University of Hull

Once Upon the Tide
The English Coastal Motor Barge Reaches Its Zenith

Being a thesis submitted for the Degree of Doctor of Philosophy

In the University of Hull

by

JOHN CRISTOPHER GOLDING

2007

THE UNIVERSITY OF HULL

ABSTRACT

ONCE UPON THE TIDE

THE ENGLISH COASTAL MOTOR BARGE REACHES ITS ZENITH

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The English coastal motor barge (ECMB) was an estuarial vessel with a limited sea-going capacity. It represented a unique line of maritime evolution carrying the small initial capital cost, minimal manning, and low operating costs of the spritsail barge (which had come to dominate lower North Sea cargo carrying under sail) directly into the second half of the 20th century. It avoided transition through the era of the steam engine and the crewing, costs and unionisation associated with it.

This thesis is essentially a case study of a distinct class of tonnage. It aims to

(a) record the development, growth and decline in use of the ECMB;
(b) determine, set down, and quantify, those factors which allowed the ECMB to thrive as a distinct line of maritime development;
(c) establish which environmental and financial factors gave rise to growth and success in an era when British - and Western European - shipping generally was in rapid decline;
(d) set the extent of ECMB use in the context of
    (1) UK foreign trade,
    (2) the 'British' merchant fleet,
    (3) Continental competition;

before much existing, unpublished, documentary evidence is lost for ever. It considers the end of Empire and changing patterns of trade, voyages, cargoes, freight rates, technical change, the cost of money in Britain, UK Inflation, and taxation, but also the contribution of increased regulation and changed UK government attitudes in the recent decline of the ECMB.

It suggests that when the operation of the UK National Dock Labour Scheme acted to disadvantage major UK ports in competition with near-Continental rivals in loading and discharging ocean-going vessels, the ECMB had reached a stage of maturity and availability which facilitated the conversion of much UK trade into transhipment traffic moving via Continental ports. On entry of the UK into the EEC, a means of cheap short-sea bulk carriage was available.

An English river/sea ship - WILKS (II), 496 GRT, 1,002 DWT, entered service 1976, sold for conversion to a bunkering tanker 1986, and still in service as such.

Of the 60 vessels in the English Coastal Motor Barge fleet at End 1992, 27 were direct developments of this innovative ship.

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PART II

Dedication

This thesis is dedicated to John T. Gillie, a ship manager who was always the complete professional and the complete gentleman, which combination I have found rare.

JCG

Acknowledgments

I would like to express my appreciation for help given by Donald K. Beveridge of The Yorkshire Dry Dock Co. Ltd., John Marquis of Eggar, Forrester Ltd. and Captain Paul S. Kinley.

Particular thanks are due to my supervisor, Dr. David J. Starkey, for his guidance and assistance which, I hope, has enabled me to overcome my greatest inadequacies in writing in a historical context. His patience in the face of my somewhat idiosyncratic style of writing and presentation has been much valued.

Finally, the responsibility for the views and conclusions expressed or inferred herein is mine alone.

Essential Definitions

Tax avoidance - that which is legal.

Tax evasion - that which is a criminal offence.

Airdraft - the height from the water to the highest point on a vessel floating motionless in Fresh Water with masts, etc. lowered down; the vessel having full ballast but less than full fuel and Fresh Water. Broadly, it is the clear height of bridge the vessel can get under. Airdraft is not an 'official' figure and there is no statutory requirement for it to be calculated or recorded.

Year built - the year construction of a vessel was completed. This is not necessarily the same year that it joined a listed fleet.

Class VIII - Department of Trade Class VIII, which in 1975 equalled British Home Trade Limits - the coasts of the British Isles and the Continent of Europe within limits Brest and the River Elbe.

Class IX - Department of Trade Class IX - the coast of England within limits Dover and Gt. Yarmouth.

Class IXA - Department of Trade Class IXA - the Smooth and Partially Smooth Water area in the Thames Estuary, defined as the area to the West of a line drawn between Colne Point in Essex and Whitstable in Kent during Winter months and between Clacton Pier and Reculvers in the Summer months.

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Frontispiece from a Wilks Shipping Company brochure.
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List of Abbreviations

A.A.A.	Amateur Athletic Association
A.B.	Able bodied seaman
ABF	Associated British Foods
APCM	Associated Portland Cement Manufacturers
ARA	Amsterdam/Rotterdam/Antwerp
BHP/bhp	Brake horse power
BMCF	British Maritime Charitable Foundation
BML	British Maritime League
B.O.T.	Board of Trade
BSF	British Shipping Federation
CAP	Common Agricultural Policy
CTL	Constructive Total Loss
cy.	cylinder
D.Kr.	Danish Kronor
DM	Deutsch Mark
dwcc	deadweight cargo capacity
DWT/dwt	Deadweight Tonnage
ECMB	English coastal motor barge
EEC	European Economic Community
Ed	Edition
EHP	Effective horsepower
EU	European Union
F.I.O.	Free in and out
Fl.	Dutch Guilders
FT	The Financial Times
FW	Fresh Water
GCBS	General Council of British Shipping
GER	Great Eastern Railway
GRT/grt	Gross Registered Tonnage
H.M.	His/Her Majesty's
H.M.S.	His/Her Majesty's Ship
ICI	Imperial Chemical Industries
IFF	International Ferry Freight
IOM	Isle of Man
IOW	Isle of Wight
K-H	Kelvin-Hughes
Kw	Kilowatt
LBP/lbp	Length between perpendiculars
LGM	Lawful General Merchandise
LOA	Length overall
LSA	Lifesavingappliances
l.t.	Long tons
LWL	Loaded waterline
m.b.	motor barge
MD	Managing Director
MNAOA	Merchant Navy and Airline Officers Association
M.O.T.	Ministry of Transport
MSA	Merchant Shipping Act
m.t.	metric tonnes
NDL	National Dock Labour
NUS	National Union of Seamen
O.N.	Official Number
ONS	Office of National Statistics
O.S.	Ordinary seaman
PANAMAX	Panama Canal Maximum size
PLA	Port of London Authority
PLC	Public Limited Company
PM	Prime Minister
pmt	per metric tonne
R.A.F.	Royal Air Force
Ro-Ro	Roll-on, Roll-off
RPI	Retail Price Index
RT	Radio Telephone
R.T.	Registered Tonnage
R.V.	Residual Value
S & P	Sale and Purchase
S.	Summer
S.B.M.	Single Buoy Mooring
SOLAS	Safety of life at sea
S/S	Special Survey
SW	Salt Water
T/C	Timecharter
TPI	Tons per inch immersion
TL	Total Loss
USA/US	United States of America
VHF	Very high frequency RT
WCUK	West Coast UK
WDV	Written down value
WW1	World War One
WW2	World War Two

Coastal motor barge fleets

Fleet	Including, at various times, vessels owned by and/or managed/operated for
L & R Rochester, Kent.	The Rochester Barge Company The London & Rochester Barge Company The London & Rochester Trading Company Hay's Marine Services Crescent Shipping Ltd. Francis & Gilders Ltd. Daniels Bros. (Whitstable) Ltd.
R. Lapthorn Hoo, Kent.	R. Lapthorn Shipping Ltd. R. Lapthorn & Co. Ltd. R. Lapthorn & Co. (Holdings) Ltd. John H. Whitaker (Tankers) Ltd. Whitfleet Ltd. John H. Whitaker (Holdings) Ltd. Bayford & Co. Ltd. Harris & Dixon (Shipbrokers) Ltd. Jacobs & Partners Ltd. Jacobs & Partners and R. Lapthorn & Co. Ltd. John I. Jacobs PLC. Jacobs Offshore Ltd. Jacobs & Tenvig (Offshore) Ltd. Jacobs VI Ltd. Eddystone Shipping Co. Ltd.
F. T. Everard Greenhithe, Kent.	F. T. Everard & Sons Ltd. F. T. Everard & Sons Management Ltd. F. T. Everard Shipping Ltd. Short Sea Europe PLC. Faversham Ships Ltd.
Thos. Watson Rochester, Kent.	Thos. Watson (Shipping) Ltd. Veneto Shipping Co. Ltd.
Tower Shipping London.	Tower Shipping Ltd. Tower Ships Ltd. Ensign Express Shipping Ltd. Fordham Navigation Ltd.
Wilks Shipping London.	Wilks Shipping Co. Ltd. Eggar, Forrester Ltd. Eggar, Forrester (Holdings) Ltd.
Weston Shipping London.	Mardorf Peach & Co. Ltd.
Seacon London.	Seacon Ltd. Sea & Continental Waterways Transport Co. Ltd.
Sully Freight Norwich.	G. F. Sully Ltd. Sully Bros. B. F. and R. A. Sully

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1. ELATION/FUNCTION Reprint from CONOSHIP Newsletter 3/1966.

2. LADY SARITA/LADY SHEENA Reprint from CONOSHIP Newsletter 3/1966.

3. EDWARD STONE Reprint from SHIP AND BOAT BUILDER INTERNATIONAL, November 1965.

4. COMMODORE TRADER Reprint from FAIRPLAY INTERNATIONAL SHIPPING JOURNAL, 30 December 1971.

5. WILKS (II) Brochure.

6. WIB (II) Particulars Sheet.

7. WIGGS (II)/LU Reprint from FAIRPLAY INTERNATIONAL SHIPPING WEEKLY, 26 February 1981.

8. The Yorkshire Dry Dock Co. Ltd. Standard Data Sheets for
   (a) 50 metre coaster;
   (b) 55 metre coaster;
   (c) 58 metre coaster.

9. Map 1. Barge Country.
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Selective Chronology

1899		Sailing barge SPINAWAY C launched with an auxiliary engine.
1900	July	APCM formed.
1907		First L & R power craft, ARCTIC.
1911	August	National Dock Strike.
1912		Start of the creation of the welfare state: national insurance introduced (at 4d per week).
	May	London Dock Strike; bargemens' strike or lock-out.
1914	4 August	WW1 commences.
1918	11 Nov.	WW1 ends.
1924		Dock Strike.
1926	3/12 May	The General Strike.
1930		Sailing barge building ceases. The start of real depression.
1932		UK unemployment passes 2.75m.
1933	October	Francis & Gilders Ltd. formed.
1936		Lords Westminster tax ruling.
1939	3 Sept.	WW2 commences.
1945	14 Aug.	WW2 ends.
1946		The Inland Transport Act nationalizes railways, road transport, docks and harbours.
1949	July	Dock Strike, London docks halted.
	18 Sept.	The £ is devalued by 30%.
1950		L & R commences building steel motor barges.
1952	February	British Government offers farmers £5 an acre to plough up grassland for crops.
1953	3 Feb.	East Coast floods.
1954	October	Month long London Dock Strike.
1955	June	Dock Strike in London and Hull.
1956	16 Nov.	Suez canal blocked.
1957	8 March	Suez canal re-opened for smaller vessels.
1957	20 July	Harold Macmillan makes his 'never had it so good' speech.
	August	London Dock Strike.
1958	5 Dec.	The first section of motorway in Britain, the M6 Preston by-pass, opens.
1959	November	The first part of the M1 motorway opens.
1960		New construction of steam engines by British Railways ceases.
1963	March	The Beeching Report on the slimming-down of British Railways is published.
	18 Nov.	The Dartford Tunnel under the Thames opens.
1964		L & R taken over by The Proprietors of Hay's Wharf.
1965	16 Feb.	British Rail publishes its plan to halve the rail network.
	21 Sept.	British Petroleum discovers oil in the North Sea.
1966		Finance Act introduces cash grants in place of taxation investment allowances.
	May/June	UK Seamen's Strike.
	June	Suez canal closed. Report of the Geddes Committee on British Shipbuilding.
1967	4 March	First UK North Sea gas pumped ashore.
	19 Dec.	Britain devalues the £ by 14.3%.
1968		Steam traction on British Railways ends. First XL400 vessel delivered.
1970		UK National Dock Strike, State of Emergency declared. Report of the Rochdale Committee into 'the organisation, operation and efficiency of the UK shipping industry'.

Selective Chronology, Cont.

1970		More working days lost in the UK from strikes than in any year since 1926.
1971	4 Feb.	Rolls Royce declared bankrupt.
	15 Feb.	Decimal currency is introduced in the UK.
		The Investment and Building Grants Act ends cash grant.
	April	The Dutch Government introduces a scrapping scheme.
		Last XL400 vessel delivered.
	21 Nov.	FESTIVITY (O.N. 304695) abandoned.
1972	9 Jan.	Miners' strike begins.
	9 Feb.	Power crisis, State of Emergency declared.
1973	1 Jan.	Britain joins the EEC.
	1 Feb.	The CAP comes into operation in the UK.
	1 April	Britain introduces Value Added Tax.
	March/June	FESTIVITY Formal Investigation.
	October	Middle East War: oil prices quadruple.
	13 Nov.	Miners and power workers strike, State of Emergency declared.
	31 Dec.	3-day working week imposed to conserve fuel in power crisis.
1975	6 June	Suez canal re-opened.
	11 June	First UK North Sea oil pumped ashore.
		British merchant fleet peaks in tonnage terms.
		RPI peaks at 24.2% p.a.
1976	9 April	WILKS (II) enters service.
	August	UK unemployment passes 1.5m.
	29 Oct.	Mining begins at the new Selby coalfield.
1977		Clelands nationalized.
1979	4 May	Margaret Thatcher becomes UK PM.
		British foreign exchange controls abolished.
1980	December	UK unemployment passes 2m for the first time since 1935.
1981	24 June	The Humber Bridge is opened to traffic.
	17 Sept.	The Royal Group of Docks in London is closed.
		Lords Ramsay tax ruling.
	19 Dec.	The Penlee lifeboat is lost with her crew of 8 whilst attempting to rescue the crew of UNION STAR.
1982		Lords Burmah Oil tax ruling.
1983		L & R takes delivery of its last dry cargo vessel.
		First UK grain export (to Rotterdam) in containers.
1984	February	Lords Dawson tax ruling.
	12 March	UK miners' strike begins.
		Clelands closes.
		Last Weston Shipping vessel sold.
1985		UK miners' strike continues.
1986	29 Oct.	The M25 is finally completed.
1987	16 Oct.	Hurricane: the worst storm in England since 1703.
1989	July	National Dock Labour Scheme abolished.
		Last new coastal motor barge delivered.
1990	22 Nov.	Margaret Thatcher resigns as UK PM.
1991		The Dartford Bridge over the Thames is completed.
1992	March	Last motor coaster visit to Wells.
1997	July	Administrators appointed for YDD.
	3 Sept.	A/S. Nordsøvaerftet files for bankruptcy.
	Dec.	L & R passes into Danish control.
2000		L & R moves its base from Rochester to Southampton.
2001		Royal assent given to Act closing the port of Colchester.
2002		Last four L & R dry cargo vessels sold.

PART I

1 FOREWORD

'But then shipping, like matrimony, never ceases to furnish examples of hope triumphing over experience.'

Greek shipowner, 1967.

Of the surface of the earth, 140 million square miles is water and only 51 million square miles is land. The ship has attained an interest and inspired affection unique among man's creations: perhaps this has been because until the last few years it alone among man-made objects was to be found on the surface of the predominant part of the earth.

The interest of man in the ship and the magic ships provide for some men has defied logical explanation from many far better qualified to provide an explanation than this author. He does not expect this thesis to add to that magic. He does hope to present for those presently interested and to preserve for future generations some facts concerning vessel trading operations which were so commonplace three decades ago that a thesis such as this would then have been unthinkable. This work has grown out of a desire to place on record what was once widespread but has in thirty years become history, and in the belief that if some effort is not now made to record the minutiae of trading information, those now young will not even have the opportunity to find it interesting or intriguing in the future. Some things if not set down in writing are lost for ever.

It has ever been the character of man to appreciate least those things with which he is most familiar. Perhaps that is why the spritsail barge - once so common on the East Coast - traded for so long unhonoured and unremarked. In recent years, no type of craft has enjoyed such interest and adulation - and publication - as the spritsail barge, the coaster of a previous age. Books and journals have been published and barges have been lovingly preserved. Yet this

surge of interest came thirty years after such craft ceased trading, and when much of the information concerning the economics of that trade had already disappeared unrecorded.

Steam too has attracted its own adherents, but - in England at least - the motor coasting vessel does not yet seem to have attained any significant following. Certainly, it has never claimed the interest displayed in the production of books which the deep sea ship has seen. Yet the very time-scale of short sea voyages - say, six days for a round voyage - makes for great variety of trading and much interest in little time.

From the earliest beginnings of navigation, shipping has been about carrying things for reward. This thesis is about ships and money: small ships, now obsolete, and sums of money which after only two or three decades look so small as to cause amazement. Yet this is what short sea trading really was about only twenty years ago.

The author has set down in detail freight rates, costs and earnings for a number of vessels. Where faced with the choice of recording very little about nearly everything or nearly everything about very little, he has chosen the latter. By so doing, he hopes to record details of trading rather than generalizations about such trading, which may owe more to prejudice or opinion than to fact.

As the author completes the bibliography for this thesis he is conscious that the most outstanding feature of coastal motor barge trading in the second half of the 20th century is probably the paucity of published information in this field. Hence, he feels there is room, and need, for this work: for its faults and omissions, he alone is responsible.

2 INTRODUCTION

'There must be a beginning of any great matter.'

Francis Drake, 1587.

2.1 What this thesis is about

The second half of the 20th century saw a rapid decline in the number of British ships and a great reduction in the number of British shipowners. This pattern was so marked and consistent that any clear departure from it is worthy of study. Against the general trend, the late 1960s saw the establishment in London and the South East of England of a crop of completely new shipowning and operating ventures, working with coaster and motor barge tonnage usually at the bottom of the ship size range. This was a field in which Dutch and West German tonnage was at that time predominant. While the birth of these new English shipowning ventures owed much to the availability of the Cash Grant and to particular fiscal provisions now repealed, and while the longer term profitability of some of these ventures is now open to question, it does appear - after three decades - that these 'new' operations have shown a markedly better survival rate than has been normal in World shipping in general or in British shipping in particular over this time. Indeed, viewed against the wider background of shipping in Western Europe over the last half century, solvent survival itself for any material period may well be considered an achievement.

The time pressures associated with coasting and short sea shipping necessarily mean that the premium placed on good management, both on board and ashore, is great. While it is never possible in the commercial world 'to beat all of the people all of the time', the dearth of published information and the time constraints inherent in trading ships in coasting and short sea trades does tend to reward skill, experience and effort. Thus, even against the

background of a generally unpropitious trading environment, some have managed 'to beat most of the people most of the time'. It is particularly gratifying to see progress where it is made against the tide.

The English coastal motor barge (ECMB) is essentially an estuarial vessel with a limited sea-going capacity. The ECMB represented a distinct line of maritime development carrying the low initial capital cost and the minimal manning and low operating costs of the spritsail barge (which had come to dominate lower North Sea cargo carrying under sail) directly into the second half of the 20th century. It avoided transition through the era of the steam engine, and the crewing, costs and unionisation which were associated with it.

When the operation of the UK National Dock Labour Scheme acted to disadvantage many major UK ports in competition with near-Continental rivals in the loading and discharging of ocean-going vessels, it is suggested that the ECMB had reached a stage of development and availability which greatly facilitated the conversion of much UK trade into transhipment traffic moving via near-Continental ports, particularly Rotterdam. A means of cheap short-sea carriage was to hand.

2.2 Why chronicle this facet of Maritime History now?

The author is very much aware that in the early years of the last century, when documentary information concerning the trading of spritsail barges was readily available, no attempt was made to record what was then the commonplace, the 'normal' means of transporting bulk goods. Only very belatedly, in the 1950s, as trading under sail was ceasing, did writers such as Hervey BENHAM (Down Tops'l, 1951) seek to record this aspect of Maritime History.

The ECMB now appears to be very much in the same position as was the spritsail barge 50 years ago. As, prima facie, the ECMB was one of the rare success stories in British shipping in the second half of the 20th century, the author feels the economic facts of its operations deserve to be recorded before much information is lost forever.

2.3 Why this author?

The author participated in the design, building and management of this class of tonnage over a period of 18 years. Whilst others might have had greater experience in the specific field of ECMB management, the author considers his shipping and transport experience to be sufficiently wide to enable him to view the ECMB in the overall context of shipping and UK trade. Some individuals whose influence and experience was greater than his, and who might have done a better job in researching and recording this part of Maritime History, are now dead. They will not do it now: he can.

2.4 Why The University of Hull?

In the heyday of this type of tonnage, say, 1965-85, of the order of half of the total of such vessels built were constructed in Hull or at other Humber locations. The author felt strongly that in The University of Hull, Maritime Historical Studies Centre there existed just that knowledge and expertise which could enable him to avoid his greatest inadequacies in writing in a historical rather than a business field.

2.5 Aims

The aims of this thesis are to

(a) record the development, growth and recent decline in use of the ECMB;

(b) determine, set down, and quantify, those factors which allowed the ECMB to thrive as a distinct line of maritime development;
(c) establish which environmental and financial factors gave rise to growth and success in an era when British - and Western European - shipping generally was in rapid decline;
(d) set the extent of ECMB development and use in the context of
    (1) UK foreign trade,
    (2) the 'British' fleet,
    (3) Continental competition;

before much presently existing, unpublished, documentary evidence is lost for ever.

This thesis is essentially a case study of a distinct class of tonnage, the ECMB. The author is intrigued by the organisation and/or the development in shipping which prima facie runs counter to generally accepted trends in commerce and/or ship design. Thus, he seeks to answer the question 'What went on here?'

The author starts from the hypothesis that, for the ECMB to have prospered as it did, there must have been a singularly good adaptation to a very particular external environment. Consideration of the external environment includes appreciation of changing patterns of trade and of the relative importance of factors such as vessel/cargo size, fuel costs, wage costs, and subsidies (both 'inside' and 'outside' shipping). Regard is had to political and social developments, in both a British and a wider European context.

2.6 Sources of Information

For this thesis, the sources of information for events and developments prior to about 1960 will be almost exclusively documentary evidence in existing publications. Such publications are focussed on sailing barges or are of general shipping and/or geographical interest, rather than directed at the specific objects of this investigation.

Thus, this part of the exercise has been largely one of extracting small snippets of pertinent information from large amounts of 'general' or 'sailing barge' reading.

After about 1960, the primary sources of information have been presently existing, unpublished, documentary evidence. Some such evidence was already in the hands of the author, who preserved it out of interest over 18 years of participation in the design, building and management of this class of tonnage. Other such information has been obtained by the author by 'trading upon' contacts made during his work in shipping.

The author has obtained clarification of particular points by informal interview with friends/acquaintances. He would, however, make the point that such activity has of necessity been very limited: such 'contacts' being generally now well past retirement age.

3 LITERATURE

> 'Economics is a branch of logic; history is analytical description, based on evidence. There are no models in history, because every event is unique.'
>
> Robert Skidelsky, Economist and Historian.

The author wishes to state at the outset that section 5.1 hereof comes almost entirely from Wilfrid Wren (1976). Dr. Wren has the 'feel' of the Eastern Counties. This author saw no need to re-invent the wheel, but he does seek to stress that the sailing barge developed and endured over a singularly long period against the background of strangely unchanging and local trade patterns in the ports of East Anglia. The use of the apt term 'Old England' does not come from Wren, while a quotation from Bob Roberts (1981) is used in connection with Maldon.

This author instinctively has reservations with Bob Roberts. Bob had many and varied talents. At 14 he left his home in Dorset and went to sea in WATERWITCH, a barquentine and the last square-rigged merchant ship to trade out of a home port in Britain. He won a bronze medal in the A.A.A. Marathon long before marathon running became popular, and fought for 'a pound a round' at the old Blackfriars ring. During the Depression he made two ocean voyages on yachts, one of which was wrecked, and also served as Mate on a trading schooner carrying rum in the West Indies. He was Master of an ex R.A.F. rescue launch lost by fire on a delivery voyage, and owner/Master of the CAMBRIA from 1954 to 1971. He then sold CAMBRIA and went Master in a motor coaster for 8 years. Bob wrote at least five books, trained with Chris Chataway in 1955, and on more than one occasion was paid by the B.B.C. (he was nautical and historical adviser to the last television series of 'The Onedin Line'). But Bob's loyalty was not always to accuracy: half of Breeze for a Bargeman has nothing to do with barging at all; this author just cannot believe that the picture on page 101 thereof is of 1814. Bob Roberts wrote (1981 p 134)

> 'Inevitably, the time came when sail was no longer an economic proposition. Such vessels were hated by dockers who had to load them .... When we did get a freight, dockers were resentful, and even insulting, about the work of stowing cargo in our hold. Instead of using every available cubic foot in the barge they would "draw the slings" and topple it in anyhow .... the mate and I would slog for hours and hours, after they had gone home, shifting and re-stowing hundreds of heavy bags for our own safety ....'

But the hold configuration of CAMBRIA was the same as that of the motor barges, virtually all of which were ex sailing barges. It seems unlikely that the London docker was averse to sailing craft perse. Towards the end of trading CAMBRIA, Bob Roberts seems to have developed something of a chip on the shoulder. Certainly, for all his talents, or possibly because of them, Bob was not a typical coasting bargemaster. This author has chosen to rely more on Captain 'Harry' Bagshaw (1998).

For railway facts, the author has relied on Heap and van Riemsdijk (1980), Joby (1977), Simmons (1987) and Thomas and Whitehouse (1988 and 1989). No contradictions were noticed.

For details of coastal liner services, Charles Waine (1999) was very useful, and reference was also made to Benham (1951). Hervey Benham fired this author's enthusiasm for the sailing barge: Down Tops'l was his choice for his eleventh birthday present from his parents. As one would expect from the highly regarded editor of the Essex County Standard, Benham writes well, but on close inspection, some caution is required. For example, in Last Stronghold of Sail (Second Impression 1950, p 10) we have '.... the total fleet of sailing barges .... numbering some 500 craft in 1939 ....' while in Down Tops'l (p 20) we have sailing barges '.... about 750 in 1939 ....'. Other small discrepancies may be noted; they are not material, but a 50% variation in the total size of the barge fleet is.

The author has dealt with particular trades very much by reference to one leading organisation in each case. Thus the North Kent brick boom is covered very much in terms of Smeed Dean, and to a lesser extent Eastwoods. The cement industry

is treated in terms of detailed consideration of the run off of the APCM fleet. In as much as George Smeed was at one time the largest manufacturer of bricks in the world, and when APCM was formed in July 1900 the 24 firms involved had an 1899 certified production of 1.4m tons out of an estimated Thames and Medway area annual total of 1.7m tons, this focus seemed valid. For George Smeed and brickmaking, the author relies heavily on Perks (1981) and on Eastwoods on Willmott (1972), both of which were invariably reliable. Willmott (1977) was invaluable in connection with the APCM fleet, and almost error-free. Bagshaw (1998) provided much interesting information, particularly concerning the conversion of the SCONE to an auxiliary. This author feels that Bagshaw rather overstates the importance of the SCONE 1934 engine provision, but this is a matter of opinion, not an error of fact.

The listing of commercial barges active as at 30th April, 1954, appearing in Cooper (1955) was most useful: Frank Carr (1971 Edition) records his debt to Mr. L. Vandersyde and to Mr. F. S. Cooper for revising the list of barges trading under sail appearing as Part I of his Appendix II. For numbers of barges trading after WW2, all roads appear to lead back to Cooper: it is thus particularly depressing that in Cooper (1955) the barges listed are 34 Sail, 44 Auxiliary, 82 Motor only but when summarised by Owner the totals shown are 36, 47 and 80 respectively, which totals do not relate to the barges listed above them. Moreover, the error in all three totals is not accounted for by the fact that the list of Owners shows one firm twice. The moral, accept no addition or calculation, however simple, without checking it, is further evidenced by Horlock (1977) Appendix III: 140 tons at 7/6d a ton is not £45; the chartering commission is 5%, not 5/-; and the expenses listed do not total the £8/10s shown. Such simple errors do not engender confidence.

The capital costs of barges owe much to Finch (1979) but Roger Finch produced a real crop of inconsistencies: IDA, 1895, cost new £720 on page 17 and £979 in Appendix 1; ENA, 1907, was fitted out as a mulie at a cost of £232 on page 27 and £480 in Appendix 1; the registered tonnage of AIDIE and

BARBARA JEAN is given as 144 on page 73 and 114 in Appendix 1 (Benham 1951 gives it as 119); on page 31 the keel of the JOCK is laid summer 1908 and she is launched in May 1909, while in Appendix 1 she was built 1907-8. According to Finch (1979) MARJORIE was the first barge to be built on the Dock End Shipyard at Ipswich: Benham (1951) has a plate between pages 96 and 97 which shows 'MARJORIE ready for her broadside launch at Cann's Harwich yard'.

In Simper (1972) the two photographs on page 84 are transposed. In Perks (1975) Plate 169 on page 136 is not the CAMBRIA, which was a wooden barge, not an 'ironpot': the same mistake appears on page 140.

All these small criticisms may seem carping, but their number does rather serve to detract from the usefulness of the books as works of reference.

4 RESEARCH METHODOLOGY

> 'All the business of War and, indeed, all the business of life, is to endeavour to find out what you don't know from what you do.'
>
> The Duke of Wellington.

4.1 The case study

This is a case study. The events considered are history. A case study is basically problem analysis. It has been defined as 'interpretation in context' (Gronbach, 1975).

By combining qualitative and quantitative data in a narrative text it seeks to provide insights upon the data which are deeper than might have come from other forms of presentation and to arrive at a comprehensive understanding of events, circumstances, causes and consequences at the critical period in English coastal motor barge affairs.

This study is thus a combination of description, analysis and diagnosis in a complex situation. The mode of analysis is inductive, by the author.

The main weakness of the case study approach is often held to be that it lacks generalisability, due to high specificity and the inability to replicate the findings of particular research. Each case study is unique. In this instance, this is regarded as no handicap since the objective is specifically to generate new insights into coastal motor barge events in the particular environment of that craft.

This study deals with events perceived by the author as being critical in the 'success' of the English coastal motor barge. It is suggested that this very criticality is a reason why the case study approach is particularly appropriate as a means of exploring, illuminating and explaining issues in motor barge affairs. It is contended that the case study is a most suitable medium for the presentation of data in this instance.

4.2 Inappropriate investigating techniques

For this study, because of the specificity of the coastal motor barge environment, business comparisons elsewhere are inappropriate. Again, interviews, surveys and questionnaires are ruled out as the main participants in the story are now dead. Participant observation did occur: the author had a part in some of the critical events in this saga. There was also non-participant observation in that throughout much of the period addressed by this study, the author was working in the British shipping industry and was an interested - and partially informed - observer of British shipping affairs.

4.3 Documentary research

This study was undertaken by obtaining and analysing documentary evidence, much of it publicly available. For this case study, documentary research has advantages; it

(1) gives access to otherwise inaccessible information;
(2) is available in ready-to-read format;
(3) can be accessed at low cost;
(4) can be obtained within an acceptable timescale;
(5) is non-reactive evidence;
(6) is free of the feelings and subjectivity of the writer;
(7) is open to comparative analysis over time;
(8) is contemporary evidence providing historical insight without need for adjustments to reflect the perspectives of time/context.

But documentary research has the following drawbacks:

(a) data may have been altered before inclusion in papers;
(b) there is no reflection of non-verbal behaviour;
(c) non-standard formats inhibit comparison;
(d) documents may contain bias by their authors;
(e) there is the personal bias of the researcher in the selection and interpretation of documents;
(f) documentary evidence may be incomplete without there being any indication of the degree of incompleteness or of the representativeness of surving documents;
(g) access to documents may be denied because of
    (i) the sensitivity of their contents, or

(ii) the disinterestedness of their custodians, without it becoming known which reason is valid.

In that really interesting information is often too sensitive to be committed to paper, only the innocuous and the non-contentious may survive. Thus, the reliability of documentary evidence is often grossly over-rated.

Archive material is fixed in time, inflexible, formal and unchangeable. There are no custodians of memory: the norms of the organisation and the time can easily be forgotten. Environmental factors may become unclear, and there is need for events to be interpreted. The very fact of committing information to paper tends to increase belief in its reliability. Once files are closed, dead data is readily accepted as fact. Perceived reality becomes truth.

Nevertheless, it is suggested that documentary evidence is central to the presentation of case studies as it has the potential to offer both qualitative and quantitative perspectives on research issues.

4.4 The focus and boundaries of research

This study is concerned with the English coastal motor barge over the period 1899-1999. It investigates the affairs of England and its government only in so far as they affected the motor barge.

Research has generally been confined to obtaining and analysing documentary evidence.

Firstly, it considers the sailing barge in the context of the Eastern Counties, the coming of the railways, the rise of London, and the Industrial Revolution as expressed in the brickmaking and cement industries of North Kent. Secondly, it outlines the making of the motor barge. It addresses the great profitability of barging under sail, the failure of steam to compete with the spritsail barge, and the legacy of great expectations which was left to the motor barge in the second

half of the 20th century.

It then addresses, factor by factor, a range of matters which are seen as contributing to the 'success' of the English coastal motor barge. In each case, it seeks to identify and focus on those incidents and relationships which are perceived as being critical to that 'success'.

In the interests of - it is hoped - clarity, the author eschews the temptation to try to present the whole motor barge story in terms of a single, continuous, chronological narrative, regarding an item by item approach as being more likely in many important matters to allow focus and due emphasis to be directed towards those parts of a long and complex story which are really significant. Finally, the study goes back into the 19th century only where it is felt that what went on later may thereby be better illuminated.

4.5 Personal values of the author

In research for this thesis, the author has tried to be objective. But his interpretation of events, his selection of material, and his analysis of findings cannot but be influenced by his own background, beliefs and values.

The author started work in shipping when the British merchant fleet was the greatest in the world. He achieved his dream in that he owned and managed his own (small) ship. In 1986, he sold it and left the industry because he felt (i) the age of the one man/one ship shipowner had passed, and (ii) those things which he had enjoyed in the shipping industry were going. He believes this assessment has been proved correct. He does not regret his decision. He is aware, however, that his background is such that it may be contended that the dinosaur of the coastal motor barge is being considered by another little dinosaur which took a conscious decision not to adapt to a changing external environment for shipping. The author can only ask the reader to make any allowance necessary for this.

5 CONTEXT - PORTS AND TRADE

'As the sun rises in the East to open and enliven the day, so the Worshipful Master is placed in the East to open the Lodge, and employ and instruct the Brethren in Freemasonry.'

Lodge Opening, Emulation Working.

5.1 The Eastern Counties - 'All Behind'*

The predominantly agricultural counties of Lincolnshire, Norfolk, Suffolk and Essex possess a total coastline of over 300 miles. Their land communications are amongst the poorest in England. Many of their roads are virtually unchanged from the earliest days of the road transport era. Today there is still not so much as a mile of motorway in Suffolk or Norfolk.

Until the Industrial Revolution, the towns in this area were among the most important in Britain. Colchester is the earliest recorded town in the country, a capital dating from pre-Roman civilisations and Norwich was the centre of the most densely populated area of Britain in the Middle Ages. Even after the discovery of America, and the decay of the eastern region in the 17th century, Norwich was still in 1701 the third largest city in Britain after London and Bristol.

In the mediaeval period the coastal towns of Boston, King's Lynn, Yarmouth and Ipswich became in company with London the most important ports of England. In 1300 Boston was the leading seaport in Britain, and the wool staple was transferred from Lincoln to Boston in 1369. All these ports faced the continent of Europe and were outlets for a hinterland which was the nearest approach to an industrial area that existed at that time. The Norman town of Harwich played a vital role in the defence of these trade routes out of all proportion to its size. If we mentally superimpose the historical fact of almost perpetual emnity between France and

* In 1970, an East Anglian newspaper ran a competition for the design of a coat-of-arms for the region. One (winning) entry portrayed the British Isles as an old lady in Victorian costume, with East Anglia as a large 'bustle' projecting out into the North Sea: the motto beneath it was 'All Behind'.

England, we can see that for much of the time the English Channel was ruled out as an area suitable for peaceful maritime trading. The East Coast ports therefore remained the main points of entry/exit for the exchange of goods between Britain and the Continent (Wren, 1976, p 12).

Fluctuations in the fortunes of the ports of the eastern counties may be grouped into three phases. Firstly, in the Anglo-Saxon and early mediaeval periods the ports were the most important in the British Isles. Secondly, a phase of regression lasted from about 1500 until the 1950s, when, apart from imports of Baltic timber and imports/exports of grain, the harbours of the region ministered to purely local needs. In the third phase, say, the last 50 years, the enlargement of the EEC and labour troubles in London and West Coast ports have focussed attention once more on the East Coast ports (Wren, 1976, p 13).

The carriage of Tyne coal by sea to the eastern counties and to London occupied many coastal vessels built and owned in the region, providing stimulus to a flourishing local shipbuilding industry. From the beginnings of the coal trade in the late 13th century, collier brigs and other vessels were driven ashore on the flood tide to discharge on the beach. Cromer and Aldeburgh were such 'ports', as was Lowestoft until 1830. Similarly, in the South Suffolk and Essex creeks, the flat-bottomed sailing barge could berth on the mud almost anywhere near the isolated farms, bringing lime and other raw materials and carrying away agricultural produce.

The continental wars of the 16th and 17th centuries meant the cessation of all but the most essential trading across the sea to Northern Europe. The ports of the eastern counties became increasingly local in their trade, dealing more in the coastwise carriage of goods. This state of affairs lasted from 1600 until the relatively more stable conditions of the 19th century and, in some cases, to the present day.

Meanwhile, the discovery and subsequent colonisation of America, and the later trade links with the West Indies,

Africa and the Far East, had brought about a radical change in the point of entry of the most important cargoes into Britain. West Coast ports such as Bristol and Liverpool rose rapidly in importance; by 1701 Bristol had overtaken Norwich in size, with a population of 30,000 to Norwich's 25,000. By 1801, as the mechanisation of industry developed, Liverpool had also exceeded Norwich, with a population of 82,000 as against only 37,000 at Norwich. Moreover, there does seem to have been produced in the governing bodies of the seaport towns of Eastern England an all-pervading lethargy and an almost total apathy towards any idea of improving local harbours. Not only did merchants do nothing to improve ports, and thereby extend their trading prospects, in some cases they actively opposed proposed developments. The problem was not simply lack of capital. The energy of the citizens of Yarmouthin creating a permanent harbour entrance in the mid-1600s was not matched at that time, nor for long afterwards, by any other place on the coast of the eastern counties.

The so-called Agrarian Revolution, including the earlier enclosures, greatly increased the eastern counties' contribution to the feeding of the expanding population of England in general and of London in particular. Agricultural products flowed down the coast to London in ever-increasing quantities, carried safely in later years in the ubiquitous spritsail barge. In return, these coasters came back to the East Coast ports laden with such commodities as grain from the London docks, bricks and cement from Kent, ragstone for estuary walls and roadstone, and lime for agricultural use. These commodities continued to be so carried throughout the railway age: only the coming of the motor lorry curtailed the coasting trade in these articles. Much of the pattern of trade in the ports of the eastern counties, therefore, did not change from 1750 through to 1950. The Industrial Revolution and the resulting increase in the export of British manufactured goods almost completely passed the Eastern region by. Consequently, the trade patterns of its ports remained strangely continuous and unchanging. Only since 1950 has the emphasis of British trade shifted back to the continent of Europe, as in mediaeval times.

While Britain was rapidly changing into an industrial nation it was also changing from a country which could support its population and livestock from its own resources into one which was forced to import food grains and feeding-stuff for stock. Before 1846, Britain only bought heavily in foreign grain markets when her own harvest was poor: after 1846, it was a constant necessity.

The Corn Laws served to protect British coastal shipping from foreign competition for centuries. The Corn Laws made for high wheat prices and a commensurately high charge for the carriage of wheat by sea. Their repeal forced farmers and merchants to be less generous with freight rates, and cheap grain from the Continent began to arrive in quantity in England in foreign ships. From 1750 to the 1840s much grain was exported from East Anglia to Dutch breweries. The repeal of the Corn Laws swung the grain trade in the reverse direction: from then on far more grain was imported into the region than was exported, apart from the London coastal trade.

The local nature of trade is demonstrated in the 1826 figures for Wisbech: vessels to/from foreign 45; vessels coastwise 1,164. The static nature of Wisbech's trade is evidenced by figures for the total tonnage handled by the port: 1910 89,333 tons; 1965 88,000 tons (Wren, 1976, pp 32,36).

In 1820 Lowestoft consisted of a fishing township with two lighthouses but no harbour. The impetus for change came not from Lowestoft but from inland Norwich, where dependence upon Yarmouth was greatly resented. A syndicate of Norwich promoters was set up and The Norwich and Lowestoft Navigation Act received the Royal Assent in 1827. Work was completed in February 1833, the first ship arriving at Norwich via Lowestoft on the 23rd of that month. In 1834, 200 ships arrived at the Navigation company's wharf at Norwich via Lowestoft: of these 94 carried coal and 79 general goods from London. In the reverse direction, 105 ships loaded at Norwich in 1834 and passed out via Lowestoft; 87 of these carried grain, flour or malt to London (Wren, 1976, p 109).

The hey-day of the sailing barge coincided with a prolonged depression in East Anglian agriculture which began in 1879, when a disastrous harvest started a depression which lasted until 1914. Acres were turned over to corn and grass and machinery became more widely used. Yet, possibly, bargemen benefitted from this in the short term for there was plenty of work in the hay and cereals trades for them. The 1880s were certainly a difficult time for King's Lynn. The King's Lynn Dock Company was in the hands of a receiver from 1890 to 1892.

The Chelmer and Blackwater Navigation 'was built following the embittered fight by the Maldoners who feared loss of custom and dues - the fight lasted for 62 years' (Perks, 1975, p 33). Until the Navigation was opened in 1797, from Heybridge Basin (bypassing Maldon) to Chelmsford, chalk, coal and stone were being transported by cart at around 1/- per mile for 1¼-ton cartloads. A bargeowner could purchase chalk at Gravesend for 2/6d per cartload, discharging it at Maldon Quay for 10/-. The freight rate of 7/6d per cartload compares with a cartage charge from Maldon to Chelmsford of 8/- and to Dunmow of 15/-. Bob Roberts commented (Roberts, 1981, p 113):

> 'Perhaps Maldon would have become a thriving port had the builders of the canal from Chelmsford been allowed to bring it into the town, as was intended. But there seems to have been a reluctance on the part of Maldon's ruling elders to allow the town to develop into a commercially important centre of North Sea trade. So the canal diggers had to break out to the river further downstream, at Heybridge. Thus the whole conception of future trade was frustrated and Maldon sank back into its charming lethargy.'

In 1846 Maldon's imports were 4,000 tons from foreign and 70,000 tons coastwise, of which 40,000 tons was coal.

Perhaps it was with justification that bargemen from Kent always referred to Essex and Suffolk as 'Old England'.

5.2 The coming of the railways

The effect of the coming of the railways in the Eastern Counties was that they enhanced trade at those ports which secured rail connections. Overall, the railways benefitted the overseas trade of these ports, and much of what we see today in terms of docks and quays was developed by, or in connection with, railway companies. Yet, despite this revival in the railway age, Eastern Counties ports were still only engaged in four items of overseas trade - the importation of Baltic timber at all the main ports, the export of coal from the Wash ports, the grain trade, and the exporting of fish from Great Yarmouth and Lowestoft. The flow of bulk goods, such as grain, coastwise continued to be carried by sea right through the railway age. The railway line from London via Colchester and Ipswich to Norwich was not completed until December 1849. Meanwhile, the Yarmouth and Norwich Railway was opened in 1844. Thus, the first line opened in Norfolk connected Norwich with the sea at Yarmouth, not with London.

From the outset the railways in East Anglia experienced considerable difficulty in remaining solvent. Most saw delay in building their lines arising from lack of funds and few had the amount of traffic originally envisaged. The common basic difficulty they faced was always their lack of heavy goods traffic. The GER, faced with the general economic recession of 1867, went bankrupt. Lord Cranbourne, elected chairman in 1868, soon succeeded in restoring confidence in the viability of the company, but the GER, while generally well run, was always very short of money (Heap and van Riemsdijk, 1980, pp 27,28).

Ipswich Dock, 33 acres with 2,780 feet of quays, was the largest enclosed wet dock in Britain when it opened in 1841. The dock and the arrival of the railway stimulated investment at Ipswich: for example, Fisons fertiliser works dates from 1850.

Table 1. Eastern Counties' Ports - Arrival of the Railway.

Port	Year First Line Arrived	Arrived From	Line Closed
Colchester	1843	London	
Norwich	1844	Great Yarmouth	
Great Yarmouth	1844	Norwich	
Ipswich	1846	Colchester	
Lowestoft	1847	Norwich	
Wisbech	1847	Cambridge	
King's Lynn	1848	Ely	
Boston	1848	Grimsby	
Maldon	1848	Witham	4/66
Mistley	1854	Colchester	
Wells	1857	Fakenham	10/64
Wivenhoe	1863	Colchester	
Brightlingsea	1866	Wivenhoe	6/64
Felixstowe	1877	Ipswich	
Sutton Bridge	1881	Peterborough	6/81*

* Dock handled one ship before its West wall collapsed. It was not reconstructed.

Source: Compiled from Wren (1976), Joby (1977), Thomas and Whitehouse (1989).

The Ipswich Dock Commission fought hard to protect its seaborne coal trade from what it regarded as unfairly cheap charges for coal carried to Ipswich by rail. In 1871 it even achieved an agreement under which the GER agreed to pay the Commission certain dues on coal brought into Ipswich by rail.

In 1849, three years after the arrival of the railway, regular shipping routes from Ipswich consisted of one sail and three steam packet services to London, and a weekly sailing ship to Hull, Goole and Gainsborough.

Colchester was the first Eastern Counties port to get a direct rail connection with London, yet bargeowner J. H. Beckwith started a packet service between London and Colchester, Harwich and Mistley over 30 years after the arrival of the railway at Colchester. This service appears to have lasted until 1914 (Benham, 1951, p 129).

Again, the Boston & Hull SS Co. Ltd. (Thos. Walker & Co.), Hull, operated regular sailings between Hull and Boston and Wisbech from around the 1870s until at least 1920 (see

Waine, 1999, p 74) while the East Coast SS Co. Ltd., King's Lynn, operated a service from Lynn to Hull and Yarmouth from the 1880s. By 1933 this service had been reduced to Hull only but it continued into the 1950s (Waine, 1999, p 113).

Finally, the Great Yarmouth Shipping Co. Ltd., Great Yarmouth, was formed in 1923 as a joint venture between the GSN and T. Small & Co. (Great Yarmouth) Ltd. to operate services between Yarmouth and Hull and between Great Yarmouth, Lowestoft, Norwich and London. The company continued to operate services from Great Yarmouth, King's Lynn and latterly Felixstowe to Rotterdam, Amsterdam, Harlingen and Antwerp into the 1960s (Waine, 1999, p 121).

The effect of the coming of the railways to the Eastern Counties was not great upon their maritime traffic.

In North Kent, in 1830 Robert Stephenson's steam engine 'Invicta' inaugurated the first regular steam passenger train between Whitstable and Canterbury, providing 'an immediate, safe, economical and expeditious connection between the city neighbourhood and the sea'. Initially, it was necessary to load and unload ships at Whitstable while they were beached at low water. To combat the drawbacks of these overside operations, a harbour was constructed, costing the Canterbury and Whitstable Railway Company some £10,000. It was opened on 19 March 1832. Whitstable thus became the first 'railway' port in the world, with a line to Canterbury which included the world's first railway tunnel. Tyler Hill tunnel, however, was not originally intended for locomotives: it was by later standards under-gauge and a continuing source of operational irritation until the line was closed in 1953. The harbour must be considered a success: it was sold to the South Eastern Railway after 20 years for almost £100,000.

Just as in Norfolk, where the first railway linked Norwich to the sea at Great Yarmouth, so in Kent, the first railway linked Canterbury to the sea at Whitstable.

The railway from London reached Dover in 1844, via Redhill. The railway from London arrived at Rochester in 1847 but the London, Chatham and Dover Railway linking London, Rochester, Chatham, Sittingbourne, Faversham, Canterbury and Dover was not completed until 1861. This made it one of the last 'main lines' to be opened in England. Faversham had no railway at all until 1858, and until 1860 Canterbury to London by rail had to be via the very circuitous route of Ashford, Tonbridge and Redhill.

Table 2. North Kent Ports - Arrival of the Railway.

Port	Year First Line Arrived	Arrived From	Line Closed
Whitstable	1830	Canterbury	1953
Dover	1844	London (via Redhill)	
Rochester	1847	London	
Sittingbourne	1857	Rochester	
Faversham	1858	Rochester	

Source: Compiled from Heap and van Riemsdijk (1980), Simmons (1987), Thomas and Whitehouse (1988).

The London, Chatham and Dover Railway became bankrupt in 1866. It took Lord Cranbourne, chairman of the equally unstable Great Eastern Railway, until 1871 to sort matters out. The Chatham survived, but in constant poverty.

The brickmaking boom came to North Kent in 1823 when Regency London and the grand terraces of the seaside resorts were being built. Production increased dramatically after the Brick Tax was repealed in 1850. That Sittingbourne and Faversham were still without the railway was irrelevant for this part of the Industrial Revolution: the transport for the brickmaking and cement industries was the sailing barge. Rail made little impression on this vast new market.

5.3 The rise and rise of London

Defoe pointed out in 1724 that the port of London had increasingly come to dominate the trade of South-East England. The very rapid growth of the city's population - from 1.1m in 1800 to 2.7m in 1850 (Mitchell, 1992) - ensured that London dwarfed all its potential rivals. Table 3 below demonstrates that by the hey-day of the sailing barge in the 1890s, the population of London was ten times that of Amsterdam, 16½ times that of Antwerp, 18 times that of Rotterdam, and 21 times that of Hull.

Table 3. 1891 Populations - East Coast of England and Near Continental Ports.

Port	000
London (Administrative County)	4,232
Hull (PB)	200
Newcastle-on-Tyne (PB)	186
Norwich (PB)	101
Grimsby (PB)	59
Ipswich (PB)	57
Great Yarmouth (MB)	49
Colchester (PB)	35
Rochester (PB)	26
Lowestoft (MB)	23
Boston (PB)	19
King's Lynn (PB)	18
Amsterdam	450
Rotterdam	235
Dordrecht	36
Antwerp	257
Ostende	27
Calais	57
Boulogne	45

PB = Parliamentary Borough; MB = Municipal Borough.
Figures are for 1891 except for Belgium and the Netherlands, for which 1894 figures are given.

Source: Handy Reference Atlas of the World (1896), The Economist Pocket Britain in Figures (1997).

Moreover, as is demonstrated in Table 4 below, London's population continued to increase dramatically.

Table 4. Populations compared - London, Liverpool* and Hull.

Year	London 000	20-year Increase 000	%	Liverpool 000	20-year Increase/ (Decrease) 000	%	Hull 000	20-year Increase/ (Decrease) 000	%
1891	4,232			584			200		
1911	7,160	2,928	69	746	162	28	278	78	39
1931	8,100	940	13	856	110	15	314	36	13
1951	8,197	97	1	789	(67)	(8)	299	(15)	(5)

* England's second port.

Source: Handy Reference Atlas of the World (1896), The Economist Pocket Britain in Figures (1997).

It will be noted that although Liverpool showed a slightly greater rate of population increase than London over the 20 years 1911-1931, London was already so vast that her population increase over these 20 years was a larger figure than the total population of Liverpool at any time. Also, London continued to show population growth in the 20 years 1931-1951, when both Liverpool and Hull experienced declining populations.

The development of Victorian London can be attributed to the growth of the suburban railway system which brought the villages like Camden, Islington, Fulham, Wandsworth and Greenwich within commuting distance of the City. Terraces of houses were built for the new railway travellers and to supplement them came shops, public houses and municipal offices. A substantial part of these new communities was built of London stock bricks, brought to the capital from North Kent by spritsail barges.

Thus, it may fairly be said that, to a great extent, London made the sailing barge, and the sailing barge made London.

5.4 North Kent - Bricks and Cement

During the Nepoleonic Wars North Kent was an agricultural community. When the war with France ended in 1815 the resumption of foreign cereal imports undercut local prices, bringing widespread unemployment. Local mills closed, including the Sittingbourne steam corn mill. In the space of a couple of years, the economy of Milton and Sittingbourne completely changed.

The brick boom came to North Kent in 1823, when Regency London was being built. Production increased dramatically after the Brick Tax was repealed in 1850. A ready-made vehicle for the cheap water transport of bricks and cement was found in the flat-bottomed sailing barge. When the industries were still in their infancy, in the early 1820s, only nine spritsail barges traded to Milton Creek. This was recalled by a correspondent to the East Kent Gazette in 1857, by which time the fleet had grown to 'upwards of a hundred of this rig.'

Bricks and cement were transported to London by an armada of Thames spritsail barges. Over 400 of these were built in Milton Creek alone during a 50-year period. They unloaded their cargoes at the many wharves and drawdocks of Southwark, the City, Westminster, Chelsea, and upriver as far as Shepperton Lock. There was also an intricate system of small waterways into which barges could penetrate; the Lee, Wandle, Grosvenor Canal, Kensington Canal, Grand Surrey Canal, Grand Junction Canal, Regents Canal and Hammersmith Creek, which served London's interior. Return freights were of household refuse for brick making.

The disposal of London's household refuse was a problem as long ago as 1800. Rubbish was collected by private contractors who stored it in great mounds on the periphery of central London. The King's Cross rubbish mound extended to 5 acres and was over 100 feet high. When more substantial buildings came to be constructed in Jacobean times it had been discovered that a stronger brick could be made if the

brickearth was mixed with ashes. In the days of coal fires, ash and clinker formed the majority of household refuse. It was not for reasons of national economy that Buckingham Palace came to be built out of bricks, a constituent of which was the contents of London's dustbins. The London stock brick was claimed to be the most durable brick in the world.*

The London stock brick was made in the areas of brick-earth deposits around the towns and villages on the Swale and Medway and in South-East Essex. These regions were also the centres of cement production. Lime for mortaring had been produced from the chalk hills of Kent and Essex since the earliest times; in the 19th century "Roman" cement was manufactured here to be followed by Portland cement in the middle of the century. Bricks and cement were analogous and early brickmaking firms often had interests in cement making.

