General Workers Union
T.T.W.A.	Travel-to-work-area
Y.T.S.	Youth Training Scheme