By 1880, nearly a quarter of the London stock brick production came from one organisation, Smeed Dean & Co. Ltd. of Murston. Production at Murston during the 1870s was around 80m bricks a year, of which three-fifths were sent to London by barge. In 1880, George Smeed, the founder of the company, calculated that he had made enough bricks to build a wall six feet high long enough to circle the earth.

Stock bricks and chamber made cement were cheap products to manufacture but could only be sold if transported in an economical way. Apart from the barges in mud work and those bringing moulding sand from Leigh-on-Sea, it was rare for a barge to make a return trip to Milton Creek without a cargo.

* The London stock brick is made by mixing ashes and clinker with Kentish brick earth. Its yellow colour comes from the admixture of chalk; the proportions being 64% brick earth, 25% fuel, 11% chalk. The bricks are fired by igniting their ash content to achieve a product of great tensile strength. London stock bricks are unusual in that they become harder as they age, and were thus particularly suitable for use in the foul atmosphere of Victorian London. A good stock has a tensile strength of 3,000 lbs. p.s.i., exceptionally strong by the standards of 150 years ago.

The London brick and cement barges brought back refuse from the Battersea or Camberwell chutes, or coke breeze from the power stations. The barges working to the Essex or Suffolk beaches with flint for roadmaking were often loaded back with fish manure. The coasting barges carried bricks and cement to South and East coast ports, and occasionally to the Continent. Building stone was carried as a return cargo from the South coast and coal was brought back from the North.

George Smeed (b.1812, d.1881.) was an inventive business man. His shipyards launched 79 sailing vessels, including a number of enormous schooner and barquentine rigged sailing barges, the largest of which could carry 800 tons of cargo. These big barges, which combined the rig of a conventional coasting ship with the hull design and leeboards of a sailing barge, were able to carry very large cargoes to shallow draft ports. Most of his big barges were in the coal trade, taking either gas coal or coking coal to the smaller South-East ports, or railway coal on contract to Strood Dock on the Medway. The traditional sailing collier was a deep-draft vessel and draft for draft the Smeed barges could carry twice the cargo using a smaller crew. Again, whereas the traditional colliers needed to load ballast for the return trip to the North-East coal ports, the barges could sail back light. The collier owner Sir Walter Runciman, later Lord Runciman, commented somewhat sourly 'They must have made large profits while they lasted.' (see Runciman, 1926).

Smeed supplied the bricks for the prestige new Law Courts at 2/- a thousand below normal cost. This started a price war which was to last for 40 years.

The early 1880s saw the start of difficult years for the brickmaking industry. North Kent production faced strong competition in the London area from Fletton bricks and Cowley (Oxford) bricks, and from foreign imports, mainly from Belgium. A commission was held into over-production and Mr. Tassell, a Faversham solicitor, gave evidence (Perks, 1981)

> 'that 450m of stock bricks are made each year in North Kent and South-East Essex, of which 120m alone come from an area within three miles of Faversham.'

The late years of the 19th century were depression years for the London stock brickmaking industry. In 1894 the brickmasters announced a reduction in the price of stock bricks from 28/- to 26/- per thousand due to trade slackness and in 1901 the price was further reduced to 24/- in Kent and 26/- in London due to competition from Fletton bricks, which could be sold in London for only 24/-. Figures for 1901 stated that the stock brickmakers were producing 400m bricks a year, the Fletton makers another 400m a year, and 150m came from the Cowley makers. At this time, in London many were more interested in cheapness than durability. Belgian bricks could be brought for 4/6d. a thousand under the price at which any stock brick could be marketed. This was a time of great housing development by trusts and by the London County Council, for whom cheapness of construction was the primary consideration. The price of stock bricks was further reduced in April 1906 (Perks, 1981, p 42).

But in spite of the lowering of prices, brick production continued at the same level. Total production on the banks of Milton Creek was in excess of 130m stock bricks a year, and 40% of them came from Smeed Dean, who were shipping nearly 4m bricks to London each month in 1904. In that year 115m bricks and 100,000 yards of flints were shipped out of Milton Creek. Imports included 130,000 tons of refuse, coke, ashes and breeze, 70,000 tons of coal, 14,000 tons of sand, 20,000 tons of clay and 50,000 tons of manure. The paper mill imported 75,000 tons of wood pulp and exported 46,000 tons of paper, and the cement mills exported 50,000 tons of cement. Two observations are pertinent (Perks, 1981, p 41/45)

> 'In the long term the bargemen came through these years much better than the brickies.'
>
> 'The larger brickmaking concerns survived the years of over-production at the expense of the smaller firms who were forced out of business.'

The cement industry also embarked on years of depression. In July 1900, 24 of the major firms amalgamated to form Associated Portland Cement Manufacturers (APCM). The certified production of these firms had been 1.4m tons in 1899, out of an estimated Thames and Medway area total of 1.7m tons.

Bricks and cement shared common problems in over-production, cheap foreign competition, and in the high price of coal. This was the time of a coal boom when the price of gas coke doubled to nearly 20/- a ton. Belgian and German cement and Belgian bricks were cheap in quality and price. Moreover, the depression in the cement industry was exacerbated in the early 1900s by the loss of foreign markets, particularly in the Americas, where countries developed their own industries: it was to continue through into the 1920s. Also, in the late 1890s, some larger manufacturers had equipped their works with the more effective but costly rotary kilns, which ruined some as they over-produced in an attempt to recover their high capital outlays. But over-production produced work for barges.

The Smeed Dean fleet in 1895 stood at 52 craft, a number which was roughly maintained into the 1920s. By 1923 it comprised 59 craft plus 10 'outsiders' working for the company. After this year many newer barges were acquired and in 1930 the fleet (including 'outsiders') comprised 85 sailing barges plus one lighter. Thus, when in 1931 the Smeed Dean Murston works passed into the ownership of APCM, the barge fleet was as large as it had ever been (Perks, 1981, p 47).

In 1921, a Smeed Dean brochure proclaimed that over the last 40 years the company had made 2,000m bricks and its annual output was then just over 52m (Perks, 1981, p 49).

For sheer numbers there was nowhere that could compare with the sailing barge fleet that was once owned at Sittingbourne. Wills and Packham - well known as barge and boat builders, were also barge owners and brickmakers. In total, they owned about 35 barges, and made bricks by hand until 1969. The local firms of Burley's and Eastwood's were both cement manufacturers and brickmakers. In 1902 Eastwoods acquired a receiver and manager, and became Eastwoods Co. Ltd. In 1915 it became Eastwoods Ltd. The Eastwoods Lower Halstow brickfields turned out 17-18m bricks a year. By the 1920s Eastwoods had installed brickmaking machines in all their brickworks.

From the very first craft that Eastwoods owned up until 1953 they appear to have had a total of 79 barges. By 1942, when the remainder of Eastwood's fleet was requisitioned by H.M. Government, the fleet had dropped to 24; six became WW2 casualties. In 1963 Eastwoods were absorbed into the Redlands Group.

As late as 1930 there were still about 250 barges working to and owned in Milton Creek. But industry was declining and road transport was often taking the place of barges. Regular barge traffic to Murston ceased in the mid-1930s when the London trade was taken over by 300-ton APCM lighters towed by tugs (Perks, 1981, p 57).

5.5 The legacy

The sailing barge developed and endured over a singularly long period against the background of strangely unchanging and local trade patterns in the ports of the Eastern Counties and vast demand from the explosive growth of London and the Industrial Revolution as expressed in the brickmaking and cement industries of North Kent. London and North Kent produced impetus and great and continuing need for local water transport. East Anglia provided consistency and continuity in the on-going association of plough and sail.

The East Anglian agricultural depression, which began in 1879, and the over-production occasioned by the long depression, which started at the end of the 19th century, in the brickmaking and cement industries, only served to create more work for spritsail barges.

Thus did the sailing barge successfully operate throughout the steam age. It never lost out to either the railway or the steam coaster. It met demands unequalled anywhere in Western Europe for cheap short-haul water transport, and survived so long that it was able to hand over its trade directly to a developed and proven internal combustion engine, both ashore and afloat.

6 THE MAKING OF THE MOTOR BARGE

'Persons frequenting the sea can only be persons of desperate fortune.'

Words attributed to Marco Polo.

The coastal motor barge developed from the Thames sailing barge. But the making of the motor barge was a very protracted process.

No type of craft has enjoyed more adulation over the last fifty years than the Thames sailing barge. The spritsail barge was the final and ultimate development of working sail, but for a highly specialized purpose. Even had the internal combustion engine not ended her reign, it is doubtful if she could have been greatly further improved. The spritsail barge was the essence of economy, but she did sacrifice certain basic qualities of seaworthiness to provide that economy. Sailing barges were built as cheaply as they could be to meet the carrying requirements of their owners. Once at work, the sailing barge was generally maintained as economically as possible. She was not usually an object of sentiment to a degree that influenced the amount of money spent on her. She was a capital asset, used to provide a return, and her success and that of those who operated her must be judged not in terms of wonderful speed or sea-keeping ability, but in money terms. The cargo-carrying sailing barge was an object of everyday utility: she did not become an object of romance until she was obsolete, or at least obsolescent.

Steam vessels took a long time to make much impact on coastal shipping. Small steamers worked alongside sailing coasters from the mid-Victorian period onwards, but sailing vessels were able to meet this competition, particularly with the smaller cargoes, and continued to be built and developed. From the turn of the century up to the end of WW1 was the hey-day of the Thames sailing barge: economic trends up to 1900 had been generally expansionist; thereafter a rather complicated decline set in. Thus, from 1907, with 2,090 sailing barges registered, the total fleet slowly decreased to 1,650 by 1918, and 1,100 by 1930, when sailing barge building ceased (see Table 6. below).

The Kent cement industry underwent a series of mergers, of which the final link-up in 1911 made APCM the owners of the largest fleet of sailing barges, at least 293; but in the 1920s these were rapidly disposed of.

The number of barges owned at Faversham halved in the ten years after WW1. On the Blackwater there had been 56 barges in 1916, but by 1933 only 17 remained. The Maldon craft had been reliant on the stack trade so that when horse transport declined, the market for hay and straw became less and Maldon craft were forced to look for other work. But at Colchester, the barge fleet was being expanded by Josh Francis who had brought Howe's barges at auction in 1921, and then taken over managing ownership of the Keeble fleet. Gradually Francis drew many of the remaining Essex barges into his partnership, and the company Francis & Gilders Ltd. was formed in October 1933 (Perks, 1975, pp 133,135).

The biggest barge fleets depending entirely on 'outside' work were those of E. and J. W. Goldsmith, Grays, with 147 craft in 1905, and the London & Rochester Trading Company (L & R), with about 120 in the early 1930s.

Just how little impact steam made in East Anglia may be judged by the following figures for 1894: Ipswich had 113 sailing vessels of 6,600 tons and 12 steam vessels of 892 tons; Colchester had 164 sailing vessels of 4,931 tons and 7 steam vessels of 239 tons; Maldon (including Burnham) had 140 sailing vessels of 8,583 tons, but no steam vessels. It was, however, during the hey-day of the sailing barge that the internal combustion engine made its appearance afloat.

In 1899 the sailing barge SPINAWAY C was launched at Ipswich with a small auxiliary engine, although the engine was removed two years later. SPINAWAY C was, in fact, one of the last barges working under sail, being used in the London to Ipswich grain trade until 1959, and then being used for lighterage until 1967.

Early failures did not put owners completely off internal combustion engines. L & R had their first power craft in 1907.

This was the steel sailing barge ARCTIC, which had been built to win races in 1897. She was a failure as a racer, and the sails were removed and an engine fitted. At that time, the Board of Trade was quite happy for a barge to go anywhere in Europe under sail, but an engine was novel, so the ARCTIC had to carry a small gaff mainsail 'to comply with the regulations'.

To begin with, power vessels were used only in limited applications. L & R, regarded as progressive, operated them in specialized trades. After the ARCTIC proved successful on a contract carrying beer from Battersea to Maidstone, the sailing barges ATRATO and WYVENHOE were motorised. They were shortly joined by THE FLAME, which was actually constructed as a power craft for the London Motor Lighterage Company.

The resources that had been devoted to the development of the diesel engine during WW1, however, inevitably led to its adoption in more small commercial vessels. A diesel engine required little space, did not need big bunkers for its fuel, and required no stokers. It enabled a more reliable service to be provided to merchants, and eliminated towage charges. The 1920s and 1930s saw the widespread tentative adoption of auxiliary power by coasting barge owners in an attempt to improve profitability. Although the number of coasting barges equipped with engines grew greatly during the 1930s, they generally remained true auxiliaries. The 36 bhp with which most were fitted could drive them adequately in a calm, but was useless to push a loaded barge against a combination of wind and tide. The engines were intended to be used in conjunction with a full spread of canvas, rather than as an alternative. In 1930, SCONE (L & R) was fitted with a 30 bhp Kelvin C2 auxiliary. It gave a speed through the water of about four knots. According to her Master, 'It was hardly powerful enough for the job .... in any tideway.'

Nevertheless, the pattern was set, and the improving economic situation of the later 1930s encouraged more owners to make the change. But if an - auxiliary - engine is powerful enough to give a barge a reasonable turn of speed, there is a tendency to use power more and sail less and less. When sails

wear out, there is a strong argument in favour of landing the gear and continuing as a purely motor vessel. This happened with a considerable number of barges. Thus, the motor barge arrived.

The decline of the spritsail barge in trade began in the early 1920s, and was heightened during the depression, when many barges were laid-up for lack of work. The old pattern of trade began to change, and small powered coasters were becoming more reliable. In the 1930s, millers were using larger silos and buying 500-quarter lots of foreign grain. Thus, the 450-quarter hundred-tonners, which had been the standard barge size, dropped out in the depression of the 1930s. Most significant was the advent of the motor lorry, which had proved its utility during WW1. The lorry was to be more forceful in its upheaval than ever the railway had been, and its effects on coasting more damaging. The decline was most evident in Kent, where the barges relied heavily on building materials for their freights, and where owners embarked on programmes of rationalising their interests, amalgamating and weeding out their smaller and older units. In 1931, the Smeed Dean barge fleet was elderly and only the bigger coasters or those barges which had recently been re-built were of any value. Over 70 of the Smeed Dean barges passed into the APCM fleet, but in the mid-1930s they were either withdrawn from service or, in the case of the better barges, sold off to continue in trade with other owners. During the early 1930s, as little as £50 could purchase a barge capable of carrying 100 tons of cargo. PERSEVERE, built at Muston in 1889, was the only craft to trade for Smeed Dean as a motor barge, but after sale the mainly Essex-owned MARY ANN, MAID OF MUNSTER and MAID OF CONNAUGHT became motor barges. HYDROGEN became the last wooden motor barge in trade, and was then re-rigged back to sail in 1980 (Perks, 1981, p 57).

In the 1920s, there was demand for larger cargoes to be carried outside the Estuary, work for which most Kent craft were unsuitable. Thus, a few barges were still being built: WILFRED, MARIE MAY, LADY JEAN, PHOENICIAN and ADIEU were built in the 1920s (Perks, 1975, p 133).

Sailing barges continued to be built up until 1930. But the arrival of the internal combustion engine and its influence can clearly be seen by reference to the craft built after the start of WW1. The WESSEX, built by J. & W. B. Harvey at Littlehampton, Sussex, in 1918, was completed with a cut-down rig - no topsail(s) - and an auxiliary engine: the shape of things to come. The MOULTONIAN, the last ketch barge to be built, completed by Harvey at Littlehampton in 1919, was not commissioned with an engine, but by 1928 had been fitted with one and was trading as an auxiliary. The MARTINET and the last of the Littlehampton and Rye-built wooden boomie barges were built with especially wide stern posts to enable them to accommodate the propeller shaft of an auxiliary engine. CABBY, the last full sized wooden barge built, completed by L & R at Strood in 1928 for their own use, was converted to an auxiliary in 1931. OLIVE MAY, composite built on steel frames, was launched by Wills & Packham at Sittingbourne in 1920 fitted with an auxiliary engine (see Perks, 1975, p 104).

In 1924 F. W. Horlock & Sons built the steel spritsail barge REPERTOR at Mistley and in 1925 the steel spritsail barge PORTLIGHT. These barges were steel since 'wood was too expensive'. But the steel spritsail barge RESOURCEFUL, built by Horlock, Mistley, in 1930, was in 1933 expensively converted to a fully powered motor barge with a 100 bhp engine.

The largest spritsail barges ever built were the ETHEL EVERARD, ALF EVERARD, FRED EVERARD and WILL EVERARD, built in 1925 and 1926 at a cost of £5,000 each by Fellows, Great Yarmouth, and loading about 300 tons. However, these barges were all built with special stern-frames to facilitate conversion to motor barges. In the event, ETHEL EVERARD was lost at Dunkirk, WILL EVERARD became an auxiliary, fitted with a 120 BHP Newbury diesel, ALF EVERARD was converted to a fully powered motor barge in January 1939, and FRED EVERARD was similarly converted during WW2.

In the 1920s and 1930s, the internal combustion engine was still not completely reliable. The SARAH COLEBROOKE was built at Rye, Sussex, in 1913 by G. & T. Smith Ltd. as a

ketch barge for Mr. W. E. Colebrooke. She was converted to a motor barge and was a Q-ship in WW1, named H.M.S. BOLHAM. After release from the Service, she was fully reconditioned at Rye. Her freights for some time after the War were very good, but large sums of money were spent on her and she had a succession of engines installed - at least three by 1931. She lasted well, however, as a motor barge. Between the Wars she had several owners. After WW2, she was working in and out of the Mersey to such places as Point of Ayr, the River Dee and the Isle of Man as a fully powered motor barge owned by Coppack Bros. of Connah's Quay (Carr, 1971 pp 248-251).

It must be appreciated that the fitting of an auxiliary greatly improved the utility of a sailing barge. Broadly, two auxiliaries could do the same work as three purely sailing craft. This is evidenced in Table 5 below.

Table 5. SCONE - Cargoes carried.

Year	No.	Comments
1925	20	
1926	27	Incl. two Continental cargoes.
1929	23	'A poor trading year.'
1930		Engine (30 bhp C2 Kelvin) installed.
1931	35	
1932	30	Lost six weeks for fire damage repairs.
1933	33	
1934	38	New engine (66 bhp K3 Kelvin) fitted.
1935	39	'despite bad trading conditions.'
1936	37	Two weeks lost on the shipyard.
1938	38	

SCONE was built by Hutson of Maidstone in 1919. She loaded about 170 tons to sea or about 190 tons in the Estuary. All the above trading was under L & R ownership. Her bowsprit was put ashore in 1934: her last sailing gear was landed in 1957. In 1969 she was still trading as a motor barge.

Source: Compiled from Bagshaw (1998).

In 1929, when SCONE carried 23 cargoes, a new motorship under L & R ownership carried 42 cargoes. In 1931, when SCONE as an auxiliary carried 35 cargoes, this was 'against the 24 which we would typically have carried under sail alone' (Bagshaw, 1998, p 95).

> Her Master commented on the 1934 engine installation 'SCONE was to be good for a steady five knots loaded with calm water, and at times 7 knots light, which was very good for the size of the engine. It is an indisputable fact that the great majority of sailing barges which were subsequently given over to power were engined based on the successful installation in the SCONE. Of great importance was the fact that it proved very reliable and efficient.' (Bagshaw (1998) p 113).

This author feels that Capt. Bagshaw rather overstates the importance of the SCONE 1934 installation, but even if he is totally correct, it is worth pointing out that it had taken the relatively large and progressive L & R 27 years (from the ARCTIC in 1907 to 1934) to arrive at this level of success.

In May 1939, SCONE's propeller shaft broke. This in no way reflects on her engine but it does, perhaps, indicate that with many early engine installations in sailing barges there was a lack of appreciation of the extent to which a wooden barge hull can flex.

One further aspect of the SCONE engine installations is worth noting. In 1931 SCONE's fuel bill averaged out at about 30/- per week. In 1935, with nearly twice the bhp, fuel was costing about 20/- per week. In 1938, SCONE's fuel bill was, in total, £40/13/3d, 15/8d per week (Bagshaw, 1998, pp 97, 123, 140). Thus, despite nearly double the bhp and more cargoes moved, SCONE's fuel cost halved over the years 1931-1938. This does not support the view that once an auxiliary engine is fitted, there is a tendency to use power more and more and sail less. Perhaps the situation with the SCONE is attributable to the fact that in L & R, while the owners paid for lubricating oil and engine maintenance, the cost of fuel used came out of the crew's share of the freight. This was not universally the case: in the fleet of Francis & Gilders Ltd., for example, the cost of fuel on auxiliaries was split 50/50.

The end of 1928 saw the first ripples of the depression, 1930 the start of real depression. In 1930 there were 1,100 sailing barges trading; by 1939 this had been reduced to about 600. But when the depression was over, and the economy

improving, some vessels which had been laid-up were put back into service with engines fitted.

> Capt. Bagshaw of the SCONE commented on the depression
> 'We were always busy in spite of the great trade depression .... The cotchel freights were a consequence of the slump, small parcels of different cargoes collected from various places and sometimes for delivery to more than one destination.' (Bagshaw, 1998, p 105).

At the beginning of WW2, about 600 barges were still in trade; by its end there were 300. WW2 brought no bonanza either to barge owners or their crews as WW1 had done. Peace brought something of an Indian Summer for the sailing barge. But the growing scale of industry required bigger shipments than many barges could deliver. The smaller sailing barges were again the first to go. Their limited capacity made them unsuitable for the size of parcels now required, and in many fleets they were the older and poorer craft, too small to warrant the installation of an engine. Again, after WW2 some craft returned to commercial service as motor barges. Thus CONVOY, launched at Rye, Sussex, in 1900 was in 1944 converted to a twin screw motor barge at Wills & Packham, Sittingbourne, to help lay the Pluto pipeline after the Normandy invasion.

In North Kent, the pattern of the installation of diesel engines in motor barges was by no means always straightforward. EDITH, built at Sittingbourne in 1904, was in 1928 the first of the Cremer fleet to be fitted with an auxiliary engine. But this was removed in 1946, and she was not re-engined until 1952. Cremer's ESTHER was not converted to a motor barge until 1955.

The VICUNIA, built at East Greenwich in 1912, was in 1940 the first vessel in the fleet of Daniels Bros. (Whitstable) Ltd. to be motorised (with a Kelvin diesel engine). By 1950 she was trading without sails. But the SAVOY, built at Rochester in 1898, waited until 1954 to be engined, by Anderson Rigden & Perkins at Whitstable. JAMES & ANN was sold by Daniels Bros. in 1952 and converted to a motor barge, but was sunk at Erith in November 1952, raised and scrapped.

In the early post-war years, the diesel engine gave those craft still in good condition a reasonable chance of survival in the rising demand for speedier transport. The rising cost of upkeep of sails, spars and cordage was a factor which materially influenced owners in converting craft to power. Before WW2 a barge's mainsail would cost about £37 to £47, according to size; in 1947, £130 to £140 was a good price. Thus it became cheaper to equip and run a fully powered motor barge than a sailing craft. The bigger coastwise trading barges fitted auxiliary engines, whilst the smaller river craft were generally stripped of their gear and made entirely reliant on their engines.

The London-Ipswich grain trade was the last regular work available to sailing barges. Seeking sailing barges had great difficulty finding enough freights to keep in regular work after the mid-1950s. The Ipswich mill barge crews were paid on a weekly basis and to some extent the barges were used as floating warehouses. Even so, they generally averaged a cargo a week from the Royal Group of Docks, London: though roughly a barge a year was sent to Lowestoft to be motorised. Cranfield Bros., Ipswich, did not have a barge with a motor until after WW2. In 1947, R. & W. Paul Ltd., Ipswich, began a policy of fitting engines in their barges. The opportunity arose to purchase diesel power units built by Ruston & Hornsby which had originally been produced for a wartime contract. The first two barges to be so fitted were LADY JEAN and LADY DAPHNE in 1948, two barges already equipped for auxiliary power. The work was done by Richards at Lowestoft, and when fitted with their 100 bhp engines they were, in effect, motor barges with sails. In succession, JOCK, ENA, GRAVELINES I, THALATTA and TOLLESBURY were fitted with new Ruston & Hornsby diesels equipped with compressed air starts. ENA and GRAVELINES I were both given 80 bhp units. At first, all main canvas was retained, although bowsprits and mizzens were sent ashore, and in view of the not altogether complete reliability of the new engines and gearboxes, all the barges found their sails more than useful on occasion. TOLLESBURY and THALATTA also had 80 bhp engines fitted in 1950. The investment in providing the engines was at least £4,000 for

each barge. When the sails of the motor barges deteriorated, in most cases they were not replaced, and the rig was reduced to a scrap of steadying canvas carried from a stumpy derrick set up in the mast case: leeboards were sent ashore.

By the end of 1950, the total barge fleet comprised 80 craft under sail alone, 41 with auxiliary engines, and 60 with motors only. The spritties had survived into the 1950s thanks to their astonishing efficiency which enabled them to shrug off the challenge of steam, and even to fight a long rearguard action against the diesel engine.

At first, bargemen had loathed power vessels, which they considered inferior. Later, sailing barges were used by young coastal skippers as stepping stones on the promotion path. The ambitious ones left sail as soon as they could gain command of a motor craft. At the end of commercial sail on the East Coast, when only a handful of sailing barges were left, they were manned by young men who had all grown up in a society where internal combustion engines were accepted as an integral part of everyday life.

Table 6. Total numbers of sailing barges registered.

Year	Number	Comments
1907	2,090	First L & R motor barge (ARCTIC).
1910	2,000	
1918	1,650	
1930	1,100	Sailing barge building ceased.
1939	600	WW2 commenced.
1945	300	WW2 ended.
1949	125	(February) Excludes auxiliaries.
1950	80	(December) + 41 auxiliaries & 60 motor only.
1954	34	(30 April) + 44 auxiliaries & 81 motor only.
1956	17	Purely under sail, of which 8 were lightering explosives for ICI.

Source: Compiled from Benham (1951), Cooper (1955), Simper (1972).

Appendix B. hereto constitutes a full listing of all sailing barges and ex sailing barges commercially active as at 30th April, 1954. There is nothing surprising in where the listed barges were built and owned. A breakdown of ownership is shown in Table 7 below.

Table 7. Ownership of Commercial Barges as at 30th April, 1954.

Owner	Sail	Aux.	Motor	Total	%
L & R	5	13	36	54	34
Cranfield Bros.	4	6	-	10	6
R & W Paul	2	7	-	9	6
R Sully	-	5	4	9	6
M F Horlock Ltd.	4	2	3	9	6
ICI	8	-	-	8	5
F T Everard Ltd.	4	1	1	6	4
Daniels Bros.	3	-	2	5	3
S West	-	3	2	5	3
Wakeley Bros.	-	-	4	4	2
Vectis S S Co.	-	-	4	4	2
11 Total	30	37	56	123	77
26 other owners with 1 or 2 barges each	4	7	25	36	23
37 TOTAL	34	44	81	159	100
%	21	28	51	100	

Source: Compiled from Appendix B.

In 1954, for the first time, the number of craft relying on motor alone exceeded those still carrying sails.

It is immediately apparent from Table 7 that by 1954 L & R had come to dominate the barge market. In fact, that domination was even greater than it appears prima facie. The 7 Southampton and I.O.W. barges operated - literally - in a world of their own and the 8 ICI sailing barges were all employed in the very specialized trade of explosives lightering: there were 21 mill barges and 3 craft owned by building materials suppliers (Leigh Building Supply Co. and Eastwoods Ltd.). Thus, at least 39 barges were not part of the 'market' trading fleet, and L & R's 54 craft should really be related to a 'seeking' fleet of 120, rather than the total fleet of 159.

Moreover, in 1950 L & R had commenced building steel motor barges. By 1954, when Vectis S S Co. had the SEACLOSE built, L & R had added FLANAGAN (1950), NAUGHTON (1951), GOLD (1951), SILVER (1952), MILLIGAN (1952) and MALONEY (1953) to their fleet. L & R domination was complete, and was to last for 20 years.

By 1954, the fleet which L & R had come to dominate was old. This is clearly demonstrated by Table 8 below. Moreover, by 1956 there was no great pool of craft trading under sail alone which could be regarded as potential conversions to motor barges.

Table 8. Age of Commercial Barges as at 30th April, 1954.

Built	Sail	Aux.	Motor	Total	%
Pre-1919	31	36	69	136	86
1919 onwards	3	8	12	23	14
Total	34	44	81	159	100
Average age in years	53.3	47.2	49.9	49.8	

No barges were built in 1916, 1917 and 1918.

Source: Compiled from Appendix B.

The 34 barges trading purely under sail as at 30th April, 1954, had in 1956 been reduced to 17; but of this 17, 8 were the ICI explosives craft and 5 were Ipswich mill barges, all destined never to receive engines (Cooper, 1955, pp 104,105).

After the 30th April, 1954, at least 9 sailing craft had engines fitted; COLONIA was lost in October 1956, and SIRDAR, SARA and WESTMORELAND were withdrawn from commercial service and kept for racing. That in the mid-1950s it was considered economically worthwhile to motorise sailing barges 60 and more years old (ETHEL built 1894, MIROSA 1892, KITTY 1895) must evidence a strong continuing demand for such craft. But the bottom of the barrel had been reached, and by this time it was clear that this demand was not going to be met by the conversion of sailing barges: there were none left to convert.

7 GREAT EXPECTATIONS - THE £.s.d. OF THE SAILING BARGE

'Economy in Time, Labour and Expense.'

Motto of Henry Dodd, 1801-81, originator of the Thames Sailing Barge Matches.

7.1 Capital Costs

Regulations favouring depth of hull in the calculation of tonnage were repealed in 1837. Consequently, craft cheaper to build and operate, and more suited to the expanding coastal trade, evolved. The flat-bottomed barge had good cargo stowage capacity, could sail without ballast, and could use shallow harbours. It was vulnerable on long sea passages and less advantageous in deep-water trades, but on the shallow lower East Coast its suitability was very great.

However distasteful it may appear to the eye, the box-section of a barge hull is an extremely strong one. This combined with the ability to be built cheaply and repaired easily made the barge a sound economic proposition. Benham and Finch (1983) wrote of the birth of the sea-going barge

> 'In the early 1850s, shipbuilders, particularly on the Thames, began to develop sea-going barge-built vessels capable of loading at least 200 tons. These craft had advantages in addition to dispensing with ballast. They were cheaper to build - perhaps two-thirds the cost of a round-bottomed hull. Their relative unhandiness could be compensated for by the appearance of steam towage, while they were given bigger hatches, facilitating loading and unloading, as they were not expected to make regular long deep-sea voyages like the traditional schooners.'

The boomie barge took the place of schooners on the East Coast. Once the ketch barge was firmly established, no more schooners were built on the East Coast and many of the old ones were sold away to the West Country. The ketch barges ousted the schooners because they were more economical: for the same reason, they in turn were ousted by the spritsail barge. The idea that the spritsail was acceptable in the Thames Estuary, but that a boom rig was necessary for sea work, came to be overcome by the economy of the sprittie. Spritsail barges required one less hand, needing only two men and a boy instead of three men and a boy.

While in line with the hard standards of the age, the rate of loss of sailing coasters in the second half of the 19th century was appalling. The generality contrasts with the spritties, whose very vulnerability caused them to be worked within reasonable limits, resulting in a relatively very small toll of disaster. Moreover, the introduction of flexible steel wire rigging made a major contribution to the safety of the big sprittie - the gear could then stand far more strain.

Barge building was, however, generally restricted to the Thames Estuary, and one of the few disadvantages associated with it was its geographical limitations. If a barge needed repair outside the area bounded by Great Yarmouth and Dover, it was difficult to find a yard where it could be carried out effectively. This in itself encouraged operating caution.

It should also be noted that barges quite commonly went to sea in the mid-19th century without fitting hatch boards. The SEXTUS was chartered to carry trees from Great Yarmouth to Sheerness and, after delivering a number of cargoes, shipped a sea in December 1862 with only tarpaulins on: she was got into Harwich at a salvage cost of £200. When the owner was sued for £75 as his share he maintained that the skipper had been negligent. This defence failed, as it was shown that it was the custom to go to sea without hatches. An attempt at a Harwich Insurance Society meeting to stop the practice also failed on the grounds that it was established custom.

Thus, it may reasonably be assumed that even of the few spritties that were lost at sea, some were losses arising from the operating standards of the time rather than from any fundamental inadequacy in the spritsail rig for seagoing.

Great care is required in accepting the published costs of barges. According to Benham and Finch (1983) p 59, the boomie SUNBEAM, 124 RT, built by Vaux, Harwich, for W. S. Gane, Harwich, in 1889, 'cost £8,000'. But Benham (1951) p 21 states

> 'The 'boomies' ADA GANE and GENESTA were built by Vaux, of Harwich, in 1882 and 1886 for £1,700 and £2,100, and paid for themselves, including insurance and all running costs, in four and six years respectively.'

ADA GANE 110 RT and GENESTA 113 RT were also built for W. S. Gane, and it beggars belief that in 1889 Mr. Gane would have paid £8,000 for what he had got for £2,100 in 1886.

J. & W. B. Harvey of Littlehampton, Sussex, built eight ketch barges of about 200 tons cargo capacity from 1902 to 1916:

NELL JESS	1902,	CLYMPING	1909,
KINDLY LIGHT	1904,	WORRYNOT	1910,
LEADING LIGHT	1906,	GIPPESWIC	1912,
BOAZ	1908,	WELLHOLME	1916.

According to Frank Carr (1971 Edition p 120) they

> '.... cost about £1,750 each and were usually taken .... on very easy terms of instalment purchase.'

In 1906, at Greenhithe on the Thames, F. T. Everard & Sons built for their own account the barges CAMBRIA and HIBERNIA, sail area 5,000 square feet and cargo capacity 170 tons. CAMBRIA cost £1,895 and HIBERNIA £1,905 (The Story of the CAMBRIA (1973) p 8).

Care is also needed with the published capital costs of the smaller spritsail barges. According to Simper (1972) p 61

> 'In the 1900s Orvis of Ipswich reckoned to build a barge ready for sea for £750.'

Table 9 below gives capital costs for 12 barges built new for R. & W. Paul Ltd., Ipswich, between 1889 and 1925. All 5 standard 100/110 ton capacity barges built for Pauls in the years 1889-1895 cost between £940 and £1,000; the 120/130 ton capacity barges built in 1902 and 1903 cost £1,216 and £1,221. All these craft were built in Ipswich. Pauls were nothing if not commercially aware, and it seems unlikely that they would have paid these prices if they really could have obtained from Orvis 'a barge ready for sea for £750'. It should, however, be noted that even Finch (1979) is not consistent. On p 16, IDA cost £720; in Appendix 1, £979. On p 27, ENA cost £1,107; in Appendix 1, £1,355.*

* The Appendix 1 figures seem far more likely to be correct, and they have been used by this author. The £720 quoted for IDA, built by Orvis and Fuller, is probably a 'hull only' figure. For AIDIE and BARBARA JEAN, the (100 A steel) hulls were built by Aldous Successors Ltd. for £2,953 each and fitted out by R. & W. Paul Ltd. for £1,148 each. This is a 72% hull/28% fitting out split, which if applied to the IDA £720 hull cost gives a total cost of £1,000.

Table 9. Capital Costs - barges built new for R. & W. Paul Ltd.

Name	Built	Total Cost	Built at	RT	Max. l.t. cargo Heavy Grain	Cost per l.t. of cargo capacity
ORWELL	1889	£ 940	Ipswich	51	110	£ 8.55
COLNE	1890	£ 950	Ipswich	56	110	£ 8.64
STOUR	1891	£1,000	Ipswich	55	110	£ 9.09
WAVENEY	1892	£1,000	Ipswich	54	110	£ 9.09
IDA	1895	£ 979	Ipswich	48	110	£ 8.90
MARJORIE	1902	£1,216	Ipswich	56	130	£ 9.35
AUDREY	1903	£1,221	Ipswich	58	130	£ 9.39
DORIS	1904	£1,235	Ipswich		160	£ 7.72
ENA	1906	£1,355	Harwich	73	160	£ 8.47
JOCK	1908	£1,415	Ipswich	83	170	£ 8.32
AIDIE	1925	£4,101	Brightlingsea	114*	200	£20.51
BARBARA JEAN	1925	£4,101	Brightlingsea	114*	200	£20.51

* Variously given as 114, 119 and 144.

Source: Compiled, with corrections, from Finch (1979).

Table 10. Costs - barges bought second-hand by R. & W. Paul Ltd.

Name	Bought	Age	Cost	Sold	Age	Sale Price	Max. l.t. cargo Heavy Grain
ALBATROSS	1896	27	£ 218	1918	49	£ 411	100
INTREPID	1903	24	£ 399	1903	24	£ 500	110
LORD BEACONSFIELD	1907	29	£ 310	1917	39	£ 400	120
SOUTHERN BELLE	1909	24	£ 422				150
HILDA	1910	15	£ 400				110
DEBEN	1911	37	£ 295				130
MISTLEY	1912	23	£ 500				140
PEGASUS	1912	21	£ 645				190
TOLLESBURY	1912	11	£ 500				160
ALICE MAY	1927	29	£ 787				160
SERB	1928	12	£ 725	1949	33	£1,375	160
THALATTA	1933	27	£ 600				160
LADY DAPHNE*	1937	14	£1,600				170
LADY JEAN*	1937	14	£2,000				180
ANGLIA	1940	44	£ 700	1961	65	£1,200	130
Average Age:		23			42		

* Auxiliary engines had been fitted in 1930.

Source: Compiled from Finch (1979).

It is recorded (Benham 1951 p 21) that RELIANCE cost £900 at Ipswich in 1900 and DEFENDER £1,100 from Maldon in the same year, both for members of the Horlock family. DEFENDER was built by Howard, unusual among bargebuilders in that he was a qualified naval architect and always built from drawings, who was regarded as a quality builder who could charge a premium price.

Post WW1, PHOENICIAN 'best quality wooden barge' was built for E. A. Horlock and Alfred Sully by Wills & Packham Ltd. at Sittingbourne in 1922 and entered service in 1923. The contract price was £2,500, but it is estimated that the builders lost £1,000 on the contract (Carr 1971 Edition p 82). This barge had the vast sail area of 6,000 square feet, was 79 RT, and carried 150 tons to sea or 175 tons in the river. Conversion to a purely motor barge was completed early in 1949 with the fitting of two (second-hand) Deutz diesels.

The largest spritsail barges ever built, in 1925 and 1926 by Fellows, Great Yarmouth, for F. T. Everard & Sons Ltd., were ALF EVERARD, ETHEL EVERARD, FRED EVERARD and WILL EVERARD. They were steel, 158 RT, set 5,600 square feet of sail, loaded about 300 tons, and cost £5,000 each. When they first entered service the crew was Master, Mate and two boys; afterwards they worked three-handed, it being found that one strong and efficient man was more useful than two inexperienced lads.

The steel barge REMINDER cost Horlocks £3,000 off their own yard in 1927. Against this, the installation of an auxiliary (and the reconstruction accompanying it) cost nearly £5,000 for VARUNA in 1949, nearly four times the original cost of the craft.

Turning to second-hand purchases, on 9 June 1869, George Smeed acquired 8 barges (out of 14 in the sale) at auction:

FAVORITE	built 1803, 49 RT for £150,
ELIZABETH	built 1812, 49 RT for £160,
DEFIANCE	built 1789, 40 RT for £165,
ISABELLA	built 1840, 67 RT for £180,
PERSEVERANCE	built 1824, 40 RT for £215,
SUSAN & MARY	built 1801, 49 RT for £180,
WAVE	built 1844, 51 RT for £160,
WATER LILY	built 1839, 27 RT for £130.

These acquisitions brought the total of Smeed owned barges up to

58. They were a very motley collection of old craft, but the highest price paid in the sale was only £295, for the then modern coaster REDAN. Surprisingly, FAVORITE lasted to be sold in April 1933, in the great APCM clear-out, for £95: thus, 64 years use cost her owners £55.

Again, in 1888, on the death of Edward Brasier, bargeowner of Southend, four topsail barges were sold at the following prices, which were regarded as satisfactory (Benham 1951 p 151):

LORD PALMERSTON £295,
FACTOR £265,
ROYAL WILLIAM £185,
THREE FRIENDS £115.

The massive APCM fleet totalled just over 300 barges; 69 barges joined 'the Combine' from Smeed Dean in 1932. Of these, it has been possible to access sale dates and prices for 156 craft and 57 of the ex Smeed Dean 69; 213 barges in all. The ex Smeed Dean contribution is set out in Table 11 below.

Table 11. Smeed Dean fleet disposal.

SOLD:	1932	11	
	1933	18	
	1934	15	
	1935	13	57
	No date known	2	
	No price known	4	6 63
LOST by marine casualty			1
HULKED			2
Nothing known of disposal			1
DUNSTABLE -	in general trade under sail to 1946		1
YOUNGARTH -	converted to m.b. 1933		1 6 69

Source: Compiled from Willmott (1977).

This author has divided APCM sales into three classes by sale price:
1. £125 and under;
2. Over £125 but under £500;
3. £500 and over.

This, admittedly arbitrary, division is on the basis that a

value of £125 or less signifies scrap or close to scrap, with no expectation that the barge will trade in the future; £125 to £500 indicates some likely remaining commercial life but probably not much - old, tired barges; £500 and over implies a buyer is looking forward to long-term future use.

Table 12. APCM barge sales - 1920s and 1930s.

Class	Craft		Main fleet	Ex Smeed Dean fleet
1.	96/47	Average age on sale	50 years	50 years
	99/47	Average sale price	£34.50	£44.50
2.	45/ 8	Average age on sale	40 years	39 years
	45/ 8	Average sale price	£237.50	£230.50
	45/ 8	Average cargo size	110 l.t.	119 l.t.
3.	12/ 2	Average age on sale	28 years	40 years
	12/ 2	Average sale price	£627	£530
	12/ 2	Average cargo size	134 l.t.	155 l.t.

Only 1 Class 1. Main fleet barge and 1 Class 1. Ex Smeed Dean barge lifted more than 130 l.t. cement. At least 23 Class 1. Main fleet barges had been withdrawn from trade or condemned prior to sale. 2 Class 1. Ex Smeed Dean craft subsequently became motor barges and worked to 1946 and 1948. For 3 Class 1. Main fleet craft, no building year could be found.
For Class 2., with only 2 exceptions, all Main fleet craft were sold 1926-1934 incl. and all Ex Smeed Dean craft were sold 1933/34. In Class 2., 2 Main fleet barges subsequently became motor barge, ANSWERS (sold 1931 and converted 1932) and DEE (sold and converted 1933); 4 Ex Smeed Dean craft subsequently became motor barges, MAID OF CONNAUGHT (1946), MAID OF MUNSTER (1946), PERSEVERE and MARY ANN.
For Class 3., Table 13 below gives enhanced information.

Source: Compiled mainly from Willmott (1977).

The highest recorded second-hand price paid by APCM for a barge was for GENESTA, built at East Greenwich in 1903, 140 tons cement cargo capacity, for which they paid £885 in August 1906. This craft was re-sold in 1939, converted to a motor barge in 1942, and lost in collision 1950. Comparison with J.B.W. in Table 13 below is interesting.

The figures for Class 1. in Table 12 above very much support a view that some of the constituents of APCM retained and passed over to 'the Combine' a large number of time-expired craft which

they would not otherwise have retained.

Table 13. APCM barge sales - 1920s and 1930s, £500 and over.

Barge	Sold	Age on Sale	Sale Price	Cargo l.t. Cement	Notes
DART	9/26	27	£500	100	Laid up 1939.
DRAKE	7/27	28	£612	150	Sunk in collision 1930.
DUPLICATE	10/28	30	£663	125	Motorised 1940.
HERON	1927	28	£745	160	Barge yacht 1947.
IRONSIDES	10/27	27	£550	160	Motorised 1938.
LARK	7/27	27	£612	130	Lost 1940.
SHANNON	7/28	30	£530	140	Traded to 1941.
SILICA	11/28	29	£728	135	Foundered 6/38.
SILVER WEDDING	1927	31	£600	135	Re-sold 1933 for £155.
NINETYNINE	11/27	27	£630	140	Became a m.b.
J.B.W.	1/27	20	£850	150	Steel. Mined WW2.
MEDINA	5/37	32	£500	80	Built Portsmouth. Sold to Wiliams S S Co., Southampton.
GERTRUDE MAY	1/34	41	£520	150	Mined 12/42.
OXYGEN	4/34	39	£540	160	Aux. (ex ARCADES) fitted 1948.

Source: Compiled from Willmott (1977).

To substantiate the severity of the Depression, Benham (1951 p 32) points out that in 1934 Peters of Southend were offering 'a useful barge, recently in work, for £25 with all gear.' But Benham rather misses the point: Peters used the depression years to re-build his small fleet with better quality barges. Thus, he acquired DUPLICATE, SHANNON and NINETYNINE from APCM (see Table 13). In the 1920s and 1930s, the big clear out of barges came from manufacturers who used craft as an extension of their main business, not from those bargeowners who functioned as independent transport providers. Thus, Francis & Gilders Ltd., Colchester, was built up in the 1920s and 1930s, while the L & R fleet reached its numerical peak in the 1930s.

In 1975, the cost of buying a motor (ex spritsail) barge in trade was £5,000 to £6,000.

The Harwich Barge Alliance Insurance Association was a Mutual Club formed in 1869. By 1900 it had well over 200 craft in three classes (class by trading area) with an aggregate value of over £150,000. In 1910, the Association had 187 craft in two classes. Appendix D. hereto sets out the ages and values for the majority of the barges in class A. and for the high and low valued craft in class B. These figures provide a good indication of the value of barges at this time. It will be noted that there is surprisingly good correlation between age and value. In 1927, the Association had 59 craft, 10 of which it had in 1910, and the values in the two years are set out in Table 14 below.

Table 14. Insurance values compared - 1910 and 1927.

Barge	Age in 1927	1910 Value	1927 Value	Increase/ (Decrease) in Value
GOLDFINCH	33	£1,200	£1,500	£ 300
BRITANNIA	34	£1,050	£1,050	-
SUSSEX BELLE	35	£1,050	£ 900	(£ 150)
MATILDA UPTON	40	£ 900	£1,500	£ 600
MYSTERY (of Harwich)	53	£ 825	£1,500	£ 675
FLOWER OF ESSEX	70	£ 750	£ 750	-
PEARL (of Ipswich)	38	£ 700	£ 675	(£ 25)
DAVENPORT	50	£ 675	£ 900	£ 225
AZARIAH	49	£ 600	£ 600	-
MYSTERY (of Faversham)	52	£ 450	£ 900	£ 450
Average (10)	45	£ 820	£1,027	£ 207

Source: Compiled from Appendix D. and Benham & Finch (1983).

In 1927, the best spritsail barges, including OLIVE MAY (1921) and RAYBEL (1920), were valued at £3,200.

It may thus be fairly concluded that, even in times of deflation, spritsail barges actually increased in value as they aged.

7.2 Earnings and profitability

By far the most important commodity carried by the Thames sailing barge was the London stock brick. In 1900, the price delivered in London for best quality stocks was 26/- a thousand. In 1960, it was about £5 per thousand. If RPI was 100.0 in 1900 and 408.2 in 1960, 26/- in 1900 is equivalent to £5.30 in 1960. Thus, over the 60 years, the cost of stock bricks almost exactly increased with inflation.

For the big barges, at least a third of all paying voyages were made in the coal trade. The coal cargo - earning between 5/- and 8/6d a ton, a sum calculated on how far down Channel it was to be delivered, the difficulty of the discharge port, and the expenses involved - underpinned the profitability of the ketch barge. According to Benham and Finch (1983 p 132)

> 'It enabled owners to secure a steady 10 to 12 per cent. return on their investment until the beginning of WW1.'

The Master and crew of a ketch barge might be paid either by the month or by the voyage. If the barge was run as an integral part of the owner's business, the tendency was to pay by the month. In the Home Trade during the 1890s, the Master of a 200 ton cargo capacity boomie earned about £5 a month, augmented by official and unofficial perks. The Mate drew £3/5s, an A.B. £3 a month if he was very reliable or rather less when first promoted, and an O.S. got £2 or a little more if he was physically strong and experienced. The cook - usually a boy, but expected to help with trimming and working out cargo - was paid 30/- a month. Should the barge have to seek its own cargoes, with the Master meeting brokers to arrange freights, and the owner relying upon the Master's commercial integrity and ability, the Master and crew, with the exception of the cook, were paid by the voyage. The Master's wages would then be as much as £6 a month, and the crew's money would be raised proportionately. This provided an incentive to 'get about', the hallmark of a good skipper. Further, it should be noted that the ship fed the crew - usually quite well. Certainly, the food on the barges was generally better than that of a Suffolk farm labourer ashore, who with a tied cottage and firewood free had to manage on 13/- a week.

GLORIANA spent years entirely employed shuttling back and forth between the Tyne and Colchester gasworks. In this trade she averaged nearly a freight a month from 1898 to 1903, and with freights at 6/6d a ton (the same as 20 years before) she grossed around £700, making a regular annual profit from this yearly income. In 1903, ten freights averaging around 200 tons of coal yielded £637 gross. Expenses in 1903 included £23 for 34½ cwt of chain, two half-yearly Club calls of £3/10s, and two calls of £6, for the losses of the ELIZA PATIENCE and ELIZA H. A new foresail and main jib cost £10 in 1898 and a new mast £24 in 1899. Finally, new leeboards were supplied in 1898,1899 and 1900. This annual breakage was serious as a new board then cost about £15, rather more than the vessel's monthly wage bill.

The regularity of this trading is a reminder that the much remembered freak passages were the exceptions which did not prove the rule. For instance, it was often recalled that ALICE WATTS once left Colchester light, loaded coal at Newcastle, and was back in Colchester within a week. The weather was not 'better in those days', even if the economic climate was. On another occasion, GLORIANA took 17 weeks over the same voyage. But cargo books show that, year after year, freights averaged rather better than one a month.

Traditionally, a spritsail barge's earnings were divided equally between the owner and the crew, after such expenses as dock dues and any towage had been deducted. The crew's share was then divided 2/3 to the skipper and 1/3 to the Mate. A third hand, only carried on coasting barges, would have 5/- to 10/- a week, paid from the Master's share of the barge's earnings, with the Master and the Mate jointly paying for his food.

The crews of R. & W. Paul's mill barges were paid on a weekly basis. The only times when this was changed were during the latter part of WW1, when very high freight rates were being paid, and - much later - when engines came in.

Table 15 below provides comparison of weekly incomes for barge crews, 1900 to 1950. It should be noted that RPI peaked in 1920, and it took just over 30 years for it to get back to the same level.

Table 15. Barge crews weekly incomes compared - 1900 to 1950.

Year	Weekly income Master	Mate	Boy [a]	RPI	Notes
1900	20/- to 30/-	17/-	5/-	100.0	See b below.
1910	30/-	19/-		106.4	See c below. R. & W. Paul weekly rates.
1920	£2/14s	27/-		341.3	Estuary trading.
1920	£3	38/-		341.3	R. & W. Paul weekly rates.
1925	£4	£2	10/-	184.8	Estuary/Coastal/Near Continental trading.
1925	£6	£3		184.8	Continental trading.
1945	£10	£5		241.5	
1950	£12	£6		295.9	Aux. P.A.M. Stone Medway/Essex, over 12 mos. Freight 9/6d per yard. d

a With food supplied.
b In 1900, a shipwright's wage at Ipswich was 27/- per week;
a GE Railway porter's wage at Southminster was 16/- per week;
a farm labourer's wage at Stambridge was 15/- per week.
c In 1909, Rutters 'fall back' yard rate for brick barge Masters was 24/- per week.
d If the 9/6d 1950 stone freight rate gave the Master £12 per week, the 1/- freight rate in 1900 should have given the Master an income of 25/3d per week, which is right in the middle of the income range shown for a Master for 1900.

Source: Compiled from Benham (1948), Benham (1951), Simper (1972), Perks (1975), Finch (1979).

Routh (1980, 2nd Edition pp 134-5) gives indices of UK Cost of Living and general Wage Rates. Pertinent extracted figures are given in Table 16 below together with Spritsail Barge Wages index figures compiled from Table 15. It is immediately clear from Table 16 that over the 40 years 1910-50, Spritsail Barge Wages increased by 1.83 times general Wage Rates and by 2.41 times the Cost of Living. Within these figures lies the crux of the continuing profitability of the barges. The 50/50 owner/crew split of net voyage income established on the spritsail barges in the 19th century was still maintained in 1950. This meant that, not only were barge owners guaranteed capital/interest income, they were assured of its increase, both absolutely and relatively.

Table 16. Cost of Living, Wage Rates and Spritsail Barge Wages - Indices 1910 and 1950.

Year	Cost of Living	Wage Rates	Spritsail Barge Wages
1906	98	97	
1907	102	103	
1908	98	100	
1909	99	99	
1910	102	100	100
Average 1906-10	100	100	
1950	305	401	735

Source: Routh (1980) and Table 15.

In 1910 (a) an average crew cost of £127.50 p.a. was 50% of net voyage income;
(b) the owner's income of £127.50 paid for about £27.50 of repairs and refurbishment and left around £100 for capital/interest (39.2% of net freight income).

In 1950 (a) an average crew cost of £936 p.a. also equated to 50% of net voyage income;
(b) of the owner's £936, about £84 was now accounted for by repairs and refurbishment (£27.50 x 3.05 Cost of Living increase), leaving £852 for capital/interest (45.5% of net freight income);
(c) the £100 1910 figure for capital/interest, if increased in line with the Cost of Living would only have become £305.

That barging was a 'good' business can be well evidenced. GOLDFINCH, a big boomie of 250 tons cargo capacity, built 1894 by J. M. Goldfinch, Faversham, was skippered for 27 years by J. H. Waters, who bought her out of his earnings in this time (Benham and Finch 1983 p 85). Again, on the Orwell, Edward Garnham built up a fleet based on his savings as an engine-driver in India. He ordered BLANCHE new from Bayley of Ipswich in 1884, and three years later had BYCULLA from the same yard. He had BONA new from Harvey of Littlehampton in 1898 and NELL JESS from the same builder in 1902, as well as acquiring, jointly with Ruffles of Ipswich, HAROLD from Stone of Mistley.

That a new owner without barging experience could start by buying newbuildings straight from the yard indicates a very healthy freight market.

NINITA, built by Robertson at Ipswich as a sprittie in 1880 and converted to a boomie in 1887, was uninsured when lost off Ostend, but had paid for herself in two years (Benham and Finch 1983 p 68). The lack of insurance was not accidental. Robertson was also builder and owner of the LILLY, also lost uninsured. Being uninsured was not uncommon: for instance, the Whitstable Shipping Company never insured even their new tonnage, ships or barges.

Benham (1951 p 21) states that around 1910 'it was actually reckoned a 'sprittie' would pay for herself in twelve months.' Horlock (1977 p 76) is more cautious, pointing out that before WW1, for a barge to earn £600 net of expenses 'would have meant 40 freights, the best part of a year's work.' But even this level of income relates well to a barge costing new £1,000 or less. Concerning the purchase of THOMAS & CAROLINE (1870, when 6 years old) Horlock also writes (pp 4/5)

> 'It is interesting to note that as soon as a barge was bought she was immediately mortgaged at five per cent interest. Barges were returning their investment at about twelve per cent, so it seemed good policy to mortgage quickly so that new vessels could be added to the fleet.'

There were certainly some remarkable performances by barges. FARMER'S BOY, a stack barge belonging to Wrinch of Ewarton, Suffolk, is said to have carried 52 cargoes of hay from Harwich to Vauxhall and brought back 52 cargoes of manure within 52 weeks, of which two weeks were spent on the shipyard. This record was never equalled under sail (Carr 1971 pp 214-5).

The ST. EANSWYTHE was an iron barge built at Papendrecht in 1901 and bought by F. W. Horlock in that year for taking acid and raw alcohol in glass carboys packed in straw from Limehouse Cut to British Xylonite Plastics Ltd. at Brantham. The previous charge by rail had been 25/- per ton, and there had been many breakages. The freight money on the barge was agreed at 12/- per ton. The barge loaded 120 tons and in one

year carried 52 cargoes. The net freight was nearly £70 per trip; £3,600 for the year with the crew at that time being paid £10, in total, per week (around four times the average at that time). On the basis of this business, F. W. Horlock built up a fleet of six sailing barges and six steam coasters by 1909. The ST. EANSWYTHE was recovering its new cost about every four months. Frederick Horlock was born into a barge-owning family. In 1900, aged 28, he had a quarter share in the small, old (built 1867) sprittie PRIDE OF THE STOUR, which he mortgaged to scrape together enough money to buy the ST. EANSWYTHE.

On the outbreak of war in 1914, Fred Horlock's big tramp steamer CORALIE HORLOCK was caught in Hamburg and interned. As the ship had been the first one to be captured by the Germans, Fred Horlock was first on the list for reparations. It is said he received over £300,000, and had the ship returned to him. In 1919 he acquired a new ship, MARY HORLOCK, 3,249 NRT, built at Newcastle by W. Dobson & Co. This ship, well insured, was lost in the South China Sea in 1924.

In the First World War, from the beginning to the end of hostilities, coasting barges were employed in carrying supplies from England to the Continent, and bargemen were exempt from all other forms of war service. As many as 180 English barges were seen in Treport at one time.

War-time work to the Continent was very profitable. As an example of the way money was earned, a barge skipper who was half-owner of his barge loaded a full cargo of coal in Goole for Calais. He was loaded the day ne arrived at Goole, was four days on passage, and discharged the day he reached Calais. The barge carried 200 tons and the freight rate was £6 per ton. This, of course, was much above the average freight rate, but was not exceptional.

Unrestricted submarine warfare against Allied shipping commenced in 1917. Prior to this, freights had risen somewhat. In 1917, freight rates rose to unprecedented heights. Coal from Hull to the French Channel ports was most profitable. DANNEBROG was fixed with coal from Hull at £8/10s per ton, with a gratuity of an extra 8/- per ton if delivery could be made by a deadline: it was, and a return cargo of pit props was secured at the rate of £3/10s per ton on the barge's deadweight. The Master cleared something like £1,300 after settling expenses and paying the crew. Between the end of June and the end of October 1917, MARJORIE carried five coke freights, each of 87 tons, from Beckton to Calais at 30/- per ton, at least six times the peacetime freight rate. In August 1918 the barge loaded 125 tons of coal at Goole for Dieppe at £6/10s per ton, say, 14 times the usual freight rate. From a gross freight of £812/10s, nearly £800 was left to be divided between owner and crew. Among the best freights ever, at the end of WW1, RUNIC, a big barge loading over 250 deadweight tons and owned by E. and J. W. Goldsmith, made £1,450 freight for London to Ostend with pitch and back to Sandwich with stone (Benham 1951 p 157, Carr 1971 p 240, Finch 1979 p 49, Benham & Finch 1983 p 139).

In WW1 bargemen were awarded the Merchant Service War Medal. Owners too received their reward: for E. and J. W. Goldsmith, RUNIC paid for itself in one round voyage to Ostend.

After the 1918 Armistice, a minor boom continued in cargoes of pitch, desperately needed for the repair of war-torn roads in the battle area. Coal continued to be much needed, and Frank Carr (1971 p 250) writing of the SARAH COLEBROOKE, which had been motorised during WW1, stated

> 'Freights for some time after the war were exceptionally good, and for about twelve months she was on charter running coal between Dover and Boulogne at 20/- a ton F.I.O. She also made one round trip from London to Rouen and back for £450 ....'

In 1926, the crew's share of net freights for the year was £338 for the VENTA. The boy was paid 2/- a day whilst actually on passage, leaving the Master and Mate just over £4 and £2 per week respectively. The VENTA's 1926 cargoes are listed in Table 17.

Table 17. VENTA - cargoes carried in 1926.

Month	From/to	Cargo
January	Yarmouth/London	Old Rubber
January	London/Newport	Wheat
February	Wareham/Battersea	Clay
March	London/Yarmouth	Wheat
April	London/Yarmouth	Wheat
May	Antwerp/Poole	Cement
June	Portland/London	Stone
June	Antwerp/Shoreham	Tiles
July	London/Shoreham	Wheat
August	Boom/Shoreham	Bricks
September	Neil/Isleworth	Bricks
October	London/Poole	Maize
November	Lightering in Portland harbour	Coal
November	Portland/Pimlico	Stone
December	London/Newport	Wheat

Source: Benham (1948 pp 180-1).

The outbreak of WW2 brought immediate benefit to barges. In the words of Bagshaw (1998 pp 143/145)

> 'From Great Yarmouth we went light to Goole and then returned to Gravesend with coal which was discharged by October 31st. Although the war was only about six weeks old freight rates were already rising dramatically. The first example of that was our coal cargo from Goole. It was fixed at 9/8d per ton, a jump of 3/6d.'
>
> '.... 1940 began with us carrying the usual cargoes for the Humber ports. Although the war was just a few months old, freight rates for our own run had already doubled to typically £136 with expenses touching £13.'

In respect of 1945 Capt. Bagshaw wrote (1998 p 164)

> '.... we were trading on more like pre-war commercial terms. Although some of our old regular cargoes were not around, nor were ever likely to be again, trading was good. Freight rates were higher than ever before. They were averaging out at about £90 per trip; many were over the £100 mark.'

Capt. Bagshaw left SCONE and came ashore on the 5th Nov., 1945. The circumstances of his departure are not here pertinent but on the 9th June, 1947, E. A. Gill, a director of L & R, wrote to Capt. Bagshaw (letter reproduced in Bagshaw 1998 p 167)

> 'Are you tired of stopping ashore yet? There is good money - three or four times what you are earning - between the Humber and Thames and Medway should you feel interested.'

A significant factor in barging until the 1930s had been the large part of the fleet that was owned by organisations/ persons who operated barges as an adjunct to another, primary business. Appendix E. hereto is a list of such bargeowners. It is certainly not exhaustive, but it does indicate the considerable extent of such ownership.

Appendix B. and Table 7 hereof set out the ownership of commercial barges as at 30th April, 1954. By this date, only 32 of the total of 159 barges listed were owned by companies operating barges as an adjunct to their main businesses. The ownership of these 32 is set out in Table 18 below.

Table 18. Organisations owning barges as at 30th April, 1954, operating them as an adjunct to a main business.

Trade	Organisation	Barges	
Explosives lighterage	ICI		8
Mill barges	Cranfield Bros.	10	
	R. & W. Paul Ltd.	9	
	E. Marriage & Son Ltd.	1	
	A. M. & H. Rankin Ltd.	1	21
Building materials	Eastwoods Ltd.	2	
	Leigh Building Supply Co.	1	3 32

Source: Appendix B. and Table 7 hereof.

By the end of the 1950s, Marriages, Rankins, Eastwoods and the Leigh Building Supply Co. had given up their last barges, and bargeowning could be said to be totally in the hands of owners functioning as independent providers of transport, which activity had become very profitable.

In 1949, a stack freight from Colchester to Ridham Dock on the East Swale was £60. Throughout that year, P.A.M., a barge with a 44 bhp Kelvin auxiliary and loading 120 yards of stone (120 yards of stone = 125 tons dwt. = 540 quarters of wheat), carried stone from the Medway to Essex at 9/6d per yard; total freight £57 per cargo. On this, the Master averaged £12 per week. In 1900, the freight rate for this work was 1/- per yard (Benham 1951 pp 52, 112).

7.3 The failure of steam

The spritsail barge existed before the steam railway and the steam coaster. It also outlasted them.

Barges were still trading under sail when railway lines to ports in the Eastern Counties were being taken up - Brightlingsea, line closed 6/64; Wells, line closed 10/64; Maldon, line closed 4/66. On British Railways, new construction of steam engines ceased in 1960; by 1963 steam locomotives accounted for only 38% of traction miles run; the phasing out of steam traction was completed in 1968 (Freeman and Aldcroft 1985 pp 110, 118).

CAMBRIA carried the last cargo under sail alone in 1971.

Finch (1979 p 3) wrote that in 1839

> 'The new steamers represented an investment equal to that made to build three sailing vessels of equivalent tonnage, and had overheads approximately five times as great.'

R. & W. Paul Ltd., Ipswich, owned steam coasters as well as barges (see Appendix F. hereto). Between 1891 and 1905, they had a series of six coasters, designed to load 200 tons of maize on a draft of seven feet, built for them by Fullerton of Paisley. In order to check the capital costs of these ships this author has considered some steam coasters built on the Clyde for Wm. Robertson Shipowners Ltd. of Glasgow (see Table 19 below).

Table 19. Some steam coasters built for Wm. Robertson Shipowners Ltd.

Name	Built	l.t. DWCC	Cost	Cost p.l.t.	Notes
AGATE	1878	210	£ 5,100	£24.3	Machinery cost £1,580.
AMETHYST	1884	735	£12,072	£16.4	
OPAL	1894	735	£ 8,086	£11.0	
PEARL	1896	700	£ 8,605	£12.3	Incl. cost of extra bunks for trading outside Home Trade limits.

Source: Waine (1976).

Wm. Robertson were highly regarded as shipowners and still trading (as part of the Powell Duffryn Group) a century after the AGATE - their first newbuilding - was delivered.

Shipbuilding costs did fall significantly between 1884 and 1894, but by this time the small 200 dwt. steam coaster newbuilding had become rare. On the basis of Wm. Robertson's experience, a good price for a 200 dwt. coaster built 1894/96 on the Clyde would have been about £18 per ton dwcc., say, £3,600. This indicates that on the prices of their six new steamers from Paisley, R. & W. Paul Ltd. did well, and that by 1894/96 steam coasters of 200 tons dwcc. were costing around $2\frac{1}{3}$ times the cost of a sailing barge of equivalent tonnage.

But Paul's 200 dwt. steam coasters ran on a total crew of 7 (Finch 1979): Master, Mate, Engineer, 2 A.B.s, 2 Firemen.

This would have produced a - fixed - wage cost of about 3 times the average cost for a sailing barge of equivalent dwt. Moreover, in the coal ports in 1896, bunker coal was costing about 7/6d per ton. Assuming a consumption of 5 tons per day at sea, this produces a fuel cost of, say, £3/15s per round voyage. Table 20 below sets out to show the utility required from a steam coaster to give an equivalent capital/interest return to sailing barges.

Table 20. 200 dwcc. steam coaster - utility required to equal sailing barges as an investment.

Sailing barges	2			3		
Cargoes per barge p.a.	10	30	50	10	30	50
Total cargoes p.a.	20	60	100	30	90	150
Net Voyage Earnings p.a. (£15 per cargo)	£300	£900	£1,500	£450	£1,350	£2,250
Wages (50%)	£150	£450	£ 750	£225	£ 675	£1,125
Owner's expenses p.a.	£ 50	£ 50	£ 50	£ 75	£ 75	£ 75
Owner's net an. income	£100	£400	£ 700	£150	£ 600	£1,050
200 dwcc. steam coaster						
Owner's net annual income			NIL	£ 270	£ 400	£ 600
Fixed Wages p.a.			£780	£ 780	£ 780	£ 780
Owner's expenses p.a.			£ 75	£ 75	£ 75	£ 75
Totals p.a.			£855	£1,125	£1,255	£1,455
Cargoes p.a. (at £11.25 net)			76	100	112	129
			(lay-up)			

Source: The author.

Table 20 shows why the sailing barge was so successful. The utility of a steam coaster was obviously greater than that of a spritsail barge. But in Table 20, the steamer has to lift 76 cargoes p.a. to avoid lay-up; with 100 cargoes p.a. the steamer produces a net return to her owner of £270 for a year, equivalent to two barges carrying 9 cargoes each p.a.; with 112 cargoes p.a. the steamer produces £400 p.a. net to her owner, equivalent to two barges carrying 30 cargoes each p.a.; with 129 cargoes p.a. the steamer provides £600 p.a. net to her owner, equivalent to three barges carrying 30 cargoes each p.a. It is suggested that 100 cargoes p.a. represents about the maximum that could be expected in general trade; two cargoes a week, every week, is not easily achieved. Thus, to survive, steam coasters had either to become materially larger than sailing barges or to confine themselves to the longer haul trades. In either event, of necessity they precluded themselves from the barge market.

FIRECREST, which loaded 560/580 tons, was the only steam coaster in R. & W. Paul's fleet to last past WW2. When sold, in 1953, she was the last steamship owned in Ipswich. She was scrapped in 1959.

BALSA and EBONY, both 405 GRT coal-burners, delivered in 1947 by Scotts of Bowling to James Fisher & Sons Ltd., Newry, were the last small steam coasters built for UK owners. They looked 30 years old and in concept were 30 years out of date the day they entered service. They lasted only ten years in Fisher's fleet (Ships Monthly April 1991 pp 12/13).

In the words of Roger Finch (1979 p 36)

'.... during the .... depression of the post World War I years, the steamers' relative inefficiency was exposed'.

Cargoes were still being carried under sail alone into the 1970s.

7.4 Half time

The Years 1950/55 may be considered as half time in our story. In the 'first half', the ports and trade of 'Old England' continued unchanged. The coming of the railways had not adversely affected barging. London had grown dramatically and the economy of North Kent had been totally transformed, with great benefit for barging.

In Victorian and Edwardian England, commerce was not continuously profitable. The London, Chatham and Dover Railway became bankrupt in 1866, the Great Eastern Railway became bankrupt in 1867, the King's Lynn Dock Company was in the hands of a receiver from 1890 to 1892, there was prolonged depression in East Anglian agriculture from 1879 to 1914, the brickmaking and cement industries were in depression from 1894 to 1914 and Eastwoods acquired a receiver and manager in 1902. The Thames barge survived, and prospered, through all these storms.

The long-term dominance of the spritsail barge allowed the coastal motor barge to develop gradually from a modest start, and continued retention of sail assisted the introduction and trial of internal combustion engines in such craft long before the motor had become reliable. Motors did, however, improve the utility of the barge fleet as, broadly, two auxiliaries could do the same work as three purely sailing craft.

Starting in the 1930s, the old, small (450 quarters of wheat = 100 tons dwt. = 100 yards of stone) barges dropped out of the fleet and there was a big clear out of old, tired craft by those owners who used barges as an extension of their main business.

By the end of 1950, for the first time, the number of craft with engines exceeded those relying on sail alone. By 1956, only 17 barges were left trading purely under sail.

By April 1954, L & R had come to dominate the barge market, having 54 out of 120 craft in the 'seeking' fleet. But this was an old fleet: the continuing demand for motor barges could not

be met by the conversion of sailing barges; there were almost none left to convert.

Yet this was a market place of great expectations: the sailing barge had been so cheap to build and economic to operate that throughout living memory, two World Wars and the Depression notwithstanding, for those bargeowners functioning as independent providers of transport, in 1950 bargeowning had been, was, and was expected to remain, very profitable. Moreover, by 1954 bargeowning had come to be almost entirely in the hands of such owners. Steam, ashore and afloat, had been defeated. Barging was a 'good' business.

In 1948 Hervey Benham wrote (Benham 1948 p 191) of the spritsail barge

> 'No form of transport has so far been developed to compete with them. They remain economically as modern as to-morrow, the one form of cargo-carrying under sail of which this can be said.... she is still a wonderful earner. She may present her owner with a bill for five hundred pounds and then work five thousand pounds' worth of freights without costing a penny.... under present conditions she remains easily able to beat rail and road on her own ground.'

In 1950, L & R commenced building steel motor barges.

PART II

8 THE FLEETS

'A trend is a trend is a trend.
The question is: will it bend?
Will it alter its course
through some unforeseen force
and come to a premature end?'

Alexander Cairncross.

8.1 World and British Merchant Shipping

After the stagnant 1930s, the post-war period saw tremendous growth in world trade, from 360m tons in 1946 to 3,247m tons in 1974. The growth of UK tonnage between 1949 and 1957 was disappointing - less than 7% compared with a growth in world tonnage of over 28% in the same period. The level of UK tonnage remained stagnant and between 1958 and 1968 achieved growth of only 8% while the world figure was 79%.

In 1967 Britain devalued the £ by 14.3%. This meant a reduction of 14.3% in the freight in most of the world's then current freight agreements, as they had been concluded in Sterling. Until 1967 the £ had been the main maritime currency: after 1967 freight rates were almost exclusively quoted in US dollars. In the opinion of Rinman and Brodefors (1983)

'1967 marks the point in history when Europe began to relinquish the initiative to the Far East and to international traders.'

By 1973 the flag of convenience fleets had grown to almost 20% of the world fleet; were twice the tonnage of the UK fleet, and growing at rates more than twice those of the world fleet as a whole. In the words of Ronald Hope (1990)

'.... by 1973 the days of British shipping supremacy, however measured, were definitely over.'

Hope headed his chapter on 1973-88 'Downhill all the Way'.

At this time overinvestment was global: in the mid-1960s the world order book had been less than 15% of the active fleet; in 1972 the figure had risen to 37%, and it peaked at 49% in 1974. The world fleet was growing out of all

proportion to anything seen before. The amount of laid-up tonnage took a leap in the winter of 1975 and reached 14.5m DWT in the spring of 1976 for the Norwegian flag alone (32%). At this time, 11% of the UK fleet was laid-up, 9% of the Greek fleet, and 14% of Liberian registered tonnage. That depression had really set in is evidenced by the Tramp Time Charter Index shown below.

Table 21. Tramp Time Charter Index (1968 = 100).

Year	Index
1973	253
1974	284
1975	122
1976	129

Source: British Shipping Statistics 1976-77, Table 5.7.

The 1970s were a time of fundamental and rapid change in world shipping. It is outside the scope of this thesis to consider the elements of this change in detail, but it is suggested that the following were significant:

(a) a trend to individually larger ships;
(b) a trend to more complex ships of high unit value;
(c) increased specialization of ships;
(d) company fleets of much smaller numbers of vessels;
(e) fleets containing fundamentally different ship types;
(f) ships staying in one ownership for only a short time;
(g) ship operation/trading and ownership becoming divorced;
(h) mass movement of shipowning from Europe to East of Suez;
(i) crewing and technical management of ships becoming widely sub-contracted to specialist agencies.

There are doubtless other influences which might be added to the trends mentioned, but the factors shown were important. It is impossible to establish their relative significance.

When the British merchant fleet peaked in tonnage terms during 1975, it numbered about 1,680 ships (GCBS, 1985), but in numbers of vessels, it had declined, was declining, and looked likely to continue to decline. In my working lifetime in shipping, it declined from a position of world dominance to international insignificance; in 1975, in international terms it was mortally ill.

Seaborne trade peaked in 1977 at 17.5 billion ton/miles, just as significant changes were about to unfold. New oil-producing areas, shorter trade routes, and efforts to reduce dependency on oil became evident by 1978 when oil transport began to recede from its peak. In five years, crude oil carriage by sea reduced by 57% in ton/miles. The shipping slump was worldwide. Between 1980 and 1985 the world's shipyards delivered 139m DWT of ships in a period in which world trade decreased by 313m tons.

Table 22. Principal European Fleets - 1975 and 1986.

Flag	Million DWT 1975	1986	1986 as a percentage of 1975
UK	53	16	30
Norway	45	11	24
France	18	11	61
West Germany	13	6	46
Sweden	12	4	33
World	553	639	116

Source: Compiled from Hope (1990) pp 454/455.

A new phase of economic growth from 1984 eventually absorbed the oversupply of tonnage. In the words of Dag Bakka (1999)

> 'The recession in the Western economies in the late 1970s spelled the end for many of the traditional core industries in Western countries, as manufacturing increasingly shifted to the blooming economies of South East Asia in the 1980s. This development had profound consequences for world trade, again affecting the shipping industry which was already struggling under a vast oversupply of tonnage.'
>
> 'The traditional shipping nations of Western Europe became particularly vulnerable, with operations based on national flag and crews. As the shipping companies became financially affected, modern ships were sold at low prices to new shipping entrepreneurs, often outside the traditional shipping community, who could operate profitably on the basis of low capital and operating costs.'
>
> 'The first part of the depression, 1974-78, was in many respects the most dramatic and conspicuous, when lay-ups and bankruptcies took some shine out of the (Norwegian) industry's social standing. The second part was more protracted and painful and ended with the collapse of the principle of national flag and manning.'

As a percentage of world shipping the British merchant fleet declined over a period of 30 years, from 1950 onwards, with notable consistency, at the rate of 0.5% of world shipping p.a. By 1984 nearly three-quarters of UK seaborne trade was confined to near and short-sea trades, largely to/from Europe, whereas ten years earlier more than half of British trade had been deep-sea. By the end of 1975 the UK registered fleet had attained an all time high level of 33.2m GRT (52m DWT), 9.7% of world tonnage. Thereafter, it dropped rapidly. By 1978 tweendeck tramps had almost disappeared from the British fleet, and between 1978 and 1983 UK shipping companies sold without replacing them 178 dry bulk cargo carriers totalling about 9.5m DWT. By 1983 'only 23 .... 'break bulk' liners were left in the British merchant fleet. Some 200 of these ships had disappeared in the previous seven years' (BMCF, 1986). By the end of 1988 the UK registered fleet stood at 8.3m GRT (25% of the 1975 figure), 2.0% of the world total. In July 1988, the UK government adhered to the view which it had held since 1979, that there was no economic argument which would justify special assistance to the shipping industry (Mr Paul Channon, Secretary of State for Transport, at a meeting with BML representatives, 13-7-88).

I leave the last word on the British deep-sea merchant fleet to Ronald Hope (1990)

> 'The unbiased judge may well consider unproven the case against British shipping managements that was put forward in the 1960s. More profitable investment oportunities than shipping were available after the war to those with capital in the UK. The further development of basic industries was no longer appropriate to Britain's post-war position. Much of the decline which took place in British shipping would appear to have been inevitable, and the decline was so managed that there were very few British bankruptcies.'

8.2 The English Coastal Motor Barge Fleet

By the early 1930s London & Rochester had the biggest Thames estuary barge fleet (about 120 craft). The river fleet of Whiting Bros. sold out to L & R in 1948. In 1949 and 1950, the last of the once great fleet of E. and J. W. Goldsmith, Grays, passed to L & R. In March 1951, Francis & Gilders Ltd., Colchester, was taken over by L & R. In June 1958, Daniels Bros. (Whitstable) Ltd. became a wholly-owned subsidiary of the London & Rochester Trading Co. Ltd. (Harry Daniels had died in 1939). But in 1964, L & R was itself taken over by the Proprietors of Hay's Wharf Ltd.

The years 1948-64 inclusive were very much the London & Rochester years. In the 15 years 1950-64, L & R took delivery of 26 new motor barges. Excluding craft built for Vectis Shipping of Newport, I.O.W., other owners managed just four new vessels between them (F. T. Everard two, and Palmer, Gravesend, and Thos. Watson, Rochester, one each) - see Appendix J. hereto. In the next seven years L & R added 20 more newbuildings to their fleet. But competition was arriving: in this seven-year period, other established owners (Everard/ Thos. Watson/Sully Bros.) took delivery of, in total, nine new vessels, while new owners in the field added 16 newbuildings. Most significant were the new fleets of Tower Shipping (6) and Wilks Shipping (5), both commencing owning in 1968/69. Tower Shipping added another two new vessels in 1972 (see Appendix J.). Other new owners were arriving, but apart from INSISTENCE and JUBILENCE, delivered in 1975, L & R did not have another new coastal motor barge until 1978. In the years 1978-83 L & R added 13 newbuildings. But in 1983 L & R took delivery of its last dry cargo vessel. Thereafter, the baton was very much passed to R. Lapthorn, which fleet took 14 of the 16 new craft delivered 1984-89 (see Appendix J.). No new coastal motor barge was built after 1989, and L & R was in rapid decline (see Appendix K. hereto).

In the production of this thesis, a problem has been 'which owners/operators and which vessels to include in, and which to leave out of the statistical base'. The criteria used for the inclusion of owners/operators is operational control

of vessels, including both crewing and technical management: it is not flag or registered ownership. Concerning ownership, it will be noted that a material number of included vessels are in the registered ownership of Banks or Leasing Companies. Some operations had vessels registered outside the UK, e.g. in Nassau. These vessels are included where, as was usually the case, they formed an integral part of a UK-based fleet, with their operation, crewing and technical management largely interchangeable with the other vessels in that operation. Where doubt has existed as to the appropriateness of including particular vessels, they have been excluded from the statistics. Concerning titles and headings, fleets are listed under the most widely known name for the operating company, and the names of other organisations involved in the ownership or operation of river/sea vessels in the same fleet are shown. The operating company is often not the registered owner of all - sometimes not of any - of the vessels operated. Locations shown for operating companies are those of the main place of operation for the vessels. They are not necessarily the registered office of any company. Tanker tonnage is always excluded, as in Appendix K. are dry cargo vessels with only an estuarial loadline or having a restricted trading area not allowing any voyages from UK to Continental ports. In this connection, it will be noted that two vessels built in 1975 did not have a 'full' loadline assigned until after change of ownership in 1987. They are included in the End 1987, but not earlier figures. Because of changes in management arrangements, some owners/operators appear as separate fleets at one census date but not at another, and this is indicated in notes. The census interval chosen is five years. This is because it was thought that (i) the total period covered should be twenty years, and (ii) the cyclical nature of the ordering and commissioning of new ships might tend to obscure trends were figures to be produced for time intervals of less than five years.

The English river/sea fleet grew substantially from End 1972 to End 1977 (64 to 85 vessels), numerically was little different at End 1982 (86), and thereafter dropped steadily (End 1987 69, End 1992 60). In tonnage terms, whether GRT or DWT, it showed a substantial increase at every census. The End 1977 figures correspond to a compound rate of increase of

about 10% p.a. from the End 1972 position. For the five years to End 1982, the equivalent rate of increase figure is about 6½% p.a. Over the 20 years End 1972 to End 1992, the overall increase was about 5.8% p.a. compound by GRT and about 6¼% p.a. compound by DWT. It is, however, salutary to remember that a 6¼% p.a. growth rate in DWT sustained for 20 years means that the carrying capacity of the English coastal motor barge fleet at End 1992 was 3.36 times that of only 20 years earlier.

The pattern shown in the figures for the total English English river/sea fleet is not, however, reflected in figures for constituent owners/operators. The pecking order altered. The largest owner/operator by number of vessels and tonnage, both GRT and DWT, was L & R at each census until End 1992, when it was R. Lapthorn. The extent of the relative L & R decline can be appreciated when that operation's fleet is expressed as a percentage of the total English river/sea fleet. This is done below.

Table 23. L & R fleet as a percentage of English river/sea fleet.

End	By No. of Vsls.	By GRT	By DWT
1972	48%	47%	43%
1977	56%	46%	44%
1982	50%	52%	48%
1987	25%	29%	28%
1992	28%	20%	21%

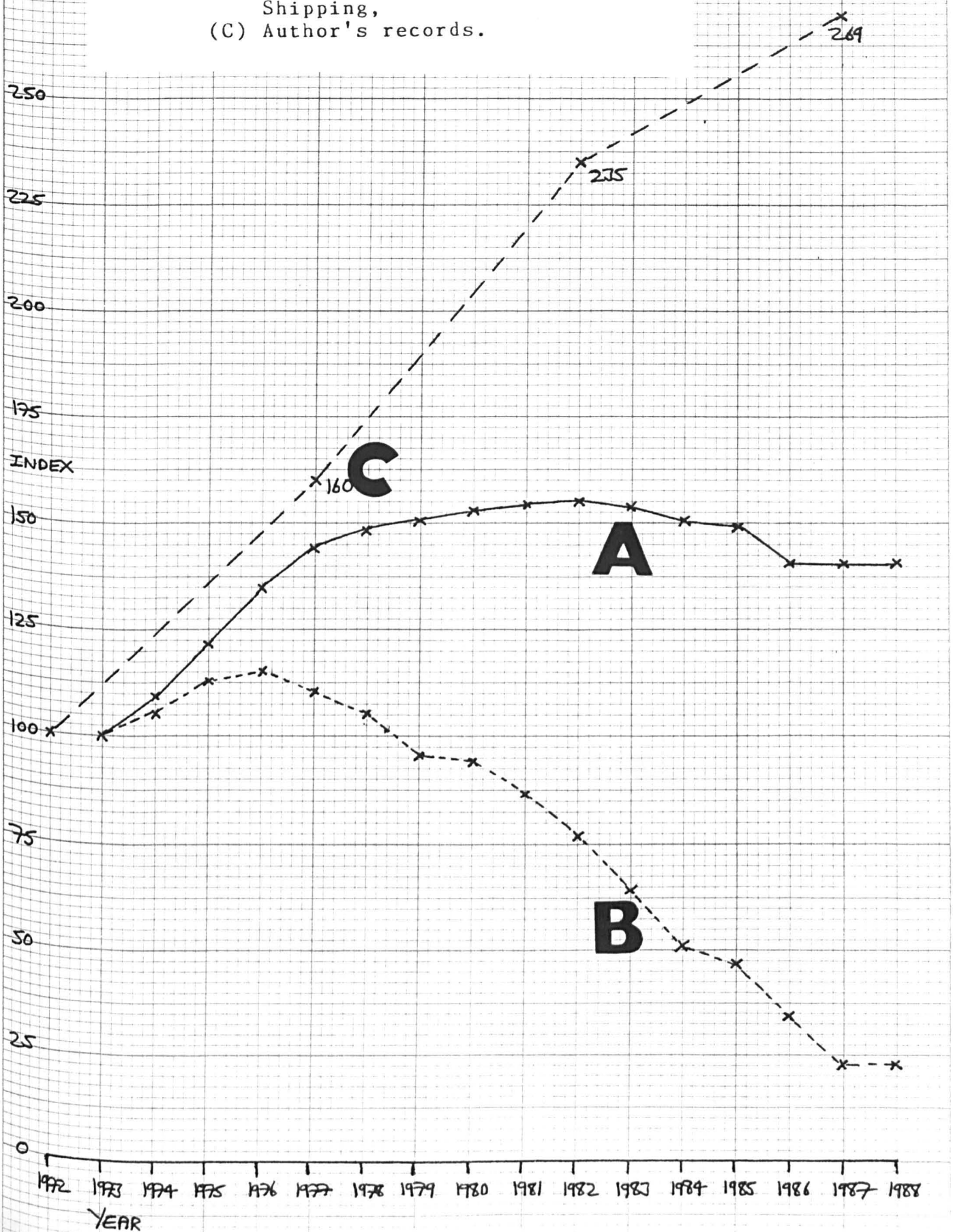
Source: Compiled from Appendix K.

No other operation achieved the dominant position previously held by L & R.

The growth/decline of (A) the World fleet, (B) the total UK fleet, and (C) the English coastal motor barge fleet, in the 1970s and 1980s is expressed graphically in Figure I. below. I contend that this establishes clearly that the growth of English coastal motor barge tonnage at this time is worthy of investigation and explanation. Such growth 'against the tide' surely prompts the question 'What went on here?'.

Figure 1. Indexes - Growth/Decline of DWT of
(A) World Fleet,
(B) UK Fleet,
(C) English Coastal Motor Barge Fleet.

Source: (A) and (B) Lloyd's Register of Shipping,
(C) Author's records.



9 THE CASE - FACTORS IN SUCCESS

'I claim not to have controlled events but confess plainly that events have controlled me.'

Abraham Lincoln.

9.1 The end of Empire and changing patterns of trade

In 1938 Britain's top trading partners were the USA and Commonwealth countries: Germany and France were eighth and tenth on the list. Even as Britain prepared a bid to join the EEC in 1960, and adopt a common external tariff in favour of European trade, its leading trade partners in rank order were the USA, Canada and Australia.

India achieved independence in 1947, followed in 1948 by Ceylon. In March 1957 Ghana became the first British colony in Africa to gain independence. By December 1963, when Kenya became independent, the British Empire was effectively gone. While it is not suggested that the loss of tied colonial trade was unimportant to Dutch, French or Belgian shipping, the British Empire was vast, and its loss correspondingly devastating for the ocean-going British merchant fleet.

As British long-haul trade declined, trade with the EU increased (see table 24. below).

Table 24. British Trade with the EU*.

Year	Exports		Imports	
	£m	% of total	£m	% of total
1955	552	18.0	776	22.9
1960	1,049	27.7	1,311	28.2
1965	1,801	36.5	1,861	32.3
1970	3,228	40.0	3,319	36.5
1975	8,098	41.7	10,868	45.5
1980	24,087	51.2	24,267	49.6
1985	42,329	54.1	46,059	54.2
1990	59,789	57.7	72,802	57.7

* 1955 EU12. From 1960 EU15.

Source: ONS, as reproduced in The Economist Pocket Britain in Figures, 1997 Ed.

British membership of the EEC also meant a profound change in trading patterns with a shift from West to East coast ports. In 1965 the trade split between the two coasts was about even with 106m tonnes of cargo using West coast ports and 121m East coast ports (which includes the eastern part of the South coast upto and including Southampton). By 1975, the UK's third year in the EEC, East coast ports accounted for some 170m tonnes and West coast ports for only 87m tonnes. By 1984 the pattern had become even clearer with East coast ports handling 232m tonnes and only 99m tonnes going through West coast facilities. So over a 20-year period, while East coast traffic had risen 111m tonnes, and almost doubled, West coast trade had slightly declined. The significance of this change in the context of this thesis is that East coast ports are coastal motor barge territory; West coast ports are not.

The Second World War underlined the need to ensure food supplies close to home. The policy of support for agriculture was put in place by Labour after the War: the 1947 Agriculture Act was the foundation stone of a new protectionist policy*, altered in part only by entry into the EEC in 1973. Europe changed the form and mechanism of policy, but not its goal of food security through home-grown production (O'Hagan, 2001). Moreover, after the War modern agricultural methods raised production spectacularly in industrialised countries - more cereals per hectare. In the UK, wheat yields were largely unchanged between the 1880s and the 1940s, about 2-2.5 tonnes per hectare. But the next 50 years saw a rapid increase to reach an average of 8 tonnes per hectare. This change was driven by greatly increased use of inorganic nitrogen fertilizer, produced by the Haber-Bosch process (Smil, 2002). Indeed, so important did the movement of fertilizers become for coastal motor barges that in March 1984 I was reporting

'The basis of fleet (Wilks Shipping Company) trading is the carriage of fertilizers from the Near Continent to the East Coast of England.'

Supporting analysis by commodity showed 49.1% of cargoes carried by Wilks vessels as fertilizers (bulk and bagged).

* In February 1952 the (Conservative) Government offered farmers £5 an acre to plough up grassland for crops.

While it is not suggested that the carriage of fertilizers was equally important for all other, competing, fleets, it does indicate the significance of this relatively new movement.

At this time, David Tinsley (Tinsley, 1984) was writing

'The considerable growth in UK cereal production has substantially overtaken the needs of domestic consumers, giving rise to increasing exports. Between 1976 and 1982, overall production increased by 70 per cent, from 13m to 22m tonnes. Wheat tonnages alone were 50 per cent up, and the barley crop grew by 12 per cent. In each of the latter sectors, yield rather than acreage has been the signal factor .... As a consequence of developments in production volume and cereal quality, coupled with EEC agricultural policy, there has been a complete reversal in the sourcing of grains used in the UK, which is now a net exporter of cereals. However, there was up until mid-1982 comparatively little purpose-built capacity in the ports industry for export movements in other than small short-sea vessels.' (My underlining).

'The export trade was largely restricted to near-sea markets and to transhipment movements to Continental terminals. Indeed, the surge of outward grain traffic through the UK's smaller ports between 1978 and 1982 in particular (notably those in the proximity of the most productive barley and wheat growing areas of Eastern and South-Eastern England) testified to the predominately "small-ship" nature of movements from UK shores. In the larger vessel sector, grain-handling capacity had been keyed to imports, reflecting the country's earlier longstanding dependence upon foreign supplies.'

The open-ended guarantee system of the CAP provided a huge incentive to produce cereals within the EEC countries, support levels having been deliberately set so as to encourage expansion of the industry. Significant intervention tonnages went for export. The trend is shown in table 25. below. Moreover, the support system held prices at levels which often favoured use of cheaper imported cereal substitutes in place of domestic wheat and barley. Thus, compound animal feed producers 'topped up' with varying proportions of (imported) substitute, such as soya meal and tapioca. Obviously, this situation increased the domestic surpluses of grain available for export. Hence the EEC pricing system not only brought about over-production of cereals in the UK but also made the import of cheaper substitutes a more attractive proposition, reducing the indigenous market for home-grown cereals.

Table 25. UK Wheat and Barley Exports ('000 tonnes).

Destination	1979/80	1981/82	1982/83
France	111	320	649
Netherlands	99	448	411
Belgium (incl. Luxembourg)	320	644	572
West Germany	143	472	351
	673	1,884	1,983

1979/80 and 1982/83 cover the August/July period.
1981/82 figures relate to the September/July period.

Source: HM Customs and Excise.

The stagnant nature of trade in East Anglian ports for over two hundred years from 1750 is mentioned in section 5.1 hereof. In 1910 the total tonnage handled in Wisbech was 89,333 tons; in 1965 it was 88,000 tons, but in 1968 it had grown to 191,000 tons, and in 1973 to 209,950 tons. At Boston, total exports in 1980 were 304,095 tons and in 1985 had increased to 696,410 tons, an average compound rate of growth of 18% p.a. But grain exports, 190,096 tons in 1980, increased to 622,874 tons in 1985, an average compound growth rate of 26⅔% p.a. (see Boston Port Handbook 1986, p 11). King's Lynn has long been an import rather than an export port. Comparison of import levels may be made for periods in its recent history. From 1929 to 1938 the annual average was 190,000 tons (there was a low of 160,000 tons in 1928), but from 1963 to 1969 tonnages of cargo grew regularly. In 1963 imports rose to 541,000 tons, and in 1966 to 608,698 tons. Exports rose from 63,000 tons in 1964 to over 120,000 tons in 1969. In 1972, over 100,000 tons of grain alone was handled. Under the 1947 Act, the King's Lynn Dock & Railway Company was taken over by the British Transport Commission, yet King's Lynn port survived and thrived. But the end of the Second World War found much amiss in the ports of London and Ipswich. In 1945 Harry Bagshaw wrote (p 165)

> 'We continued to trade to and from Ipswich, taking seed or cake into the port and often returning to Strood with flour. I found the very slow turn round increasingly frustrating. Following our arrival at Ipswich on May 3rd, we were still there on June 14th. After that passage we took flour back to Strood then returned with yet more linseed. We arrived back at Ipswich on June 26th and lay about until July 5th waiting to unload. Those delays badly affecting our earnings, despite the good rates and demurrage. Returning to the Surrey Dock light, we were locked in to load timber for Faversham, but a dock strike prevented us getting our cargo until August 3rd.'

Capt. Bagshaw was disillusioned. His desire to give up a life afloat was not just in order to spend more time at home with his family. It seemed more to do with the trouble and strife that was clearly beginning to take over in docks around the coast and particularly in London. Restrictive practices, demarcation disputes and go slows all fuelled by an organised, powerful, overmanned and volatile dock labour force were beginning to tear the heart out of the world's busiest port. The frustrations of saving a tide here and making a good swift passage there, only to see the gains wasted by the deliberate delaying tactics of the dockers, was more than he could bear. Industrial strife was the hall-mark of the London docks during the whole post-War period. As tonnages became lower, dues and charges increased. London was a National Dock Labour Scheme port, dockers, in effect, being guaranteed 'jobs for life'. This meant that as one stevedoring firm closed, those that survived were forced to pay dockers who would otherwise have been redundant. This presented a declining port with an economic impossibility which hastened the transfer of trade to non-Scheme ports such as Felixstowe and Colchester, and abroad to Antwerp and Rotterdam. In July 1949 the London docks were halted as dockers went on strike. Indeed, the major dock strike in London became an almost annual event: a month-long strike in October 1954 and major stoppages in June 1955 and August 1957. The port of London contracted until, in September 1981, the Royal Group of Docks closed in readiness for redevelopment. The National Dock Labour Scheme was not ended until 1989.

Ipswich trade statistics are given below.

Table 26. Ipswich trade statistics, 1950-72.

Year	No. of vessels	Imports (tons)	Exports (tons)
1950	1,397	924,514	45,709
1955	2,068	1,697,565	110,563
1960	1,982	1,299,580	85,808
1965	2,255	1,741,564	129,330
1969	3,593	2,084,666	230,785
1972	3,680	2,121,215	272,273

Source: Wren p 149.

Wren's comment on the Ipswich trade statistics was that

> 'The gratifying increase in trade over the last twenty years has been partly due to shipping being diverted from the London docks by the prevalence there of crippling labour troubles - the same factor which contributed to the Felixstowe "miracle". Altogether, imports have more than doubled, and exports have increased by six times ....'

Dr. Wren did not point out that, whereas London and Ipswich were NDL Scheme ports, Felixstowe was not.

One consequence of the Second World War was a significant increase in the size of ocean-going ships and their cargoes. In the 1930s, vessels with wheat direct from Australia were discharged in the Orwell for R. & W. Paul of Ipswich. But ships grew and improved faster than English port facilities. The last such discharge was completed in July 1939. Post-War, Ipswich was no longer a port for deep-sea vessels; wheat arrived by transhipment.

In 1985, the fourth edition of PORT OF LONDON, the PLA magazine, contained a feature on Vogan & Company, situated in St. SaviorsDock, Bermondsey, on the South bank of the Thames, and engaged (since 1813) in the processing and cleaning of peas, lentils and rice. The article contained the following

> 'With the closure of the Upper Docks and reduction in riverside wharves' commercial activity, things have changed. Rice is transhipped on the Continent and brought to St. Saviours Dock by coasters. These vessels are up to 400 tons and carry the rice in bulk. On average, two coasters every six weeks call at the dock ....'

The feature included three photographs of Sully Bros. vessel SUBRO VEGA discharging at Bermondsey. I can only assume that the irony of the appearance of such a feature in PORT OF LONDON was lost on PLA management. Yet again, transhipment on the Continent had become the order of the day.

Nowhere demonstrated the advantages of being a non-Scheme port better than Colchester. In 1948, the port handled 230,000 tons. By 1975 the figure had become 700,000 tons. In 1981, Colchester became the number two port in England for the export of grain. On 12 December 1983 Lloyd's List reported

> 'The British port of Colchester - which covers the Colne estuary and has the borough council as harbour authority - has entered the big league in tonnage terms nationwide.'

'It now handles more than a million tonnes of cargo each year and at the last count achieved a better balance than most - 577,620 tonnes inwards and 492,536 tonnes outward.'

'Colchester's exports in the last financial year included nearly 280,000 tonnes of cereals grown by farmers in Essex and East Anglia.'

'Ships up to 250 ft long can reach Wivenhoe and Rowhedge, or 200 ft the upstream wharves, with maximum draughts of 14 ft and 12 ft on spring tides. Limitations of this sort have not prevented the port's growth, but the authority has to be constantly vigilant against silting and slippage of banks.'

'Major dredging began this autumn to remove knolls along a vulnerable two-mile reach ....'

'Wivenhoe throughput last year was 224,000 tonnes and that figure has been well exceeded this year. An average of 35 ships a month berth at Wivenhoe Port Ltd's 460 ft quay ....'

'Feeding stuffs for animals at 156,276 tonnes make the biggest import at Colchester.'

It will be noted that Wivenhoe Port Ltd. was newly established in 1981, specifically to take part in the grain exporting business.

The situation at Norwich and Great Yarmouth provides more evidence of the strange effects of the operation of the NDL Scheme. In 1965 there were a total of 524 coaster arrivals in Norwich. Bryan Read writes (Coastal Shipping, Vol 7 No. 5)

'.... the peak traffic for Norwich was in 1936 when 753 coasters arrived handling 374,600 tons of cargo .... Two grain silos were built in the early 1930s, one for Colmans and one for my own company, R J Read. As well as grain for the flour mill, this company pioneered the import of maize for animal feed by transhipment into coasters from the Antwerp/Rotterdam/Amsterdam range instead of using the Port of London.'

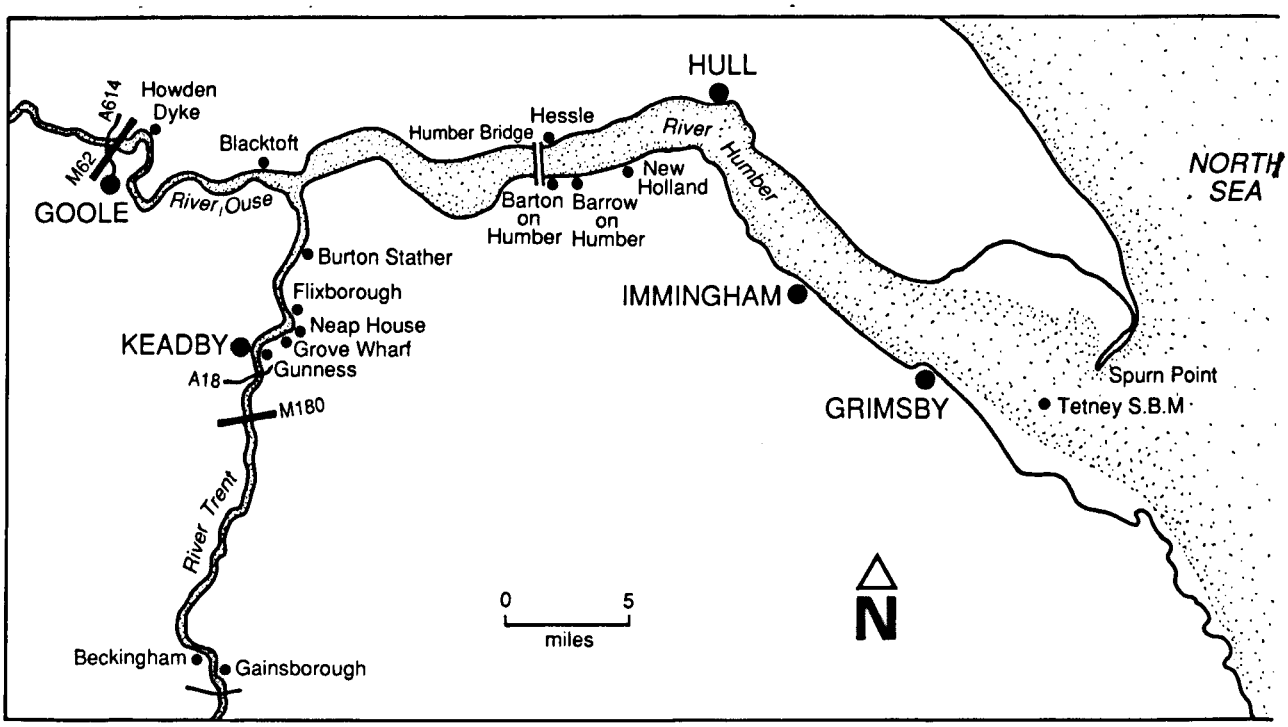
'The port hung on until the 1980s due largely to the UK's National Dock Labour Scheme which was in force at Great Yarmouth but not at Norwich. This meant that for a time it was cheaper to bring cargoes of such commodities as soya bean meal from the near-continent past Great Yarmouth to Norwich and then send it back to Great Yarmouth by road!'

Further North, industrial strife and the NDL Scheme in Hull also had its affect. In Whitby the first coaster arrival of modern times, on 29 May 1955, was the Dutch ANNIE with 320 tons of potatoes. A 14-man team was recruited from the dole to

discharge the vessel, the first of half a dozen diverted to Whitby from Hull because of a dock strike. In 1958 Whitby commenced exporting ground limestone. In 1959 this trade showed 62 shipments totalling 33,398 tons. By 1966 Whitby was starting to flourish as a port: there was no longer dependence on just one or two trades. This trend continued in 1967 when the number of import cargoes almost doubled to 150. For Whitby 1970-76 were boom years. During 1973 there were no less than 101 shipments of import steel into Whitby from Ijmuiden. Total trade handled in 1974 was 188,000 tons in 282 ships: in 1984 it was 181,000 tons in 245 ships.

Figure 2. below is a map of the Humber ports and Trent wharves. All the Trent wharves, Barton on Humber, Barrow on Humber and Howdendyke grew from avoidance of the NDL Scheme ports of Hull and Goole.

Figure 2. The Humber ports and Trent wharves.



Source: Ships Monthly, Nov. 1992, p 21.

In November 1986 the UK Department of Transport and the British Ports Association produced a report Transhipment of UK Deep-Sea Trade 1976-1984. This report, which claimed to be the first on transhipment trends, studied transhipments in Belgium and the Netherlands and concluded that the growing trend of

transhipment was of concern as the revenue earned from smaller feeder services was less than that from deep-sea vessels calling direct at UK ports. In the liner trades, the report stated that discrepancies in freight rates for cargo to deep-sea destinations from the UK, compared with Continental ports, had encouraged transhipment. UK port costs were found to be higher than Continental charges and a wider choice of carrier existed on the Continent, with freight forwarder activity increasing competition. The report found that by 1984 about 16% of deep-sea non-fuel imports amounting to 4.4m tonnes were transhipped in the Netherlands or at Antwerp, this having increased from 9% or 2.8m tonnes in 1976. Deep-sea non-fuel exports reflected a similar pattern, with growth from 6% or 600,000 tonnes in 1976 to 21% or 2.1m tonnes in 1984. The report suggested that transhipment of UK trade had reached levels 'potentially damaging' to UK shipping lines and ports.

In 1986, this report was about as helpful to what remained of British ocean shipping as a report on the LSA on the TITANIC.

While it is felt that changing patterns of trade, and particularly the rise in UK grain exports and nitrogen fertilizer imports, might adequately account for the growth of English coastal motor barge tonnage in established fleets in the 20 years to 1985, I am convinced I must consider England, its economy and governance much more deeply if I am to explain satisfactorily the entry of newcomers into the coastal motor barge field in the period 1968/1985. We must now look beyond shipping and trade alone.

9.2 The cost of money in Britain

The 1970s produced both an absolute increase in the cost of money in Britain and more frequent variation in the cost of that money. These factors are illustrated in Table 27. below.

Table 27. UK Bank Rate in 20-year periods.

20 years to End	No. of changes	Rate in % p.a. Min.	Max.	Range	Max. Rate as a multiple of Min. Rate
1952	5	2%	4%	2%	2.0
1972	41	3%	9%	6%	3.0
1992	158	5%	17%	12%	3.4

Source: Compiled from Bank of England statistics.

In the second 20-year period of Table 27. the rise from the minimum rate of 3% p.a. to the maximum rate of 9% p.a. took 13.7 years (26-1-55 to 19-9-68). In the third 20-year period, Bank Rate fell from 15% p.a. to 5% p.a. in less than a year (November 1976 to October 1977): it rose from the minimum rate of 5% p.a. to the maximum rate of 17% p.a. in two years (November 1977 to November 1979). Thus, the matters we have been considering took place at a time when the time-span of cyclical economic change in the UK was reducing. Under such circumstances the attraction of fixed-rate Industry Act financing at 7½% p.a. on new vessels built in the UK is great.

9.3 UK Inflation

On the 12th April 1966 The Financial Times reported

'The cost of living over the last nine years has risen by almost exactly 3 per cent each year.'

Even as late as 1967 the UK Consumer Price Index showed an increase on a year earlier of only 2½%. But by 1975 UK inflation was at a level never seen before or since, 24.2% p.a. In such circumstances the urge to buy assets is high. Inflation remains strictly positive in Britain and if it continues at only a steady 1.6% p.a. for the next 100 years, prices will rise fivefold, tying the 21st century with the 16th. The 20th century was truly exceptional: prices rose 48-fold in the UK.

This is a far cry from the 300 years after 1615, when the English price index was truly trendless.

Table 28. Inflation - UK Consumer Prices.

Year	Index	% change on a year earlier
1950	100.0	
1967	174.4	2.5
1968	182.5	4.7
1969	192.3	5.4
1970	204.7	6.4
1971	223.9	9.4
1972	239.7	7.1
1973	262.0	9.3
1974	303.8	16.0
1975	377.4	24.2
1976	440.2	16.7
1977	509.8	15.8
1978	552.1	8.3
1979	626.1	13.4
1980	738.5	18.0
1981	826.5	11.9
1982	897.4	8.6
1983	938.9	4.6
1984	985.9	5.0
1985	1,045.7	6.1
1986	1,081.6	3.4
1987	1,126.9	4.2
1988	1,182.1	4.9

Source: ONS, as reproduced in The Economist Pocket Britain in Figures, 1997 Ed, pp 60 and 62.

Table 29. Inflation and after-tax returns compared, mid-1982.

Investment	Return in % p.a. over 10 years to mid-1982 for someone paying tax at 30% basic rate	60% higher rate
Building Soc. term shares (1)	8.6	5.7
House prices (1)	12.8	12.8
Property Bond (2)	9.5	7.4
Shares (3)	7.9	6.3
Rate of UK Inflation	14.2	14.2

Assuming (where appropriate) an investment of £1,000 made at the start of the period and cashed at its end (in most cases end-May 1982) with after-tax income reinvested. (1) Nationwide Building Soc. figures. (2) Longest running property bond. (3) FT-Actuaries All-Share index.

Source: Investing a lump sum, September 1982.

The message from Table 29. is clear: over the 10 years to mid-1982, there was no investment which equalled the rate of UK inflation. The award to the National Union of Seamen of a 24% increase in average wages in January 1980 bore eloquent testimony to the severe inflation from which the national economy was suffering. Only eight months later, in September, a further demand was tabled by the NUS in the shape of a package calculated to work out at an average 16% increase.

9.4 British shipping taxation and cash grant

While it was the stated policy of successive governments to encourage the growth of UK merchant shipping, in the field of taxation there was by 1950 a fundamental divergence of view between the shipping industry and government. The shipowners argued that the impact of high taxation of profits was such that it was impossible to maintain, let alone increase, the British merchant fleet.

Section 468 of the Income Tax Act 1952 (subsequently Section 482 of the Income and Corporation Taxes Act 1970 and later Section 765 of the Income and Corporation Taxes Act 1988) made unlawful certain transactions which might result in the avoidance of liability to UK tax and prohibited, save with Treasury consent, the trade or business or any part of the trade or business of a body corporate resident in the UK being transferred to a person not so resident. By Section 468 (1)b, a resident Colonial shipowning company would be a person not so resident in the UK. Henceforth, UK companies were locked into the UK tax system. Section 468 was reinforced by the fact that a breach of the section was a criminal offence carrying heavy penalties.

By the Finance Act 1954 the total investment and annual allowance was increased to 120% of a new ship's cost. By the Finance Act 1957, this figure was increased to 140%.

The Finance Act 1965 introduced corporation tax in place of income tax and profits tax for all UK companies. Davies (1992) states

> 'However the Finance Act 1965 did provide that, in respect of future capital expenditure on new ships, the shipowner should be entitled to "free" depreciation - i.e. that he should be free to decide how much of the writing-down allowances should be used in each year for the purpose of reducing or eliminating his corporation tax liability in respect of the profits for that year - and for some years shipping was the only UK industry which qualified for free depreciation.'

One of the most important factors which brought about increase in UK tonnage between 1968 and 1972 was the introduction (Finance Act 1966) of cash investment grants in place of taxation investment allowances. Free depreciation for new ships continued but writing-down allowances could only be claimed in respect of the cost of a new ship less the amount of any investment grant paid for that ship. The grant was to be at the rate of 20% but by Order coming into effect on 30th December 1966 the rate of grant was increased to 25%. Davies (1992) tells us

> 'The new Conservative government which came into power in June 1970 instituted a study of investment incentives for industry and in October published a White Paper .... which stated that investment grant had not achieved its objectives since it benefited firms whether or not they were making profits and could result in uneconomic investment leading to a waste of resources.'

The government determined to scrap cash grant and concluded that the retention of free depreciation for ships would represent adequate preferential treatment for shipping. This was a radical change of policy. The Income and Corporation Tax (No. 2) Act 1970 reduced the charge of corporation tax from 45% to 42½% and also reduced the standard rate of income tax by 5%. The Investment and Building Grants Act 1971 ended cash grant. UK shipowners felt aggrieved: free depreciation on 100% of a new ship's cost was far less beneficial than the investment and annual allowances totalling 140% of cost available before cash grant was introduced in 1966.

By the time cash grant was removed, the British merchant fleet had grown by 35% in tonnage terms. In mid-1967 the average age of the UK registered fleet was 9.5 years: in mid-1972 it had fallen to 6.9 years.

Davies (1992) also pointed out that

'An alternative method (to leasing) of ensuring the prompt and effective use of the first year allowance in cases where the shipowner's profit level was inadequate was by means of the utilisation of the group relief provisions in Sections 258 to 264 of the Taxes Act 1970.'

'Although a number of these schemes were carried through, their scope was .... restricted by anti-tax avoidance legislation which affected both group relief and leasing transactions' (Finance Act 1973, Sections 28 to 31 and Schedule 12, and Finance Act 1975, Section 41).

British foreign exchange controls were abolished in 1979, and there was no longer any restriction on transfers abroad of capital of any kind.

By 1982 32% of world tonnage was registered on open registers. 'At that time half of all seamen in the world and half of the world merchant fleet were exempted from tax' (Rinman and Brodefors, 1983).

The 1984 Budget proposals included the withdrawl of the 100% first-year allowance and free depreciation for new ships, on which ship leasing had largely depended. The Finance Act 1984 substituted a 25% reducing balance depreciation allowance for the previous 100% first-year allowance, at the same time reducing corporation tax after 1986 to 35%. In consequence, ships on order for UK registration plummeted to almost nothing. Eventually government undertook that in the 1985 Finance Bill provision would be made for continuing the system of free depreciation for new ships which had been in existence since 1965. The free depreciation, however, would relate only to the new 25% writing-down allowance (although the 1985 Finance Act did also provide that second-hand ships would qualify for free depreciation on the same basis as new ships). UK shipowners felt betrayed, but by this time British international shipping was virtually dead.

In 1986 the GCBS reported that 'during the whole of 1985 the only new orders for UK registration were six ferries of varying sizes and six general cargo ships <u>totalling</u> 15,000 DWT' (my underlining).

I submit that taxation was for long the one area in which

successive British governments - Labour and Conservative - have never seemed able to accept shipping for treatment on the merits of its particular circumstances, rather than as a part of industry generally. Since 1950, each step taken by Government to assist British shipping in the field of taxation has had two characteristics, it was (i) too late, and (ii) followed in short order by anti-avoidance legislation which limited or negated the possible gain.

9.5 British Income Tax

In 1901, out of a population of some 33 million, less than one million were liable to pay UK income tax which, at the rate of 1/- in the £, was levied on incomes of £160 p.a. or more, and no more than 400,000 people declared their incomes at more than £400 p.a. To put these figures into perspective, the first garden city in England was started in 1903 at Letchworth in Hertfordshire. Bishop (1977) reproduces an Illustrated London News depiction of ten types of 3-bedroom house designed for that area. The price range was £128-£175 per house, average £161. Thus, in Edwardian England you did not pay income tax unless your annual income was equivalent to the cost of a new house in a very desirable location. In 1909, Winston Churchill described Britain as 'the best country in the world for rich men'. The creation of the welfare state (1912 saw the start of national insurance, at 4d per week) and the growing involvement of government in the regulation of the economy caused a huge growth in the scale and expenditure of government. From Table 30. below it can be seen that in 1975-76, whereas the Standard rate of tax was six times the 1911-12 figure, the top marginal rate was 11 times that of 1911-12.

Table 30. UK Income Tax - Standard and top marginal tax rates.

Year	Standard rate	Top marginal rate	
1911-12	5.8%	7.5%	Source: Routh (1980) p 52 and this author.
1975-76	35%	83%*	

* This was the top marginal <u>personal</u> tax rate. If, however, this tax rate was being paid on income which was part of an enforced distribution from a limited company, tax would also have been paid in the company and £1 of gross company profit could suffer a total tax 'take' of 89.8% (18/- in the £).

Table 31. below illustrates that in international terms the top marginal UK tax rate became very high.

Table 31. Top marginal personal tax rates in 1979.

West Germany	56%
France	60%
USA	70%
Italy	72%
Japan	75%
UK	83%

Source: The Economist Pocket Britain in figures, 1997 Ed, p 74.

Do not believe the Revenue's advertising: tax <u>is</u> taxing.

9.6 Tax avoidance in Britain

Tax-planning came of age in Britain in 1936. The Duke of Westminster had covenanted part of his income to his gardener in lieu of wages, and thereby reduced surtax. The Revenue's challenge was dismissed by the Lords when Lord Tomlin uttered his now famous dictum that 'every man in entitled, if he can, to order his affairs so that the tax .... is less than it otherwise would be'. It was on this statement of the law of England that all of us who were involved in tax-avoidance in shipping in the 1970s grew up.

By the 1970s, tax-planning organisations like Rossminster were selling off-the-peg avoidance schemes by the score. Their fee was a large slice, say 20%, of the tax saved. These schemes, typically, depended on a series of transactions, each of which would alone stand examination, though the overall commercial effect was nil, the only real result being the avoidance of tax liability.

But in 1981, the Lords delivered a shattering judgment. W. T. Ramsay, a Lincolnshire farming company, had sought to avoid tax on a gain made in 1973 when it sold and leased back its farm. It bought a typical off-the-peg scheme. This created two artificial assets. A tax-exempt gain was produced on one; an equal, but tax-deductible, loss on the other. The loss was available to wipe out Ramsay's real gain on the leaseback deal.

The Lords overturned the conventional reading of Westminster. Henceforth, the courts would look at the net effect of a series of transactions. Intermediate steps - e.g. the creation of artificial assets - could be disregarded for the purposes of a tax assessment. For a while, however, it looked as though the Ramsay doctrine applied only to artificial, Rossminster-style, schemes, but in 1982, the Lords widened its scope. Burmah Oil had tried to get a tax deduction for a debt owed to it by a subsidiary. It injected money into the subsidiary by taking up a rights issue. The subsidiary then paid off the debt, and was wound up. Burmah claimed that the loss on liquidation was tax-deductible. The Lords ruled otherwise. The loss Burmah faced was real; it was not artificially manufactured, as in Ramsay. Even so, Burmah's steps to make it tax-deductible were ruled void. The Lords found that they had no commercial effect other than to reduce tax payable, and so could be ignored.

Later in 1982, however, Mr Justice Vinelott in the High Court struck back for tax-planners. In the Dawson case, he found that the Ramsay doctrine did not apply. The Dawsons (father and two sons) wanted to sell their shares in the family companies, but to defer their liability to capital gains tax. They had a buyer - a company called Wood Bastow. They set up a company called Greenjacket Investment in the Isle of Man, and sold the family shares to it. In exchange, they received a holding in Greenjacket, which then sold on the family shares to Wood Bastow. The Dawsons hoped to avoid immediate liability to capital gains tax because they were swapping shares rather than disposing of them. Mr Justice Vinelott approved the plan. He ruled that Ramsay did not apply because, unlike the previous case, the series of transactions were not 'self-cancelling'. There were 'enduring legal consequences' - the continuing existence of Greenjacket. This ruling was upheld on appeal. But in February 1984, the Lords reversed this judgment. Lord Brightman stated that, when trying to decide whether tax was payable, the courts should look not to the commercial effects (or lack of them) of a string of transactions but at the commercial purposes of the participants. Lord Brightman dismissed the arguments about enduring legal consequences. The Revenue and the courts could disregard intermediate steps if

they considered they had no commercial purpose, no matter what their effects were or whether or not they were enduring. The Revenue could assume that the share sale had been direct to Wood Bastow because, had it taken place before capital gains tax was invented, there would have been no Greenjacket.

This was, and remains, a very disturbing judgment as it implies that tax avoidance is in the mind. How are we to decide what was or was not a man's purpose? It is obvious that if a tax does not exist nobody will try to avoid it, but just how far are judges to go beyond the wording of the law into the spirit of the taxpayer? Not only was the law in Westminster totally reversed in less than 50 years, but certainty in the law was completely removed. This judgment effectively ended the tax-avoidance industry in the UK.

9.7 A changed commercial climate

I have, in Sections 9.2-9.6 hereof, set out financial and taxation developments in Britain in the 20th century in some detail because I feel that, from about 1950, a fundamental change came about in British commercial thinking. In Victorian and Edwardian England the accent was on making money: (some) men became rich and in a climate of stability kept, and added to, their wealth. By 1950, after two World Wars, the consequences of social developments and world political changes were becoming apparent in Britain. In 1957 Harold Macmillan said

> 'Most of our people have never had it so good.'

But he went on to add

> 'Is it too good to be true, or perhaps I should say, is it too good to last?'

Were Macmillan's doubts about future prosperity well-founded? In 1957 average weekly male earnings were about £12.10. Adjusting for inflation, 30 years later, in 1987, that figure would have been about £112.50 weekly (factor 9.3): actually in 1987 it was £190 weekly. It would appear, therefore, that Mr. Britain had rewarded himself very well over the 30 years from 1957. But in the 1950s the accent seemed to change: it was no longer so much on making money as on the keeping of what was being made. By the mid-1970s inflation had reached unprecedented levels in Britain, and so had rates of personal taxation. The rich were on the defensive.

9.8 Tower Shipping

The genesis of Tower Shipping I leave to the words of Ken Garrett (Ships in Focus Record 8, 1999, p 218). He wrote

> 'Tower Shipping Ltd. was formed in 1965 by the amalgamation of two well-established freight forwarding and shipping agencies, Macdonald Deadman Ltd. of London and Universal Freight Ltd. of Liverpool. They were shortly joined by R. H. Tennens Ltd. of London.'
>
> 'At first the new company carried on with the forwarding and agency activities of its constituent partners. However, an early association with J. F. Embleton and Co. Ltd., brokers on the Baltic Exchange, resulted in some small ships being taken on time charter by Tower. This experience, coupled with their knowledge of the contemporary freight market, lead Tower to investigate the possibility of owning ships themselves. They found that it was possible to obtain 25% investment grants from the Government, and together with many tax advantages, this made the building of ships an attractive proposition.'

The first pair of ships came into service in 1968. They were TOWER VENTURE (yard no. 301) and TOWER CONQUEST (yard no. 303) from Clelands Shipbuilding Co. Ltd. of Wallsend.

9.9 Wilks Shipping

Eggar, Forrester was a shipbroking partnership formed in London in the 19th century. It became well regarded as a sound, reliable second-rank London shipbroker. It never diversified into tanker broking. It provided a very good living for its partners. In 1948 it became Eggar, Forrester Ltd., but continued much as heretofore, save that the partners were now directors and shareholders. During the 1960s, however, as senior figures retired and died the shareholding became more and more concentrated and a controlling interest came to be held by Ropner Shipping Co. Ltd., Darlington, an old-established, family shipowning organisation. Peter Talbot Willcox (DOB 17-3-27) was a member of this family through his mother. Peter's character was abrasive. He was sent to work in, and subsequently manage, Eggar, Forrester, suitably far away in London. Here he alienated more people more quickly. In 1965, things were very difficult in Eggar, Forrester, which was only very modestly profitable at the time. It was resolved to sell it, with first refusal given to Peter - at a very 'full' price. Peter accepted, and the directors of Eggar, Forrester woke up to find Peter in complete and absolute control.

From 1965, Eggar, Forrester was Peter Willcox; and it became very, very profitable. In 1970, Eggar, Forrester Ltd. was renamed Eggar, Forrester (Holdings) Ltd. and two subsidiaries - Wilks Shipping Co. Ltd. and Eggar, Forrester Ltd. - were formed. Further subsidiaries and new activities came later.

In 1967 Kyle Shipping Co. Ltd. sold its last remaining ship (KYLEBANK). After this sale, the only significant asset in the company was a substantial tax loss. Eggar, Forrester, facing the possibility of an enforced distribution, was in need of a tax loss to set against its shipbroking profits. Counsel's opinion to Eggar, Forrester, however, was unequivocably that the Revenue would treat shipbroking and shipowning as separate trades and, therefore, the loss in Kyle would not be available to set against the Eggar, Forrester profits. After dropping the purchase of Kyle, Eggar, Forrester decided to order new tonnage. Time being of the essence, it embarked on a series of new 199 GRT, 400 DWT coastal motor barges, the first of which - WILKS(I) - was ordered in 1968 and entered service on 25-3-69. The Eggar, Forrester Year End was 31st March, and in order to get some trading within 1968-69, delivery was taken with decks partly unpainted. The first (coastal)cargo was taken on the basis of freight payable on shipment, and loading and sailing were accomplished before the Year End. Thus, one freight and a very small amount of operating expenses were included within the 1968-69 Accounts. It should be noted that the existence of cash investment grant and Industry Act credit meant that of a total capitalized cost of £85,189 for WILKS(I), the Eggar, Forrester cash input, inclusive of pre-delivery interest,as at delivery was only £16,100. Three further like newbuildings entered service in 1970 and a 1968-built vessel (CONTINENT) of similar size was purchased towards the end of that year.

The first Eggar, Forrester coastal motor barge fleet, while fully tax-effective, also brought operating problems and exposure to market risk. The company did not wish to add to the five-vessel fleet with which it ended 1970 and, as further tax allowances were still needed, it diversified into the ownership and leasing of major deep-sea ships and motor car leasing to distributors on a massive scale. Tax avoidance was 'successful' in Eggar, Forrester; tax was not paid. But each succeeding

'deal' was a little more artificial, a little more fragile, and generally a little less attractive if stripped of its tax benefits.

In June 1975, the five-vessel fleet was sold/bareboat chartered and sold to Glenlight Shipping Ltd./Clyde Shipping Co. Ltd. for their Highlands and Islands trade. When WILKS(I) entered service in 1969 the UK Inflation rate (RPI) was the same as the interest rate on Industry Act shipbuilding loans, but thereafter RPI rose dramatically. Thus, throughout the vessel's life with Eggar, Forrester, the company was in real terms being paid to borrow on Industry Act credit. This, of course, also applied to the other newbuildings. When WILKS(I) was sold in 1975, UK inflation was peaking at 24.2% p.a. The sale price for the vessel was £140,000; for the five-ship fleet it was £690,000 and, in addition, the deal provided £146,000 in bareboat hire over the two years to July 1977. This deal was unbelievably good. It provided an average after-tax return of over 20% p.a. after taking into account all trading losses on the motor barges but disregarding the tax benefits of those losses.

It was quickly forgotten in Eggar, Forrester that the investment in coastal motor barges had been entered into as a tax-avoidance exercise. Indeed, so profitable had it proved to be that in very short order it came to be working against Eggar, Forrester's interests. It was taken as the standard for 'what we are looking for in the future'. This was an impossibly high expectation of return: any business proposition that approached it was, of course, very risky, and more time was devoted to killing off dangerously high-risk proposals than was spent pursuing sound business indicating more modest returns. In Eggar, Forrester greed had set in.

The sale/lease and sale of the whole Wilks fleet in 1975 (when UK inflation was at its peak) created an immediate need for new tonnage. Eggar, Forrester acted speedily: the Shipbuilding Agreement for the first of a new fleet - WILKS(II) - was dated 10th June 1975, and the vessel entered service on 9th April 1976. Further vessels entered service in 1977, 1979, 1980, 1981 and 1982, and Eggar, Forrester obtained appropriate tax investment allowances.

One feature of this second Wilks fleet which is here important is that three of the vessels were built in Denmark. Thus, the shipbuilding loans were from the Danish Ship Credit Fund and denominated in D.Kr. Eggar, Forrester soon discovered that (i) their D.Kr. loan obligations allowed them to hold, and deal in, D.Kr., (ii) the spot £/Kr. exchange rate varied widely over quite short periods, and (iii) the exchange rates obtainable for forward Kr. were invariably only the spot rates plus a small premium, reflecting an interest element. Eggar, Forrester started dealing in D.Kr. Initially, the intention was to protect the organisation from future exchange rate fluctuations, but it soon became apparent that exchange gains were being made. Thus, very quickly, the objective shifted to trading in Kr. for exchange gain. So a further activity came to Eggar, Forrester, and yet another step was made away from 'pure' shipbroking. By 31-3-85, when the average age of its three Danish-built vessels was 3.8 years, Eggar, Forrester had made exchange gains totalling £144,800. This was 8.75% of the original capitalized cost of the vessels, or 17.25% of the then outstanding loan principal. Thus, these gains were material.

In 1969-70, turnover in Eggar, Forrester was attributable 80% to shipbroking and 20% to all other activities. A decade later, these figures were reversed; 19% was attributable to shipbroking. Apart from the shipowning, plant and equipment leasing and currency dealing mentioned above, new subsidiaries were formed handling offshore oil industry broking, transport consultancy, ownership and leasing of industrial property, and estate agency. But while most in London in the 1980s continued to think of Eggar, Forrester as a shipbroking company, that the organisation had fundamentally changed was brought home when Eggar, Forrester (Offshore) Ltd. got into financial trouble. Despite its name, it was not a wholly-owned subsidiary. Eggar, Forrester (Holdings) Ltd. declined to support it. It was wound up, insolvent. Surprise at the National Westminster Bank was great: they had, it appeared, lent on the assumption that differentiation between companies with Eggar, Forrester names was unnecessary.

Tax <u>was</u> taxing in Eggar, Forrester: it so changed the focus of the organisation that as a shipbroker it died.

9.10 John I. Jacobs (R. Lapthorn fleet)

John I. Jacobs & Co. Ltd., London, were world-class and reputedly very profitable tanker brokers, and also ocean tanker owners. But a fleet of six ships in 1958 dropped to three in 1962: these last three were subsequently sold, and John I. Jacobs vacated the field of ocean-going shipowning. By the late 1970s they were seeking tax-effective investment in ships. The Yorkshire Dry Dock Co. Ltd. had built a small Thames passenger vessel for them for leasing, and YDD introduced them to R. Lapthorn & Co. The result was a string of orders for YDD from Jacobs (who had capital) for coastal motor barges for leasing to Lapthorn (who did not). I wrote:

> 'This lease has full amortisation over a 15-year primary period at a gross cost of money to the lessee (Lapthorn) of 8.437% p.a. monthly. There is a secondary period of an additional 5 years at Lapthorn's option at a peppercorn rental.'
>
> 'At the end of the lease, the lessee (Lapthorn) has 90% of the residual value: the lessor (Jacobs) has 10% of the R.V. (which is not likely to be worth a lot at the end of 20 years).'

This was in a memo. dated 30-4-82. At the end of 1981 (first vessel entered service 1982), ruling interest rates (see Appendix N. hereto) were:

Base Rate		14.50% p.a.
Inter-bank 3-month		15.75% p.a.
Government Bonds:	5-year	14.65% p.a.
	20-year	14.74% p.a.

The interest rate on D.Kr. Shipbuilding loans for LU (del. 12/80), WIGGS (del. 1/81) and WIRIS (del. 3/82) was 8% p.a. It must be concluded, therefore, that Jacobs passed on to R. Lapthorn the full benefit of shipbuilding credit. The gain for Jacobs can only have been the tax benefits of ownership, with a possible (small) reward from a 10% share in residual value at the end of 20 years.

9.11 Weston Shipping/General Freight/Spillers

For Weston Shipping/General Freight I again rely on Ken Garrett who wrote (1999)

'Faced with a decline in his traditional market, a ship owner can send his ships elsewhere or search for other cargoes; so too, an arable farmer can diversify and grow other crops but a miller does not have such flexibility. He needs wheat and for the British bread market he needs hard, winter grown wheat. In the late 1960s this meant wheat from Britain, northern France, the USA or Canada, much of it having to be transhipped from silos in the larger ports to mills around the UK coast in relatively small coastal vessels.'

'At that time, the shipping industry was going through a cyclic boom period, which gave every indication of continuing. Freight rates were high and Associated British Foods Ltd. (ABF), a huge group of food producing and marketing companies, founded by the Canadian Mr Garfield Weston, could foresee further increases in transhipment costs. But probably worst of all, there was a possibility of a shortage of ships, which would jeopardise continuous supplies of wheat to their mills.'

'To influence the market and to safeguard their supplies, ABF decided to set up their own shipping company. Weston Shipping already existed as a ships agency company as a division of Mardorf Peach & Co. Ltd., a grain broking house within the ABF Group.'

'Within the group of nine vessels built in Holland were two that were outside the mainstream of Weston Shipping. These were the 645 deadweight GUY CHIPPERFIELD and EDWARD BROUGH. Although owned by Mardorf Peach they were demise chartered for fifteen years to the Unilever Group company, BOCM Silcock Ltd. The technical and personnel management of the ships was carried out by Weston Shipping while the freight management rested with the General Freight Co. Ltd., another company in the Unilever group.'

'The reasons for building these two ships for Unilever were very similar to the ABF reasons for building the fleet for Weston Shipping, namely, the fear that there would not be sufficient ships to guarantee uninterrupted supplies of grain to their mills.'

'After eight years operation, BOCM Silcock bought out the demise charters but the management arrangements remained the same.'

In 1982, after a short period in lay-up and sale to another Unilever company, the two vessels returned to service as ELLEN W and FREDA W with technical and personnel management by R. Lapthorn & Co. That arrangement lasted until 1985, when Unilever decided to divest itself of all 'non core' activities and sold off all its transport interests. Conceived as a hedge against high freight rates in a boom time, the Weston Shipping fleet became an expensive and unnecessary luxury when other owners were seeking work and freight rates were low.

Spillers Feed and Grain arrived late (1977) on the coastal motor barge scene as owners. It may be thought too late, for the freight market changed at the end of the 1970s. All the vessels were soon sold and merged into the L & R fleet. Owning ships is said not to have been a happy experience in Spillers.

9.12 Tax benefits or Freight market hedge?

Table 32. below seeks to summarize sections 9.8-9.11 above.

Table 32. 'New' owners - Tax benefits or Freight market hedge?

Fleet/owner	First New Vessel	No. of Vsls.	No. of Vsls. acquired for tax benefits
Tower Shipping	1968	8	4*
Wilks Shipping	1969	11	11
Giles W. Pritchard-Gordon	1978	2	1*
John I. Jacobs (Lapthorn fleet)	1983	13	13
Other (5+)	1971/1985	9	-
		43	29 (67½%)
Weston Shipping (ABF)	1971	7	-
General Freight (Unilever)	1974	2	-
Spillers Feed & Grain	1977	4	-
Totals		56	29 (52%)

* Arbitrarily assessed as 50% due to tax benefits.
\+ Of which 2 were shipbrokers and 2 were shipowners.

Source: Compiled from Author's records.

It will be noted that Tower/Wilks/Pritchard-Gordon/Jacobs were all shipbrokers. It may be concluded that 'new' coastal motor barge owners were either grain houses, part of major multi-national corporations, or organisations of fairly modest size already within the shipping industry acquiring small vessels for tax-avoidance reasons. In the light of indicated grain house freight market fears, we must now consider the freight market carefully.

10 TRADING

'The earth is the LORD'S, and the fulness thereof; the world, and they that dwell therein.
2 For he hath founded it upon the seas, and established it upon the floods.'

Psalm 24.

10.1 The Freight market

When considering the trading of coastal motor barge tonnage, it must always be remembered that its operation was, by its very nature, a fringe activity. In road terms such employment is best likened to that of the taxi rather than that of the bus. Unless physically restricted points of shipment or discharge are involved, regular long-term movements were less likely for coastal motor barges than for larger vessels.

The markets for coastal motor barge tonnage were so diverse that all owners tended to specialise in particular areas and/or particular commodities. In Wilks Shipping, this specialisation came to take the form of carriage of fertilizers, and in trading to and from Schelde ports. Among others, R. Lapthorn tended to carry grain derivitives from ARA to the West Country and stone back coastwise.

Irrespective of the particular operating preferences of individual owners and fleets, the whole tone of the market was set by the grain trade. Grain probably accounted for about 70% of the total cargo moving for coastal motor barge tonnage. While most of this trade moved in particular set cargo sizes, e.g. 300 mt 10%, 600 mt 10%, or 1,200 mt 10%, these fixed cargo sizes became less rigid as the years passed. Generally, the major grain charterers tended to be better organised than most other charterers. A high proportion of the fixtures which, from an owners' point of view, would have been considered to be at 'bad' rates were to grain houses. Wilks Shipping involvement in the grain trade tended to be at times when either the market was very poor, and nothing else was available, or when the market was very good, when it was occasionally possible to make even grain houses pay up.

There was an overall seasonal character to the coastal motor barge freight market, which was usually at its weakest in June, July and August. It must be stressed, however, that at any time of year very considerable short-term rate fluctuations did arise. The weakness of the Summer market arose from relative lack of grain movement in the period before new harvest grain became available, and the lack of fertilizers and fuels moving in the Summer months. In the 1970s and 1980s the Summer trough was accentuated by an increasing tendency for UK factories, as well as those on the Continent, to close for set periods for Summer holidays rather than to work on a reduced basis. The unstable nature of the market was also increased by the fact that a large proportion of the trade became transhipment business to or from ocean vessels. A large bulk carrier into Rotterdam to discharge grain might well mean twenty transhipment cargoes. Three or four such import vessels into Rotterdam in the same week was not unknown.

With tonnage carrying a cargo a week, the time scale for coastal motor barge operations contrasts markedly with deep-sea trade. Long term contracts of affreightment for coastal motor barges were those which extended to twelve months. Such contract business was rare, and for periods beyond a year almost unknown. Timecharter was also uncommon. That which did exist was often to speculators, or involved chartering a vessel to direct competitors who then bid for business against its sister vessels. For a timecharterer to make a commitment extending beyond twelve months was unheard of for coastal motor barge tonnage, and even for such a period it was normal for a charter to be for three month periods, with continuation in charterers' option. Demise, or bareboat, charter was also unusual. This probably resulted from the fact that, by world shipping standards, the capital requirement for a new vessel was low, and an organisation of sufficient worth to be regarded as a satisfactory signature for a demise charter would normally be able to provide such a capital sum out of its own resources.

A feature of the short-sea market which should be noted was the diversity of owners, brokers and charterers. Broker activities tended to be very specialised, nearly all brokers dealing with only a small segment of the total market. Such

specialisation might be by commodity, charterer, or geographical area. Thus, many cargoes were fixed by brokers in relatively minor provincial centres such as Hull, Great Yarmouth, Ostend or Terneuzen. Short-sea broking organisations were usually small and the wide coverage available to ocean shipping from the major London shipbrokers was not available in the coastal motor barge market. A number of major charterers for small vessels conducted their chartering through specially established subsidiary broking companies, e.g. Fairway Shipping and Trading for Dreyfus. The coastal motor barge chartering market was essentially a telephone market (like the tanker market in London). It was rare for cargoes to be worked on the Baltic Exchange. Fixtures were not reported and brokers did not publish market reports. The general diversity of the market, coupled with an almost complete lack of published information, meant that there was seldom a general consensus on the state of the market.

Until recent years, a high proportion of small German tonnage was Master owned, and to a lesser extent this was also true of the Dutch coaster fleet. For historical reasons, the same degree of Master ownership never existed in the UK, but even in the 1980s at the bottom end of the tonnage scale, there was some Owner/Master tonnage.

The areas bordering the North Sea at its lower end are characterised by high densities of population and high levels of economic activity. This has resulted in a heavy concentration of movement of goods by sea between the lower East Coast of England and the near Continental ports, and vice versa. Recent economic trends, including the integration of the UK into the EEC, and greatly increased oil costs, have tended to concentrate a higher proportion of cargo movements between the UK and the mainland of Europe into the area bordered by lines drawn Spurn Head/Ijmuiden and Shoreham/Caen. This area, it will be noted, represents only a tiny part of that allowed to British vessels by the statutory constraints of British Near Continental limits.

10.2 Freight rate movements

At a time when all dry bulk cargo vessels - of whatever size - are needing increases in freight market levels to provide

'profitability', it is important to consider the pattern and moment of freight market movements for particular sizes/types of vessel in the past. This section considers past freight market movements for North Sea motor barges and contrasts it with the markets for (i) ocean dry bulk ships, and (ii) 1,599 GRT, 2,500/3,000 DWT single deckers.

Table 33. Coastal motor barges - Average Freight Rates fixed.

All in £ pmt. Base 1969 = £1.40 pmt = Index 100.0.

Year	First Half	Second Half	Year	Index
1968/69	-	1.31	-	-
1969/70	1.40½	1.46½	1.43½	102.5
1970/71	1.39	1.50	1.44½	103.2
1971/72	1.33	1.39	1.36	97.1
1972/73	1.86	2.16	2.01	143.6
1973/74	2.31	3.90	3.10½	221.8
1974/75	3.53	-	-	-
1975/76	-	-	-	-
1976/77	3.26	4.52	3.89	277.9
1977/78	4.26	4.46	4.36	311.4
1978/79	4.35	4.84	4.59½	328.2
1979/80	5.72	5.18	5.45	389.3
1980/81	5.11½	5.05½	5.08½	363.2
1981/82	4.77½	5.60½	5.19	370.7
1982/83	4.75½	5.68	5.22	372.7

Years end 31st March.

Source: Wilks Shipping Company records.

Table 34. Average Freight Rates required to keep pace with RPI.

Year	RPI % change on a year earlier	RPI Index	£ pmt Freight Rate required
1969	5.4	100.0	1.40 (BASE)
1970	6.4	106.4	1.49
1971	9.4	116.4	1.63
1972	7.1	124.7	1.75
1973	9.3	136.3	1.91
1974	16.0	158.0	2.21
1975	24.2	196.3	2.75
1976	16.7	229.1	3.21
1977	15.8	265.3	3.71
1978	8.3	287.3	4.02
1979	13.4	325.6	4.56
1980	18.0	384.5	5.38
1981	11.9	430.2	6.02
1982	8.6	467.2	6.54
1983	4.6	488.7	6.84
1984	5.0	513.1	7.18

Source: Author's records.

Table 35. Average Freight Rates compared - North Sea motor barges and 1,599 GRT, 2,500/3,000 DWT single deckers.

Year	Half Year	Motor barges £ pmt	Index	French Bay - WCUK/Ireland Grain, 2/3,000 mt cargoes £ pmt	Index
1973/74	1	2.31	100 (BASE)	3.05½	100 (BASE)
	2	3.90	169	5.43	178
1974/75	1	3.53	153	4.97	163
	2	-	-	5.08	166
1975/76	1	-	-	2.75	90
	2	-	-	3.29½	108
1976/77	1	3.26	141	3.82	125
	2	4.52	196	4.77½	156
1977/78	1	4.26	184	4.26½	140
	2	4.46	193	4.36	143
1978/79	1	4.35	188	3.88	127
	2	4.84	210	4.93	161
1979/80	1	5.72	248	4.85½	159
	2	5.18	224	5.63½	184
1980/81	1	5.11½	221	5.22	171
	2	5.05½	219	4.86	159
1981/82	1	4.77½	207	4.42	145
	2	5.60½	243	6.12½	200
1982/83	1	4.75½	206	4.31½	141
	2	5.68	246	4.98	163

Years end 31st March.

Source: Author's records.

Table 36. Maximum Voyage Freight Rate variations.

Basis half-year average rates.	French Bay - WCUK/Ireland, Grain, 2/3,000 mt cargoes	North Sea motor barges
Max. increase over any 3-year period	49%	165%
Max. decrease over any 1-year period	45%	11%

Source: Author's records.

It is widely known that ocean voyage freight rates are subject to very considerable variations over time. This is illustrated below by taking the peak and trough rates paid in two trades in the decade since the start of the 1970s.

Table 37. Ocean trades - dry bulk voyage Freight Rates.

(a) Coal, Hampton Roads - Japan, PANAMAX.

Month/Year	Freight Rate paid in US $ pmt	% change on previous rate	Index
3/70	13.25	-	100 (BASE)
6/72	3.50	- 74%	26
5/74	28.45	+ 713%	215
2/76	5.75	- 80%	43
1/81	29.60	+ 415%	223
8/82	11.25	- 62%	85

(b) Grain, US Gulf - ARA, 25-60,000 DWT*

Month/Year	Freight Rate paid in US $ pmt	% change on previous rate	Index
4/70	9.40	-	100 (BASE)
7/71	2.50	- 73%	27
3/74	22.00	+ 780%	234
7/77	4.50	- 80%	48
12/80	23.62	+ 425%	251
8/82	6.50	- 72%	69

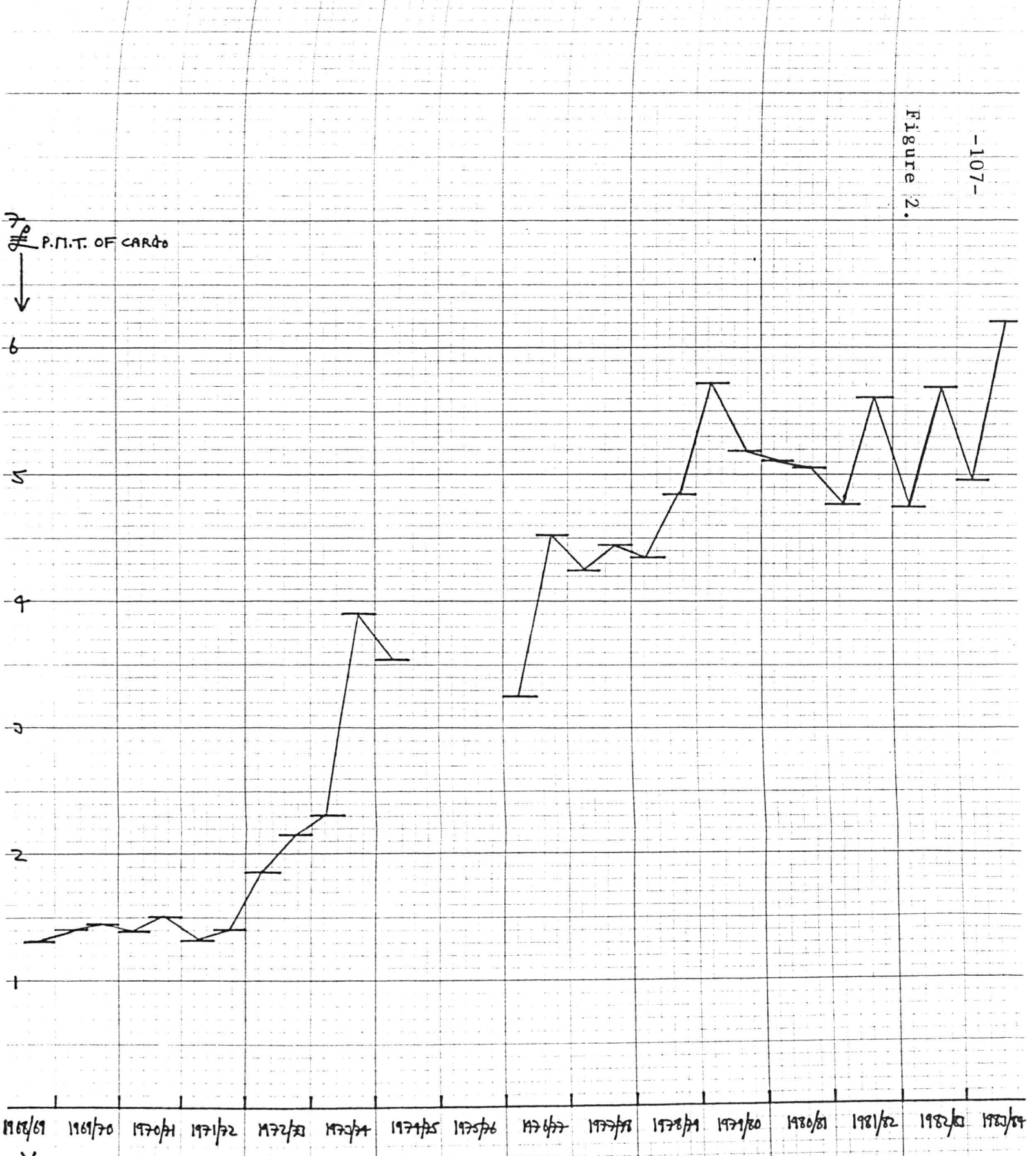
* 25-35,000 DWT 1/1970 - 1/1977; 50-60,000 DWT thereafter.

Source: Author's records.

It should be noted how similar were the pattern and moment of the movements in the freight rates paid in the above trades.

Table 35. above clearly illustrates that, while freight rates for the 1,599 GRT, 2,500/3,000 DWT single decker moved in exactly the same way as those for North Sea motor barges, the long-term rate of increase in freight levels for the 2,500/3,000 DWT single decker was less than half that for North Sea motor barges. Not only does the 1,599 GRT, 2,500/3,000 DWT single decker freight market show none of the boom freight rate peaks of the ocean dry bulk market, over a ten-year period it consistently performed worse than the market for North Sea motor barges. It will be seen that for North Sea motor barge voyage freight rates (1) the pattern of peaks and troughs applying to rates in the ocean dry bulk trades is missing, upward movements being less marked than for the ocean dry bulk trades, whilst downward movements are rare and small; (2) the market is characterised by a general upward trend in rates interrupted by periods of about four years with very little change in rate levels; (3) the index movement of from 102.5 to 372.7 over 13 years is equivalent to an increase of about 10½% p.a. compound.

Figure 2.



NORTH SEA MOTOR BARGES – AVERAGE FREIGHT RATES FIXED

14-8-89.

Were the Weston Shipping/ABF freight market fears in 1969/70 really justified? While the North Sea coastal motor barge freight market undoubtedly performed well in comparison with the markets for deep-sea shipping, the fact remains that its rate increases during the Weston Shipping era (1970-1983) did not keep pace with UK inflation: they averaged about 10½% p.a. compound. Inflation (RPI) averaged nearly 13% p.a. compound over this period. The inflation of the four crucial years 1974/77 inclusive was such that this time alone required freight rates to increase 95% if in 'real' terms market levels were not to have been worse than before. I submit that there was never any freight market boom for North Sea coastal motor barges: the reality was that the £ shrank, not that 'real' earnings levels increased. The very existence of the Weston Shipping fleet was based on a misconception. Moreover, the more one looks into Weston Shipping, the more it becomes clear that this operation was never a seriously commercial shipping company.

At the start of the Weston Shipping fleet the MD was Mr Leslie Goldsmith. He was a collector of vintage cars and took on a marine engineer and fellow enthusiast, George Noyce, to take charge of engineering matters. Mr Goldsmith appointed his son Jonathan to be fleet manager and Tony Brewer, who was later made a director, to be chartering manager. Tony was subsequently joined by Terry Mitchell, ex Metcalf Motor Coasters. Mr Goldsmith also recruited Capt. Ron McBrearty, again ex Metcalfs, as marine superintendent. He in turn recruited a former Metcalf engineer, Bill Forbes, to be engineer superintendent. Frank Leworthy from the British Shipping Federation joined as personnel manager and Colin Wilkinson, formerly an assistant yard manager at Everards shipyard at Greenhithe, also joined as a superintendent. In order to 'assist the ships' engineers with surveys and maintenance', two staff engineers were employed, one based in the South and the other in the North of England. Despite the shoreside technical assistance indicated above, all the small Weston vessels carried an engineer.

Weston vessels were federated - i.e. crews were employed and paid according to conditions set out in the National Maritime Board Year Book. At the time Weston Shipping became owners, there was a yawning gulf in pay terms between the federated and

non-federated sectors of the British shipping industry.

The first new Weston vessel, JANA WESTON, was delivered in November 1971. Despite the weight of Weston Shipping's technical management, in the words of Ken Garrett (1999)

> 'She showed a little corporate naivety by being measured at 507 gross tons and thus just above the tonnage requiring the full application of the SOLAS regulations. Subsequent owners managed to reduce the figure to 499 gross tons to secure a more economical operation. Interestingly, her sister MARY WESTON coming into service some two years later was well below the convention tonnage at 496 gross tons with both having a deadweight of 920 tons.'

Later, a Weston Shipping Master was based at Hoogezand to supervise newbuildings.

In April 1975, Weston Shipping took delivery of the new MARGARITA WESTON, 317 GRT 449 DWT. This vessel was specifically built to service Stambridge Mill, Rochford. Her design did not reflect much credit on her owners. To quote Ken Garrett again

> 'She was a difficult ship to handle and even when loaded her propeller was not always fully immersed .... her homogeneous stowage factor was greater than that of wheat which meant that to comply with the contemporary grain regulations, the cargo would have to be overstowed with bagged grain or secured by a sloping bulkhead of bagged grain.'

This vessel was too small in deadweight terms and too late. Stambridge Mill was always a difficult destination, but it is incredible if it had not occurred to anyone in Weston Shipping that the answer might be to part-load higher DWT vessels. In September 1977, WILKS (II), 495 GRT 1,002 DWT, discharged 700 mt of wheat at Stambridge Mill from Rouen.

I leave Ken Garrett to sum up the Weston Shipping operation

> 'Since the start, the ships had been operated as a service to the mills and although they did carry spot cargoes, they were generally under no great pressure to boost their earnings from outside sources. Internally, freight rates were fixed at about 50% higher than market rates and any criticism of this arrangement was countered with the argument that no demurrage was ever charged. The ships often waited for days before loading a particular cargo, discharging programmes were planned to suit the mills and sometimes, ships became floating warehouses when a mill's storage facility was full. They also undertook long ballast passages to loading ports when a more commercially driven shipowner would have attempted to make a positional voyage with another cargo. Other times a loaded ship would be diverted to a convenient port for Customs entry before continuing to the original destination thus becoming a vehicle for the permissible manipulation of subsidies.'

By 1982, the scale of the uneconomic operation had become untenable, and ABF decided to sell the Weston Shipping fleet.

There is, however, some evidence that in the purely Estuarial trade, freight rate escalation did match RPI. In June 1970, the new WIGGS (I) was fixed for Tilbury - Rochford, wheat, at 12/6d per ton. In January 1979, L & R fixed Tilbury - Faversham, maize, at £2.07 per ton for BASTION (1958) and Tilbury - Ipswich, maize, at £2.46 per ton for ROFFEN (1965). Faversham is directly comparable with Rochford, and the freight increase over the 8½ years averages about 14½% p.a., the same as Inflation.

Moreover, it does seem that in the critical 3½ years from the delivery of WILKS (II) in April 1976, freight rate escalation did more than keep pace with RPI in the lower North Sea trades. See Table 38. below.

Table 38. Escalation Comparisons - Lower North Sea Freight Rates.

	Vessel	Voy.	Fixed	From	To	Frt. Rate	Increase % p.a. *
A	WILKS (II)	2	4/76	Rotterdam	Battersea	£2.69	
	WILKS (II)	137	8/79	Ghent	Battersea	£4.50	15.63
B	WILKS (II)	11	7/76	Rotterdam	Gunness	£2.79	
	WIB (II)	20	7/79	Rotterdam	Gunness	£4.75	18.00
C	WILKS (II)	13	7/76	Rotterdam	Wisbech	£2.64	
	WIB (II)	37	11/79	Rotterdam	Boston	£4.60	16.88
D	WILKS (II)	21	9/76	Brussels	Goole	£4.25	
	WILKS (II)	23	9/76	Brussels	Goole	£4.25	
	WILKS (II)	132	6/79	Brussels	Goole	£7.25	
	WILKS (II)	136	6/79	Brussels	Goole	£7.25	19.50

Freight Rates adjusted to £ p.m.t. intaken for comparability where necessary.
* Compounding monthly.

RPI = $\frac{680}{440}$ over 42 months = 12.75% p.a.

Source: Author's records.

10.3 Voyages and cargoes

The cargoes carried and voyages performed by Wilks Shipping Company vessels are set out in detail in Appendixes O., P. and Q. hereto. Tables 39-44. inclusive below endeavour to summarize the contents of these Appendixes.

Table 39. Voyages and cargoes - WIGGS (I) and WIS (I) 1970.

Commodity	No. of cargoes		
Wheat	8		
Maize	9		
Other Grain	5	22	51%
Steel		7	16%
Scrap		2	5%
Fertilizers		1	2%
Stone		5	12%
Other		6	14%
Totals		43	100%

Source: Appendix O.

Table 40. Voyages and cargoes - WOPPER 1971/72.

Commodity	No. of cargoes		
Wheat	7		
Maize	14		
Barley	7		
Other Grain	13	41	66%
Steel		12	20%
Scrap		2	3%
Fertilizers		1	2%
Stone		2	3%
Other		4	6%
Totals		62	100%

Source: Appendix P.

It will be noted how localized trading was. On the carriage of the 105 cargoes listed above, the vessels on the Continent did not go West of Caen, and North of Ijmuiden only twice, once to Leeuwarden and once to Bremerhaven. Excluding stone moved on the UK East Coast, only three cargoes involved going North of the Humber (one each Whitby, Perth and Burghead). On the UK coast, the vessels never went South of Ramsgate (although one cargo went to Jersey and one to Guernsey).

Table 41. Wilks Shipping Company fleet - cargoes carried in 1973.

Commodity	No. of cargoes		
Wheat	18		
Maize	37		
Other Grain	30	85	34%
Steel		38	15%
Scrap		52	21%
Fertilizers		22	8%
Minerals, ingots, ores, residues		16	7%
Stone, bricks, tiles, slag, aggregates		12	5%
Other		25	10%
Totals		250	100%

Source: Author's records.

Table 42. Voyages and cargoes - WILKS (II) 1976/77.

1. By loading port

Antwerp	12	
Rotterdam	15	
Seaham Harbour	3	
Other	27	57

2. By loading country

Belgium	16	
Netherlands	17	
UK	19	
France	4	
West Germany	1	57

3. By discharge port

Antwerp	3	
Goole	4	
Thames	3	
Other	47	57

4. By discharge country

Belgium	6	
Netherlands	3	
UK	42	
France	4	
West Germany	2	57

5. By commodity

Wheat	4		
Maize	8		
Barley	3		
Other Grain	1	16	28%
Steel		7	12%
Scrap		3	5%
Fertilizers		14	25%
Coal		4	7%
Clay		3	5%
Other		10	18%
Totals		57	100%

Source: Author's records.

Table 43. Voyages and cargoes - WILKS (II) and WIS (II) 1978/79.*

1. By loading port

Antwerp	8	
Brussels	6	
Thames	7	
Other	20	41

2. By loading country

Belgium	16	
Netherlands	3	
UK	17	
France	5	41

3. By discharge port

Brussels	8	
Goole	4	
Boston	3	
Thames	3	
Other	23	41

4. By discharge country

Belgium	11	
Netherlands	2	
UK	27	
France	1	41

5. By commodity

Steel	11		
Scrap	8		
Fertilizers	11	30	73%
Other		11	27%
Totals		41	100%

* October 1978/March 1979, both months inclusive.

Source: Author's records.

Table 44. Voyages and cargoes - WILKS (II), WIS (II), WIB (II).+

1. By loading port

Antwerp	11	
Brussels	36	
Thames	6	
Goole	3	
Other	18	74

2. By loading country

Belgium	50	
Netherlands	3	
UK	17	
France	3	
West Germany	1	74

3. By discharge port

Brussels	9	
Antwerp	4	
Goole	20	
Boston	16	
Thames	8	
Norwich	6	
Other	12	75

4. By discharge country

Belgium	13	
UK	58	
France	3	
West Germany	1	75

Includes one 2-port discharge

5. By commodity

Steel	48		
Scrap	10		
Fertilizers	7	65	88%
Honey in Drums		6	8%
Other		3	4%
Totals		74	100%

+ April - September 1979, both months inclusive.

Source: Author's records.

Table 45. Wilks Shipping Company fleet - trading pattern for six months to End March 1984.

1. By trading area

Cargo voyages	Percentage of cargo voyages	
A. Loading Continent within Dunkirk/Ijmuiden range for English ports (not West of Shoreham)	65.5	
B. Loading East Coast England within Tees/ Dover range for Continental ports within Dunkirk/Ijmuiden range	24.5	90.0
C. Loading Continent within Dunkirk/Ijmuiden range for East Coast Scotland (not North of Dundee)	1.8	
D. Loading East Coast Scotland (not North of Dundee) for Continental ports within Dunkirk/Ijmuiden range	.9	2.7
E. Coasting within Thames/Firth of Forth range		3.7
F. To and from North German ports		3.6
Totals		100.0

2. By commodity

	Percentage of cargoes moved	
Steel	16.4	
Scrap	6.4	
Fertilizers	49.1	71.9
Wheat	6.4	
Barley	9.0	
Other Grain	4.5	19.9
Ferrochrome, Bauxite, Perlite		5.5
General cargo, Paper products		2.7
Totals		100.0

Source: Author's records.

Concerning trading by area, it will be noted that 90% of cargo voyages were between the East Coast of England and the near Continent, and vice versa. There was occasional extension of this trading to include the lower East Coast of Scotland and some trading coastwise on the East Coast. Cargo voyages other than those mentioned were to or from North Germany, but such voyages were rare. Regarding commodities carried, the basis of

fleet employment was the carriage of fertilizers from the near Continent to the East Coast of England. The movement of steel was also significant between the near Continent and East Coast England in both directions. Wheat, Barley and Scrap were backhaul cargoes from the East Coast of England to the near Continent, and some wheat was carried coastwise. Commodities other than those mentioned were uncommon.

From Tables 43. and 44. it would seem that the 1978/82 UK wheat export explosion, and soya meal 'substitute' imports, largely passed Wilks Shipping Company by. Indeed, the percentage of cargoes which were grain fell markedly in the period under review. For Wilks Shipping, in 1970 it was 51%, and a peak level of 66% in 1972. But in 1973 it had halved (to 34%): in 1976/77 it was 28%, and in 1978/79 it was non-existent. In the six months to End March 1984, it recovered to 20% of cargoes lifted. During the grain export 'boom' of 1978/82, many grain houses and commodity trading organisations owned and operated small ships, e.g. ABF, Unilever, Spillers Feed and Grain, Continental Grain, Dreyfus. I think certainly some of the independent owners of small vessels rather tended to abandon the grain market to them. All five of the above-mentioned organisations got out of small-ship owning in 1982/85. Moreover, on 27 January 1984, Lloyd's List contained the following

> 'International Ferry Freight is to order 100 purpose built containers for the shipment of grain, pulses and vegetables to the Continent from Ipswich and Hull.
>
> IFF exported more than 100,000 tonnes of grain in 5,000 container loads to Rotterdam in 1983.
>
> Mr Chris Beckett, managing director, said yesterday that this tonnage was double that moved by the company in the previous year. There had been a significant change-over in transport methods for bulk grain.
>
> The company, which claims to have pioneered the transport of crops in containers, has introduced new devices including top hatches for fast loading from silo or hopper and a plastic liner that is renewed after each consignment.
>
> Its containers hold up to 24 tonnes for road haulage or 27 tonnes by rail.
>
> "Ideally we are able to take the crops straight off the fields and direct to the overseas processor", said Mr Beckett.
>
> The company recently carried a trial shipment of durum wheat from Hertfordshire to Belgium specially for pasta production.'

The percentages of steel, scrap and fertilizer cargoes moved

by Wilks Shipping Company vessels appear in Table 46. below.

Table 46. Percentages of cargoes moved by Wilks Shipping vessels.

Year	Steel	Scrap	Fertilizers	Totals
1970	16	5	2	23
1971/2	20	3	2	24
1973	15	21	8	45
1976/7	12	5	25	42
1978/9	27	20	27	73
1979	65	14	9	88
1984	17	6	49	72

Source: Author's records.

While there is much variation between the three commodities over the years, it is clear that together they became very significant in the market.

In 1984/85 the UK had the miners' strike, and imports of coal remained at a high level in 1986. Shipments from ARA continued to be discharged at the private berths in the Humber area which were used during the strike to minimise the problems of picketing. It may be, however, that this 'boom' for shipping, and the enormity of the confrontation that was taking place, tended to mask the importance of other more permanent changes.

By 1976/77 Wilks Shipping trading had become less localized: WILKS (II) was encroaching on the trades of the coaster and was not always remaining in motor barge country. This, I think, was more of necessity than choice. Out of 57 cargoes, no less than 20 took the vessel outside traditional motor barge territory: on the Continent, as far as Hamburg; to Poole, Teignmouth and Par in the West Country. On the East Coast of Scotland cargoes took the vessel as far North as Peterhead and Fraserburgh, and on the West Coast to Briton Ferry in Wales and to Ayr in Scotland. This spreading of wings may be explained by pointing out that WILKS of 1976 was 2½ times the DWT of WILKS (I) of 1969. To a degree, in 1976/77 market demand in terms of available cargo size in the motor barge trades had not increased as fast as vessel DWT: in short, when new WILKS (II) was a bit big for the market. It is also significant that WILKS (II) was - unusually - a twin engine twin propeller craft. This possibly engendered a feeling of

greater confidence for longer and more exposed sea passages. A further factor arising from the trading statistics is the apparent decline of Rotterdam for loading/discharging at the hands of Antwerp, and later Brussels, over the three years from the delivery of WILKS (II).

Table 47. Wilks Shipping vessels loading and discharging calls.

1976/77	Antwerp	15	Belgium	22
	Rotterdam	15	Netherlands	20
1978/79	Antwerp	8	Belgium	27
	Brussels	14	Netherlands	5
April/Sept. 1979	Antwerp	15	Belgium	63
	Brussels	45	Netherlands	3

Source: Author's records.

The rise of ports in Belgium relative to those in the Netherlands is for Wilks Shipping undoubtedly a function of the abandonment of the grain trade by the organisation in favour of the carriage of steel, scrap and fertilizers. It does, however, indicate the degree to which Rotterdam had by this time come to rely on grain transhipment business.

Concerning trading, one last matter needs to be mentioned. Back in sailing barge days it was widely held that spritsail barges tended to undertake longer voyages when sea freight markets were high and to retreat back into the Estuary when times were hard. In this connection it will be noted that it was not until 1984 that average freight rates fixed for North Sea motor barges exceeded the level of 1979 (see Figure 2. hereof). In the six months to End March 1984, 90% of Wilks Shipping fleet cargo voyages were back within 'traditional' motor barge waters (see Table 45.). There were, for the total fleet of six vessels, no trips West of Shoreham on the English coast or West of Dunkirk on the Continent. Moreover, in that six months, 20% of the cargoes moved were, again, grain. The pendulum was swinging back.

10.4 Dutch coasters

The 1950s and 1960s were the golden age of the small Dutch motor coaster. While they did not compete with English coastal motor barges in the purely Estuarial trades, they were very much a force in near Continental/UK trading. Their manning, however, was such that in the second half of the 1960s they were forced more and more onto longer voyages. In 1969, HEATHER of 1948 (357 GRT 435 DWT, 300 bhp) had a total manning of six: Master/Owner, Mate, Engineer and three Cape Verde sailors. This ship was sold from the Dutch flag in July 1972. In 1969, AFIENA (II) of 1962 (399 GRT 483 DWT, 300 bhp) called at Gijon, Bilbao and Pasajes in Spain; at Ballina on the West coast of Ireland, and at Kirkwall. This vessel left the Dutch flag in 1976. As late as November 1968, DONI (II) of 1939 (289 GRT 310 DWT, 150 bhp) could be seen discharging at R. J. Read Ltd. in Norwich, but this was at the end of an era: DONI (II) was sold to Nigeria in November 1971. Some English owners in the coastal motor barge field started out on ex-Dutch tonnage. R. Lapthorn & Co. bought RAYCREEK, completed in Delfzijl in 1932 and 181 GRT 220 DWT, in 1960. RAYCREEK lasted with Lapthorn until broken up in December 1968. Lapthorn also acquired HOOCREEK, completed in Groningen in 1928 and 209 GRT 240 DWT, in 1962, and sold the vessel in 1970. Again, HILDA of 1939 (249 GRT 320 DWT, 180 bhp) renamed MEPPEL in 1965, was sold - in damaged condition - in October 1971 from the Dutch flag to English ownership.

In 1969 new manning regulations were introduced by the Dutch Government, based on length rather than tonnage. Ships upto 60 metres 1.b.p. could be crewed by six men. According to Anderiesse and Spurling (2003, p 22)

> 'The successful age of the hard working captain/owner, which had origins in the 17th century began to draw to a close. Many Dutch coastal vessels were reasonably old by the end of the sixties and approaching the end of their economical lifetime. It became more and more difficult to find suitable cargoes for these relatively small vessels. Increasingly, cargo was being transported with the rapidly growing Ro-Ro system of transport in Western Europe, and also with the container trade becoming prevalent.'
>
> 'The demand for small vessels sharply fell and many owners decided to sell their vessel either for scrap or for further trading in distant waters.'

> 'In April 1971 the Dutch Government established a measure of sanity for the struggling coaster owner whereby under certain conditions (vessels older than 19 years) the owner who sold his ship for scrap received a good price.'
>
> 'Within a few years all remaining older "Gruno" ships were sold for further trading abroad. For "Gruno", no newbuildings replaced these old ships and the number of owned and managed ships continued to diminish.'

It will be noted that this was a scrapping scheme, not a 'scrap and build' scheme. That the Dutch coaster had been significant is evidenced by the fact that Freight Express Ltd., London, had one such small Dutch owner/master vessel on timecharter for ten consecutive years 1962-72. It will be recollected that one of the most important factors which brought about increase in UK tonnage between 1968 and 1972 was the introduction of cash investment grants: in April 1971, the Dutch Government was setting out to reward owners for scrapping their ships, without any requirement for replacement. Perhaps the final comment on the small Dutch coaster may be left to Fairplay (25 October 1984)

> 'The measure of the changed structure of the Dutch small-ship fleet may be discerned from the fact that at the end of 1983 there were only 50 or so vessels of under 500 grt on the Netherlands registry.'
>
> 'Thus reinvestment by the traditional Dutch "coastal" owners has been in progressively larger ships, in tonnage designed and manned so as to enable competitive deployment in world trade at large.'

But one small Dutch vessel was atypical: CONTINENT, despite her Netherlands flag and ownership, was a true English coastal motor barge. Her line of development in such Conoship-built craft clearly shows in Table 48. below. Appendix R. hereto is a statistical study of her trading in 1968 and 1969. In 1970 she was purchased by Eggar, Forrester, registered in London, renamed WOPPER, and became part of the Wilks Shipping fleet. Appendix P. hereto lists the voyages and cargoes carried by WOPPER in the Year 1971/72. It is interesting to see just how similar, and localized, trading as CONTINENT and WOPPER was. In short, not only was CONTINENT a coastal motor barge, she was traded as an English coastal motor barge.

Table 48. The line of development to CONTINENT.

Vessel	ANDESCOL	ELATION FUNCTION	LADY SARITA LADY SHEENA	WILLMARY	CONTINENT
Year	1961	1963	1965	1966	1968
GRT	191	212	200	199	259
S. DWT mt	254	282	378	376	400
Grain c.ft	15,180	15,230	17,450	17,150	19,770
Bale c.ft	14,300	14,300	16,170	15,100	17,885
Engine	Deutz	Kelvin	MAK	MAK	Bolnes
bhp	120	180	260	290	210
Owner	L & R	L & R	Thos.Watson	Antler Ltd.	Capt. R. Alberts

Source: Author's records.

Table 49. CONTINENT 1968/69 - loading and discharging ports.

Port calls	No.	%
England within Thames/Humber range to/from Continent within Abbeville/Ijmuiden range	166	90.7
Other	17	9.3
Totals	183	100.0

Source: Appendix R.

10.5 West German coasters

The outstanding feature of the West German fleet in the 1960s and 1970s was the diversity of ownership. This arose from (i) the historically high proportion of small owner/master vessels, and (ii) tax-effective investment (often in partnerships) in ships by persons having otherwise no connection with shipping. The Shipbroker (April 1981) reported

> 'At the end of 1980 there were still 577 coastal shipping companies with a base in the triangle between the Weser and Ems, on both coasts of Schleswig-Holstein and on the Kiel Kanal.'

The same report advised that at 1January 1981 there were in total 634 vessels in the Association of German Coastal Shipowners (VDK). While a small amount of tonnage was outside the VDK, the above figures indicate that the West German coaster fleet was almost entirely one of single vessel ownership. Indeed, the 1971 Annual Report of the VDK (p 6) stated (in translation)

> 'Most owners have only one ship each. Only approx. 60 enterprises represent multi-shipping organisations owning 2 to 12 ships each.'

An analysis of the VDK fleet by GRT and DWT appears as Appendix S. hereto. While this considerable block of small ships did not engage directly in the English coastal motor barge trade, in the late 1960s a number of small German vessels were taken on time-charter by English owners and operated by them in the coastal motor barge market. Indeed, organisations such as Seacon (Sea & Continental Waterways Transport) and Eggar, Forrester clearly 'cut their teeth' in this field with such cheap chartered-in tonnage. That the tonnage was 'cheap' is evidenced in Table 50.

Table 50. West German vessels timechartered in 1969 and 1970.

Vessel	TIM	CHERIE	ARIADNE
Flag	West German	West German	West German
GRT	211.12	211.60	211.10
Total Summer DWT	320 m.t.	333 m.t.	378 m.t.
Summer DWCC	300 m.t.	315 m.t.	360 m.t.
Built	1937	1960	1961
Hatchways	2	1	1
Cu. ft. Grain	14,500	16,550	17,100
Cu. ft. Bale	13,600	14,600	15,700
B.H.P.	150	230	198
Loaded Speed	About 8 knots	About 9 knots	About 8.5 knots
T/C. cost daily	£46.21 =	£47.28 @	£62 *
Surplus daily	Say, £10 (18%)	£10.03 (17½%)	£15 * (19½%)
Totals daily	£56.21 (100%)	£57.31 (100%)	£77 * (100%)
Trading	March 1970	3/11 1969 incl.	Summer 1970
Operator	Seacon, London.	Eggar, Forrester, Ldn.	Rye Shipping, Rye.
	= DM 12,270 per month of 30 days at DM 8.85	@ DM 460.80 per day - 1½% at DM 9.60 (3/1970)	* Figures from Arthur Reynolds Summer 1970

Source: Author's records.

Appendix T. hereto is a detailed statistical study of the trading of the timechartered CHERIE in 1969. According to Capt. Reichel, the wages bill on CHERIE in July 1969 was DM 8,000 monthly: at DM 9.60 = £1, this is £833.33 monthly, or £27.78 daily basis 30 days per month. Thus, from the timecharter hire, the owner was getting just £20 per day with which to cover everything else.

Appendix U. details the trading of the FRIEDERIKE in 1969/70.

The reader is particularly directed to voyages 11-15 inclusive (Rotterdam/Ipswich/Rotterdam/Hull/Grimsby/Rotterdam/Wisbech) and to voyages 18-28 inclusive (Rotterdam/Hull/Rochford/Lowestoft/Rotterdam/Hartlepool/Gunness/Ipswich/Leeuwarden/Groningen/Great Yarmouth/Norwich/Rouen/Bonnieres/Norwich/Rotterdam/Norwich). Such port to port trading represents fixing of a very high order. Finally with regard to trading, for the FRIEDERIKE, 11 brokers in nine centres were involved on 29 fixtures, as set out in Table 51. below. The geographical diversity of the market shows.

Table 51. FRIEDERIKE - The location of brokers fixing cargoes.

Location	Fixtures		
2 in London	12		
1 in Gt. Yarmouth	3		
1 in Norwich	1		
1 in Newcastle	1		
1 in Rye	1	6	18
2 in Rotterdam	4		
1 in Delfzijl	1		
1 in Ostend	5		
1 in Rouen	1	11	29

Source: Appendix U.

At this time UK Inflation was at over twice the West German level (see Appendix V. hereto). For the three years 1969/1970/1971, the average change on a year earlier was 7.1% in the UK, but only 3.5% in West Germany. For the ten years 1969-1978 incl. the annual average figures were 11.9% in the UK and 4.7% in West Germany. Keeping pace with UK Inflation, a charterer paying £47.28 for CHERIE in early 1969 should have been paying £58.00 three years later, an additional £10.72 per day. But for a West German owner, any possible gain from the higher UK Inflation Rate would be more than offset by the falling value of the £ in DM terms (see Table 52. below).

Table 52. Annual average exchange rate to the £.

Year	DM
1960	11.71
1965	11.17
1970	8.74
1975	5.45
1980	4.23

Source: Extracted from The Economist Pocket Britain in Figures, 1997 Ed, pp 58/59.

To equate with the DM 453.89 the owner received (DM 460.80 less 1½% at DM 9.60 = a cost of £47.28) in early 1969, he would require DM 504.20 three years later. But with the exchange rate falling from 9.60 to 6.40 in three years the cost of DM 504.20 to an English charterer would have risen from £47.28 to £78.78, an increase of £31.50 daily, or ⅔rds. This was not affordable. In short order, West German coasters became no longer 'cheap' for the English charterer. In 1970, such timechartering ceased: English coastal motor barge owners, such as Eggar, Forrester, built new vessels.

Summary

In this chapter the increased concentration of movement of goods by sea between England and near Continental ports, and vice versa, into the area bordered by lines drawn Spurn Head/ Ijmuiden and Shoreham/Caen is demonstrated. It is also shown that freight market movements for North Sea motor barges did not vary to the extent of those for (i) ocean dry bulk ships, or (ii) 1,599 GRT, 2,500/3,000 DWT single deckers (i.e. the Middle Trade vessels) and were much more a reflection of UK domestic inflation. Nevertheless, it is evidenced that in the decade from 1971 there was never any freight market boom for North Sea motor barges: the reality was that the £ shrank, not that 'real' earnings increased. Thus, the very existence of the grain house fleets of small vessels was based on a misconception. I suggest that, for those in the motor barge field, the UK miners' strike, and the resultant 1984/85 'boom' for shipping, probably served to mask the importance of other significant and more enduring changes, such as the movement of bulk grain in containers. It is shown that in 1969 and 1971, through the introduction of new manning regulations and a scrapping scheme, the Dutch Government acted to bring about the removal of Netherlands flag tonnage from the bottom end of the ship size market, to the benefit of the English coastal motor barge. The chapter concludes by showing that movement of the DM/£ exchange rate in the three years from March 1970 acted to make West German river/sea ships unaffordable to English operators timechartering-in for the coastal motor barge trades. Thus, at a time of great traffic expansion in the lower North Sea, British flag tonnage had this field to itself.

11 TECHNICAL CHANGE

'Remember .... only afterwards does an innovation look like the right thing to have done all along.'

Rosabeth Moss Kanter (1983).

11.1 The concept of the coastal motor barge

In the late 1960s and 1970s there was increased recognition of the 'through transport' concept together with significant improvements to the near Continental waterway system. For the first time, to any material extent, English owners built/bought specialist low airdraft river/sea tonnage designed for trading to and from inland Continental ports. The low airdraft short-sea vessel is a conception which has allowed the use of the ship as an intercontinental mover of cargo on sea, river and canal, without the need for double handling or transhipment. It thus realizes, to the fullest possible extent, the economies of water transport. It should be noted, however, that prior to the rapid drop in the overall number of British vessels, the river/sea fleet was perceived as an insignificant and inconsequential part of the whole British fleet. Most people, in shipping as well as more widely in the UK, thought - if they considered the matter at all - that the English river/sea fleet would reflect the fortunes of British shipping generally. It did not. It grew as the proportion of British trade with the EU grew. In the mid-1970s, river/sea shipping was one small, growing, niche market in a sea of decline for British shipping.

With the steady reduction over the years in basic working hours in West European ports, i.e. with the gradual lowering of the point at which overtime is incurred, operators were under correspondingly greater pressure to arrange the most economic voyage patterns and to ensure that vessels were not 'caught' over weekends. The basic working week in most of the EEC became four-and-a-half days, and over the last 50 years the scheduling of loading and discharging operations has taken place within an increasingly restricted framework. Thus operators were - often very reluctantly - brought to conclude that in most near-sea bulk trades a high proportion of delay was inevitable, and the

individual shipowner had become less and less able to exert any control over what happened to his vessel when it was in port and, therefore, less and less able to determine its profit. Changes in attitude and changed social conditions for seafarers also contributed towards this change of tempo, as did reduction in the number of owner/masters in, particularly West German, ships. Many owners in the short-sea bulk trades thus felt themselves faced with a straight choice of either (i) buying control of the shore-side part of the transportation process or (ii) accepting delay as inevitable and minimizing the consequences of that delay by producing the most basic tonnage with the lowest possible daily cost: such tonnage is, however, yet more liable to delay.

English coastal motor barges were not in competition with tonnage from

(a) countries East of Suez, where wage costs reflected the living standards of the Third World;
(b) the new national fleets of countries where the national shipping company emerged as the second most popular toy after the national airline;
(c) the Comintern countries, where Western concepts of economics did not apply;
(d) large numbers of like vessels sold at prices far below their real building costs as the result of government subsidies, generally designed to avoid the political and social consequences of mass unemployment in shipbuilding.

English motor barges provided internal transport within the EEC. Their trade had recently been, and was likely to be further, concentrated into an area bordered by lines drawn Shoreham/Caen and Spurn Head/Ijmuiden. Within this area, sea transport was not a declining industry: it was likely to be a growth business. Within this area, coastal motor barges could provide competitive transportation. Thus, such small, simple vessels were built for local operation. Coastal motor barge tonnage was developed to provide good carrying capacity and a strong hull within dimensional restrictions, while at the same time keeping initial capital cost to the minimum.

Very small tonnage has shown a stability in capital values,

apart from the early years in commission, which is unknown for ocean-going vessels. The main reason for this is that the original purchase price for such tonnage has generally been directly related to actual building cost. Such tonnage has not been built at a big loss because a small vessel building Yard will be significantly subsidized only very rarely. If orders for small cargo carrying vessels are unavailable, such Yards build tugs, pilot vessels and ferries, or even involve themselves in steelwork fabrication contracts on land (e.g. storage tanks for bulk liquids). Moreover, the specialized nature of building small cargo vessels and the requirements of national regulations has meant that they have usually been built for owners resident within and operating from the same country as the building Yard. With building prices directly related to building costs, high rates of inflation tend to act to the benefit of the owners of existing coastal motor barges. Despite the 'internationality' of the shipping industry, small British vessels have tended to remain under the UK flag until scrapped, ownership often passing from major owners to smaller fleets and single-ship owners when such vessels were well into their working lives.

In the 1970s, the time-span of the validity of specialist technical knowledge was generally getting shorter, but the value of that knowledge was often greater than ever before.

11.2 Twenty years of little change

I think it necessary to state that change does not of itself imply improvement, or that things are worse, only that they are different. Nevertheless, man is a creature of habit and changes are not made unless there is hope of producing something more fit for purpose. Change came slowly to coastal motor barges because they were fit for purpose. But an extension of their regular trading area to near Continental ports in the 1960s did engender alteration. The motor barge of the 1950s could not have done the work of the motor barge of the 1980s.

The ROCK (see Illustrations 1 and 2 below) was the basic motor barge and was clearly only ever going to be suitable for

purely estuarial work. She was confined to the Smooth and Partially Smooth Water area in the Thames Estuary.*

1 ROCK, L & R, 1961, 125 GRT, at Colchester. The low bulwarks fore and aft and the very low hatch coamings are evident.

* This area is to the West of a line drawn between Colne Point in Essex and Whitstable in Kent during Winter months and between Clacton Pier and Reculvers in the Summer. The regulations allowed craft to load to a lesser freeboard and thus carry a larger cargo than if they were proceeding 'to sea'. This presents an interesting navigational anomaly in that the sandbanks and channels in the estuary run along the tidal line and do not conform to any arbitrary line drawn North/South. To proceed into the Thames or Medway from the entrance of the Colne it is first necessary to go just outside the area to cross the Spitway before entering the East Swin channel. The Board of Trade always chose to avoid addressing this point. It will also be noted that the Summer extension to Clacton Pier/Reculvers was no practical use to barges since it included no additional load/discharge port.

2 ROCK, L & R, 1961, 125 GRT, at Colchester. The PLA craft number* is evident on the back of the wheelhouse.

* Craft regularly using the Thames were registered with the PLA and paid an annual fee rather than dues every trip into the river in the manner of a ship generally trading outside the river. Each craft was given a PLA registration number that was kept regardless of any change of ownership.

With MAGUDA (170 GRT) in 1959 and ANDESCOL (191 GRT) in 1961, L & R, as well as higher bulwarks and hatch coamings, added deckhouse structures aft which were more than just wheelhouses. CAPTION (see Illustration 3 below) and DICTION (both 189 GRT) of 1963 represented the culmination of this design in L & R.

3 CAPTION, L & R, 1963, 189 GRT, at Colchester. The higher bulwarks and hatch coamings are evident. In its day, this proved to be a particularly satisfactory design.

In 1963, L & R also took delivery of ELATION and FUNCTION (see Enclosure, reprint from CONOSHIP Newsletter 3/66). While the first L & R craft to have a full poop (as opposed to a deckhouse), these motor barges were still quite basic - e.g. hand steering, hand windlass, and only 35 tons total ballast capacity. In 1964, L & R took delivery of HORATION (see Illustration 4 below) and BENCOL (see Illustration 5 below) from J. Samuel White & Co., Cowes, IOW. From a performance standpoint, the hull form of this design was outstanding. I attribute this to the Yard's warship building experience. Certainly, on the same full displacement, HORATION/BENCOL with a 180 bhp T6 Kelvin would make exactly the same speed as Lapthorn's more conventionally shaped EDWARD STONE/HOONESS (both 1965) with a 240 bhp TS6 Kelvin. But HORATION/BENCOL did prove to be a bit 'flexible' in the light condition in anything like a sea, and on at least two occasions hatch boards dropped down into the hold on passage.

4 HORATION, L & R, 1965, 205 GRT, passing Tilbury bound light from the Thames to the Medway. The fine hull lines show clearly.

5 BENCOL, L & R, 1965, 204 GRT, at Colchester fully loaded. The hatch locking bars are not in place. The funnel is L & R; the hull colour is Francis & Gilders Ltd.

The EDWARD STONE (see Enclosure, reprint from Ship & Boat International, Nov. 1965) from James W. Cook & Co,, Wivenhoe, in 1965 probably represents the zenith of the aft deckhouse concept. Elsewhere, from 1964 the full poop was the order of the day.

Thos. Watson had, since 1921, a contract to carry china clay from Par and Charlestown to Reed's paper mill at Aylesford on the Medway. At the peak, circa 1960, Thos. Watson delivered 17,000 tons p.a. by coaster direct to the mill. They also had return Medway contract cement cargoes to the South West and to the Channel Islands. In 1964 (LADY SERENA) and 1965 (LADY SHEENA/LADY SARITA) Thos. Watson took delivery of three new coastal motor barges (see principal particulars below) to service this china clay work. The M.O.T. trading limits for all three, and for ELATION/FUNCTION, were Penzance/Tyne and Brest/Ijmuiden. The three Thos. Watson vessels had double bottom water ballast tanks and represented a step forward in sophistication. LADY SHEENA/LADY SARITA had a total ballast capacity of 231 tons (see Enclosure, reprint from CONOSHIP Newsletter 3/66). They provided both a material extension to the 'normal' trading area for English coastal motor barges and a marked increase in size. In the light of subsequent vessels it is easy to forget that in 1964, LADY SERENA at 361 DWT was the big barge of its day. No other craft had made 300 DWT, and it was not until 1968 that L & R exceeded that figure.

Principal Particulars - LADY SERENA and LADY SHEENA

Vessel	LADY SERENA	LADY SHEENA
Built	1964	1965
Summer DWT	361	372
GRT	200	200
Builder	Clelands	CONOSHIP
Grain cu. ft.	16,530	17,450
Bale cu. ft.	15,144	16,170
Hatch covers	Wood	Wood
Salt Water Summer Draft	7' 5"	7' 6"
Engine	Kelvin TS6	Dorman (from 1974)
Gross Continuous bhp	240	320
Loaded Speed in knots	About 8	About 8½
Fuel consumption in long tons per day	About .75	About 1.00

The original contract price for LADY SERENA was £39,000, but the builders lost on the contract and the final building cost was £46,000 (Harry Robson, Clelands Technical Director, to the author 15 June 1970). LADY SHEENA/LADY SARITA were sister ships and as built both had 260 bhp MAK main engines, which proved unsatisfactory. LADY SARITA was re-engined in 1972 with a Gardner engine and LADY SHEENA in 1974 with a 320 bhp Dorman engine which had been made in 1968.

When the demand for transporting china clay to the Medway fell away, Thos. Watson did not retain their coastal motor barges to be fixed on the open market. LADY SARITA was sold to English buyers early in 1975 for £38,500. LADY SHEENA was sold in 1976 and LADY SERENA in 1977. Water transport to the mill at Aylesford finally ceased in 1980. It might be said, therefore, that the three 1964/65 Thos. Watson craft were rather outside the mainstream of English motor barge growth. Their importance, however, is that LADY SERENA for Clelands and LADY SARITA/LADY SHEENA for CONOSHIP acted as prototypes for tonnage built later. In CONOSHIP this was WILLMARY (1966) and CONTINENT (1968) - see Table 48. and Appendix R. hereto.

One further significant change was occurring. In the 1960s, L & R tried steel hatchcovers on one of their estuary 'R' class, but did not go beyond this experiment. In 1963, F. T. Everard took delivery of FRIVOLITY and FESTIVITY (199 GRT 287 DWT) and in 1966 of FIXITY (199 GRT 324 DWT), all three fitted with MacGregor single-pull steel hatchcovers. After 1968, with the exception of the L & R 'L' class, all English coastal motor barges had steel hatch covers. The hatchway on LADY SERENA was 80½' x 14': 1,127 square feet was a very big opening for wooden boards on a vessel with low manning.

The four L & R 'L' class craft were conceived primarily for estuarial transhipment from the new Tilbury Grain Terminal. They had trading limits of Landguard Point, Felixstowe/Dover, with a manning of Master and Mate only. Unfortunately, Tilbury Grain Terminal proved to be too little and too late. The hoped for volume of work never materialized and L & R soon set about altering these craft to enable them to trade to the Continent.

This work involved building in accommodation under deck forward. Thus, L & R achieved the unenviable distinction of being the last British shipowner to produce accommodation in a forecastle. In this connection it will not be amiss to point out that at the end of the Second World War the Dutch Shipping Inspectorate had made it obligatory that henceforth all crew accommodation had to be in the aftship. By entry into the EEC in 1973, Britain was beginning to look distinctly behind the times in matters of maritime regulations.

Principal Particulars - LOACH and LOBE

Built	1968
Summer DWT	310
GRT	191
Builder	Bay Wharf Construction
Grain cu. ft.	15,600
Bale cu. ft.	14,300
LOA	104'
Breadth moulded	22'
Depth moulded	9' 6"
Salt Water Summer Draft	8' 6"
Hatchway	56' x 15'
Hatch covers	Wood
Engine	Kelvin T6
Gross Continuous bhp	180

11.3 Newcomers

The late 1960s brought a crop of fresh influences into thinking in the coastal motor barge field. Seacon had much discussion with Clelands concerning a requirement for tonnage to be under 200 GRT, minimum 400 DWCC, having steel hatch covers and bulwarks rather than rails, and able to stow eight 20' x 8' x 8' containers in the square of the hatch. This Clelands could provide in a design developed from LADY SERENA. While Clelands could meet all the stipulated design criteria, Seacon did not order from them. Apparently, Seacon wanted something which would look more like their idea of a conventional coaster. Seacon (who had a principal brought up and educated in Germany) ordered from Gebr. Schlömer of Oldersum. This yard produced two nice little ships which were, however, rather more

sophisticated - particularly electrically - than Clelands XL400 design. But Schlömer had a beam restriction of 23' 6" on what they could build. On the given GRT they could not produce the required DWT, for SEACON managing 385 mt all told. Clelands, at this time desperate for work, had put much time and commitment into the XL400 design. They persuaded F. T. Everard to buy two such vessels, which became FORMALITY and FUTURITY of 1968, at a fixed price of £75,000 each. These vessels were built under an edict from Everards that there were to be no extras whatsoever. Just how far the specification was pared down may be appreciated from the fact that the cabin linings were painted board, rather than the slightly more expensive alternative of Formica or Wareite.

FORMALITY and FUTURITY were followed by five XL400 vessels for Tower Shipping in 1968 and 1969, four for Wilks Shipping in 1969 and 1970, and one for Aberdeen Coal & Shipping in 1971. Of these 12 vessels, seven were built by Clelands, three by John R. Hepworth at Paull, and two by Malta Drydocks in Malta. In this connection it will be noted that Clelands had been taken over by the Swan Hunter Group in November 1967 and that in 1967 the Swan Hunter Group had successfully tendered for management of the Malta Drydocks Corporation. TOWER MARIE (Hepworth Yard 107) always suffered from being ten tons short of her design DWT, although WIGGS (Hepworth Yard 109) never had any DWT problem. The end of cash grant in 1971 cut off demand for the XL400 design. By that time, one near sister vessel LADY SANDRA had been completed in 1970 by J. W. Cook at Wivenhoe for Thos. Watson. Hull form was modified to suit yard practise and the accommodation was more spacious, but DWT fell to 382.

The capital cost of WILKS (Clelands Yard 311) is set out in Table 53. below. The price increase over FORMALITY/FUTURITY is not great and may represent Clelands recouping a little of their initial overheads. By 1971, however, the final cost of FERRYHILL II (Hepworth Yard 112) had risen to £103,000, and the builders must long since have recovered their initial outlay. Even allowing for UK Inflation (which prior to 1971 had never reached 6½% p.a.), £103,000 looks to be a very 'full' figure. The principal particulars of the four Wilks Shipping XL400 vessels appear below, alongside those of the 1968 CONOSHIP-built

WOPPER (ex CONTINENT). Illustration 6 below - WIGGS (Hepworth Yard 109) - is representative of the whole XL400 series. This was a Clelands design which owners purchased 'off the shelf'.

Table 53. WILKS (Clelands Yard 311) - Capital cost.

Builders Basic Price	£81,000	
Plus liferafts	£ 352	
Plus Hold sparring	£ 115	£81,467
Extras required by BOT		£ 200
Extras required by Owners	£ 599	
Less Hold sparring credit	£ 100	£ 499
Total cost of Yard work		£82,166
K-H Navigational equipment	£ 2,095	
Commitment commission	£ 680	
Guarantee fee	£ 248	£ 3,023
Total Capital cost		£85,189

Source: Author's records.

Principal Particulars - WILKS, WIGGS, WIB, WIS and WOPPER

Vessel	WILKS, WIB, WIGGS, WIS	WOPPER (ex CONTINENT)
Built	1969/1970	1968
Summer DWT	415	388
GRT	199.29	259.52
Grain cu. ft.	18,500	19,770
Bale cu. ft.	16,500	17,885
LOA	137' 2½"	136' 8"
Salt Water Summer Draft	8' 10"	7' 10"
Hatchway	79' x 16' 3"	75' 10" x 16' 5"
Hatch covers	Steel	Wood
Total Water Ballast capacity	242 tons	143 tons
Engine	Rolls Royce DV8NM	Bolnes 3NL
Gross Continuous bhp	340	210
Loaded Speed in knots	About 9.2	About 8.5

6 WIGGS, Wilks Shipping, 1970, 199 GRT, new at Hull. The XL400 design looked, and was, materially more seaworthy than anything that had gone before.

In the four years 1968/71 inclusive no less than 33 new coastal motor barges were delivered to English owners. Of these, L & R had 14, Tower Shipping six, and Wilks Shipping four. After 1971, no English coastal motor barge was built to the 200 GRT limit. In 1969 and 1970, L & R took delivery of eight new vessels designed to lift 600 10% grain cargoes. The four AMBIENCE-class vessels were built to go above bridges at Gainsborough to load export grain. They were 392 GRT, 30,300 cu. ft. grain, and - eventually - 591 mt DWT. These vessels were a rush job. BLATENCE, for instance, had completed two cargo voyages before it was discovered that the sidelights were so positioned that they could not be seen from dead ahead unless the vessel was trimmed significantly by the bow. They were speedily repositioned. More importantly, the vessels as designed did not make the required DWT. The solution - not cheap - to this problem was to construct side tanks on the main deck along both sides of the hatch to increase freeboard and so allow the vessels to load deeper in the water. This produced a high lightweight, a distinctive appearance which was never emulated, and demonstrated to all the world just how wrong things had gone (see Illustration 7 below).

7 CADENCE, L & R, 392 GRT, at Colchester. The side tanks are clearly visible.

The four vessels of the CONOSHIP-built FAIENCE class were altogether more conventional. Of 424/425 GRT and 645 DWT, they were followed in 1971/74 by another five like vessels from CONOSHIP for Weston Shipping/General Freight and Tower Shipping. In 1971 James W. Cook, Wivenhoe, produced their - upgraded - version of this design in COMMODORE TRADER. DWT was exactly the same, but the J. W. Cook vessel had superior accommodation, a better grain capacity (34,800 cu. ft.), and a 630 bhp Lister Blackstone main engine. Not surprisingly, COMMODORE TRADER (see Enclosure, reprint from Fairplay International Shipping Journal, 30 December 1971) had a high GRT (477) in relation to her DWT. Nevertheless, she can fairly claim to represent the zenith of the 600 10% coastal motor barge design. Interestingly, 'on a quiet S & P market', when ten years old the vessel was sold for £210,000 (see Short Sea in Fairplay, 2 July 1981). DOMINENCE of 1970 was the first of the CONOSHIP 600 10% vessels to be sold by L & R, going for £100,000 in 1983. By 1985 they had sold all eight of the 1969/70 600-tonners.

CONOSHIP produced a stretched version of their design, giving 905/920 DWT on 499 GRT. They sold four 1971/73, two to

Weston Shipping and two to Tower. However, the increased DWT was not gained without penalty: all four were, for example, of too great beam to trade to the Olympia Oil and Cake Mill„ Selby. But a really big change was about to take place.

11.4 WILKS (II)

This thesis now considers the birth of a new type of vessel. The reader is asked to bear in mind my personal involvement in the matters reviewed. I have written of events of some time ago in the belief that any feeling of need to justify my own past actions will be today insignificant. But a study such as this must always provide information subject to an element of doubt concerning the extent to which the author is seeking in retrospect, consciously or unconsciously, to justify past actions. This is an inevitable consequence of personal involvement, to be weighed against the benefits of inside information. In this case, it is over 21 years since I had any involvement with coastal motor barges. It is thus suggested that the passage of time will, by now, have been sufficient to allow me to exercise adequate objectivity in relation to the subject development. The reader must make what he feels to be due allowance with respect to my personal involvement and to the inevitable selectivity of memory. I am aware of the charge that those who seek to be judged kindly by history often write it themselves.

In 1975 the Eggar, Forrester organisation disposed of its first five small vessels in an en block deal at a substantial profit. The organisation then decided to build a highly innovative design of river/sea vessel at The Yorkshire Dry Dock Co. Ltd., Hull. This Yard had never built a Class VIII vessel, but had a track record and a good reputation gained in building estuarial craft and small tugs. In 1974 the yard had completed SEACOMBE TRADER, designed to move grain from Liverpool and Birkenhead to Manchester. It appeared to me that this basic design could be cheaply upgraded to produce an acceptable river/sea ship.

Mr. D. K. Beveridge, MD of YDD, was a naval architect of

skill who had the considerable advantage of having been, immediately prior to his move to YDD, the Department of Trade Principal Officer in Hull. He thus knew precisely what he could and could not do, how the Department worked, and who would approve Tonnage calculations. The design which was produced subsequently became WILKS (II). This vessel was classed with Lloyds Register, but it was not by accident that it entered service with a Department of Trade loadline. The Shipbuilding Agreement was dated 10 June 1975. WILKS (II) entered service 9 April 1976, before which date a second, similar, vessel had been ordered. A third ship (WIB (II)), a material improvement which corrected the least desirable features of the first two vessels, was ordered in March 1978. The venture eventually extended to the three vessels in Hull and to another three similar vessels in Denmark in 1980-82.

This thesis considers the technical merits of the design but does not detail the means whereby DWT was increased in relation to GRT to a level not previously achieved - WILKS (II) was the first single deck vessel to enter service with a DWT exceeding 1,000 tonnes on a GRT of under 500. The inherent design peculiarities are, however, adequately indicated. Under subsequently adopted International Tonnage Regulations, GRT on this design of vessel significantly increased.

WILKS (II) entered service in April 1976. A measure of the impact of her design is that of the 49 English coastal motor barges built over the next 13 years, no less than 28 were direct developments of the innovative WILKS of 1976. After 1983 no other type of 'small' dry cargo vessel was built for English owners. Thus, the considerable influence of Eggar, Forrester/Wilks Shipping Company far outlasted their own involvement in and ownership of this class of tonnage. This vessel was truly at the forefront of small ship technology when it entered service in 1976.

The WILKS-type tonnage was designed primarily for carrying capacity and cheapness of construction. The objective was thus to maximize the displacement and minimize the lightweight (i.e. the weight of the ship) on a given GRT. The difference between

the displacement and the lightweight is the total carrying capacity of the vessel by weight. To reduce lightweight relative to volume implies reducing surface area, primarily by reducing length (the largest dimension) relative to beam and depth. Reduced length allows a given strength to be maintained with a lower steel weight (and hence lower cost). For maximum displacement and minimum surface area (and hence minimum weight, given a constant metal thickness) the ideal hull form is, in fact, a biscuit tin.

Inherently, the WILKS-type hull form with low LOA and a high block coefficient is inefficient at other than low speed. Given constant displacement, trim, hull form and hull condition, speed is a reflection of power applied. Power applied is related directly to fuel consumed. By July 1976 the effective delivered cost of a ton of Marine Gas Oil was about 4.4 times what it had been five years earlier. This is an average compound rate of cost escalation of about 35% p.a. Thus, in the mid 1970s, fuel cost had become a very much more significant element in the overall cost of operating a vessel. By the time WILKS (II) was designed, speed had become much more expensive (and, therefore, much less desirable) than it had been only a few years previously. It should be understood that the average ocean-going tanker spends about 90% of total time actually running. On such a ship, an overall improvement of one knot means an increase in average speed of about 6.4% and an improvement in overall utilization of about 5.8%. The WILKS was designed on the expectation of spending about 30% of total time actually running. On the vessel, on such a basis, to achieve an improvement of 5.8% in overall utilization would require an increase of 23.8% in average speed. It will be further noted that the WILKS-type vessel has about one-third of total running time made up of river, estuary and canal running, and two-thirds of sea navigation. This tends to depress average running speeds.

Since a large number of coastal motor barge cargoes involved the vessel going aground or loading aground, inherent hull strength was necessary, and WILKS (II) was given substantial skegs to give as much protection as possible to the propellers.

As the service for which the vessel was designed was one of high port time and low engine running hours, it was possible to produce a hull design which was inherently simple with a minimum of curved plates and very strong, with a very low steel weight in relation to the total displacement. Such a hull was cheap to build and, moreover, could be constructed by a small shipyard without sophisticated equipment and the usual correspondingly high overheads.

Dimensional restrictions and simplicity of design lend themselves to an operating concept requiring minimum crew numbers. The vessel was designed to maximize this potential. It was produced to need the minimum of men on deck for mooring, and the ability to produce full power through 360° allowed all the men on deck to be used together at one end of the vessel. The complement of the new vessel was to be Master, Mate and two seamen. Simplicity in construction assists ease of maintenance, and coastal motor barge tonnage was usually operated without seagoing engineers. In consequence, the level of manning was fixed by the minimum necessary to (a) maintain watches and (b) work the vessel on deck. Low manning means the utilisation of little space for accommodation and produces low running costs. Such savings in manning costs, however, are not achieved without extra expenditure ashore. Shore-based engine servicing adds to management content and also - if it is to be undertaken effectively and economically - implies trading in a restricted area.

Suitability for river, estuary and canal work, low LOA and low power coupled with a high block coefficient tends to work against the performance of a vessel at sea in bad weather. In the event, WILKS (II) proved better than expected at sea in bad weather. Although slow in the loaded condition, on full displacement there was so little vessel above the water that resistance was minimized.

WILKS (II) did have 'high' speed diesel engines. My view was that this was a natural reflection of engineering progress and it would be wrong to suppose that WILKS (II) had 'high' speed diesels whereas other comparable British vessels had

'slow' speed engines. The engines being fitted in British coastal and short-sea tonnage in 1976 would all have been regarded as having an unacceptably high gross continuous r.p.m., say, twenty years earlier. L & R vessels were fitted with Kelvin diesels with a gross continuous rating at 1,000 r.p.m., and all F. T. Everard vessels had Mirrlees Blackstone engines running at 900 r.p.m. gross continuous. As the maximum acceptable propeller speed for such vessels is around 400/450 r.p.m., all such installations required reduction gearboxes to be incorporated. While direct drive diesels were normal for larger ships, this was not the case for tonnage of the size we are considering. Once the principle of an engine r.p.m. which is too high for the engine to be directly coupled to the propeller is accepted, there is no fundamental difference between an engine with a gross continuous rating of 900 r.p.m. fitted with a 2/1 reduction gearbox and an engine running at 1,400 r.p.m. fitted with a 3.5/1 reduction gearbox. Comparison in 1976 was not between 'high' and 'low' speed engines, but between 'high' and 'higher' speed diesels. Once a 'high' speed engine is accepted in principle, there is little point in choosing a type of engine solely because it has an r.p.m. which is closest to that of a 'slow' speed diesel.

The WILKS-type design was not as much of a gamble as many have supposed. Don Beveridge of YDD and I attended tank tests of a 1/24th scale model at Southampton University in autumn 1975. These tests established that the speed/EHP penalty for a double (as opposed to a single) skeg configuration was not large. Moreover, in head seas approximately eight feet high

> 'The bow is seen to cope well with the oncoming water, the spray trajectory being such that the water is unlikely to be blown back onto the vessel, except in extreme conditions'.
>
> Wolfson Marine Craft Unit, University of Southampton, Report No. 260, October 1975.

The effect of trim on EHP in the loaded condition was also investigated. Report No. 260 stated

> 'A substantial improvement is evident as the vessel is trimmed by the bow.'

At the time, I attached insufficient importance to this finding. Coastal masters normally trimmed by the stern, and to go 'bow down' would be against all their instincts. The flat counters aft on WILKS and WIS produced considerable drag and proved to be clearly a mistake. This was corrected on WIB.

Principal particulars of WILKS, WIS and WIB built by YDD are given in Appendix W. hereto, and principal particulars of LU, WIGGS and WIRIS in Appendix X.

WILKS, WIS and WIB were true barges, in many respects a regression to earlier times in that they had deckhouses aft rather than a poop and did not carry double bottom water ballast. Nevertheless, their ballast capacity of around 200 tonnes carried in deeptanks proved adequate. The argument over the relative merits of deckhouse versus poop is less clear cut than might first appear. A poop does let accommodation be moved further aft and thus allows a longer hatchway on the same LOA, but Class requirements on steel thickness for a deckhouse kept the Rule distance from the ship's side are much lower than for a poop, which is regarded as an integral part of the vessel's structure. The saving on steel weight on WIB was further increased by dropping part of the deckhouse below main deck level, with a consequent improvement of two feet in airdraft (see Principal Particulars, WIS and WIB, Summer Displacement, Lightweight and Airdraft).

LU, WIGGS and WIRIS had a poop and a full-height forecastle. They gained greatly on DWT and had the vast water ballast capacity of 470 tonnes. But their cargo capacity, Grain and Bale, was significantly worse than WIB, and - despite the vast ballast capacity - their airdraft was a foot worse (see Principal Particulars).

A breakdown of the capital costs of WILKS, WIS and WIB appears as Appendix Y. hereto, and of LU, WIGGS and WIRIS as Appendix Z. Appendix Y. contains an item 'Net Cost Variation due Builders': unusually, WILKS, WIS and WIB were not contracted on a fixed price basis. Dealing with cost variation did have the ancillary advantage of allowing me to produce a complete breakdown of the shipyard costs of WILKS and WIS, and this is Appendix AA. hereto. A 1983 summary of the advantages and disadvantages of WILKS-type tonnage appears as Appendix BB. Enclosures 'A new concept in coastal dry cargo vessels' and 'A better concept in coastal dry cargo vessels' were produced jointly by YDD and Wilks Shipping. LU and WIGGS are featured in an Enclosure, reprint from Fairplay Shipping Weekly, 26 Feb.'81.

11.5 Engines and Engineers

We will now consider engines and engineers with regard to WILKS-type vessels, but it is first requisite to call your attention to a retrospect of those developments in engines through which coastal motor barges had already passed. Engines are generally not a happy part of the coastal motor barge story. Indeed, I feel that engines were the Achilles heel of the English coastal motor barge.

Firstly, it must be understood that the diesel engine did not, per se, provide economical manning. Two examples will suffice to establish this.

Principal Particulars - BROCKLEY COMBE and CENTURITY

Vessel	BROCKLEY COMBE	CENTURITY
Owner	Ald Shipping, Bristol	F. T. Everard
Builder	Chas. Hill, Bristol	Goole Shipbuilding
Built	1938	1956
GRT	662	770
Holds/Hatches	2/2	2/2
Main Engine	7 cy. Ruston & Hornsby	6 cy. Sirron
Gross continuous bhp	525 at 430 rpm	600 at 300 rpm
Speed	10 knots on trials loaded with 900 tons	10 knots
Total crew	11	8
Comprising	Master, Mate, 2 Engineers, Bosun, 6 Seamen.	Master, Mate, 2 Engineers, 4 Seamen.

Secondly, while in deep-sea shipping there was normally a progression from sail, to steam, to motorship, this was not the case in short-sea shipping. Both sailing barge owners F. T. Everard and Thos. Watson had a motor vessel before they first owned a steamer. For F. T. Everard the years were 1913 and 1916; for Thos. Watson, 1932 and 1960.

L & R had long been wedded to Kelvin diesels (see section 6, pages 35, 38, 39), but in the 1930s speed was a low priority, five knots loaded in calm water and about seven knots light did suffice. In 1965/66, ROGUL, ROHOY and ROINA each had a 120 bhp

T4 Kelvin to give 7 knots. BASTION (1958), CAPTION/DICTION (1963), ELATION/FUNCTION (1963), HORATION/BENCOL (1964), and LOACH/LOBE (1968), all had a 180 bhp T6 Kelvin, giving about 8¼ knots for CAPTION/DICTION, rather more for HORATION/BENCOL, and somewhat less for BASTION. ACTION (1956) was unusual in that she had two 3 cy. Kelvin giving in total 130 bhp and about 6½ knots: she was always particularly difficult to steer. The CONOSHIP-built MAGUDA (1959) and ANDESCOL (1961) each had a 120 bhp Deutz engine, giving them about 7½ knots. But in 1968 KIPTION entered service with two 6 cy. Blackstone engines, giving her 7 knots. These engines, however, had been made in 1962, and this installation rather indicated that low initial cost was regarded as more important than technical suitability. KIPTION was also the subject of the experimental introduction of air cooling for her engines. This was unsatisfactory, was soon altered, and never repeated. Moreover, the attraction by L & R to Kelvin diesels was not entirely a technical one. L & R were appointed selling agents for Kelvin for South-East England. The net cost of each engine to L & R was after the deduction of their agency commission, and could not be matched by any other owner.

HOONESS/EDWARD STONE (Lapthorn, 1965) had a 240 bhp TS6 Kelvin, as did LADY SERENA (Thos. Watson, 1964). The TS6 Kelvin was the old T6 supercharged to produce 40 bhp per cylinder instead of 30. It did not give the power or speed Thos. Watson wanted for LADY SERENA but in 1964 it was at the top of the Kelvin power range. Five years later Kelvin had the TS8 giving 320 bhp and this engine went into all eight L & R 600 10% vessels in 1969/70. Kelvin never produced anything to give more than this 320 bhp and by the 1970s the TS8 was an old design. Barges grew faster than engine bhp and through lack of development Kelvin effectively vacated the motor barge market. LADY SARITA/LADY SHEENA (1965) built by CONOSHIP had 8 cy. MAK engines. Thos. Watson were unhappy with these units and, when only seven years old, LADY SARITA was re-engined with an 8 cy. Gardner engine. Again, however, this did not really provide the power Thos. Watson required, but it was - yet again - at the top of the Gardner power range. The Gardner engine had a fine reputation, and for long each engine was hand-built for a

specific client, but Gardner never moved to meet the demand for increased bhp and so they too left the motor barge field. LADY SHEENA was re-engined in 1974 with a 6 cy. Dorman. This engine, however, was six years old by the time it was fitted in LADY SHEENA, and I feel that - once again - cheapness may have triumphed over technical considerations.

For the Clelands XL400 series the standard main engine offered was the Rolls Royce DV8NM giving 340 bhp. In the words of Ken Garrett (1999, pp 220/221)

> 'With hindsight, the choice of Rolls Royce main DV8NM engines .... did not prove to be particularly wise'. The advantages perceived at the time were that the weight was a couple of tons less than an equivalent .... Lister Blackstone unit and the engine, being shorter .... reduced the length of the engine room .... thus providing some extra cargo space. However, much of the saving in weight was absorbed by the skin cooling tanks ....'
>
> 'In practice, the engines did not perform to expectations and constantly gave trouble, mainly associated with overheating. The exhaust silencer had to be replaced at least every two years and the fuel pumps much more frequently. The engine rooms were very hot and particularly prone to fires: oil splashes were a real hazard if they came into contact with the exhaust system. While on the Isle of Man run in the summer of 1975, the TOWER VENTURE suffered two major engine room fires and had to be towed to safety on each occasion. At the statutory Special Survey or following an engine breakdown, it was quite usual to remove the entire engine and replace it with an exchange unit. The TOWER HELEN had a main engine breakdown at Ostend in January 1975 when the damaged engine was replaced and taken back to the UK for repair in the ship's hold. These exchange units were provided by the engine builders at advantageous rates, no doubt in an endeavour to salvage their reputation. To be fair, the makers probably did not envisage the conditions under which the engines would have to operate or, perhaps, the standards of care and maintenance normally expected on small coastal vessels at that time.'
>
> 'There were frequent discussions about the feasibility of changing the main engines but the cost and difficulties involved and the need to take up some valuable cargo space always overcame the argument for change. In the end, the company learned to live with the problems they could not solve. With all the difficulties, it was, on the face of it, rather surprising when the company opted for a Rolls Royce engine for the first of the Dutch-built ships in 1971. However, the simple truth was that by this time, many of the recurring problems had been overcome by various modifications that could be built into a new ship from the start. Further, the company had built up considerable experience with these engines and also a comprehensive and valuable stock of spare parts.'

Ken Garrett gives the Tower Shipping experience, but he does not mention the important fact that the initial cost of the Rolls Royce engine was substantially less than that of the alternative Lister Blackstone, or a Kelvin. It is tempting to ascribe all Tower's engine troubles to the Clelands XL400 design, but the CONOSHIP-built TOWER HELEN also had engine troubles. TOWER HELEN (1971, 645 DWT) was a repeat of the L & R FAIENCE class of 1969/70, but with a Rolls Royce rather than a Kelvin main engine. Interestingly, fitting the lighter Rolls Royce engine in the vessel does not seem to have produced a higher DWT in TOWER HELEN.

Rolls Royce were new to the marine field. They were possessed of a vast body of technical expertise and, in my opinion, of an overweening corporate confidence. For example, they just would not accept that their engines could go on fire at the back end until a Rolls Royce director making a trip in an engine room had the sleeve of his overalls burnt off and - an expensive - suit jacket ruined. Again, their experience of their engines actually running was confined to the test bed at Shrewsbury, where they were absolutely level. The significance of this was that on the DV8 engine the fuel pump sat in the V of the engine at the back end. Coastal motor barges normally ran trimmed by the stern. Sooner or later, fuel pumps may be expected to leak. On the DV8 there was nowhere for leaking fuel to drain away, and it accumulated in the V of the - very hot - engine. When this was pointed out to Rolls Royce they suggested that the solution was to run the vessels trimmed materially by the head, which would allow leaked fuel to drain off forwards. After complaints concerning the vast number of air filter elements which were being consumed, a Rolls Royce representative made an exploratory visit to a Wilks Shipping vessel at Grimsby, and subsequently wrote pointing out that he had found the problem was that the vessel 'was in a salt-laden atmosphere'.

But the XL400 design undoubtedly compounded the Rolls Royce engine problems. Basically, the specification included tight and conflicting objectives. For Wilks Shipping vessels DWT was to be 'Approx. 420 tons giving 410 tons cargo' and

Specification 'speed to be 9¼ knots trial and about 9 knots in service'. The DWT was achieved (although not on TOWER MARIE (Hepworth 107) which was some ten tons short of her designed DWT) but this required a displacement which necessitated a very full hull form. This militated against speed, and in the Shipbuilding Agreement for the Wilks vessels there was a speed penalty clause. This clause, however, did not mention fuel consumption. Clelands avoided paying any speed penalty but, subsequently, consultants were engaged by owners to produce EHP/Speed curves for WILKS, from which it was concluded that the speed obtained new could not have been produced unless the engine had been materially over-fueled, and was thus - at least at times - operating on overload. New propellers with an altered pitch were ordered by owners from Bruntons, Sudbury, which when fitted resulted in a slight reduction in speed but much 'happier' engines. At the time of ordering the new propellers, it came to light that the only information Bruntons received from Clelands on which to design propellers for the XL400 ships related to the characteristics of LADY SERENA (1964) which had a quite different displacement and a stipulated Specification speed of about 8 knots on 240 bhp gross continuous at 1,000 rpm, with Specification DWT 'Approx. 350 tons on 7' 6" draft giving 340 tons cargo'. Clelands Yard No. 275 Specification November 1963, is in this author's possession.

The skin cooling tanks had a capacity of 1.83 tons each, Port and Starboard. They were undoubtedly a mistake, particularly in a design where DWT was at a premium. Tower Shipping later fitted their vessels with a heat exchanger and changed to the more usual sea water cooling for the main engine: Wilks Shipping never made this change. It should be pointed out, however, that skin cooling tanks were not otherwise unknown at this time. For example, Seacon had four vessels built with skin cooling tanks, SEACON/SEACON II (1970/71) built in West Germany and SEA THAMES/ SEA MAAS (1973/74) built in Poland. All four were, however, later fitted for sea water main engine cooling.

Following an incident on WIGGS at sea on 7 August 1971, I made extensive investigations into the main engine cooling system on the vessel. The following emerged

(a) There was an extra filling line from the vessel's 1-ton FW

tank to the starboard skin cooling tank which did not appear on any drawing on the vessel and was not on 'Diagrammatic arrangement of FW & FW cooling' produced by Clelands Shipbuilding Co. Ltd.

(b) The actual run of the cooling return line from the engine to the port skin cooling tank was not as in WILKS and was, in fact, less than half the length of that in WILKS.

While (a) and (b) above were in no way causative in relation to the 7 August 1971 incident, it had become clear that, while the Rolls Royce main engines were identical in all vessels, the skin cooling arrangements which had been produced by builders/engine fitters were not and were an individual Yard production, not subject to any approval by Rolls Royce. This was significant where vessels were being built under licence. The engine fitting on WIGGS was not carried out by Hepworths but was further sub-contracted to Drypool Engineering, and, indeed, was generally a far superior job to that done by Clelands on WILKS. Two test passages were made on WIGGS with appropriate instrumentation fitted. On passage one, Gt. Yarmouth to Flushing Pilot, 5 September 1971, the coolant temperature in the system header tank had not reached that of the engine coolant manifolds after over 12½ hours continuous running: on passage two, 6 September 1971, the coolant temperature in the header tank had reached the level of the engine coolant manifold temperatures in about 45 minutes. It was concluded (Report dated November 1971, in author's records) that WIGGS

> 'is suffering from a fundamental design fault in that the vessel can, and, apparently, sometimes does, cool the engine through the cooling system header tank, rather than through the skin cooling tanks.'

Modifications were made at Dundee, completed 6 November 1971.

The first two XL400 vessels, FUTURITY/FORMALITY (1968) for F. T. Everard were not quite as sensitive in terms of DWT/cubic capacity as subsequent XL400 vessels, as they were built to earlier Tonnage Rules. They had 4 cy. Lister Blackstone main engines and did not have the big electrically driven engine room fans and skin cooling tanks of the other XL400 vessels. But photographs show them in service with large engine room ventilators fitted on each side of the wheelhouse which were

not there when they entered service. It would appear, therefore, that they too proved to have unacceptably warm engine rooms. LADY SANDRA (1970) lasted with her DV8NM engine with Thos. Watson until sold in 1980, when the china clay traffic direct to Aylesford finally ceased.

The significance of the Rolls Royce DV8NM engine saga in the context of the 1975 WILKS (II) design is that, even as late as 1975, Tower Shipping and Wilks Shipping - the newcomers - were the only coastal motor barge owners with substantial experience of main engines operating at over 1,000 rpm. The WILKS (II) design required small, light engines positioned aft, uniquely high up in the vessel. An acceptable power/weight ratio could not be obtained from any 'conventional' marine diesel.

WILKS (II) and WIS (II) each had two Caterpillar D343 main engines giving 365 bhp each at 1,800 rpm gross continuous. WIB (II) had two Caterpillar 3408TA engines, again giving 365 bhp at 1,800 rpm. LU, WIGGS (II) and WIRIS each had two 3408TA engines. The change to the V-form 3408TA engine for WIB (II) and subsequent vessels arose because Caterpillar took the view that the D343 had reached the limit of its possible development and decided to phase it out. It was not an economy decision by Wilks Shipping, although the 3408TA as supplied was about £1,000 cheaper. After WIB (II), YDD coastal motor barges had twin Cummins KT1150M diesels, each providing 365 bhp at 1,800 rpm gross continuous.

The late 1970s brought an increasing rash of regulations affecting English ships and coastal motor barges. Generally, this has been ascribed to Britain joining the EEC and a desire at the highest - political - levels to demonstrate that Britain was at least as regulated in the marine field as other EEC countries. I feel, however, that another powerful, but unquantifiable, influence was at work. From 1976, the tonnage of the total UK fleet started to plummet. The staffing of the Department of Trade and the number of Mercantile Marine Offices were geared to the numbers of ships and the requirements of earlier days. While I do not say that those within the Department set out deliberately to create work to justify their

existence, by 1980 there certainly appeared to be a greater availability of staff to regulate the fewer and fewer remaining UK flag vessels. The Department set out to introduce, effective 1 September 1981, a scheme whereby vessels of 350-750 Kw propulsive power were required to carry a Class 4E certificated engineer. Wilks Shipping had always operated without seagoing engineers, and wished to continue so to do. The YDD standard twin engine/propulsion unit vessels broke new ground in many ways, not least in manning. Wilks made a formal request for exemption (see Appendixes CC. and DD. hereto) with their application based on the fundamental belief that a vessel with two complete, independent propulsion systems was inherently a safer seagoing vehicle than one not so provided. I maintained that, with two completely self-contained propulsion systems, only the power of one engine should be taken into account, and as this was below the convention breakpoint, there should be no requirement to carry an engineer. This was not accepted by the Department. In the words of Ken Garrett (2001)

> 'The Government officials had their own agenda and, whatever the rights or wrongs of John Golding's case, or what they thought privately, the officials felt they had to bear in mind the effect such a precedent could have on the much more powerful twin-engined off-shore supply ships.'

It will be seen, however, from the application (Appendix CC.) that even when it was made, two vessels (LU and WIGGS) were already being run with each of their main engines de-rated to 230 bhp, 460 bhp in total bringing them just below the 350 Kw (469 bhp) limit. The other Wilks vessels were later similarly de-rated, and Wilks Shipping never carried seagoing engineers. But this de-rating was not entirely a reaction to compulsory engineer manning. In 1981, escalating fuel cost was a continuing concern (see Table 54. below).

Table 54. Fuel cost escalation - Marine Gas Oil.

Month/Year	Av. delivered cost (a) pmt	(b) Index	Average rate of cost escalation in % p.a.	RPI
March 1969	£ 10.40	100	Base	Base
June 1971	£ 15.75	151	23%	8%
April 1976	£ 67.00	644	30%	12½%
Feb. 1979	£ 88.00	846	24%	12½%
Oct. 1979	£135.00	1,298	27%	12½%
April 1983	£195.00	1,875	23%	12%

Source: Author's records.

In April 1976, when WILKS (II) entered service, the daily worth of the vessel was about £285 net timecharter equivalent: in October 1979, it was about £405 daily. In April 1976, the average delivered cost of Marine Gas Oil was £67 pmt: in October 1979 it was £135 pmt. Thus, over this three-and-a-half year period, while the daily net timecharter equivalent for the vessel increased by about 10¼% p.a., fuel cost escalated at approximately 21% p.a. Over the same period, RPI increased by about 13% p.a. Assuming 3 mt per day running, in April 1976 a day's running cost for fuel was about 70% of the vessel's net timecharter equivalent worth; by October 1979 this figure had become 100%. Appendix EE. hereto is a detailed record of mileage, speed and fuel consumption for WIB (II) on full power (730 bhp). This shows clearly that by 1980, mileage and fuel consumption per cargo were both decreasing: WIB (II) was being pushed back onto the very short-haul cargoes (see Table 55. below), and this trend may reasonably be attributed to pressure from fuel cost escalation. It is also apparent that ballast running - as opposed to loaded running - was being cut down and, for the first time, loaded mileage represented three-quarters of total mileage. Appendix FF. gives similar figures for the first year of WIGGS (II) de-rated to 460 bhp. It will be noted that the loaded/ballast mileage split is once again astoundingly close to 3/1. I consider the data recorded for these two vessels to be almost uniquely comparable in that it covers both vessels from new with 3408TA engines with no alterations to fueling, and with the same Master: Capt. Paul Kinley was Master of WIB from new to November 1980, when he moved to standby WIGGS, which he took new from Esbjerg in January 1981.

Table 55. Fuel cost per cargo.

Vessel	Engines	bhp	Period	Gas Oil per cargo	Cost pmt	Per cargo
WIS	D343	730	First year (2/77-2/78)	7.76 mt	£ 84.50	£656
WIB	3408TA	730	First year (2/79-2/80)	5.19 mt	£123.25	£640
WIB	3408TA	730	9 months (2-11/80)	4.35 mt	£147.00	£640
WIGGS	3408TA	460	First year (1/81-1/82)	4.81 mt	£165.00	£794

Source: Author's records.

Initial experiments with WILKS, downrating rpm from 1,800 to 1,600/1,625, indicated that the speed loss in good conditions de-rating to 460 bhp was about one knot, to 9 knots, in the ballast condition and rather less than one knot, to 6.8/6.9 knots, fully loaded, but that speed dropped off more quickly than before in rough conditions. WIS, with 730 bhp gross from two D343 engines, over the year from entry into service in February 1977, averaged 7.76 mt fuel per cargo and 2.678 mt daily fuel consumption for all purposes. Thus it does appear that the 3408TA was indeed a slightly more economical engine.

Over the first four years of service (January 1981 to January 1985) WIGGS produced a daily fuel consumption of 1.869 mt for all purposes. Incredibly, the average mileage per cargo was 282 loaded, 98 in ballast, and 380 in total; exactly the same figures as appear in Appendix FF. for the first year of trading for the vessel. Did speed on the de-rated vessels drop off significantly in rough conditions? I think the answer must be 'yes'. WIGGS made one passage loaded from Hook of Holland to Spurn Head in Force 6 all the way: the average speed was 5.2 knots. Was the twin engine/propulsion unit configuration the safety feature it was claimed to be? Again, I think the answer is clearly 'yes'. In November 1985 - Winter it will be noted - LU, on passage from Rouen to Hull, Old Harbour, with 956 mt wheat, had trouble with one Aquamaster unit off Fecamp. The Master, Capt. H. Van Es, decided to proceed on one engine/ propulsion unit and the speed Fecamp to destination averaged 4.6 knots on the 230 bhp. I feel this more than vindicates the Wilks system, particularly as Capt. Van Es had the opportunity to divert into Dieppe or Dover or Gt. Yarmouth, but did not think it necessary to do so. The case was made.

The economics of de-rating are set out below basis WIGGS. The conclusion drawn was that there was no economic penalty from de-rating, even if one did not take into account the cost of otherwise employing an engineer on the vessel. If one did, the financial argument for de-rating was clearly irrefutable. An ancillary gain was that the de-rated engines - working well below their capacity - were particularly trouble free.

The economics of engine de-rating for WIGGS.

De-rated Loaded 75% at 6.75 knots
Ballast 25% at 9.00 knots

(a) 460 bhp average 7.31 knots for 380 miles = 52.0 hours
(b) 730 bhp (+ 1 knot) 8.31 knots for 380 miles = 45.7 hours
Extra time required per cargo = 6.3 hours
Extra time required for 50 cargoes = 13.125 days p.a.

(a) 2.1667 days at 2.00 mt = 4.333 mt at £165 = £715 per cargo
(b) 1.9042 days at 2.65 mt = 5.046 mt at £165 = £833 per cargo
Therefore, average fuel saving = £118 per cargo
on 50 cargoes = £5,900 p.a.

v. Earnings loss = 13.125 days p.a.
at £450 daily net T/C equivalent = £5,906 p.a.

L & R never adopted the WILKS-type design. Of the 19 non WILKS-type coastal motor barges built over the seven years after 1976, 13 were for L & R. Moreover, L & R subsequently purchased four (from Spillers) of the other six. The remaining two were vessels delivered new to General Freight in 1981 and sold in 1985 as Unilever withdrew from shipping. Thus, in the seven years after 1976 L & R were the only traditional coastal motor barge owners building 'conventional' tonnage. The other six 'conventional' vessels delivered at this time were for Spillers/General Freight, whose sojourn in owning was brief. In 1983 L & R took delivery of its last new dry cargo vessel.

YDD developed the twin engine/propulsion unit concept, marketing and selling 'off the shelf' designs for 50/55/58 m LOA vessels (see Enclosures, Standard Data Sheets). Indeed, the exploitation of coastal motor barge building on a large scale by YDD provided a shining example of how one small Yard in England adapted to a rapidly changing economic climate in the shipbuilding industry.

Summary

In this chapter we see how ECMB sea-going characteristics improved in response to the need to regularly go outside the Thames estuary. However, in the 1976 WILKS (II) design the then ruling Tonnage Regulations were exploited, and manning reduced to a level unprecedented for a vessel of such carrying capacity. But more DOT manpower was concentrated on the regulation of the smaller British vessel. The carriage of certificated engineers was avoided by engine derating. Derating was also a reaction to fuel cost escalation: it imposed no economic penalty, even if the cost of otherwise carrying an engineer is disregarded.

12 COST ESCALATION AND RESULTS

'The past is of use to me as the eve of tomorrow.'

Maeterlinck, as quoted by Montgomery of Alamein.

12.1 Running Costs in 1970

Table 56. below sets out the Running Costs for WILKS (I) in its first year of operation. It demonstrates just how small were the figures less than 40 years ago, and is also useful as a guide to the relative importance of constituent items.

Table 56. WILKS (I) Running Costs, first year 1969/70.

Item	£	£	£ daily	%
Wages and crewing expenses		6,855	18.78	55.9
Food		414	1.13	3.4
Stores and Spares		1,245	3.41	10.2
Insurances		1,977	5.42	16.1
Repairs - Engine servicing	600			
RT and Radar	199			
Other	967	1,766	4.84	14.4
Totals		12,257	33.58	100.0

Source: Author's records.

A significant event occurred in November 1970; Wilks Shipping took over CONTINENT (renaming her WOPPER) and with her two Portuguese Cape Verde Island sailors. Thereafter, two Cape Verde Island sailors were always employed on WOPPER and on all subsequent Wilks Shipping vessels. In this, Wilks were years ahead of any other British owner. In 1970, Wilks paid their Cape Verde sailors £28-4-8d per week all inclusive (including fixed overtime). The manning on the other four Wilks Shipping vessels was not altered and they continued to be run 3-handed until they left Wilks Shipping in 1975.

12.2 Voyage Cost Escalation

Voyage costs consist of port disbursements, commission, fuel, and charter party and communication expenses. Commission, as a percentage of gross freight income, varies with that income. Charter party and communication expenses are very small in relation to other voyage costs. This leaves fuel costs and port disbursements. We have already (section 11.5, Table 54.) considered fuel cost escalation and its effects: we now look at port disbursements.

Below are port disbursement escalation figures for two cargo voyages. The first, Dunkirk to Rochester with steel, was the shortest voyage which Wilks Shipping vessels regularly undertook. The second, Brussels to Goole with steel, was the longest voyage which such vessels would regularly undertake.

1.	Dunkirk to Rochester	8/1976	5/1983
	Average total port disbursements	£ 572	£ 984
	Compound rate of cost escalation		8.1% p.a.
2.	Brussels to Goole	9/1976	6/1983
	Average total port disbursements	£1,378	£2,290
	Compound rate of cost escalation		7.6% p.a.

RPI over the same period was 11% p.a.

In April 1980, the 'normal' division of gross freights was

Commission	3%
Port disbursements	21%
Fuel	16%
Total voyage costs	40%
Net timecharter equivalent	60%

If the cost escalation rate on port disbursements was 8% p.a. and that on fuel was 24% p.a., the overall average escalation rate on voyage costs was 14.9% p.a. This was materially above RPI, but with only fuel cost escalation giving real cause for concern.

12.3 Running Costs Escalation

Figures are given below for (a) Overall Running Costs, and (b) Wages. The figures are the actual experience of Wilks

Shipping Company. Overall Running Costs are the total Running Costs on the vessels: they do not include any Management Fees or shore office/administration costs. Wages are separately shown as they are (i) the largest Running Costs item, and (ii) the one cost item over which owners can exercise any real control.

Table 57. Running Costs Escalation - Wilks Shipping Company.

Year ending 31 March	Average Running Costs of fleet in £ per day over 365 days p.a.
1977	117
1978	147
1979	168
1980	175
1981	194
1982	203
1983	237

Over six years escalation = 12½% p.a. compound.

Source: Author's records.

Table 58. Percentage Wage Increases - Wilks Shipping Company.

Agreed for Year	Masters & Mates %	Index	Sailors %	Index
1976	Base	100.0	Base	100.0
1977	3.5	103.5	8	108.0
1978	10	113.9	10	118.8
1979	8	123.0	8	128.3
1980	20	147.6	20	154.0
1981	2.5	151.3	2.5	157.9
1982	8	163.4	8	170.5
1983	Nil	163.4	Nil	170.5

Over 7 years escalation = 7¼% p.a. 8% p.a.

RPI = 11½% p.a.

Source: Author's records.

The Wilks Shipping figures for wage cost escalation invite the question 'was the Wilks experience typical?' In September/November 1969, the Mate of HOOFINCH (R. Lapthorn & Co.) averaged £54 net per week on the share system. Looking at share system percentage splits then is not helpful as in Lapthorns at that time the crew paid for all fuel and a proportion of both port disbursements and radar/autopilot costs. In September/November 1985, 16 years later, a Mate in Lapthorns (by then on fixed wages) was paid £9,000 p.a. (£750 per month or £172.60 per week). However, to this must be added the cost of a 50% increase in the

amount of paid annual leave over the period, which increases the cost to £184.02 per week. This over 16 years equates to 8% p.a. compound escalation. Over the same period, RPI was 11.2% p.a. It would seem, therefore, that in the matter of wage cost escalation, the Wilks Shipping experience and the Lapthorn experience were remarkably similar. Interestingly, however, in 1984 R. Lapthorn & Co. attributed pressure to increase leave in their fleet to the longer voyages they were then undertaking, away from the East Coast and down to West France and Southern Ireland. This rather indicates that the full economies of the coastal motor barge were only to be obtained with trading as a 'traditional' motor barge.

I attempted to run a further check using some L & R figures, but their changing from the share system to fixed wages and back to a - different - share system made it impossible to produce any meaningful figures for comparison. In January 1984, L & R were back working on the share system, with 19% of gross freight in total going to crews. This indicates that times were getting harder: L & R always wanted to be on fixed wages in the good times and on the share system in the bad. Finally, in this connection, so far as Federated tonnage was concerned, at the end of 1984 both the NUS and the MNAOA agreed an 8.2% increase for 1985.

12.4 Financial Results - Wilks Shipping Company second fleet

Did the WILKS-type design work? The figures appearing below are the actual results of the Wilks Shipping coastal motor barge fleet from the introduction of the first vessel of the second fleet in April 1976 to 31 March 1985. It will be noted that the overall return to owners, before charging any office administration cost, to 31 March 1985 was 13.8% p.a. on the total original capital cost of tonnage. This tonnage was, of course, all financed on Industry Act/Danish Ship Credit Fund loans at 7½%/8% p.a.

Table 60. below shows the loan interest paid in respect of the Wilks fleet in each of the three years to 31 March 1985 and Table 61. sets out the - healthy - financial position of the fleet as at that date.

Table 59. Wilks Shipping motor barge fleet results.

£ 000

Year (Ending 31 March)	1976/77	1977/78	1978/79	1979/80	1980/81
No. of vessels employed	1.14	2.00	2.12	3.00	3.51
Original capital cost*	340.5	654.5	711.8	1,129.5	1,399.0
Gross freights/hire	146.0	329.3	385.8	734.5	876.4
Less: Voyage Costs	62.9	98.6	152.5	300.5	355.3
Leaves: Net T/C Equivalent	83.1	230.7	233.3	434.0	521.1
Less: Running Costs	48.7	107.4	129.7	191.5	248.5
Applicable S/S Cost	-	-	-	-	5.0
Leaves: Net Bareboat Income	34.4	123.3	103.6	242.5	267.6
Add: Exchange gains on Loans	-	-	-	-	38.9
Total income to owners	34.4	123.3	103.6	242.5	306.5
which on original capital cost =	10.1%	18.8%	14.6%	21.5%	21.9%

Year (Ending 31 March)	1981/82	1982/83	1983/84	1984/85	Overall
No. of vessels employed	5.04	6.00	6.00	6.00	
Original capital cost*	2,213.0	2,783.1	2,783.1	2,783.1	14797.6
Gross freights/hire	1,257.5	1,410.4	1,498.1	1,660.9	8,298.9
Less: Voyage Costs	562.2	682.7	702.0	775.7	3,692.4
Leaves: Net T/C Equivalent	695.3	727.7	796.1	885.2	4,606.5
Less: Running Costs	372.9	518.6	496.1	569.3	2,682.7
Applicable S/S Cost	10.0	10.0	10.0	10.0	45.0
Leaves: Net Bareboat Income	312.4	199.1	290.0	305.9	1,878.8
Add: Exchange gains on Loans/Loan early repayment discounts	16.6	46.4	56.0	-	157.9
Total income to owners	329.0	245.5	346.0	305.9	2,036.7
which on original capital cost =	14.9%	8.8%	12.4%	11.0%	13.8%

* Adjusted pro-rata to number of days in service for a vessel in service for only part of a year.

Source: Author's records.

Table 60. Wilks Shipping fleet - loan interest paid.

£ 000

Year Ending 31 March	1983	1984	1985
Loan interest paid	100.2	87.0	74.9

Source: Author's records.

Table 61. Wilks Shipping fleet - financial position at 31/3/85.

£ 000

Vessel	WILKS	WIS	WIB	LU	WIGGS	WIRIS	Total
Exchange gains on Loans	-	-	-	47.8	44.2	52.8	144.8
Loan early repayment discounts	4.1	9.0	-	-	-	-	13.1
Stock in hand (spares)	4.0	3.0	4.0	5.0	5.0	6.0	27.0
Book WDV	97.6	138.4	234.7	315.9	316.7	396.7	1,500.0
Bank Loans outstanding	-	-	47.8	257.2	260.9	319.8	885.7

Source: Author's records.

Summary

In this chapter voyage cost escalation and Running Costs escalation have been considered and wages - the one cost item over which owners can exercise any degree of real control - investigated. The financial results of the WilksShipping Company second fleet are given in great detail and the reader is invited to conclude that the innovative WILKS-type design had been successful.

13 ACCIDENT AND REGULATION

'Although the new arrangements have taken much longer to work out than we had expected I think you will agree that the package now agreed is a considerable step forward. I hope we can now look forward to a period of stability and continuity as far as the certification regulations are concerned.'

David Mitchell, Parliamentary Under Secretary of State, Department of Transport, in a letter to Bill Menzies-Wilson, President, General Council of British Shipping, 20 May 1985.

13.1 FESTIVITY

FESTIVITY (O.N. 304695) was abandoned on 21 November 1971 on a loaded passage from Rotterdam to Selby, which was later described by the Formal Investigation (Report of Court No. 8060) as a near Continental voyage which involved an open sea passage approaching 24 hours in good conditions. The Court found

'that the said casualty was caused by the severity of the weather conditions prevailing at the time .... and insufficiency in the training and experience of her Master and crew in respects set out'.

Under the heading Manning, the Court stated (Report section 47)

'This is one of the most difficult aspects of this Investigation. At various stages of this Investigation counsel for the Owners of the FESTIVITY objected to inquiry being made into standards of manning, principally on the ground that to allow the Department of Trade and Industry to use this casualty as a peg on which to hang such an inquiry was unjust to his clients because it went beyond what was necessary in the investigation of this casualty and was not an appropriate subject-matter for inquiry by this Court. The Court accepts that it would not be proper for this and other reasons for this Court to conduct a wide-ranging inquiry into or make pronouncements upon the manning of home trade vessels generally; but if it appears from the primary facts that there are serious questions whether a vessel which sustains a casualty the subject-matter of investigation is properly manned and if not whether such improper manning contributed to the casualty, it is the Court's duty to endeavour to answer those questions and conduct such investigation as is reasonably necessary for that purpose.'

In section 49 the Report states

'The first question to be considered can be stated as follows. Was the FESTIVITY, when she sailed from Rotterdam on the 20th November, 1971, manned by a master and crew of sufficient numbers, proficiency and experience to be fit to encounter ordinary perils of a voyage to Selby, including

> bad weather? There was at the material time and still is no statutory manning scale and no statutory requirement for the master or anyone else on board such a home trade cargo vessel as the FESTIVITY to have any certificate of competency. So the question must be answered solely on a consideration of what standard of manning is required to ensure so far as is reasonable the safe navigation of the vessel and the safe accomplishment of the voyage. It is necessary to use the qualification "so far as is reasonable" because absolute safety at sea is probably impossible to achieve except by preventing any vessel from putting to sea at all; and even to insist on the highest degree of safety that is possible, as distinct from practicable, may be to drive ships off the sea by rendering them commercially unviable.'

It is pertinent to ask 'why was this Formal Investigation called?' As the Report indicated (section 63)

> 'the Department of Trade and Industry did not consider it necessary .... to invite the Court to consider whether in the event of a finding of unseaworthiness being made the Owners or some other person or persons in their employment were at fault or ought to be censured.'

Moreover, the Court also pointed out (section 63) that the case

> 'involved no loss of life or personal injury and no heavy loss of or damage to property'.

It will be noted that at the time of the casualty and at the time of the Formal Investigation (March and June 1973) any censure of owners would have been under section 457 of the Merchant Shipping Act, 1894. Perhaps, this gives a clue as to why there was a Formal Investigation. In 1971, the governing British legislation was still the 1894 Act, 77 years old. The maritime world had materially changed since Queen Victoria's day, although the controlling British legislation had not. The abandonment occurred in 1971: the Court sat in March and June 1973. In the interim, Britain - with its somewhat dated marine legislation - had joined the EEC. Mr. Manson, the Surveyor General in the Marine Division of the Department of Trade and Industry, gave evidence to the Court that the Department proposed exercising their powers to 'make regulations controlling the manning of ships'. But the Court pointed out (Report section 64) that

> 'small British ships have navigated home trade waters for many years without apparent lack of safety.'

I consider the FESTIVITY Formal Investigation Report to be a model of both thoroughness and fairness. Nevertheless, the fact remains that over the next 15 years a number of small British ships were totally lost, including MARY WESTON in the Seine 24 August 1978 with all her crew of five, and no like Formal Investigation was ever called. Indeed, the FESTIVITY Formal Investigation appears to be the only such investigation ever to have been called on the basis of what might have happened rather than because of loss that had actually arisen. Many of us in the industry really did feel that the Department of Trade in calling the FESTIVITY Formal Investigation were looking for that peg on which to hang new regulation and to demonstrate political correctness in the EEC. In February 1974 the Department of Trade informed the British Shipping Federation that increasing concern both nationally and internationally, and the recommendations of a recent Court of Formal Investigation, had led to a re-examination of the manning in small home trade cargo ships (see BSF circular 103/74). One cannot avoid thinking that counsel for the Owners of FESTIVITY knew only too well at the Formal Investigation what was going on (see Report section 47).

13.2 Manning, Certification and Trading Areas

It will be noted that the letter quoted at the start of section 13 hereof was dated 20 May 1985. Thus getting to final resolution in the matters of manning, certification of officers and Trading Areas had taken 12 years from the FESTIVITY Formal Investigation. In that time, vast amounts of paper had emanated from and been submitted to the Department. More importantly, in that 12 years (i) the total tonnage of the UK flag fleet had more than halved (see Appendix H. hereto), and (ii) the English coastal motor barge fleet had completely changed. Thus, for example, of the Clelands XL400 series of 12 vessels built 1968/1971 for four different owners, at end 1985 only FORMALITY remained with her original owner, F. T. Everard (she was sold in 1987).

In August 1973, after the conclusion of the FESTIVITY Formal Investigation (June 1973) but before publication of the

Report of Court (June 1974), the Department published a proposed new certificate structure for engineer officers and modifications of previous proposals for deck officers. For these proposals to have been issued in August 1973 indicates that they must have existed - largely if not entirely - while the FESTIVITY Formal Investigation was in progress in June. These proposals involved the elimination of the existing UK Home Trade area (unchanged since 1894) and the introduction of a Coastal Area which

> 'would include voyages beginning and ending at ports in the U.K., Channel Islands, Isle of Man, Republic of Ireland and ports on the Continent between Ostend and St. Malo without the ship calling at any intermediate port in any other territory, and during which the ship would not be at any time more than 30 nautical miles from land unless on a direct course between two ports in the area.'

As early as 1972, the British Motor and Sailing Ship Owners' Association had made representations to the Department (draft letter Ref: 95/1/KF in author's possession from J. P. Callen, Secretary, to W. G. Madigan, Esq., Department of Trade and Industry) which included

> 'As represented to you previously, the substitution of a coasting for a coasting and home trade area effectively cuts in half the established and natural trading pattern for many of the small coasters entered in this Association.'
>
> 'In this connection, it is pointed out that there are more than four trading areas included in the comparable regulations in certain other Western European countries.'
>
> 'So far as the definition of the coastal area is concerned, it is felt strongly that the requirement that a vessel should not at any time be more than 30 nautical miles from a point on the U.K. or Irish coast, is impracticable.'
>
> 'So far as practical considerations are concerned, it is felt that the required number of (certificated) officers is not available and is not likely to become available. On economic grounds, the first consideration might become academic since it is felt that if the requirements were implemented British ships would become uncompetitive vis-a-vis their Continental competitors.'
>
> 'Looking at the requirements overall so far as vessels of under 200 g.r.t. are concerned, the Association would stress that existing ships of this class were built by British owners with the object of recovering traffic from near Continental competitors. The ship itself was a new concept of design which met the requirements of the Department and its predecessors and in operation the ships have been very successful in obtaining trade which would otherwise have been carried in foreign flag ships.'
>
> 'It does not seem desirable in the interests of the economy that British owners of this class of tonnage should be placed in a position where the ships become uneconomic to operate.'

> 'I should add that even if some means could be found to protect the competitive position of existing ships, the implementation of the proposed arrangements without amendment on the lines suggested, would almost certainly mean that British owners would build no further ships of this class.'

The proposed Coastal Area ending in the East at Ostend was an absurdity, even by the standards of the Department of Trade. Such a limit included in the proposed UK Coastal Area hundreds of miles of almost uninhabited French coastline, whilst it excluded every major Continental port. This proposed Coastal Area was duly dropped and replaced by a Near Continental Area, which was the old UK Home Trade area but with the Continental limit extended from the Elbe to 62°N on the Norwegian coast. This extension was welcomed by many British owners but gave an enormous increase in the range and distance of possible open sea voyages, and undoubtedly justified more demanding officer certification requirements. There was no objection to this new Near Continental Area as such, but the Department seemed unable to grasp that for coastal motor barges another, more restricted, area was required, but one which admitted of commercial common sense. Ireland, Wales, Scotland, Norway and the West Coast of England were not required, but Amsterdam, Rotterdam and Antwerp were needed. An example of a small, restricted, trading area was the Dutch Shipping Inspectorate trade 'Denmark' which confined vessels to river trading and seagoing service between the Netherlands and Denmark. Two vessels built to this trading restriction were MARCO (709 GRT, 1977) and YVONNE (998 GRT, 1983). The Department of Trade, however, seemed determined to work on the basis of 'one size fits all'. The concept of a coastal motor barge trading area with limits of, say, Caen/ Littlehampton and Spurn head/Harlingen, and with less onerous certification and manning requirements, was never grasped by them. Thus, in the stated interests of safety, Bergen to Brest (930 miles) and Rotterdam to Ramsgate (120 miles) were to have the same officer certification requirements. Bureaucracy won.

Perhaps, however, the British Motor and Sailing Ship Owners' Association was slightly naive. In 1972, 'recovering traffic from near Continental competitors' was a laudable objective. In 1973, with British membership of the EEC a fact, any British

competitive advantage over Dutch or West German ships was, as a matter of UK Government policy, to be speedily sacrificed.

Under the heading of THE FUTURE, the FESTIVITY Investigation Report was realistic enough to state (section 64) that the factors to be taken into account must be

> 'balanced against economic considerations, such as .... the extent to which the shipping industry can cope with new statutory requirements and remain economically viable.'

13.3 Total losses

It will be remembered that in section 2.1 hereof it stated

> 'The English coastal motor barge (ECMB) is essentially an estuarial vessel with a limited sea-going capacity.'

We will now consider total losses in that context.

On 5 September 1974, R. Lapthorn lost HOONESS (196 GRT, 1965) which sank about 35 miles NE of Barfleur on passage loaded from the Thames for Guernsey. There was no loss of life or personal injury, or Formal Investigation.

On 8 November 1978, Glenlight Shipping lost RAYLIGHT (ex WOPPER ex CONTINENT, 259 GRT, 1968) which sank 33 miles SSW of Carnsore Point on passage loaded with 370 tons of bagged basic slag fertilizer from Sharpness for Ballylongford on the River Shannon. The reported cause of the casualty was that tarpaulins carried away and some hatch boards were lost, leading to the subsequent sinking of the vessel. Capt. Robert Kermath, who was Master of the vessel, as WOPPER, 1970-75, was always of the opinion that this could not have happened if the hatch locking bars had been properly secured in place. There was no loss of life or personal injury, or Formal Investigation.

On 28 February 1989, Glenlight Shipping lost POLARLIGHT (ex WIGGS, 199 GRT, 1970) which sank 1.5 miles off Point of Ayr. The crew had abandoned the vessel when her cement cargo shifted in heavy weather whilst on passage from Larne for Ramsey, IOM. Again, there was no loss of life or personal injury, or Formal Investigation.

On 27 November 1991, SEALIGHT (ex WIS, 199 GRT, 1970)

stranded at Lochmaddy and was ababdoned by her crew. She had extensive bottom damage and was abandoned to Underwriters.

On 25 January 1988, F. T. Everard lost GRIT (499 GRT, 1976) which sank in Hull Roads after colliding with the anchored dredger BOWPRINCE whilst on passage from Rotterdam for Gunness with a cargo of furnace scrap.

Only one YDD twin engine/propulsion unit coastal motor barge was ever lost at sea. On 3 November 1985, GWYN (794 GRT, 1985) was lost off Borkum Island with a cargo of steel which shifted. The vessel was new that year for Graig Shipping of Cardiff, a deep-sea shipowner who had never before, and would never again, venture into such tonnage. As the YDD-built ships became older and less valuable, however, they did become more liable to be declared a CTL. Thus, HOOFORT (ex ANTONIA B ex WHITONIA, 671 GRT, 1983), after grounding at Rye and sustaining extensive bottom damage in January 2002, was taken to Gravesend, where the machinery and other useful equipment was removed to be used as spares for other vessels in the Lapthorn fleet, and hulked.

I suggest a clear pattern emerges from the above-noted coastal motor barge casualties. With the exception of the GRIT loss, sinkings were where vessels were being traded outside the 'normal' motor barge area and/or with the vessels operated/ owned by organisations outside the river/sea ship field. Perhaps the owners concerned did not always appreciate the constraints of 'a limited sea-going capacity'. Certainly, the Glenlight Shipping loss rate was unique and, significantly, pre-dated their acquisition of the Wilks coastal motor barges. KAFFIR was lost when she ran aground off Ayr. DRUID (240 DWT, 1959) was lost in 1962 when she 'capsized, with the loss of her crew, in circumstances that were never explained satisfactorily' (Patterson, 1996, p 44). STORMLIGHT (1957) stranded at Jura after an engine breakdown and was lost. GLENSHIEL (240 DWT, 1963) sank in 1973 on a night passage from Ayr for Glasgow with coal. There was only one survivor. It will be noted that DRUID, STORMLIGHT and GLENSHIEL were all modern vessels, DRUID being just three years old at the time of her loss. The Glenlight

fleet was not large: in 1974, just before the acquisition of the five Wilks vessels, it stood at eight ships. In the loss of the four craft mentioned above in this paragraph and the total loss of three of the five ex-Wilks vessels, I think the finger must be pointed at the operation, not at the vessels operated.

On page 108 (section 10.2) I wrote

'the more one looks into Weston Shipping, the more it becomes clear that this operation was never a seriously commercial shipping company.'

Weston Shipping owned small vessels from 1971 to 1984. During its short existence it had three total losses, all by collision. MARY WESTON, on a voyage from Rouen for Goole with wheat, sank in the river Seine, 24 August 1978. All the crew of five were lost. SOPHIA WESTON, loaded with lead ingots from Avonmouth, sank in the river Schelde on 23 December 1979 whilst on passage for Antwerp. CAMILLA WESTON sank 15 February 1984 off Happisburgh whilst on passage from Tilbury for Leith with wheat. There appears to have been no financial pressure or pressure on manning in Weston Shipping. Even the 600 10% CATRINA WESTON carried an engineer. Some said that Weston Shipping were just unlucky. Others have pointed out that, as a newcomer, they did not get crews from traditional coastal motor barge personnel, but neither did Tower Shipping or Wilks, and they did not lose vessels. Moreover, when Weston Shipping started owning they were Federated and their crews were paid much more than those of, say, L & R. On a mathematical basis, the odds against the Weston Shipping loss rate are so enormous that I can only conclude that, as well as being a seriously non-commercial shipping company, it was also a seriously dangerous shipping company.

To further test the pattern of coastal motor barge total losses, I have looked at the fates of all the Clelands XL400 series of 12 vessels (see Appendix GG. hereto). The results are summarized in Table 62. below. It can clearly be seen that not one of the 12 vessels, notwithstanding their engine cooling and seizure problems, was lost in its original ownership or within 'traditional' motor barge trading areas. Properly used, coastal motor barges were not lost at sea.

Table 62. Fates of XL400 vessels.

Fate	Vsls.
Sank under Glenlight Shipping control	2
Sank or abandoned Africa/America	9
Broken up in the UK	1
Totals	12

Source: Appendix GG. hereto.

Summary

The FESTIVITY Formal Investigation was a watershed. Prior to it the English coastal motor barge had been left largely unregulated by the Department of Trade, and there had never been an ECMB total loss. Thus, casualty rate could not have been a justification for holding a Formal Investigation. But the ECMB can be said to have been to a material degree the victim of its own success. In 1971, vessels such as WILKS (I) were carrying cargoes of 400 tons on a total manning of three (Dutch flag manning would have been six). On the entry of the UK into the EEC in 1973 the ECMB had as never before a competitive advantage vis-a-vis small Dutch and West German flag tonnage. UK entry into the EEC vastly increased ECMB trade but it also initiated the start of the decline of this class of tonnage. In 1973, with British membership of the EEC a fact, any British competitive advantage over Dutch or West German ships was, as a policy of UK Government, to be speedily sacrificed on the altar of political correctness. Getting to final resolution in the matters of manning, certification of officers and Trading Areas took 12 years from the FESTIVITY Formal Investigation. In that 12 years the total tonnage of the UK flag fleet more than halved. But the staffing of the Department of Trade and the number of Mercantile Marine Offices were geared to the number of ships and the requirements of earlier days. More staff were available to set about the regulation of the fewer and fewer UK flag vessels. The ECMB did not escape in this surge of regulation. In the late 1960s and early 1970s, we in the coastal motor barge industry had been particularly successful in working to the letter of the - longstanding - Regulations as they then stood, especially in the areas of Tonnage calculation and Manning. Entry into the EEC focussed the spotlight of officialdom upon us.

14 GOVERNMENT, SUBSIDY AND FOCUS

'People in public life are not always as clear as they should be about where the boundaries of acceptable conduct lie.'

First Report of the Committee on Standards in Public Life, Cm 2580, May 1995, p 15.

14.1 Government and subsidy

One of the most important factors which brought about increase in UK tonnage between 1968 and 1972 was the introduction (Finance Act, 1966) of cash investment grants in place of investment allowances. The new (Conservative) government which came to power in June 1970 determined to scrap cash grant and concluded that the retention of free depreciation for ships would represent adequate preferential treatment for shipping. By the time cash grant was removed, the British merchant fleet had grown by 35% in tonnage terms. In mid-1967 the average age of the UK registered fleet was 9.5 years: in mid-1972 it had fallen to 6.9 years. In the 1970s, fixed rate Industry Act financing at 7½% p.a. on new vessels built in the UK also constituted an attractive subsidy. During the ten years to mid-1982, RPI in the UK averaged 14.2% p.a. (see Table 29. hereof).

In April 1971, while British owners were investing in new small vessels and benefitting from cash grant, the Dutch Government introduced a scrapping scheme (see section 10.4 hereof). This was popular in the Netherlands and was well taken up: it was also popular in the UK since it served to remove much competition at the bottom end of the ship size range.

Between 1976 and 1982 the open-ended guarantee system of the CAP produced a grain mountain in the EEC. This was subsidy for EEC farmers, but it also greatly assisted English coastal motor barges (and, indeed, other parts of the British transport infrastructure).

One further instance of 'subsidy' should be recorded. Both

L & R and Wilks Shipping built at A/S. Nordsøvaerftet, Ringkøbing. Vessels built at Ringkøbing reach the sea through a lock at Hvide Sande. When A/S. Nordsøvaerftet was founded in 1958 the dimensions of the - long established - sea lock at Hvide Sande were quite adequate. But 'small' ships grew: an 8.3m breadth of lock became very restrictive; it would have prevented the building of the L & R and Wilks vessels at Ringkøbing. The lock chamber was eventually (twice) increased in length and breadth. While A/S. Nordsøvaerftet contributed to the cost of this work, the major share of funding came from the kommune in West Jutland, and from EU funding.

The UK General Election of 3 May 1979 produced a change of political colour in the administration. It soon became clear that with Margaret Thatcher as PM ideology had ousted pragmatism. Closure of the P & O Belfast-Liverpool passenger and car ferry service was postponed until 11 November 1981 to enable further representations to be made to government for short term aid to enable the service to continue. The Lord Mayor of Belfast led a delegation from the city council to David Mitchell, Minister in charge of the Department of the Environment, who informed them that 'it was not government policy to subsidise merchant shipping'. But that government saw nothing wrong in the Belfast-Liverpool passenger service continuing to be the victim of most unfair competition from British Airways, which it was projected should be sold off to the private sector. The airline is known to have practised below cost selling and cross subsidisation to increase sales volume. There were good grounds for believing that these air services lost £1 million in 1980/81, carrying 609,000 passengers, compared with 359,000 passengers in 1977/78. The government abstracted a staple off-season element of passenger traffic from the Belfast-Liverpool route in 1979 and transferred it to British Airways. The traffic concerned was the carriage of military personnel and their families whom the Belast Steamship Company and P & O after them carried at 9½% discount fares. The Ministry of Defence in 1979 claimed that British Airways were giving them a discount of 40%. It is hard to see how this could possibly have been economic for the airline.

That expenditure of public money in the support of transport

infrastructure projects with no commercial justification had become acceptable in the early 1980s may be illustrated by reference to the Humber Bridge saga. The Bridge had been promised at the time of a critical parliamentary by-election in Hull. It was opened in 1981 and was financed by borrowing from the Secretary of State for Transport and the Public Works Loans Board. But it took longer and cost more to build than expected and traffic was always lower than forecast, mainly because population growth postulated for South Humberside when the Bridge was planned never materialised. Toll income never covered all the interest on the debt and unpaid interest was capitalised. The opening debt rose from £151 million to £439 million in March 1992. A grant was made to meet unpaid interest charges and the debt was stabilised at £435 million. In 1995, the Humber Bridge (Debts) Bill was introduced into Parliament to enable the Government to write off or suspend parts of the Humber Bridge debt, the exact amounts of which were to be determined only when the legislation was in place.

The purpose of this section is not to record every aspect of national and international subsidy which affected coastal motor barges but to demonstrate that by the 1980s, in the matter of disbursing public monies, the goal posts had been moved. Subsidy in Britain was no longer based on commercial assessment of benefit. It had moved to the basic support of political ideology. This would not have been acceptable in Government even 20 years earlier.

14.2 Focus

During the production of this thesis, it has become clear to me that the attitudes, character, strengths and weaknesses of the various owners/operators in the English river/sea fleet were often very different. Some owners of such tonnage had extensive interests in other areas of the shipping industry and some in other business activities outside shipping. Other owners, such as R. Lapthorn were almost solely concerned with river/sea shipping.

L & R dated from 1907. In the 1950s and 1960s it attained a dominance in our field which was never subsequently equalled.

It also acquired substantial interests in shipping outside the coastal motor barge trades including the ownership and operation of coastal colliers. For example, MILITENCE/NASCENCE (563 GRT, 750 DWT, 1956) were built for coastal coal contracts. That they both had Sirron diesels is attributable to the fact that when they were ordered, F. T. Everard had a significant shareholding in L & R. This was acquired in 1955, and Mr. W. J. Everard was made a director of L & R. Everards disposed of this shareholding when L & R became involved with the Proprietors of Hays Wharf. CRESCENCE (950 GRT, 1,100 DWT, 1965) was a technically advanced coastal collier (see Lloyd's List, 3 March 1965). But the carriage of coal coastwise was a declining market: there was no long-term future in it. In the 1970s, a liner service was run between Whitstable and Esbjerg by DANGELD (694 GRT, 1969); RESILIENCE (988 GRT, 1969) was a bulk starch carrier, and FALLOW DEER (497 GRT, 1972) a small container ship on charter to European Unit Routes. But these were all essentially 'one off' diversifications. The ownership and operation of larger ships never seemed to be other than modestly profitable in L & R. The 1,596 GRT, 3,210 DWT, KINDRENCE (1976) and LUMINENCE (1977) were not repeated and always remained much larger than anything else in the fleet. The 'sell-out' to Hays Wharf made finance available at a time of great investment in new tonnage, but changes in control as L & R became part of a larger and larger group did seem to give rise to an increasing lack of focus. Hays Marine Services Ltd. was formed in 1985 to be a holding company for L & R and Bowker & King Ltd., London (founded 1884) who specialized in the estuary, coastwise and near continental carriage of oils and other liquids. But the group was the subject of a UK management buy-out from former owners, the Kuwait Investment Office, late in 1987. It is pertinent that in the 14 years 1959/1972, Bowker & King had 18 new tankers enter service; in the six years 1980/1985, the figure was eight. It may be nothing more than a coincidence, but in the years 1980/1985, L & R also had eight newbuildings. It has been said that there was a 'one and one' investment policy, which, if true, hardly seems a very sound overall basis for investment. But there was one diversification which rapidly became dangerously successful. L & R formed Offshore Marine Ltd., which in 1965/1967 took delivery of seven oil-rig supply vessels. This was very much a new and expanding area for British shipping. The

problem for L & R was that they soon found that their best Masters and Mates gravitated to the Offshore Marine vessels, where pay and conditions were much better. Offshore Marine Ltd. was speedily sold to Cunard: by 1971 they had 19 oil-rig supply ships.

In F. T. Everard the focus was never on coastal motor barges: they were always a fringe activity. Everards were a major shipowner - CENTURITY (1956) was the 100th ship in the fleet at that time - with extensive interests in wharfage and warehousing, quarrying (until 1970), ship repairing (until 1982), road transport (until 1984), and oil storage (until 1986). The coastal motor barges were five (all 199 GRT) until 1974; six in June 1976; and three (all 499 GRT) after the sinking of GRIT in January 1988. Thus, in the coastal motor barge field, Everards were really less of a force than, say, Wilks Shipping. Moreover, FORMALITY (199 GRT, 1968) remained with F. T. Everard until 1987 only because she was used to operate a small contract carrying cement from Northfleet to Cowes, IOW. When the cement movement was transferred to road transport, FORMALITY was sold (for £35,000).

Summary

In this chapter the factors of cash investment grant and Industry Act financing in the UK, the Dutch Governmentscrapping scheme, the open-ended guarantee system of the CAP, and EU funding for the enlargement of the sea lock at Hvide Sande, are noted as examples of subsidy benefitting the ECMB. But it is also contended that, with Margaret Thatcher becoming PM following the UK General Election of 3 May 1979, ideology ousted pragmatism. Expenditure of public money in the support of transport infrastructure projects with no commercial justification became acceptable. A climate in government whereby basic support of political ideology replaced commercial assessment of transport benefit tended to act against the ECMB. Moreover, diversification - particularly in L & R - did seem to give rise to an increasing lack of focus in the ECMB field.

15 THE END OF THE LINE

> 'For the future the required overall return on all Group activities would be 20 per cent and this could only be achieved by cutting back on the dominance of shipping within the Group.'
>
> Lord Inchcape, P & O Group Chairman, 1980, as quoted by Sinclair, 1990, p 175.

15.1 Running down

Of the shipbuilders significant in our story, Clelands Shipbuilding Co. was nationalized in 1977 and closed in 1984. The closure of The Yorkshire Dry Dock Co. was announced in August 1997, administrators having been appointed early in July. The yard was subsequently sold to George Prior Engineering. This just beat A/S. Nordsøvaerftet which filed for bankruptcy on 3 September 1997 after announcing a large loss of about D.Kr. 150 million.

In the 1990s, it was downhill all the way for small-ship ports. Wells, which had 98 vessel calls in 1972 and 252 in 1985, importing over 100,000 tons (mainly fertilizers), saw its last motor coaster visit in March 1992. On 10 August 2000 shipments of grain to Stambrige Mill, Rochford, ceased. As the discharging equipment at the mill had been refurbished at no small cost in 1999, the end of milling at Stambridge reflected yet again the ineptness of ABF planning. Nowhere evidences changes in trade patterns better than Colchester. In 1948, the port handled 230,000 tons; by 1975, the figure was 700,000 tons; and in 1982 it was 1,053,000 tons. But after the end of the National Dock Labour Scheme in 1989, trade died and on 28 May 2001, Royal assent was given to the Act which closed the port and ended cargo handling at Colchester's Hythe after 2,000 years. The busiest year for vessels visiting Selby was 1973 with a total of 616 ships, many of which were loaded for both inward and outward voyages. By comparison, only four ships (albeit larger ones) visited Selby during the whole of 2003. On 5 November 2003, planning permission was granted for a £25 million housing development involving the closing of the last independent wharf in Selby. The grain trade to Greens Flour Mill, Maldon, ceased in 2006 and the discharging equipment was dismantled.

ABF/Spillers/Unilever/Continental Grain/Dreyfus all got out of small-ship owning in 1982/85. They were all sojourners in the territory of the coastal motor barge, having arrived with concern for the movement of their own cargoes, and they left when that concern evaporated. ABF (Weston Shipping) sold its last ships in 1984. Spillers arrived late as owners (1977) and went early, all their four vessels going to L & R. Unilever (General Freight) took a policy decision to get out of shipping and sold their last vessel (RIVER DART) to Tower Shipping in July 1985. The Tower fleet had reduced to three vessels in 1988 and to one (RIVER DART) in May 1991: thereafter, they struggled on, a shadow of what they had been previously.

Eggar, Forrester/Wilks Shipping decided to get out of coastal motor barges in 1985. Reference to Table 59. hereof shows that they had not made losses, but trading had become less good than before. Table 61. shows the financial position of the fleet as at 31 March 1985 and indicates that they could get out entirely 'clean'. Table 63. below shows that, even after making allowance for normal seasonal variations, in 1985 things were going downhill.

Table 63. Wilks Shipping fleet - Net T/C Equivalent Earnings.

Month	£ per vessel per day	
Oct. 1984	474	
Nov. 1984	588	
Dec. 1984	478	average 513
Jan. 1985	426	
Feb. 1985	409	
Mar. 1985	293	average 376
Apr. 1985	312	
May 1985	267	
June 1985	262	average 280

Source: Author's records.

Moreover, reductions in the manning of 'conventional' coasters in recent years meant that in 1985, while Wilks-type motor barges were still the most economic vessels for wage costs, their advantage had narrowed. WILKS, WIS and WIB were sold in 1986 in panic sales. LU, WIGGS and WIRIS were sold in 1988 - rather well - in an en bloc deal to Jugoslavian interests. It

should not be forgotten that Eggar, Forrester had entered into owning vessels in 1969 as a tax-avoidance exercise. It had sold its first fleet en bloc in 1975 (see section 9.9 hereof) and it had no inhibitions about selling the second fleet. It would be nice to be able to say that the 1985 decision to sell out of coastal motor barges was an entirely rational act, but that would not be honest. There was a large measure of pique involved. It is outside the scope of this thesis to delve into the internal politics of Eggar, Forrester: suffice it to say that while in retrospect I have no doubt that the correct decision was made, it was probably not made for the correct reasons. Nevertheless, Wilks Shipping was the first of the non-grain house coastal motor barge fleets to vacate the field: others followed.

L & R lost its way. In December 1997 Hays Marine Services announced the sale of the organisation to an investment company owned 50% by Torben Jensen's Clipper Group. Early in 2000 it was announced that the L & R/Crescent Shipping operation was to transfer its base from the Medway to Southampton. To those of us who had worked in the small-ship field in the 1960s, 1970s or 1980s, this was akin to an advice that a whisky distillery was moving from Speyside to Birmingham. Exactly two years later came an announcement that the last four L & R dry cargo vessels had been sold and that the organisation had ceased owning dry cargo tonnage. Later in 2002 it was reported that the Crescent Shipping/L & R organisation had become a wholly-owned subsidiary of the Danish Clipper Group.

Also in 2002 (April) it was reported that F. T. Everard was getting out of dry cargo ships to concentrate on its tanker activities. Early in 2007 came an announcement that F. T. Everard had been taken over by the James Fisher Group. Fisher paid Everards £23.7 million and also took over an Everard debt of £28 million. Everard made a taxable profit of £2.91 million in its last independent financial year. The end of the line had been reached.

In June 2004, Coastal Shipping (Vol. 11 No. 3) reported

'During the last two years, we have made frequent references to the problems faced by the Lapthorn company. At the time of writing, four of the company's coasters are laid up by its headquarters at Hoo.'

HOO PLOVER (671 GRT, 1983) arrived at Hoo from Ipswich on 9 October 2003; HOO WILLOW (671 GRT, 1984) arrived from Boston on 27 October; HOOCREEK (671 GRT, 1982) arrived from London on 22 March 2004; and HOO VENTURE (671 GRT, 1982) arrived from Ipswich on 23 March. HOO VENTURE was subsequently replaced by HOO SWAN (794 GRT, 1986). Sales of vessels followed (see Table 64. below).

Table 64. R. Lapthorn - Coastal motor barge disposals 2002/06.

Vessel	GRT	Built	Disposal	
HOOFORT	671	1983	2/02	Grounded Rye. Extensive bottom damage. Hulked.
HOO MAPLE	794	1989	6/04	Sold for conversion to a suction dredger.
HOO PLOVER	671	1983	2/05	Sold.*
HOO VENTURE	671	1982	7/05	Sold. Del. in Rotterdam.
HOO TERN	794	1985	7/05	Sold. Del. in Rotterdam.
HOO MOSS	794	1985	7/05	Sold. Del. in Rotterdam.
HOOCREEK	671	1982	11/05	Sold. Del. in Rotterdam.
HOO WILLOW	671	1984	2/06	Sold. Del. in Rotterdam.*
HOO DOLPHIN	794	1986	3/06	Sold. Del. in Rotterdam.

* Having been laid up since October 2003.

Source: Coastal Shipping, Vols. 11, 12 and 13.

It will be noted that, with the exception of HOO MAPLE, all vessels sold were 20 years old (or more). In December 2006, Coastal Shipping (Vol. 13 No. 6) reported

'As from 1 November, the Lapthorn name disappeared from the coastal shipping scene and the company is now known as Coastal Bulk Shipping Ltd.' The fleet as at 1 November 2006 is shown in Table 65. below.

Table 65. R. Lapthorn fleet as at 1 November 2006.

Vessel	GRT	Built	LOA m	Proposed new name
HOO BEECH	794	1989	58.3	TEAL
HOO FINCH	794	1989	58.3	FULMAR
HOO LAUREL	794	1984	58.3	LARK
HOO MARLIN	794	1986	58.3	MARTIN
HOO ROBIN	794	1989	58.3	REDWING
HOO SWAN	794	1986	58.3	SWALLOW
HOO SWIFT	794	1989	58.3	SWIFT
HOOCREST	794	1986	58.3	CURLEW
HOOPRIDE	794	1984	58.3	PIPIT
plus one larger ship				
HOO FALCON	1,382	1991	77.8	FALCON

Source: Coastal Shipping (Vol. 13 No. 6)

15.2 Reflections

Reductions in the manning of 'conventional' coasters meant that by 1985, while Wilks-type motor barges were still the most economic vessels for wage costs, their advantage had narrowed. The end of the National Dock Labour Scheme in 1989 signalled the end for many small English ports on which the ECMB depended. Perhaps the only surprise was the speed of the decline. Wells, which had 252 vessels call in 1985, saw its last motor coaster in March 1992. Colchester, a port in pre-Roman times, had handled over a million tons in 1982. On 28 May 2001, Royal Assent was given to the Act which closed the port. In 1973 616 ships visited Selby; in 2003 the total was just four vessels. It is significant that 1989 was also the year in which the last four new English coastal motor barges entered service.

The preceding chapters have been concerned with looking back. Everything I have described herein is now obsolete or obsolescent. All motor barges will ultimately disappear as surely as the sailing barges before them. How much does it all matter? In a world striving to change its social, economic and political systems, many may say, very little. The world cannot stand still, and however much one loves old vessels and old practices, one cannot expect them to survive simply because they are familiar and 'comfortable', or because of past fitness for purpose. Certainly, this seems to be the attitude of most English people, who view with remarkable equanimity the disappearance of ships from their coasts and rivers, and who have within the last century lived with great changes in the transport to, from and within their country.

When in 1985 Wilks Shipping decided to sell out, the UK owned and registered fleet over 500 GRT amounted to some 680 ships of 18.8 million DWT, having fallen from some 1,600 ships of 50 million DWT in nine years. But in addition there were another 235 little ships of between 100 and 500 GRT. Furthermore, there were 150 offshore supply ships of various kinds and an efficient and profitable fleet of tugs. There were also some 340 fishing vessels and many miscellaneous vessels. None of there craft appeared in GCBS statistics, but

they counted very much for employment. Since then, the UK fleet of little ships has also been decimated. Yet at its zenith, and at a critical time for the UK economy in an era of tremendous change, the English coastal motor barge did provide the competitive transportation which eased Britain's entry into the EEC.

Economic reality is an unpitying master, but if you are going to address the issue of the future of UK shipping, whether it be near continental or deep-sea, that is where you have to start. Shipping is an activity in which capital goes where it is anticipated that the return will make investment worthwhile. Investment in shipping in the UK now makes little or no economic sense. And as long as that is the case, harbours and waterways will attract flats and apartment complexes because they do make economic sense. This is not short termism; investment in property is nothing if not long term. You cannot have short term bricks and mortar.

In 1976, Paul Kennedy won critical acclaim with his book The Rise and Fall of British Naval Mastery which showed that British naval pre-eminence down the centuries was, in its waxing and waning, almost exactly reflective of the nation's economic strength. With the slow but inexorable erosion of Britain's industrial lead over other developed countries from about 1850 onwards, her maritime hegemony also gradually shrank, though the extent of this decline was, for many years, masked by other factors.

I am driven to wonder, however, whether transport, as opposed to trade and finance, has ever in aggregate been in itself profitable in other than circumstances of special economic advantage. There are some compelling facts, such as the great US investor Warren Buffet's calculation that the total sum of all airline profits since the birth of the industry was zero. But this question I must leave to further investigation by others.

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APPENDIXES AND ENCLOSURES

Appendix A.

A Note on Tonnage

GRT - Gross Registered Tonnage - is broadly a measurement of physical size. It is the total of, generally most of, the enclosed space in a vessel expressed in tons of 100 cubic feet. Certain spaces have been excluded, for example, galleys. Gross tonnages are calculated according to set, and complex, formulas derived from both Tonnage Conventions and national regulations. Thus, a vessel could have different GRTs if measured under different national rules or where measured under the national rules of the same country at dates where different Tonnage Conventions apply to measurement under that nation's rules. Once assigned, however, a vessel's GRT would not normally change unless (i) it was reregistered under the flag of a country whose regulations required remeasurement for registration, and/or (ii) material physical changes had been made to the vessel. Thus, the identical sisterships AMBIENCE (II) and BOISTERENCE, both delivered new in 1983, had GRTs of 493 and 536 respectively, because different dates of keel laying meant that different Tonnage Conventions applied.

GRT is an 'official' tonnage but it has often been a very artificial figure differing considerably from the actual enclosed space in a vessel. When comparing vessels, therefore, it should not be assumed that the 'largest' vessel will have the highest GRT. If all vessels comprised within the statistics compiled for this thesis could be remeasured on the basis of a common standard, it is likely that the GRT figures for those vessels built in the earlier years would tend to rise relative to the GRT figures for more recent ships. In 1994, however, new rules were applied, and existing British ships were remeasured. Then, for example, the sisterships CONFORMITY and CANDOURITY, which had been 499 GRT since delivery in 1975, both grew to 559 GRT. For the first time, for British ships, GRTs were increased when no change of flag or physical alteration had occurred.

DWT - Deadweight Tonnage - is a measurement of carrying capacity by weight (as opposed to volume). It is the total weight of cargo, fuel, fresh water, etc. required to immerse a vessel to its assigned Summer loadline mark. DWT is not in any way an 'official' tonnage. Quoted figures are often design figures and tend to be slight understatements of the 'real' figures, particularly for recently built vessels.

Appendix B.

Commercial Barges active as at 30th April, 1954.

(a) Sail

Name	Built	Owner
ANGLIA	Ipswich 1898	R & W Paul, Ipswich.
ARDEER	Rochester 1895	ICI Ltd.
ARDWINA	Ipswich 1909	Daniels Bros., Whitstable.
ASPHODEL	Rochester 1900	ICI Ltd.
CAMBRIA	Greenhithe 1905	F T Everard Ltd., Greenhithe.
CENTAUR	Harwich 1895	L & R, Strood.
COLONIA	Sandwich 1897	Daniels Bros., Whitstable.
DREADNOUGHT	Sittingbourne 1907	ICI Ltd.
EDITH & HILDA	Milton 1892	ICI Ltd.
ETHEL	Harwich 1894	Cranfield Bros., Ipswich.
ETHEL ADA	Paglesham 1903	ICI Ltd.
GEORGE SMEED	Murston 1882	L & R, Strood.
GIPPING	Ipswich 1889	ICI Ltd.
KITTY	Harwich 1895	L & R, Strood.
LADY MAUD	Greenhithe 1903	F T Everard Ltd., Greenhithe.
LADY MARY	Greenhithe 1900	F T Everard Ltd., Greenhithe.
MARJORIE	Ipswich 1902	R & W Paul, Ipswich.
MAY	Harwich 1891	Cranfield Bros., Ipswich.
MEMORY	Harwich 1904	M F Horlock Ltd., Mistley.
MILLIE	Brightlingsea 1892	ICI Ltd.
MIROSA	Maldon 1892	L & R, Strood.
NELSON	Sittingbourne 1905	Eastwoods Ltd., Halstow.
PORTLIGHT	Mistley 1925	M F Horlock Ltd., Mistley.
REPERTOR	Mistley 1924	M F Horlock Ltd., Mistley.
REVIVAL	Ipswich 1901	ICI Ltd.
SARA	Conyer 1902	F T Everard Ltd., Greenhithe.
SAVOY	Rochester 1898	Daniels Bros., Whitstable.
SIRDAR	Ipswich 1898	L & R, Strood.
SPINAWAY C.	Ipswich 1899	Cranfield Bros., Ipswich.
VENTURE	Ipswich 1900	Cranfield Bros., Ipswich.
VERAVIA	Sittingbourne 1898	Shrubshall, Greenwich.
VERONA	Greenwich 1903	Shrubshall, Greenwich.
WESTMORLAND	Conyer 1900	Eastwoods Ltd., Halstow.
XYLONITE	Mistley 1926	M F Horlock Ltd., Mistley.

Totals 34

(b) Auxiliary Sail

Name	Built	Owner
ALAN	Battersea 1900	L & R, Strood.
ALARIC	Sandwich 1901	L & R, Strood.
BERIC	Harwich 1896	Cranfield Bros., Ipswich.
BEATRICE MAUD	Sittingbourne 1910	R Sully, London.
BRITISH EMPIRE	Brightlingsea 1899	L & R, Strood.
CABBY	Frindsbury 1928	L & R, Strood.
DANNEBROG	Harwich 1901	Cranfield Bros., Ipswich.
DAWN	Maldon 1897	L & R, Strood.
EDITH	Sittingbourne 1904	Cremer, Faversham.

Appendix B, Cont.

(b) Auxiliary Sail, Cont.

EDITH MAY	Harwich 1906	R Sully, London.
ENA	Harwich 1906	R & W Paul, Ipswich.
ETHEL MAUD	Maldon 1899	Baker Bros., Maldon.
FELIX	Harwich 1893	Cranfield Bros., Ipswich.
GEORGE & ELIZA	Rochester 1907	L & R, Strood.
GLADYS	Harwich 1901	Cranfield Bros., Ipswich.
GLENMORE	Rochester 1902	W R Cunis, Woolwich.
GLENWAY	Rochester 1913	S West, Gravesend.
GRAVELINES I	Ipswich 1905	R & W Paul, Ipswich.
HYDROGEN	Rochester 1906	R Sully, London.
JOCK	Ipswich 1908	R & W Paul, Ipswich.
KIMBERLEY	Harwich 1901	Cranfield Bros., Ipswich.
LADY DAPHNE	Rochester 1923	R & W Paul, Ipswich.
LADY HELEN	Rochester 1902	L & R, Strood.
LADY GWYNFRED	Gravesend 1904	S West, Gravesend.
LADY JEAN	Rochester 1923	R & W Paul, Ipswich.
LEOFLEDA	Harwich 1914	E Marriage & Sons, Colchester.
LEONARD PIPER	Greenwich 1910	S West, Gravesend.
LESLIE WEST	Gravesend 1900	L & R, Strood.
LORD ROBERTS	Maldon 1900	A M & H Rankin, Stambridge.
MAJOR	Harwich 1897	Anderson, Whitstable.
MARIE MAY	Maidstone 1920	L & R, Strood.
NELLIE PARKER	Ipswich 1899	Peter Horlock
ORINOCO	Greenwich 1895	Cranfield Bros., Ipswich.
OXYGEN	Rochester 1895	R Sully, London.
PUDGE	Rochester 1922	L & R, Strood.
RAYBEL	Sittingbourne 1920	R Sully, London.
REDOUBTABLE	Harwich 1915	M F Horlock Ltd., Mistley.
REMERCIE	Harwich 1908	M F Horlock Ltd., Mistley.
SCONE	Rochester 1919	L & R, Strood.
THALATTA	Harwich 1906	R & W Paul, Ipswich.
THYRA	Maidstone 1913	L & R, Strood.
TOLLESBURY	Sandwich 1901	R & W Paul, Ipswich.
VARUNA	Greenwich 1907	L & R, Strood.
WILL EVERARD	Gt. Yarmouth 1925	F T Everard Ltd., Greenhithe.

Totals 44

(c) Motor Barges

Name	Built	Owner
ARCTIC	Greenwich 1897	L & R, Strood.
ADIEU	Mistley 1929	M F Horlock Ltd., Mistley.
ATRATO	Wivenhoe 1896	L & R, Strood.
AZIMA	Whitstable 1898	Daniels Bros., Whitstable.
BRITISH KING	Maldon 1901	L & R, Strood.
THE BROWNIE	Gravesend 1901	L & R, Strood.
C.I.V.	Sittingbourne 1901	T Allsworth, Queenborough.
CELTIC	Papendrecht 1903	A Sheaf, Newport, I.O.W.
CHARLES BURLEY	Sittingbourne 1902	C Burley, Sittingbourne.
CLENWOOD	Borstal 1911	L & R, Strood.
CIRCE	Southampton 1899	L & R, Strood.
CORONATION	Ipswich 1903	L & R, Strood.

APPENDIX B, Cont.

(c) Motor Barges, Cont.

CONVOY	Rye 1900	R Sully, London
CYGNET	Frindsbury 1881	E Mumford, Barling, Essex.
DEE	Sittingbourne 1898	T Allsworth, Queenborough.
DECIMA	Southampton 1899	Tester Bros., Greenhithe.
ESTHER	Faversham 1900	Cremer, Faversham.
FRED EVERARD	Gt. Yarmouth 1926	F T Everard Ltd., Greenhithe.
GRETA	Brightlingsea 1892	L & R, Strood.
GAZELLE	Krimpen D'Ysell 1904	Vectis S S Co., Newport, IOW.
GERALD	Faversham 1899	Vectis S S Co., Newport, IOW.
GWYNRONALD	Greenwich 1908	S West, Gravesend.
H.T.WILLIS	Sittingbourne 1889	L & R, Strood.
IMPERIAL	Greenwich 1902	L & R, Strood.
IRONSIDES	Grays 1900	L & R, Strood.
KATHLEEN	Gravesend 1901	Daniels Bros., Whitstable.
KING	Greenwich 1901	L & R, Strood.
KENTISH HOY	Krimpen D'Ysell 1904	A Gamman, Chatham.
LAWSON	Sittingbourne 1878	Shaws of Kent, Rainham, Kent.
M.N.	Rochester 1893	L & R, Strood.
LANCASHIRE	Teynham 1900	R Lapthorn, Hoo, Kent.
MARIA	Sittingbourne 1898	S J Ellis, Sittingbourne.
MAID OF CONNAUGHT	Greenwich 1899	Leigh Building Supply Co.
MAIN OF MUNSTER	Sittingbourne 1898	Wakeley Bros., Southwark.
MARY ANN	Milton 1900	Mackenzie, Gravesend.
MAYOR	Sandwich 1899	L & R, Strood.
MELISSA	Southampton 1899	L & R, Strood.
MOUSME	Maidstone 1924	L & R, Strood.
MILDREDA	Ipswich 1900	G Andrews, Sittingbourne.
MOULTONIAN	Littlehampton 1919	Williams S S Co., Southampton
NIAGARA	Wivenhoe 1898	L & R, Strood.
NINETY NINE	Frindsbury 1900	C Burley, Sittingbourne.
NELLIE	Faversham 1901	R Lapthorn, Hoo, Kent.
NORTHDOWN	Whitstable 1924	L & R, Strood.
OCEANIC	Papendrecht 1902	Vectis S S Co., Newport, IOW.
OLIVE MAY	Sittingbourne 1920	S West, Gravesend.
P.A.M.	Rochester 1900	Wakeley Bros., Southwark.
PERSEVERE	Murston 1899	Maynard, Brightlingsea.
PIMLICO	Borstal 1914	L & R, Strood.
PINUP	Greenwich 1921	L & R, Strood.
PREMIER	Milton 1900	E P Hill, Dover.
PRIDE OF SHEPPEY	Faversham 1900	G Andrews, Sittingbourne.
PHOENICIAN	Sittingbourne 1922	R Sully, London.
QUEEN	Sittingbourne 1906	L & R, Strood.
R.B.	Rochester 1903	Vectis S S Co., Newport, IOW.
RAVEN	Rochester 1904	L & R, Strood.
REMINDER	Mistley 1929	M F Horlock Ltd., Mistley.
RESOURCEFUL	Mistley 1930	M F Horlock Ltd., Mistley.
SAXON	Southampton 1898	L & R, Strood.
SCOTSMAN	Sittingbourne 1899	R Sully, London.
SUCCESS	Papendrecht 1903	L & R, Strood.
SURREY	Greenwich 1901	L & R, Strood.
SIR RICHARD	Gravesend 1900	L & R, Strood.
SPARTAN	Southampton 1898	L & R, Strood.
SQUAWK	Strood 1914	L & R, Strood.
SERVIC	Krimpen D'Ysell 1904	L & R, Strood.
THISTLE	Port Glasgow 1895	L & R, Strood.

Appendix B, Cont.

(c) Motor Barges, Cont.

TRILBY	Rebuilt	Sittingbourne 1947	R Sully, London.
TROJAN		Southampton 1898	A Johnson, Sheerness.
VIROCCA		Southampton 1899	Shaws of Kent, Rainham, Kent.
VICUNIA		Greenwich 1912	Daniels Bros., Whitstable.
VICTOR		Ipswich 1895	L & R, Strood.
VICTORY		Conyer 1901	T Schmidt, Queenborough.
VIGILANT		Ipswich 1904	L & R, Strood.
VIKING		Rochester 1895	L & R, Strood.
WATER LILY		Rochester 1902	Wakeley Bros., Southwark.
WINDWARD		Sittingbourne 1897	Wakeley Bros., Southwark.
WESTALL		Strood 1913	L & R, Strood.
WYVENHOE		Wivenhoe 1898	L & R, Strood.
WESSEX		Littlehampton 1912	Williams S S Co., Southampton.
WILFRED		Greenwich 1926	L & R, Strood.

Totals 81

(d) Summary - Where the Barges were built

Place	Number		%	
Ipswich/Harwich/Mistley	38			
Wivenhoe/Brightlingsea/Maldon/Paglesham	12	50	31	
Medway/Faversham/Sittingbourne/Whitstable		63	40	
Thames, Gravesend and above		23 136	14	85
Sandwich/Rye/Littlehampton	7			
Southampton	7	14	9	
Great Yarmouth		2	1	
Port Glasgow		1	1	
Papendrecht/Krimpen D'Ysell		6 23	4	15
Totals		159		100

(e) Summary - Where the Barges were owned

Place	Number		%	
Within Ipswich/Dover limits	152		96	
I.O.W. and Southampton		7 159	4	100

Source: Cooper (1955) with minor corrections.

Appendix C.

Sailing Barges owned by R. & W. Paul Ltd., Ipswich.

Name	Built	O.N.	R.T.	Notes
ANDROMEDA	1867 Ipswich	58531	40	Bought 1877. Lost 1907. £281 insurance paid.
ALBATROSS	1869 Ipswich	58536	48	Bought 1896 for £218. Sold 1918 for £411.
DEBEN	1874 Ipswich		78	Bought 1911 for £295. Damaged in collision 1915: reduced to a lighter.
MABEL	1875 Ipswich	65375	49	Bought 1875. Sold 1919 for £400.
LORD BEACONSFIELD	1878 Sittingbourne	75279	58	Bought 1907 for £200 and £110 spent on repairs. Sold 1917 for £400.
INTREPID	1879 Ipswich	81993	57	Bought 1903 for £283 from underwriters and repaired for £116. Sold 1903 for £500.
EMILY	1882 Ipswich		57	Last trading voyage 1940. Sold 1949 for £20 as a lighter.
SOUTHERN BELLE	1885 Ipswich	89661	80	Traded regularly to the Rhine. Bought 1909 for £251 and £171 spent on her. Damaged in collision 1930: given to Ipswich Sea Scouts.
MISTLEY	1889 Harwich	91336	64	Bought 1912 for £500. Sunk in collision 1950 Raised; unseaworthy; sold for lightering.
ORWELL	1889 Ipswich	95310	51	Bought new for £940. Sold 1937 for £325. Traded until 1950.
COLNE	1890 Ipswich	97678	56	Bought new for £950. Sold 1930; house barge 1946.
PEGASUS	1891 Strood	98810	77	Bought 1912 for £645. Lost 1919. Claim of £900 met by Thames Estuary S.B. Assoc.
STOUR	1891 Ipswich		55	Bought new for £1,000. Sold 1932 for £250. Lost 1935.
WAVENEY	1892 Ipswich	97685	54	Bought new for £1,000. Sold 1933 for £250 to be a barge yacht.
IDA	1895 Ipswich	104053	40	Bought new for £979. Sold 1948 for £70 for lightering.

Appendix C, Cont.

HILDA	1895	Ipswich	104054	57	Bought 1910 for £400. Sunk in collision 1927: £1,300 TL paid.
ANGLIA	1896	Ipswich	110029	54	Bought 1940 for £700. Rebuilt 1946. Sold 1961 for £1,200 for conversion to yacht.
ALICE MAY	1898	Harwich	109205	70	Bought 1927 for £787. Sold 1949 for a house barge but used in trade 1957-70.
TOLLESBURY	1901	Sandwich	110315	70	Bought 1912 for £500. 80 bhp diesel fitted 1950 at cost of £4,636. Sold 1965 to be a barge yacht.
DANNEBROG	1901	Harwich	109881	71	Bought 1967 and as a motor barge traded until 1974.
MARJORIE	1902	Ipswich	113753	56	Bought new for £1,216. Sold 1960 for £1,000.
AUDREY	1903	Ipswich	113756	58	Bought new for £1,221. Sunk in collision 1941
DORIS	1904	Ipswich	113759		Bought new for £1,235. Lost by mine 1940. £970 compensation paic
WOLSEY	1904	Borstal	118205	65	As ROBERT POWELL in 1907 wrecked Newhaven. Wreck bought for £190 from underwriters and rebuilt at Ipswich. Sold 1949 for £650 to be a barge yacht.
GRAVELINES I	1905	Ipswich	120785	77	Built by Pauls as ENA. Sold 1905 for £1,450 to Dunkirk, re-named GRAVELINES I. In 1912 re-purchased for £800. 80 bhp diesel fitted 1949 at total cost of £3,968. Sails removed 1960. Run down and lost 1965.
BIJOU	1906	Ipswich	122971		Built by Pauls as HILDA. Sold 1907 to France for £1,400 and re-named GRAVELINES I. Re-purchsed for £800 in 1912; re-named BIJOU. Lost 1940 by fire due to enemy action: compensation of £620 paid.
THALATTA	1906	Harwich	116179	67	Bought 1933 for £450. A further £150 spent on repairs. Sold 1966 to East Coast Sail Trust.

Appendix C, Cont.

ENA	1906	Harwich	122974	73	Bought new; total cost £1,355. 80 bhp diesel fitted 1948. In trade to 1974.
JOCK	1908	Ipswich	122975	86	Bought new for £1,415 100 bhp diesel fitted 1947. Sails removed 1958. Sold 1973 to be a barge yacht.
SERB	1916	East Greenwich	140324	75	Bought 1928 for £725. Sold 1949 for £1,375. Foundered 1951.
LADY DAPHNE	1923	Rochester	127276	85	Bought 1937 for £1,600. Re-engined 1947 with 100 bhp diesel. Sails removed 1958. Last traded 1973.
LADY JEAN	1923	Rochester	148366	86	Bought 1937 for £1,850. Repairs cost £150. Re-engined 1947 with 100 bhp diesel. Sails removed 1958. Last traded 1973.
AIDIE	1925	Brightlingsea		114*	Hull cost £2,953. Fitted out at Ipswich for £1,148. Lost at Dunkirk 1940. £3,495 compensation paid.
BARBARA JEAN	1925	Brightlingsea		114*	Hull cost £2,953. Fitted out at Ipswich for £1,148. Lost at Dunkirk 1940. £3,495 compensation paid.

* Variously given as 114, 119 and 144.

Source: Finch (1979).

Appendix D.

The Harwich Barge Alliance Insurance Association Valuation List 1910.

Class A

Name	Age	Value
OLYMPIA	8	£1,800
LEADING LIGHT	4	£1,650
NELL JESS	8	£1,650
CLYMPING	1	£1,600
BOAZ	2	£1,600
KINDLY LIGHT	5	£1,500
ATHOLE	18	£1,500
DANNEBROG	9	£1,350
HAROLD	10	£1,350
EVELYN	10	£1,275
GOLDFINCH	16	£1,200
TERESA	18	£1,200
DIANA	19	£1,200
BRITANNIC	19	£1,200
MEDINA	4	£1,125
JUSTICE	15	£1,050
GENESTA (of Harwich)	24	£1,050
SUSSEX BELLE	18	£1,050
BRITANNIA	17	£1,050
ADA GANE	28	£ 975
ALICE WATTS	35	£ 900
HESPER	31	£ 900
IVY P	17	£ 900
LAURA	27	£ 900
MATILDA UPTON	23	£ 900
LORD LANSDOWNE	20	£ 900
PRINCESS MAY (of Littlehampton)	17	£ 900
PRINCESS MAY (of Poole)	16	£ 900
ROSIE	24	£ 900
STARTLED FAWN	42	£ 825
UNITY (of Ipswich)	25	£ 825
MYSTERY (of Harwich)	36	£ 825
COCK O' THE WALK	34	£ 750
DOVERCOURT	45	£ 750
QUEEN MAB	22	£ 750
FLOWER OF ESSEX	53	£ 750
JAMES GARFIELD	19	£ 750
LILY (of Rye)	37	£ 750
PEARL (of Ipswich)	21	£ 700
DAVENPORT	33	£ 675
NELLIE	28	£ 675
GAZELLE	33	£ 675
FEARLESS	34	£ 675

Class A, Cont.

Name	Age	Value
YULAN	31	£ 600
ROSE BUD	35	£ 600
SUSIE	32	£ 600
MAY QUEEN	40	£ 600
MAZEPPA	23	£ 600
HARWICH	43	£ 600
AZARIAH	32	£ 600
BIRTHDAY	31	£ 600
EASTERN BELLE	27	£ 600
ENTERPRISE (of Harwich)	36	£ 600
HUDSON	32	£ 500
GRAVELINES III	19	£ 500
BLANCHE	26	£ 450
MYSTERY (of Faversham)	35	£ 450

Class B

Name	Age	Value
VIGILANT	6	£1,250
ALDERMAN	5	£1,200
DEFENDER	10	£1,200
DORCAS	12	£1,200
EDITH MAY	4	£1,200
MAYOR	11	£1,200
MEMORY	6	£1,200
PRINCESS	8	£1,200
WATERLILY	8	£1,200
CHARLES AND ANN	56	£ 375
TERTIUS	66	£ 375
TIT-BITS	9	£ 375
THREE SISTERS	45	£ 375
CAMBRIA (of Colchester)	33	£ 375
GOOD INTENT	117	£ 300

Source: Compiled from Benham (1951), Benham & Finch (1983) and Horlock (1977).

Appendix E.

Bargeowners who operated barges as an adjunct to another business.

Trade	Organisation
Explosives/chemicals	ICI
	Fisons
Millers/Maltsters	Cranfield Bros.
	R. & W. Paul Ltd.
	E. Marriage & Son Ltd.
	A. M. & H. Rankin Ltd.
	Owen Parry Ltd.
Building materials	Wills & Packham Ltd.
	APCM
	C. Burley
	Eastwoods Ltd.
	Smeed Dean & Co. Ltd.
	John Sadd & Son
	Eldred Watkins
	Leigh Building Supply Co.
Farming	Clement Parker
	Walter Wrinch
	W. H. Theobald

Source: Benham (1951) and Author's records.

Appendix F.

Some Steamers owned by R. & W. Paul Ltd., Ipswich.

Name	Built	O.N.	NRT	Notes
CROSSBILL	1912 Gt. Yarmouth	140103	127	Bought 1920 for £23,187 Sold 1944 to Ramsey S S Co. Loaded 260/280 * tons heavy grain.
OARSMAN	1919 Northwich	136088	117	Bought 1923 for £6,740 Went missing 2/32 after leaving Rotterdam with maize. All 7 $ crew lost.
OXBIRD	1916 Gt. Yarmouth	132928	112	Bought 1924. Sold 1946. Loaded 260/280 tons heavy grain.
CONISCRAG	1923 Gt. Yarmouth	147861	152	Bought 1925 from Beynon Shipping Co., Ipswich. Sold 1933. Loaded 320/340 tons heavy grain.
GOLDCREST	1924 Goole	147248	196	Bought 1929. Sold 1934. Loaded nearly 500 tons.
SPEEDWELL (2)	1891 Paisley	97679	52	Newbuilding. Sold 1922.
SWALLOW (1)	1892 Paisley	97683	47	Newbuilding cost £3,050 Sold 1904 to Algiers for £2,050.
SEAGULL	1893 Paisley	97688	47	Newbuilding cost £3,225 Mined Folkestone 1916.
SWIFT (2)	1904 Paisley	113760	60	Newbuilding cost £3,305 = Sold 1917 for £10,152
SWALLOW (2)	1905 Paisley	120781	63	Newbuilding cost £3,225 Sold 1918 for £10,152.
TERN	1905 Paisley	120783	61	Newbuilding cost £3,225 Sold 1912.
FIRECREST	1929 Aberdeen	149559	259	Newbuilding. Sold 1953. Scrapped 1959. Designed to load the max. cargo for Boal Quay, King's Lynn. Loaded 560/580 tons.

* Finch also says 325.
\+ Finch also says £6,470.
$ Finch also says 8.
= Finch also says £3,225.

Source: Finch (1979).

Appendix G.

UK Fleet, 1950-1988, in million tons for vessels over 100 gross tons and as a percentage of World Fleet

Year	GRT	%
1950	18.2	21.5
1951	18.6	21.3
1952	18.6	20.7
1953	18.6	19.9
1954	19.0	19.5
1955	19.4	19.2
1956	19.5	18.6
1957	19.9	18.0
1958	20.3	17.2
1959	20.8	16.6
1960	21.1	16.3
1961	21.5	15.8
1962	21.7	15.5
1963	21.6	14.8
1964	21.5	14.0
1965	21.5	13.4
1966	21.5	12.6
1967	21.7	11.9
1968	21.9	11.3
1969	23.8	11.3
1970	25.8	11.4
1971	27.3	11.1
1972	28.6	10.7
1973	30.2	10.4
1974	31.6	10.1
1975	33.2	9.7
1976	32.9	8.9
1977	31.6	8.0
1978	30.9	7.6
1979	28.0	6.8
1980	27.1	6.5
1981	25.4	6.0
1982	22.5	5.3
1983	19.1	4.5
1984	15.9	3.8
1985	14.3	3.4
1986	11.6	2.8
1987	8.5	2.1
1988	8.3	2.0

Source: Lloyd's Register of Shipping.

Appendix H.

World and UK Fleets, 1973-1988, in million tons for vessels over 100 gross tons

Year	World Fleet		UK Fleet	
	GRT	DWT	GRT	DWT
1973	290	452	30	47
1974	311	494	32	50
1975	342	553	33	53
1976	372	608	33	54
1977	394	649	32	52
1978	406	670	31	50
1979	413	681	28	45
1980	420	691	27	44
1981	421	697	25	41
1982	425	702	23	36
1983	423	695	19	30
1984	419	683	16	24
1985	416	674	14	22
1986	405	639	12	16
1987	403	637	9	11
1988	403	637	8	11

Source: Lloyd's Register of Shipping.

Appendix I.

World Fleet and World Seaborne Trade, 1970-1987, in million tons for Fleet and million metric tons for Trade

Year	Fleet DWT	1970 = 100	Trade Metric tons	1970 = 100
1970	383	100	2,482	100
1975	553	144	3,047	123
1980	691	180	3,606	145
1985	674	176	3,293	133
1986	639	167	3,362	135
1987	637	166	3,418	138

Source: HOPE, R. (1990) p 445.

Appendix J.

English Coastal Motor Barge newbuildings, 1950-89 incl.

Year	Name	GRT	Owner
1950	FLANAGAN	121	L & R
1951	GOLD	120	L & R
1951	NAUGHTON	120	L & R
1952	SILVER	120	L & R
1952	MILLIGAN	124	L & R
1953	MALONEY	124	L & R
1954	SEACLOSE	110	Vectis Shipping, Newport, IOW.
1955	PEPITA	137	L & R
1955	JOSH FRANCIS	137	L & R
1955	NICOLA DAWN	137	L & R
1956	ACTION	177	L & R
1957	RIVERCLOSE	110	Vectis
1958	LAFFORD	138	Palmer, Gravesend.
1958	CECIL GILDERS	137	L & R
1958	BASTION	172	L & R
1959	MAGUDA	170	L & R
1960	NEWCLOSE	118	Vectis
1961	ANDESCOL	191	L & R
1961	ROAN	138	L & R
1961	ROBUST	133	L & R
1961	ROCK	125	L & R
1962	RODENT	127	L & R
1962	MURIUS	125	Vectis
1963	CAPTION	189	L & R
1963	DICTION	189	L & R
1963	ELATION	212	L & R
1963	FUNCTION	212	L & R
1963	ROER	174	L & R
1963	FRIVOLITY	199	F T Everard Ltd., Greenhithe.
1963	FESTIVITY	199	F T Everard
1964	GILLATION	195	L & R
1964	HORATION	205	L & R
1964	BENCOL	204	L & R
1964	LADY SERENA	200	Thos. Watson (Shipping) Ltd., Rochester.
1965	LADY SARITA	200	Thos. Watson
1965	LADY SHEENA	200	Thos. Watson
1965	HOONESS	196	R Lapthorn, Hoo.
1965	EDWARD STONE	196	R Lapthorn
1965	ROFFEN	172	L & R
1965	ROGUL	172	L & R
1966	ROHOY	172	L & R
1966	ROINA	172	L & R
1966	FIXITY	200	F T Everard
1966	WILLMARY	199	Antler Ltd., London.
1967	IGNITION	199	L & R
1967	JUBILATION	199	L & R
1968	KIPTION	198	L & R
1968	LOACH	191	L & R
1968	LOBE	191	L & R
1968	FORMALITY	200	F T Everard
1968	FUTURITY	199	F T Everard

Appendix J, Cont.

Year	Name	GRT	Owner
1968	CONTINENT	259	Capt. F Alberts, Barendrecht. *
1968	TOWER VENTURE	199	Tower Shipping Ltd., London.
1968	TOWER CONQUEST	200	Tower Shipping
1969	TOWER DUCHESS	200	Tower Shipping
1969	TOWER MARIE	199	Tower Shipping
1969	TOWER PRINCESS	200	Tower Shipping
1969	WILKS (I)	199	Wilks Shipping, London.
1969	AMBIENCE	392	L & R
1969	BLATENCE	392	L & R
1969	CADENCE	392	L & R
1969	ELOQUENCE	392	L & R
1969	FAIENCE	424	L & R
1969	GARDIENCE	424	L & R
1969	LIBATION	198	L & R
1970	DOMINENCE	425	L & R
1970	HALCIENCE	424	L & R
1970	LOCATOR	191	L & R
1970	LADY SANDRA	199	Thos. Watson
1970	WIGGS (I)	199	Wilks Shipping
1970	WIB (I)	199	Wilks Shipping
1970	WIS (I)	199	Wilks Shipping
1971	SUBRO VENTURE	196	Sully Bros., London.
1971	COMMODORE TRADER	460	Commodore Transporters, Portsmouth.
1971	LODELLA	196	L & R
1971	TOWER HELEN	425	Tower Shipping
1971	FERRYHILL II	199	Aberdeen Coal & Shipping, Aberdeen.
1971	JANA WESTON	500	Weston Shipping, London.
1971	CATRINA WESTON	425	Weston Shipping
1972	SOPHIA WESTON	425	Weston Shipping
1972	TOWER JULIE	499	Tower Shipping
1972	FORDONNA	499	Tower Shipping
1973	MARY WESTON	496	Weston Shipping
1974	SEACOMBE TRADER	480	Alexandra Towing Co., Liverpool.
1974	SEALAND TRADER	499	Alexandra Towing
1974	EDWARD BROUGH	425	Weston Shipping
1974	GUY CHIPPERFIELD	425	Weston Shipping
1975	CANDOURITY	499	F T Everard
1975	CONFORMITY	499	F T Everard
1975	INSISTENCE	475	L & R
1975	JUBILENCE	475	L & R
1975	MARGARITA WESTON	250	Weston Shipping
1975	SEABORNE TRADER	499	Alexandra Towing
1976	GRIT	499	F T Everard
1976	CITY	499	F T Everard
1976	WILKS (II)	495	Wilks Shipping
1977	WIS (II)	491	Wilks Shipping
1977	MERSEY TRADER	496	Alexandra Towing
1977	IRWELL TRADER	492	Alexandra Towing
1977	HULL MILLER	427	Spillers Feed & Grain Ltd., London.
1977	GAINSBOROUGH MILLER	427	Spillers

* Netherlands flag until 1970, when sold to Wilks Shipping, London, and re-named WOPPER.

Appendix J, Cont.

Year	Name	GRT	Owner
1978	ALICE P.G.	499	Giles W Pritchard-Gordon, London.
1978	ORDINENCE	470	L & R
1978	NASCENCE	960	L & R
1978	MILITENCE	960	L & R
1979	PIQUENCE	945	L & R
1979	QUIESCENCE	945	L & R
1979	LONDON MILLER	967	Spillers
1979	BIRKENHEAD MILLER	967	Spillers
1979	WIB (II)	498	Wilks Shipping
1980	LU	497	Wilks Shipping
1980	EMILY P.G.	499	Giles Pritchard-Gordon
1980	TARQUENCE	499	L & R
1981	URGENCE	699	L & R
1981	VIBRENCE	699	L & R
1981	RIVER DART	499	General Freight Co., London.
1981	RIVER TAMAR	498	General Freight
1981	WIGGS (II)	497	Wilks Shipping
1982	WIRIS	497	Wilks Shipping
1982	HOO VENTURE	499	R Lapthorn
1982	CRESCENCE	493	L & R
1983	ARDENT	498	Franco-British Chartering, London.
1983	HOOCREEK	499	R Lapthorn
1983	HOO PLOVER	498	R Lapthorn
1983	WHITONIA	499	R Lapthorn
1983	TURBULENCE	699	L & R
1983	STRIDENCE	699	L & R
1983	AMBIENCE (II)	493	L & R
1983	BOISTERENCE	536	L & R
1984	HOO WILLOW	498	R Lapthorn
1984	HOO LAUREL	794	R Lapthorn
1984	HOOPRIDE	794	R Lapthorn
1985	HOO TERN	794	R Lapthorn
1985	BETTY-JEAN	794	R Lapthorn
1985	DOWLAIS	794	Harris & Dixon (Shipbrokers), London.
1985	GWYN	794	Graig Shipping PLC, Cardiff.
1986	HOO MARLIN	794	R Lapthorn
1986	HOO DOLPHIN	794	R Lapthorn
1986	HOO SWAN	794	R Lapthorn
1986	HOOCREST	794	R Lapthorn
1988	HOO FINCH	794	R Lapthorn
1989	HOO ROBIN	794	R Lapthorn
1989	HOO SWIFT	794	R Lapthorn
1989	HOO MAPLE	794	R Lapthorn
1989	HOO BEECH	794	R Lapthorn

Source: Author's records.

Appendix K.

English Coastal Motor Barge fleet* as at Year End

1972

Owner/operator	No. of Vsls.	Total GRT	Total DWT
L & R	31	7,383	11,016
F T Everard	4	794	1,518
Wilks Shipping	5	1,056	2,075
Tower Shipping	7	1,923	3,714
T J Palmer	3	549	773
Thos. Watson	4	798	1,509
Other (6)	10	3,162	4,937
Totals	64	15,665	25,542

1977

Owner/operator	No. of Vsls.	Total GRT	Total DWT	
L & R	48	11,829	17,853	Incl. Sully/Palmer/Spillers.
F T Everard	6	2,393	4,379	
Tower Shipping	8	2,422	4,619	
Other (8)	23	8,906	14,028	
Totals	85	25,550	40,879	

1982

Owner/operator	No. of Vsls.	Total GRT	Total DWT	
L & R	43	18,074	28,657	Incl. Gardscreen Shipping.
R Lapthorn	3	1,497	3,672	
F T Everard	6	2,393	4,379	
Wilks Shipping	6	2,961	6,508	
Tower Shipping	4	1,623	2,885	
Sully Bros.	7	1,487	2,545	Incl. Palmer.
Other (8)	17	6,674	11,407	
Totals	86	34,709	60,053	

1987

Owner/operator	No. of Vsls.	Total GRT	Total DWT	
L & R	17	10,632	19,498	Incl. Gardscreen/Marsh.
R Lapthorn	13	8,844	17,371	
F T Everard	4	1,996	3,520	
Wilks Shipping	3	1,491	3,420	
Tower Shipping	4	1,922	3,295	
Sully Bros.	11	4,249	7,507	Incl. Palmer/Breydon Marine.
Other (14)	17	8,098	14,002	
Totals	69	37,232	68,613	

Appendix K, Cont.

1992

Owner/operator	No. of Vsls.	Total GRT	Total DWT
L & R	14	9,572	17,893
R Lapthorn	18	12,814	24,377
F T Everard	4	3,727	5,640
Other (17)	24	22,277	37,781
Totals	60	48,390	85,691

Summary

End	No. of Vsls.	Total GRT	Total DWT	Average Vsl. GRT	Average Vsl. DWT	DWT Index
1972	64	15,665	25,542	245	399	100
1977	85	25,550	40,879	301	481	160
1982	86	34,709	60,053	404	698	235
1987	69	37,232	68,613	540	994	269
1992	60	48,390	85,691	807	1,428	335

* Excludes purely Thames estuarial craft of under 100 GRT.

Source: Author's records.

Appendix L.

English Coastal Motor Barge newbuildings - Builders

Builder	No.	Built	First/Last
The Yorkshire Dry Dock Co. Ltd., Hull.	30		1974/1989
J. R. Hepworth & Co. (Hull) Ltd., Paull.	7		1967/1971
Cochrane Shipbuilders, Ltd., Selby.	4		1981/1983
Drypool Engineering & Drydock Ltd., Hull.	4		1969/1969
R. Dunston (Hessle) Ltd., Hessle.	2	47	1963/1963
Clelands Shipbuilding Co. Ltd., Wallsend.	10		1964/1978
T. Mitchison Ltd., Gateshead.	1	11	1956
		58	
J. W. Cook & Co. (Wivenhoe) Ltd., Wivenhoe.	15		1955/1981
Cubow Ltd., Woolwich.*	3		1978/1983
London & Rochester Trading Co. Ltd., Strood.	3		1964/1969
Bay Wharf Construction Co., Greenwich.*	2	23	1968/1968
Fellows & Co. Ltd., Gt. Yarmouth.+	3		1963/1966
J. Samuel White & Co., Cowes, I.O.W.	2		1964/1964
McTay Marine Ltd., Bromborough.	1	6	1977
Conoship (Combination Northern Shipbuilders), The Netherlands.	26		1959/1976
A/S. Nordsøvaerftet, Ringkøbing, Denmark.	8		1979/1983
Malta Drydocks Corporation, Malta.	2	36	1970/1970
		123	

* Owned by London & Rochester Trading Co. Ltd.
\+ Owned by F. T. Everard Ltd.

Excludes craft limited to purely Thames estuary trading (e.g. L & R 'R' class) and craft owned by Vectis Shipping, Newport, I.O.W.

Source: Author's records.

Conoship (Combination Northern Shipbuilders) Members as at 3/1966:

N.V. Scheepswerf Appingedam v/h A. Apol C.V., Appingedam.
Scheepswerf Barkmeijer N.V., Vierverlaten.
Scheepswerf & Machinefabriek Tj. Barkmeijer, Stroobos.
Scheepswerf Bodewes Gruno N.V., Foxhol.
N.V. Scheepswerf Ton Bodewes, Franeker.
Bodewes Scheepswerf Volharding Foxhol N.V., Foxhol.
Scheepswerf Bijlholt N.V., Foxhol.
N.V. Scheepswerf G. Bijlsma & Zn., Wartena.
N.V. Scheepswerf Gebrs. Coops, Hoogezand.
N.V. Scheepsbouwbedrijf v/h Th. J. Fikkers, Foxhol.
Grol's Scheepswerven N.V., Zuidbroek.
Scheepswerf Hoogezand N.V., Hoogezand.
Scheepswerf Hoogezand N.V., Bergum.
Scheepswerf Voorwaarts N.V., Hoogezand.

Appendix M.

UK Internal purchasing power of the £

Year	Year in which purchasing power was 100p							
	1910	1930	1950	1970	1975	1980	1985	1990
1910	100.0	123.8	278.6	570.2	1051.2	2057.1	2913.1	3886.9
1930	80.8	100.0	225.0	460.6	849.0	1661.5	2352.9	3139.4
1950	35.9	44.4	100.0	204.7	377.4	738.5	1045.7	1395.3
1970	17.5	21.7	48.9	100.0	184.3	360.8	510.9	681.6
1975	9.5	11.8	26.5	54.2	100.0	195.7	277.1	369.8
1980	4.9	6.0	13.5	27.7	51.1	100.0	141.6	188.9
1985	3.4	4.3	9.6	19.6	36.1	70.6	100.0	133.4
1990	2.6	3.2	7.2	14.7	27.0	52.9	74.9	100.0

Source: Extracted from The Economist Pocket Britain in Figures, 1997 Ed, pp 56 and 57.

Appendix N.

UK Interest rates in % p.a.

End Year	Base Rate	Inter-bank 3-month	Government Bonds 5-year	20-year
1971	4.50	4.75	6.69	8.90
1972	7.50	9.06	7.55	8.90
1973	13.00	16.31	10.41	10.71
1974	12.00	12.83	12.51	14.77
1975	11.00	11.19	10.57	14.39
1976	14.00	14.63	12.06	14.43
1977	7.50	6.75	10.08	12.73
1978	12.50	12.63	11.32	12.47
1979	17.00	17.06	11.73	12.99
1980	14.00	14.88	13.84	13.79
1981	14.50	15.75	14.65	14.74
1982	10.25	10.63	12.79	12.88
1983	9.00	9.41	11.19	10.81
1984	9.75	10.13	11.29	10.69
1985	11.50	11.94	11.13	10.62
1986	11.00	11.13	10.01	9.87
1987	8.50	9.00	9.36	9.48
1988	13.00	13.19	9.66	9.36
1989	15.00	15.16	10.73	9.58
1990	14.00	14.00	12.08	11.08
1991	10.50	11.00	9.67	9.65
1992	7.00	7.25	7.25	9.31

Source: Extracted from The Economist Pocket Britain in Figures, 1997 Ed, p 69.

Appendix O.

Voyages and cargoes - WIS (I) 1970.

Voy.	Month	From	To	Cargo
3	Oct.	Lowestoft	Antwerp	Barley
4	Oct.	Antwerp	Ramsgate	Cattle Food
5	Oct.	Lowestoft	Rotterdam	Steel & LGM
6	Oct.	Amsterdam	Lowestoft	Soya Meal
7	Oct.	Lowestoft	Rotterdam	Steel Pipes
8	Oct.	Rotterdam	Colchester	Soya Meal
9	Oct.	St. Valery sur Somme	Grays	Flintstones
10	Nov.	Dunkirk	Lowestoft	Steel Pipes
11	Nov.	Lowestoft	Rotterdam	Steel Pipes
12	Nov.	Rotterdam	Norwich	Maize
13	Nov.	Dunkirk	Lowestoft	Steel Pipes
14	Nov.	Rotterdam	Gt. Yarmouth	Maize
15	Nov.	Amsterdam	Gt. Yarmouth	Wheat
16	Dec.	Amsterdam	Gt. Yarmouth	Wheat
17	Dec.	Gt. Yarmouth	Zaandam	Wastepaper
18	Dec.	Amsterdam	Gt. Yarmouth	Wheat
19	Dec.	Norwich	Ostend	Scrap
20	Dec.	Antwerp	Whitstable (diverted from Rochford)	Wheat

Voyages and cargoes - WIGGS (I) 1970.

Voy.	Month	From	To	Cargo
1	April	Sunderland	Perth	Limestone
2	April	Sunderland	Perth	Limestone
3	April	Sunderland	Perth	Limestone
4	May	Newburgh	Barking	Stone
5	May	Tilbury	Lowestoft	Timber
6	May	Caen	Bow Creek	Steel
7	May	Tilbury	Ipswich	Maize
8	May	Greenwich	Merksem	Maize Feed
9	May	Antwerp	Ipswich	Am. Sulphate
10	May	Rotterdam	Battersea	Maize
11	May	Tilbury	Wijk bij Duurstede	Wheat Feed
12	June	Rotterdam	Battersea	Maize
13	June	Tilbury	Rochford	Wheat
14	June	Rochester	Goole	Scrap
15	June	Rotterdam	Kings Lynn	Rye
16	June	Kings Lynn	Leeuwarden	Beans
17	June	Antwerp	Rochford	Wheat
18	June	Rowhedge	Rouen	Steel
19	July	Bonnieres	Norwich	Maize
20	July	Rotterdam	Silvertown	Denat. Wheat
21	July	Rotterdam	Battersea	Maize
22	July	Rotterdam	Mistley	Maize
23	Aug.	Rotterdam	Le Havre	Logs
24	Aug.	Rouen	Isleworth	Crude Rubber
25	Aug.	Rouen	Isleworth	Crude Rubber

Source: Author's records.

Appendix P.

Voyages and cargoes - WOPPER 1971/72.

Voy.	Month	From	To	Cargo
17	April	Antwerp	Ipswich	Urea
18	April	Antwerp	London	Wheat
19	April	Ghent	Dagenham	Steel
20	April	Greenwich	Duisburg	Scrap
21	May	Rotterdam	Gt. Yarmouth	Maize
22	May	Barking	Rotterdam	Scrap
23	May	Rotterdam	Ipswich	Soya
24	May	Charlton	Amsterdam	Wastepaper
25	May	Amsterdam	Colchester	Soya
26	June	Rotterdam	Battersea	Maize
27	June	London	Dunkirk	LGM
28	June	Dunkirk	London	Steel
29	June	Ghent	Dagenham	Steel
30	June	Rotterdam	Ipswich	Soya
31	June	Ghent	Greenwich	Steel
32	July	Antwerp	Battersea	Maize
33	July	London	Dunkirk	LGM
34	July	Ghent	Greenwich	Steel
35	July	Amsterdam	Gt. Yarmouth	Soya
36	July	Rotterdam	Gt. Yarmouth	Wheat
37	July	Tilbury	Norwich	Barley
38	Aug.	Ghent	Whitby	Steel
39	Aug.	Amble	Ipswich	Stone
40	Aug.	Amsterdam	Colchester	Soya
41	Aug.	Ghent	Greenwich	Steel
42	Aug.	Antwerp	Rochford	Wheat
43	Sept.	Amsterdam	Gt. Yarmouth	Soya
44	Sept.	Thames	Jersey	Cement
45	Sept.	Amsterdam	Gt. Yarmouth	Soya
46	Sept.	Felixstowe	Bremerhaven	LGM
47	Sept.	Rotterdam	Guernsey	LGM
48	Oct.	Antwerp	Perth	LGM
49	Oct.	Newburgh	Ipswich	Stone
50	Oct.	Rotterdam	Burghead	Maize
51	Oct.	Amsterdam	Grimsby	Maize
52	Nov.	Boston	Rotterdam	Peas
53	Nov.	Amsterdam	Wisbech	Soya
54	Nov.	Boston	Schoten	Tic Beans
55	Nov.	Ghent	Colchester	Soya
56	Nov.	Dunkirk	Rowhedge	Fertilizers
57	Dec.	Tilbury	Hull	Barley
58	Dec.	Hull	Whitstable	Wheat
59	Dec.	Rotterdam	Lowestoft	Millet
60	Dec.	Amsterdam	Gt. Yarmouth	Soya
61	Dec.	Amsterdam	Gt. Yarmouth	Soya
62	Dec.	Rotterdam	Norwich	Maize

Appendix P, Cont.

Voy.	Month	From	To	Cargo
63	Jan.	Antwerp	Battersea	Maize
64	Jan.	Rotterdam	Battersea	Maize
65	Jan.	Antwerp	Battersea	Maize
66	Jan.	Tilbury	Ipswich	Wheat
67	Jan.	Antwerp	Gt. Yarmouth	Wheat
68	Feb.	Rotterdam	Gt. Yarmouth	Wheat
69	Feb.	Rotterdam	Battersea	Maize
70	Feb.	Amsterdam	Colchester	Soya
71	Feb.	Rotterdam	Battersea	Maize
72	Feb.	Rotterdam	Battersea	Maize
73	Feb.	Ghent	Battersea	Maize
74	March	Ghent	Battersea	Maize
75	March	Rotterdam	Ipswich	Pellets
76	March	Ghent	Beckingham	Soya
77	March	Antwerp	Ipswich	Urea
78	March	Mistley	Rotterdam	Beans

Source: Wilks Shipping Company Fixture Book and Author's records.

Appendix Q.

Voyages and cargoes - WILKS (II) 1976/77.

Voy.	Month	From	To	Cargo
1	April	Seaham Harbour	Thurrock	Coal
2	April	Rotterdam	Battersea	Maize
3	April	Rotterdam	Teignmouth	Maize
4	April	Teignmouth	Fécamp	Ball Clay
5	May	Rouen	Poole	Barley
6	May	Par	Rotterdam	China Clay
7	May	Rotterdam	Teignmouth	Maize
8	May	Par	Terneuzen	China Clay
9	May	Le Treport	Ayr	Bagged Fertilizers
10	June	Britton Ferry	Ghent	Anthracite Duff
11	July	Rotterdam	Gunness	Maize
12	July	Blyth	Upnor	Coal
13	July	Rotterdam	Wisbech	Maize
14	July	Wisbech	Antwerp	Grass Meal Pellets
15	Aug.	Rotterdam	Goole	LGM
16	Aug.	Immingham	Antwerp	Bulk Fertilizers
17	Aug.	Northfleet	Ghent	Logs
18	Aug.	Dunkirk	Barking	Steel Coils
19	Aug.	Erith	Rouen	Soya Bean Meal
20	Sept.	Rotterdam	Hull	Maize
21	Sept.	Brussels	Goole	Steel and LGM
22	Sept.	Goole	Brussels	Steel and LGM
23	Sept.	Brussels	Goole	Steel and LGM
24	Sept.	Rotterdam	Hull	Wheat
25	Oct.	Ghent	Wisbech	Wheat
26	Oct.	Rotterdam	Gunness	Maize
27	Oct.	Vlaardingen	Grangemouth	Pig Iron
28	Nov.	Rotterdam	Gunness	Maize
29	Jan.	Antwerp	Ipswich	Am. Sulphate
30	Jan.	Antwerp	Boston	Am. Sulphate
31	Feb.	Antwerp	Immingham	Am. Sulphate
32	Feb.	Antwerp	Boston	Am. Sulphate
33	Feb.	Boston	Leith	Bulk Fertilizers
34	March	Seaham Harbour	Peterhead	Limestone
35	March	Seaham Harbour	Fraserburgh	Limestone
36	April	Ghent	Wisbech	Barley
37	April	Appingedam	Selby	Wheat
38	May	Antwerp	Lowestoft	Barley
39	May	Rotterdam	Selby	Pitchcoke
40	May	Flixborough	Antwerp	Steel
41	May	Antwerp	Goole	Am. Sulphate
42	June	Rotterdam	Norwich	Honey in Drums
43	June	Antwerp	Ipswich	Am. Sulphate
44	June	Rotterdam	Norwich	Honey in Drums
45	June	Barking Creek	Hamburg	Scrap
46	July	Hamburg	Kings Lynn	Steel
47	July	Barking Creek	Hamburg	Scrap
48	July	Rotterdam	Selby	Copra
49	July	Selby	Rotterdam	Scrap
50	Aug.	Antwerp	Ipswich	Am. Sulphate
51	Aug.	Antwerp	Gt. Yarmouth	Bulk Fertilizers
52	Aug.	Antwerp	Le Treport	Potash
53	Sept.	Antwerp	Colchester	Bagged Fertilizers
54	Sept.	Antwerp	Le Treport	Potash
55	Sept.	Rouen	Rochford	Wheat
56	Sept.	Rotterdam	Selby	Copra
57	Sept.	Goole	Poole	Coal

Source: Author's records.

Appendix R.

"CONTINENT"

A STATISTICAL STUDY OF

TRADING IN 1968 AND 1969

JCG/1-72.

"CONTINENT"

STATISTICAL INFORMATION

GROSS FREIGHT, LOADING PORT EXPENSES, DISCHARGING PORT EXPENSES, NETT FREIGHT FOR EACH VOYAGE IN 1968 AND IN 1969, IN TOTAL FOR 1968 AND 1969, AND ON AVERAGE IN 1968.

LOADING AND DISCHARGING PORTS VOYAGE BY VOYAGE IN 1968 AND IN 1969.

VOYAGE COSTS OTHER THAN PORT EXPENSES, IN TOTAL, ON AVERAGE, AND AS A PERCENTAGE OF GROSS FREIGHT ON AVERAGE IN 1968.

AVERAGE DAYS PER VOYAGE IN 1968 AND IN 1969.

AVERAGE TIME CHARTER EQUIVALENT DAILY RETURN INCLUDING FUEL OVER ALL TIME, GROSS AND NETT IN 1968 AND IN 1969.

GROSS FREIGHT, LOADING PORT EXPENSES, DISCHARGING PORT EXPENSES, NETT FREIGHT, IN TOTAL AND ON AVERAGE FOR THE 21 CONSECUTIVE CARGOES LOADED AT TERNEUZEN IN 1969 TOGETHER WITH THE AVERAGE VOYAGE TIME REQUIRED TO GIVE AN AVERAGE DAILY RETURN FOR THE 21 VOYAGES EQUIVALENT TO THE AVERAGE FOR ALL VOYAGES IN 1969.

VOYAGE COSTS OTHER THAN PORT EXPENSES FOR THE 21 CONSECUTIVE CARGOES LOADED AT TERNEUZEN IN 1969, IN TOTAL, ON AVERAGE, AND AS A PERCENTAGE OF GROSS FREIGHT ON AVERAGE.

LOADING PORTS, DISCHARGE PORTS, LOADING PORTS BY AREAS, DISCHARGE PORTS BY AREAS, LOADING AND DISCHARGING PORTS BY AREAS, LOADING AND DISCHARGING PORTS BY EXTENDED AREAS, LOADING AND DISCHARGING PORTS BY EXTENDED AREAS EXCLUDING THE 21 CONSECUTIVE CARGOES LOADED AT TERNEUZEN IN 1969.

FLOW OF CARGOES BY COUNTRIES.

SEA MILES LOADED AND IN BALLAST IN 1968 AND IN 1969 FOR EACH VOYAGE AND IN TOTAL.

AVERAGE LENGTH OF LOADED TRIP AND AVERAGE LENGTH OF BALLAST TRIP IN SEA MILES.

SEA MILES FOR EACH TRIP OVER 288 MILES (36 HOURS AT 8 KNOTS) AND FOR EACH TRIP UNDER 128 MILES (16 HOURS AT 8 KNOTS).

SEA MILES LOADED, BALLAST, AND IN TOTAL.

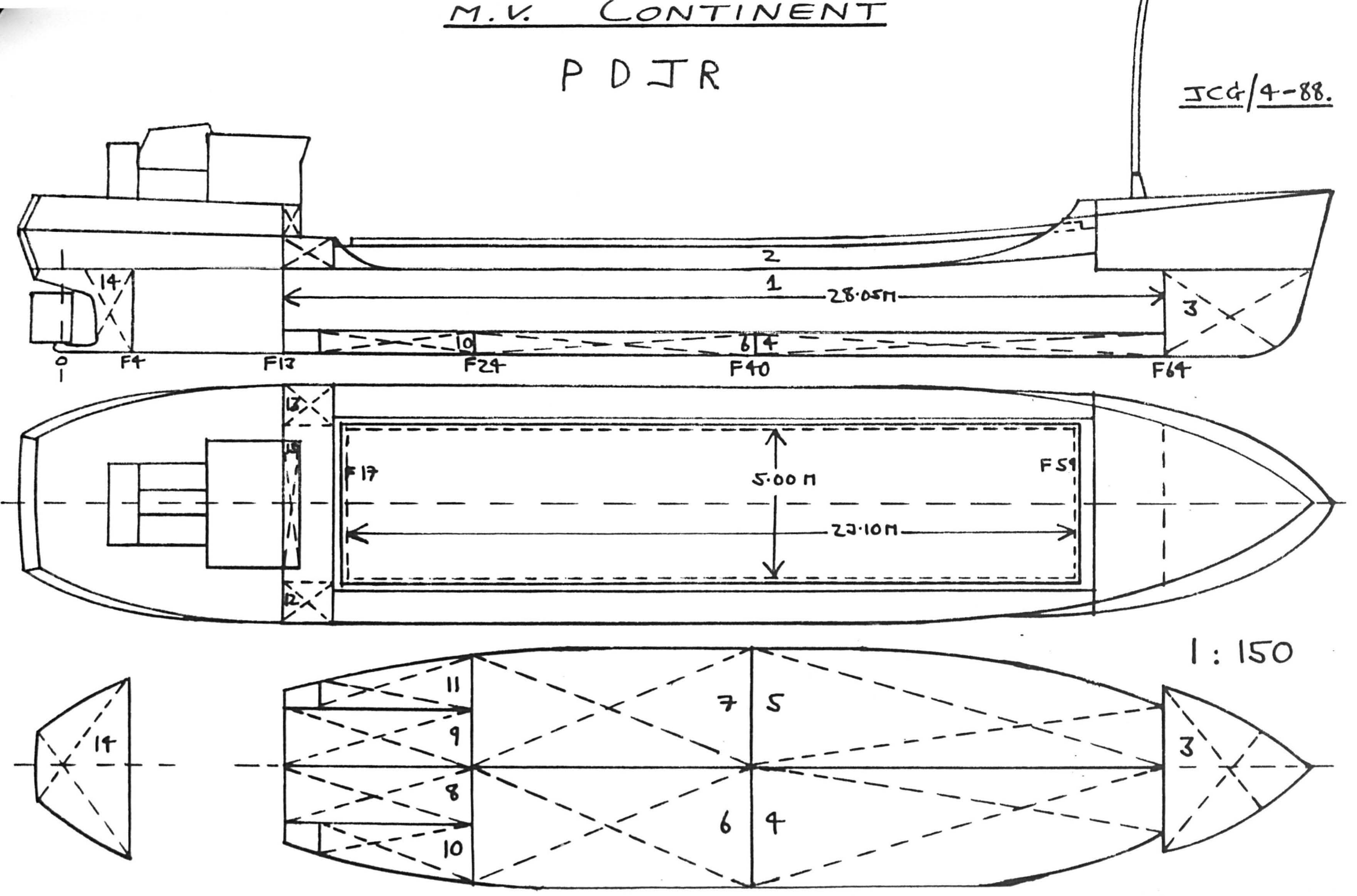
TOTAL LOADED AND TOTAL BALLAST SEA MILES AS PERCENTAGES OF TOTAL SEA MILES.

THE EXCHANGE RATE OF DUTCH GUILDERS 8.66 = £1 STERLING HAS BEEN USED THROUGHOUT.

M.V. CONTINENT

P D J R

JCG/4-88.



1969. ALL IN £. * ALSO LOADED AT TERNEUZEN

VOYAGE NUMBER	FROM	TO	GROSS FREIGHT	PORT 1.	PORT 2.	NETT FREIGHT
1	ROTTERDAM	COLCHESTER	395.09	48.61	61.66	261.97
2	ROTTERDAM	COLCHESTER	412.48	52.74	46.53	289.85
3	BRESKENS	HULL	512.81	25.36	59.69	399.65
4	TERNEUZEN	HULL	510.64	53.70	66.78	366.41
5	"	HULL	472.23	10.73	53.10	396.84
6	"	LONDON	468.35	21.97	28.28	418.10
7	"	"	427.75	29.79	12.60	385.36
8	"	"	473.82		30.62	443.20
9	"	"	474.09		30.56	443.53
10	"	"	474.65		30.57	444.08
11	"	"	480.42		45.82	434.60
12	"	"	491.60		30.77	460.83
13	"	"	474.44		30.68	443.77
14	"	"	480.75	46.49	36.81	388.29
15	"	"	476.66	46.44	21.90	399.22
16	"	"	476.66	82.50	21.90	363.15
17	"	"	480.91	94.50	21.90	355.34
18	"	"	487.04	104.25	49.65	323.86
19	"	"	480.50	64.42	29.19	377.73
20	"	"	485.81	63.80	39.44	373.31
21	"	"	487.19	82.78	21.02	373.80
22	"	"	487.81	105.43	47.69	325.40
23	"	"	562.53	121.47	68.30	362.35
24	"	HULL	555.77	46.94	52.00	421.35
25	LONDON	ROTTERDAM	391.80	52.74	29.24	340.86
26	ROTTERDAM	IPSWICH	484.33	35.31	27.29	440.35
27	HALLING	GUERNSEY	466.74	Time Charter	69.47	396.42
28	ABBEVILLE	LONDON	646.78	84.65	25.13	510.84
29	ROCHESTER	GHENT	536.27	25.64	79.19	396.12
30	TERNEUZEN	HULL	556.27	36.28	73.20	411.28
31	TERNEUZEN	HULL	557.16	47.80	45.02	428.79
32	DUNKIRK	SELBY	650.47	69.17	82.70	463.26
33	TERNEUZEN	SELBY	556.27	47.69	96.18	381.47
34	TERNEUZEN	SELBY	556.31	47.00	99.54	382.98
35	DUNKIRK *	SELBY	830.30	81.52	121.11	605.09
36	TERNEUZEN	SELBY	556.20	48.04	90.05	402.93
37	TERNEUZEN	HULL	488.30	123.69	53.79	297.35
38	TERNEUZEN	GUNNESS	474.30	89.14	65.11	310.26
39	ROTTERDAM	TYNE	558.09		82.16	456.28
40	TEES	TAMISE	506.47	32.78	78.03	374.44
41	ANTWERP	NORWICH	476.67	111.20	51.69	294.31
42	TERNEUZEN	HOWDENDYKE	586.58	59.73	83.08	432.67
43	GOOLE	AMSTERDAM	343.96	110.27	137.64	61.95
44	IJMUIDEN	ROCHESTER	476.33	56.26	21.13	383.57
45	TERNEUZEN	HULL	513.21	70.05	66.52	362.66
46	GOOLE	AMSTERDAM	343.92	123.94	108.78	99.61
47	TERNEUZEN	HULL	549.82	46.13	58.77	429.71
48	GOOLE	AMSTERDAM	344.94	138.80	75.87	118.63
49	IJMUIDEN	COLCHESTER	469.98	77.12	79.10	298.30
50	ST. VALERY	HULL	734.87	77.52	78.47	559.01
51	TERNEUZEN	SELBY	641.10	50.09	106.87	466.76
52	ST. VALERY	HULL	854.50	90.02	63.30	678.57
53	ROTTERDAM	HARTLEPOOL	691.60	52.51	61.13	531.79
54	HARTLEPOOL	ROTTERDAM	403.86	11.29	37.17	325.59
55	BURGHSLUIS	HARTLEPOOL	608.87	42.23		527.94
56	HARTLEPOOL	DELFZIJL	460.79	36.53		424.26
57	APPINGEDAM	SELBY	707.01	44.55		662.46
58	HARTLEPOOL	DELFZIJL	437.50	32.90		404.60
59	APPINGEDAM	SELBY	710.10	43.85		666.25
60	IMMINGHAM	BARKING	497.74	28.40	23.17	423.52
61	ST. VALERY	SELBY	859.95	77.86	108.75	642.73
62	GUNNESS	IPSWICH	482.90	53.55	25.60	403.14
62	TOTALS		32.542.26	3,358.17	3,241.71	25,048.74

SECOND HALF 1968. ALL IN £.

VOYAGE NUMBER	FROM	TO	GROSS FREIGHT	PORT 1.	PORT 2.	NETT FREIGHT
1	ESBJERG	ANTWERP	592.45	34.99	66.61	453.09
2	ANTWERP	DAGENHAM	423.87	64.97	100.34	229.95
3	COLCHESTER	ROTTERDAM	402.11	66.70	47.07	258.21
4	ROTTERDAM	HARTLEPOOL	433.42	35.33	67.79	309.44
5	AMSTERDAM	KING'S LYNN	412.82	53.30	36.42	302.99
6	PERNIS	BOSTON	346.42	66.77	52.86	202.36
7	IPSWICH	STEENWIJK	571.78	63.51	15.48	449.63
8	ROTTERDAM	COLCHESTER	413.30	43.42	61.47	290.42
9	COLCHESTER	UTRECHT	396.97	61.66	31.24	281.94
10	PUTTERSHOEK	SELBY	541.12	72.92	28.87	438.88
11	FLIXBOROUGH	ANTWERP	451.30	46.82	87.64	287.21
12	ANTWERP	SELBY	452.15	50.44	93.08	275.93
13	IJMUIDEN	BOSTON	504.62	47.02	64.26	362.95
14	ROTTERDAM	KING'S LYNN	413.68	51.82	43.84	297.99
15	IMMINGHAM	ANTWERP	452.92	58.88	35.38	358.67
16	ROTTERDAM	GREENWICH	401.90	20.33	51.44	303.17
17	ANTWERP	THAMES	437.52	24.20	120.77	361.35
18	TERNEUZEN	HULL	484.67	62.53	52.19	343.17
19	ROTTERDAM	LONDON	443.68	21.85	51.03	345.80
20	ROTTERDAM	IMMINGHAM	613.96	57.97	49.38	461.67
21	TERNEUZEN	LONDON	447.87	53.63	25.72	343.47
22	ROTTERDAM	SOUTHAMPTON	519.63	43.82	43.89	408.76
23	ROTTERDAM	GT. YARMOUTH	498.12	71.44	31.98	367.41
24	ROTTERDAM	LONDON	440.96	46.19	23.09	363.52
25	TERNEUZEN	LONDON	441.32	51.68	21.72	343.15
26	ROTTERDAM	LONDON	470.24	62.10	23.27	358.81
27	AMSTERDAM	LONDON	428.73	70.68	19.68	317.74
28	LONDON	ANDEL	369.59	18.15	51.96	293.35
29	ROTTERDAM	ST. MALO	1,097.00	47.32	93.82	884.40
30	ST. MALO	BRUGGE	600.98	93.29	58.76	448.51
29	TOTALS		13,912.65	1,528.74	1,484.44	10,290.85
29	AVERAGES		479.75	52.72	51.19	354.86

29 OTHER COSTS TOTAL £608.62 = £20.98 AVERAGE PER VOYAGE = 4⅜% OF GROSS FRT.

1968 SAY, 178 DAYS IN TOTAL = 6.138 DAYS PER VOYAGE ON AVERAGE.

AVERAGE TIME CHARTER EQUIVALENT DAILY RETURN INCLUDING FUEL OVER ALL TIME = £61.23 GROSS, £57.81 NETT. ALWAYS EXCLUDING VOYAGE NUMBER 1.

1969 365 DAYS IN TOTAL = 5.887 DAYS PER VOYAGE ON AVERAGE.

AVERAGE TIME CHARTER EQUIVALENT DAILY RETURN INCLUDING FUEL OVER ALL TIME = £71.08 GROSS, £68.63 NETT.

THE 21 CONSECUTIVE VOYAGES LOADING AT TERNEUZEN IN 1969. ALL IN £.

		GROSS FREIGHT	PORT 1.	PORT 2.	NETT FREIGHT
21	TOTALS	10,209.62	975.21	769.58	8,300.52
21	AVERAGES	486.17	46.44	36.65	395.26

21 OTHER COSTS TOTAL £164.31 = £7.82 AVERAGE PER VOYAGE = 1.6% OF GROSS FRT.

TO GIVE AN AVERAGE DAILY RETURN EQUIVALENT TO THE AVERAGE FROM ALL VOYAGES IN 1969, AN AVERAGE VOYAGE TIME OF 5.76 DAYS IS REQUIRED.

LOADING PORTS

TERNEUZEN	36 (1 part cargo)	
ROTTERDAM	16	52
ANTWERP	4	
IJMUIDEN	3	
GOOLE	3	
HARTLEPOOL	3	
ST. VALERY	3	
COLCHESTER	2	
AMSTERDAM	2	
LONDON	2	
IMMINGHAM	2	
DUNKIRK	2 (1 part cargo)	
APPINGEDAM	2	28
FLIXBOROUGH	1	
ST. MALO	1	
HALLING	1	
ABBEVILLE	1	
BRESKENS	1	
ROCHESTER	1	
TEES	1	
IPSWICH	1	
PERNIS	1	
PUTTERSHOEK	1	
BURGHSLUIS	1	
GUNNESS	1	12
TOTALS		92

DISCHARGE PORTS

THAMES	29	29
HULL	12	
SELBY	11	23
COLCHESTER	4	
AMSTERDAM	3	
ROTTERDAM	3	
HARTLEPOOL	3	
DELFZIJL	2	
IPSWICH	2	
ANTWERP	2	
BOSTON	2	
KING'S LYNN	2	23
STEENWIJK	1	
UTRECHT	1	
IMMINGHAM	1	
SOUTHAMPTON	1	
GT. YARMOUTH	1	
ANDEL	1	
ST. MALO	1	
BRUGGE	1	
GUNNESS	1	
TYNE	1	
TAMISE	1	
NORWICH	1	
ROCHESTER	1	
HOWDENDYKE	1	
GUERNSEY	1	
GHENT	1	16
TOTALS		91

LOADING PORTS BY AREAS

SCHELDE/BELGIAN COAST	42 (1 part cargo)	
ROTTERDAM AREA	18	60
HUMBER	7	
AMSTERDAM/IJMUIDEN	5	
COLCHESTER/MEDWAY	4	
TEES/TYNE	4	
ST. VALERY/ABBEVILLE	4	24
LONDON RIVER	2	
NORTH NETHERLANDS	2	
DUNKIRK	2 (1 part cargo)	
IPSWICH	1	
ST. MALO	1	8
TOTALS		92

DISCHARGE PORTS BY AREAS

LONDON RIVER	29	
HUMBER	26	55
ROTTERDAM AREA	5	
COLCHESTER/ROCHESTER	5	
SCHELDE/BELGIAN COAST	5	
WASH	4	
TEES/TYNE	4	
AMSTERDAM/IJMUIDEN	3	
NORTH NETHERLANDS	3	29
IPSWICH	2	
GT. YARMOUTH/NORWICH	2	4
SOUTHAMPTON	1	
ST. MALO	1	
GUERNSEY	1	3
TOTALS		91

LOADING AND DISCHARGING PORTS BY AREAS

SCHELDE/BELGIAN COAST	47 (1 part cargo)	
LONDON RIVER	31	
HUMBER	33	
ROTTERDAM AREA	23	134
COLCHESTER/MEDWAY	9	
AMSTERDAM/IJMUIDEN	8	
TEES/TYNE	8	25
NORTH NETHERLANDS	5	
ST. VALERY/ABBEVILLE	4	
WASH	4	
IPSWICH	3	
GT. YARMOUTH/NORWICH	2	
DUNKIRK	2 (1 part cargo)	
ST. MALO	2	
SOUTHAMPTON	1	
GUERNSEY	1	24
TOTALS		183

ALWAYS EXCLUDING VOYAGE 1 OF 1968.

"CONTINENT"

TRIPS UNDER 128 MILES
(16 HOURS AT 8 KNOTS)

BALLAST

1968	VOYAGE NUMBER	SEA MILES
	2	nil
	3	75
	4	nil
	9	nil
	10	nil
	11	nil
	12	nil
	15	74
	24	114
	28	nil
	29	nil
	30	nil

1969	VOYAGE NUMBER	SEA MILES
	1	70
	3	125
	26	nil
	27	70
	31	nil
	40	33
	41	nil
	43	nil
	44	nil
	46	nil
	48	nil
	49	nil
	54	nil
	55	50
	56	nil
	57	nil
	59	nil
	60	nil
	62	nil

LOADED

1968	VOYAGE NUMBER	SEA MILES
	23	114

1969 nil

ALWAYS EXCLUDING VOYAGE 1 OF 1968.

LOADING AND DISCHARGING PORTS BY EXTENDED AREAS

GT. YARMOUTH/DOVER	45	
ABBEVILLE/IJMUIDEN	84 (2 part cargoes)	129
WASH/HUMBER		37
TEES/TYNE	8	
NORTH NETHERLANDS	5	13
ST. MALO/GUERNSEY/SOUTHAMPTON		4
TOTALS		183

IN 1969 "CONTINENT" LOADED 21 CONSECUTIVE CARGOES AT TERNEUZEN, THE FIRST 2 AND THE LAST 1 FOR HULL, AND THE OTHER 18 FOR LONDON. DEDUCTING THESE CARGOES FROM THE EXTENDED AREA ANALYSIS, THERE REMAINS :-

DOVER/HUMBER AND ABBEVILLE/IJMUIDEN AREA	124
REMAINDER OUTSIDE THE ABOVE AREA	17
TOTALS	141

FLOW OF CARGOES

CARGOES LOADED IN	FOR	YEAR	NO.	
NETHERLANDS/BELGIUM/FRANCE	ENGLAND	1968	21	
		1969	50	71
ENGLAND (BACKHAULS)	NETHERLANDS/BELGIUM/FRANCE	1968	6	
		1969	9	15
NETHERLANDS/BELGIUM	FRANCE	1968	1	
		1969	-	1
FRANCE (BACKHAULS)	NETHERLANDS/BELGIUM	1968	1	
		1969	-	1
ENGLAND (COASTWISE)	ENGLAND	1968	-	
		1969	2	2
ENGLAND	CHANNEL ISLANDS	1968	-	
		1969	1	1
TOTALS				91

VOYAGE NUMBER	BALLAST 1968	BALLAST 1969	LOADED 1968	LOADED 1969
1	excl.	70	excl.	145
2	nil	145	181	145
3	75	125	145	217
4	nil	230	267	230
5	260	230	203	230
6	194	230	195	160
7	174	160	230	160
8	160	160	145	160
9	nil	160	190	160
10	nil	160	265	160
11	nil	160	300	160
12	nil	160	315	160
13	243	160	180	160
14	197	160	197	160
15	74	160	260	160
16	149	160	181	160
17	190	160	181	160
18	160	160	230	160
19	210	160	187	160
20	187	160	202	160
21	222	160	160	160
22	187	160	252	160
23	252	160	114	160
24	114	160	187	230
25	160	229	160	187
26	187	nil	187	131
27	211	70	211	270
28	nil	210	195	165
29	nil	210	363	155
30	nil	160	305	230
31		nil		230
32		225		275
33		280		280
34		280		280
35		275		389 *
36		280		280
37		280		230
38		230		255
39		230		287
40		33		335
41		nil		183
42		147		260
43		nil		245
44		nil		175
45		138		230
46		nil		245
47		143		230
48		nil		245
49		nil		150
50		155		279
51		230		280
52		329		279
53		210		267
54		nil		267
55		50		250
56		nil		303
57		nil		323
58		165		303
59		nil		323
60		nil		212
61		157		329
62		nil		195
TOTALS	3,606	8,626	6,188	13,629

SEA MILES TO NEAREST

NOTES

Voyage 1 in 1968 excused as delivery voyage from Building Yard.

* 2 port loading.

Average length of loaded trip over 91 trips = 218 miles.

Average length of ballast trip over 91 trips = 134 miles.

TRIPS OVER 288 MILES (36 HOURS AT 8 KNOTS)

BALLAST

1968 nil

1969

VOYAGE NUMBER	SEA MILES
52	329

LOADED

1968

VOYAGE NUMBER	SEA MILES
11	300
12	315
29	363
30	305

1969

VOYAGE NUMBER	SEA MILES
35	389 *
40	335
56	303
57	323
58	303
59	323
61	329

TOTAL SEA MILES STEAMED

LOADED	19,817 (61.8%)
BALLAST	12,232 (38.2%)
TOTAL	32,049

Appendix S.

Association of German Coastal Shipowners (VDK) tonnage

(a) By GRT

As at	1/1/1960			1/1/1970			1/1/1980		
GRT	Ships	GRT	%	Ships	GRT	%	Ships	GRT	%
under 100	156	12,360	5	21	1,827	1	7	651	-
100 - 200	320	45,983	18	183	26,462	7	23	3,527	1
200 - 300	293	78,618	31	290	77,666	21	112	30,404	7
300 - 400	70	25,622	10	86	31,623	8	22	8,206	2
400 - 500	199	89,180	35	458	214,941	57	264	125,152	31
over 500	3	2,068	1	23	22,705	6	200	237,425	59
Totals	1,041	253,831	100	1,061	375,225	100	628	405,365	100
Average		244			354			645	

(b) By DWT

As at	1/7/1959			1/1/1970			1/1/1980		
DWT	Ships	DWT	%	Ships	DWT	%	Ships	DWT	%
under 100	24	2,165	1	2	170	-	1	90	-
100 - 200	281	44,792	12	107	18,549	3	12	1,944	-
200 - 300	208	50,567	13	131	32,670	5	19	4,467	1
300 - 400	127	45,445	12	115	41,680	6	27	9,295	1
400 - 500	170	75,645	20	144	64,809	10	53	23,482	3
500 - 600	56	31,240	8	77	43,295	7	24	12,955	1
600 - 700	128	70,837	19	128	84,260	13	28	17,974	2
700 - 800	46	34,715	9	89	68,636	10	44	32,355	3
800 - 900	18	15,580	4	59	50,747	8	31	26,184	3
900 - 1,000	6	5,677	1	42	40,953	6	18	16,783	2
over 1,000	2	2,110	1	167	205,946	32	371	761,625	84
Totals	1,066	378,773	100	1,061	651,715	100	628	907,154	100
Average		355			614			1,445	

Source: Compiled from Detlefsen (1983) pp 82/83.

Appendix T.

"CHERIE"

A STATISTICAL STUDY OF TRADING IN 1969

JCG/6-70.

M/V. CHERIE

By charter party dated the 26th. February, 1969, Eggar, Forrester Ltd. timechartered the M/V. CHERIE of Hamburg, the vessel being delivered at Hamburg at 1330 on the 28th. February.

The Vessel

The principal particulars of the M/V. CHERIE were as follows.

Flag	West German
GRT	211.60
Total Summer Deadweight	333 m.t.
Summer Dwt. Cargo Capacity	315 m.t.
Builder	H. RANCKE, Hamburg.
Yard No.	191
Trials Date	30-11-60
Class	Germ. Lloyd + 100 A4 Nordsee E
Hatchways	One, 16 x 5 m.
Cargo Capacity Grain	16,550 cu. ft.
Cargo Capacity Bale	14,600 cu. ft.
Main Engine	4SA 6 cy. Deutz Type RA6M 528.
B.H.P.	230 gross continuous at 600 r.p.m.
Loaded Speed	About 9 knots.
Fuel Consumption	1,155 litres Gas Oil per day at sea.

M/V. CHERIE was a conventional, low airdraft, canal/coasting vessel built to the 212 GRT limit. Perhaps a little surprising in view of her year of build though, no attempt was made in the design to maximize the deadweight possible from this GRT. She was also typical of her type in that, with a total water ballast capacity of 30.8 m.t. (Fore Peak 24.5 m.t. and Aft Peak 6.3 m.t.), she was less than ideal for open sea ballast passages.

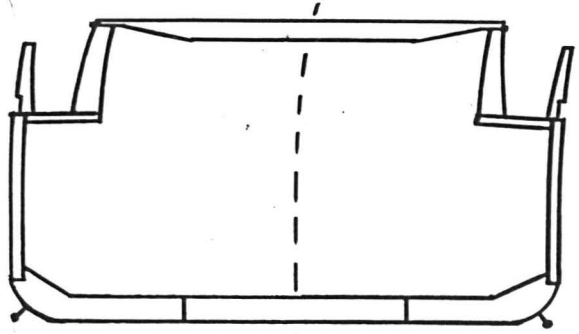
M/V. CHERIE had one sister, M/V. CHRISTA JURGENS - later BIRGIT, later NITA - H. Rancke Yard No. 193, trials date 25-3-61.

The Voyages

Whilst on timecharter to Eggar, Forrester the M/V. CHERIE performed 43 cargo voyages. Time off-hire and on-hire is shown below. A voyage by voyage time analysis is included, as is analysis of all delays. Voyages, cargoes, time used, fuel used, income, voyage expenses and surpluses are detailed. The 'delays' are considered in some detail. Time 'lost' is set out and a delay analysis is given. The significant elements of delay are commented upon.

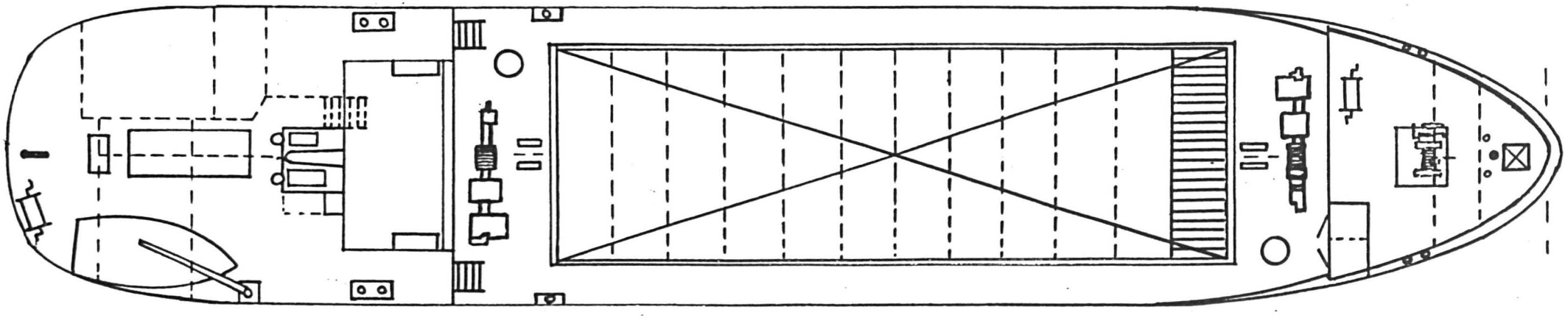
M.V. CHERIE

DAHG



SECTION FRAME 35 1 : 103·5

1 : 138



JCG/4-88.

M/V. CHERIE - Analysis of Delays

Cause of Delay	Time Lost	Days Lost	% of Total Time
Fog	6- 9-21	6.389	2.4
Bad weather, other than fog, on passages	27- 8- 8	27.339	10.1
Total Delays at sea	33-17-29	33.728	12.5
Waiting to work cargo	14-20-52	14.869	5.5
Waiting for tides	2-12-50	2.535	.9
Waiting for papers	5- 0	.208	.1
Holidays and strikes ashore	1-18-33	1.773	.7
Hold cleaning	2-16- 0	2.667	1.0
Stevedoring damage repairs	2-40	.111	.0
Vessel unfixed	1-19- 5	1.795	.7
Other Delays in port	2- 1- 0	2.042	.7
Total Delays in port	26- 0- 0	26.000	9.6
Total Delays in on-hire time	59-17-29	59.728	22.1
Total Time on-hire	257-23-15	257.969	95.5
Time off-hire (for pump repairs)	12- 4-15	12.177	4.5
Total Time	270- 3-30	270.146	100.0

(a) Fog

The M/V. CHERIE was not fitted with radar. During the timecharter there were 14 separate occurrences of delay due to fog, the total time lost being 6 days, 9 hours, 21 mins.

The frequency of small delays, even more than the total time lost, made the case for a radar set. From 1969, all Eggar, Forrester vessels were fitted with radar.

(b) Bad weather, other than fog, on passages

Whilst on timecharter to Eggar, Forrester, the M/V. CHERIE made 29 ballast passages and 43 loaded passages.

Bad weather, other than fog, caused ten delays on seven ballast passages, seven of the delays being of 9 hours or less, and three being of 18 hours or more. The total time lost on ballast passages was 4 days, 21 hours, 6 mins. and the average delay was 11 hours, 43 mins.

While any vessel as small as the M/V. CHERIE must from time to time be subject to weather delays, the frequency of - often quite short - delays on ballast passages (one such passage in four being affected) confirmed earlier fears concerning the adequacy of the ballast capacity of the M/V. CHERIE, 30.8 tonnes in total or 9 per cent. of total Summer deadweight.

In 1970, Eggar, Forrester purchased the M/V. CONTINENT: this vessel had a total water ballast capacity of 145.5 tonnes, 36 per cent. of total Summer deadweight. However, that a lesson had been learned was also evidenced in another way. After the M/V. CHERIE charter, efforts were made in Eggar, Forrester to cut down ballast running, and a standard of three loaded miles to one ballast mile was, in due course, achieved.

On loaded passages, bad weather other than fog caused delay on six passages. Here, though, the situation was less straightforward, for on voyages 33, 38 and 44 the delays were very significant (in aggregate, 21 days, 5 hours, 40 mins. out of the total 22 days, 11 hours, 2 mins. lost on loaded passages). However, examination shows that the delays on these three voyages had one common characteristic; they were at or near the commencement of relatively long open sea passages. Subsequently, a further fifteen years of operating small coasters in Eggar, Forrester served to strongly reinforce the view formed at this time that the psychological affect on those on board of facing a relatively long sea passage - say, over 30 hours - was more significant as a constraint on movement than the actual weather being experienced, or the relevant weather forecast, at the time. I still hold this view. The resulting conclusion, so far as the operation of small coasters is concerned, must be to try to fix short sea voyages.

(c) Delays in port

Well over half the total delay time in port resulted from waiting to work cargo. This, together with the delays arising from waiting for tides, holidays and strikes ashore, and stevedoring damage repairs, was not something over which the operators of the M/V. CHERIE could exert any control. Again, the delays arising from hold cleaning and waiting for papers must - at the level experienced with the M/V. CHERIE - be considered an almost unavoidable constituent of tramp coaster trading. This accounts for 22 days, 3 hours, 55 mins. out of the total 26 days for delays in port. The balance was made up

as follows.

Cause of Delay	Time Lost
Vessel unfixed (twice)	1-19- 5
Contacting Agents	2- 0
Waiting for bunkers	4- 0
Canal bridge closed	14- 0
Vessel went to wrong berth	5- 0
Pilot failed to find vessel	1- 0- 0
Totals	3-20- 5

In theory, all such delays might be eradicated by high quality operation and management. In practice, with tramp coaster tonnage employed on the spot market, the occasional such delay is inevitable, however admirable the standard of operation and vessel management. None of this delay could be attributed to any failure in the design of the M/V. CHERIE while, as the 3 days, 20 hours, 5 mins. lost represented only 1.4 per cent. of the total time, the scope for improving performance in this direction seemed to be small.

Overall, the conclusion was drawn that port delays would be largely beyond the influence of vessel owners/operators unless they exercised control over cargo handling operations. This conclusion has stood the test of time.

(d) Off-hire - repairs

As has been detailed, during the timecharter the M/V. CHERIE was off-hire on four occasions for pump repairs, total time off-hire being 12 days, 4 hours, 15 mins. Also, the vessel spent 5 hours on pump repairs and 5 hours on main engine repairs when she was not off-hire. It is clear that the pump aspect merits comment.

A worn out general service pump was frequently under repair: with the benefit of hindsight, that it was not replaced - rather than repaired - may have been due to the fact that the owner of the vessel had already decided to sell it. With this exception, the M/V. CHERIE proved very reliable.

Whilst on timecharter to Eggar, Forrester, the M/V. CHERIE moved 43 cargoes in 257 days, 23 hours, 15 mins. in commission; an average

of 6 days per cargo. Any attempt to annualize this performance should be resisted, however. The timecharter did not cover the three Winter months of December, January and February, when the affect of weather on the performance of the vessel might be expected to be most marked.

Ports and Cargoes

The voyage loading ports, discharging ports, commodities and tonnages lifted are listed below.

Voyage	From	To	Commodity	Long Tons Lifted
1	Hamburg	Colchester	General Cargo	234
2	Zwijndrecht	London	Grain - Denat.	298
3	Rotterdam	Mistley	Grain	301.800
4	Amsterdam	Ramsgate	Grain	275
5	Cancelled			
6	Amsterdam	Rochford	Grain	300
7	Amsterdam	Rochford	Grain	301
8	Antwerp	Gainsborough	Soya Bean Meal	255.875
9	Rotterdam	Norwich	Grain	302.226
10	Rotterdam	Norwich	Grain	299.730
11	Rotterdam	Norwich	Grain	299.730
12	Norwich	Ghent	Scrap	302.550
13	Rotterdam	Norwich	Grain	299.150
14	Amsterdam	Gt. Yarmouth	Grain	305.100
15	Gt. Yarmouth	Ghent	Scrap	306.910
16	Rotterdam	Boston	Fertilizers	307.513
17	Boston	Rotterdam	Pig Iron	300
18	Rotterdam	Norwich	Grain	300.040
19	Norwich	Caen	Scrap	296.800
20	Shoreham	Ghent	Scrap	200.400
21	Rotterdam	Ipswich	Fertilizers	301.181
22	London	Hartlepool	Grain	300
23	Dagenham	Brussels	Scrap	295
24	Dagenham	Brussels	Scrap	303.425
25	Dagenham	Brussels	Scrap	305.188
26	Dagenham	Brussels	Scrap	305.162
27	Dagenham	Brussels	Scrap	305
28	Dagenham	Brussels	Scrap	305.300
29	Dagenham	Brussels	Scrap	300.300
30	Rotterdam	Ipswich	Potash	307
31	Alblasserdam	Norresundby	Steel Wire Rods	273.435
32	Thisted	Naestved	Luxovite	245
33	Assens	Port Longuet	Woodpulp	300.100
34	Bonnieres	Ipswich	Grain - Denat.	298.215
35	Munnikenland	London	Grain - Denat.	295.750
36	Tilbury	Hamburg	Copper Cathodes	202
37	Itzehoe	Bremen	Cement Clinker	301.280
38	Bremen	Grangemouth	Fertilizers	301.275
39	Middlesbrough	Antwerp	General Cargo	300
40	Brussels	Norwich	Grain - Denat.	297.573
41	Norwich	Dunkirk	Scrap	305.781
42	Antwerp	Mistley	Grain	297.150
43	Mistley	Itzehoe	Beans	308.112
44	Hamburg	Bridlington	Potash	310

It will be seen that the following part cargoes were lifted.

Voyage	Commodity	Long Tons Lifted	
1	General Cargo	234	
4	Grain	275	
20	Scrap	200.400	
31	Steel Wire Rods	273.435	
32	Luxovite	245	
36	Copper Cathodes	202	
8	Soya Bean Meal	255.875	Vessel cubically full.

Thus, the cargoes carried may be summarized as follows.

Part Cargoes	6		14%	
Deadweight Restricted Cargoes	36		84%	
Cubically Restricted Cargoes	1	43	2%	100%

The passages made summarize as follows.

Loaded Passages	43		60%	
Ballast Passages	29	72	40%	100%

The commodities carried summarize as follows.

Grain (incl. Meal and Beans)	18		42%		
Scrap	12		28%		
Fertilizers (Bulk and Bagged)	5		12%		
Iron and Steel	3	38	7%	89%	
Other		5	43	11%	100%

It may be tempting to say that the M/V. CHERIE 'had a good cubic'. Any such conclusion should be resisted: the lesson to be drawn from the cargoes carried on the Eggar, Forrester timecharter was clearly that the deadweight of the vessel was inadequate for its cubic capacity. On 84 per cent. of cargoes carried the vessel was deadweight restricted. An increase in deadweight, without any increase in cubic capacity, would very often have allowed additional cargo to be moved. Extra cubic capacity without more deadweight would have been useful in only one case in 43. It is, therefore, reasonable to conclude that other tonnage with a better ratio of deadweight to cubic capacity and built at the same time as the M/V. CHERIE provided a more satisfactory overall

design if the cargoes carried on this timecharter were in any way typical.

In the breakdown of cargoes carried shown above, Grain and Scrap together totalled 70 per cent. of all cargoes: Grain, Scrap, Fertilizers and Iron and Steel in aggregate provided 89 per cent. of cargoes. Assuming this to be generally representative, it is clear that the only really significant requirement for vessel holds in this trading is that they should be as close to the configuration of a biscuit tin as possible. While the box hold for small coasters was still some way off in 1969, the pressures that brought it into being were well in evidence.

The timecharter voyage loading and discharging ports are summarized below.

Loadings by area

Amsterdam	4		
Rotterdam (incl. Zwijndrecht, Alblasserdam and Munnikenland)	12		
Antwerp and Brussels	3		
Thames (Tilbury and above)	9		
Mistley	1		
Norwich and Gt. Yarmouth	4	33	
Other		10	43

Discharges by area

Rotterdam	1		
Antwerp and Brussels	8		
Dunkirk	1		
Thames (Tilbury and above)	2		
Outer Thames Estuary (Rochford, Ramsgate and Colchester)	4		
Mistley and Ipswich	5		
Norwich and Gt. Yarmouth	7		
Ghent	3	31	
Other		12	43

Loadings and discharges by area

Amsterdam/Dunkirk	32				
Gt. Yarmouth/Ramsgate	32	64		74%	
Elbe/Weser		7		8%	
Other		15	86	18%	100%

Income was as follows.

Voy.	Freight Rate*	£ Gross Freight	% Comsn.	£ Other Income	£ Total Income	Notes
1	DM. 4,000 lump sum	416.7	3	-	416.7	
2	26/-	388.1	5	25.2	413.3	Payment for delay
3	26/-	390.0	2½	-	390.0	Paid £2.3 short; written off
4	Lump sum	390.0	5	48.1	438.1	21 hours demurrage
5	Cancelled					
6	27/3d.	408.7	5	9.2	417.9	4 hours demurrage
7	Lump sum	405.0	5	-	405.0	
8	Lump sum	475.0	4 1/6	-	475.0	
9	29/3d.	442.0	3¾	-	442.0	
10	29/3d.	438.4	3¾	-	438.4	
11	29/3d.	438.4	3¾	-	438.4	
12	23/-	345.0	2½	-	345.0	
13	29/3d.	438.7	3¾	-	438.7	
14	29/-	442.4	3⅓	55.0	497.4	1 day demurrage
15	21/6d.	322.5	2½	-	322.5	
16	Fl. 18.50	476.9	3⅓	-	476.9	
17	Fl. 3,150 lump sum	360.8	3⅓	-	360.8	
18	29/6d.	442.6	2½	1.8	444.4	Exchange gain
19	29/6d.	437.8	2½	-	437.8	
20	32/6d. per ton on 300 tons	487.5	2½	-	487.5	
21	Lump sum	380.0	2½	-	380.0	
22	32/6d.	487.5	3⅓	-	487.5	
23	48/6d. per ton on 300 tons	727.5	5	-	727.5	
24	-"-	727.5	5	-	727.5	
25	-"-	727.5	5	-	727.5	
26	-"-	727.5	5	3.4	730.9	1½ hours demurrage
27	-"-	727.5	5	-	727.5	
28	-"-	727.5	5	-	727.5	
29	-"-	727.5	5	75.0	802.5	Cleaning payment
30	23/6d.	355.1	2½	-	355.1	
31	Fl. 3,550 lump sum	412.9	4	-	412.9	
32	D.Kr. 12.50 p.m.t.	173.3	5	-	173.3	
33	Lump sum	1,150.0	5	-	1,150.0	
34	45/-	667.7	3¼	-	667.7	½% in lieu of weighing
35	26/6d.	391.9	3⅓	-	391.9	
36	Lump sum	450.0	3¾	28.2	478.2	Payment for second discharging berth
37	DM. 5.75 p.m.t.	198.9	5	-	198.9	
38	DM. 6,250 lump sum	706.2	4	-	706.2	
39	Lump sum	400.0	4⅖	-	400.0	
40	34/6d.	513.3	3½	-	513.3	
41	24/6d.	374.6	-	-	374.6	
42	30/-	445.7	3¾	-	445.7	
43	35/-	539.2	3⅓	-	539.2	
44	44/-	675.2	3	-	675.2	1% in lieu of weighing.

* Per long ton unless otherwise stated.

Voyage Costs are summarized below.

All in £.

Voy.	Port Charges:- L.	D.	Total	Fuel	Comsn.	Other	Total	Notes
1	19.9	50.6	70.5	23.6	12.5	-	106.6	
2	44.2	12.6	56.8	28.6	19.4	4.7	109.5	
3	64.5	25.1	89.6	19.6	9.8	1.7	120.7	
4	60.5	17.8	78.3	19.1	21.9	.7	120.0	
5	Cancelled							
6	59.1	24.8	83.9	20.8	20.9	6.0	131.6	
7	53.6	27.7	81.3	20.0	20.3	1.7	123.3	
8	101.1	83.4	184.5	22.8	19.2	1.1	227.6	
9	50.0	46.0	96.0	13.7	16.6	3.1	129.4	
10	49.5	37.2	86.7	21.1	16.4	1.5	125.7	
11	51.3	22.7	74.0	16.0	16.4	1.5	107.9	
12	22.7	74.4	97.1	9.3	8.6	1.1	116.1	
13	45.3	41.5	86.8	12.6	16.4	1.5	117.3	
14	62.9	24.6	87.5	13.5	16.6	4.4	122.0	
15	20.8	77.7	98.5	10.2	8.1	1.1	117.9	
16	49.9	39.8	89.7	16.7	15.9	2.0	124.3	
17	22.3	46.7	69.0	9.9	12.0	32.1	123.0	Stevedoring Overtime Boston £30.1
18	42.5	43.2	85.7	8.6	11.1	3.1	108.5	
19	11.0	95.0	106.0	14.0	10.9	1.1	132.0	
20	30.6	86.2	116.8	17.6	12.2	1.6	148.2	
21	47.4	39.2	86.6	11.3	9.5	.8	108.2	
22	29.4	46.9	76.3	23.4	16.3	18.2	134.2	Stevedoring Overtime £17.0
23	32.4	137.7	170.1	25.4	36.4	4.0	235.9	
24	37.2	157.5	194.7	27.0	36.4	1.5	259.6	
25	36.2	176.9	213.1	21.4	36.4	1.5	272.4	
26	47.1	138.3	185.4	24.0	36.5	1.5	247.4	
27	33.4	132.9	166.3	22.2	36.4	1.5	226.4	
28	33.7	128.7	162.4	21.6	36.4	1.5	221.9	
29	33.2	133.6	166.8	19.5	36.4	80.4	303.1	Cleaning £73.5
30	78.4	34.1	112.5	15.5	8.9	.7	137.6	2 Agents Rotterdam
31	68.2	36.4	104.6	30.7	16.5	1.5	153.3	
32	23.2	40.5	63.7	11.9	8.7	1.3	85.6	
33	24.7	257.9	315.2	44.2	57.5	49.9	466.8	Kiel Canal £32.6; Tarpaulin Hire £40.2
34	72.5	56.4	128.9	24.6	21.7	1.1	176.3	
35	41.1	26.0	67.1	20.8	13.1	1.7	102.7	
36	32.8	25.7	58.5	38.6	16.9	2.9	116.9	
37	9.1	17.4	26.5	11.6	9.9	1.1	49.1	
38	20.6	43.2	63.8	28.6	28.2	1.1	121.7	
39	36.0	73.9	109.9	32.2	18.7	.5	161.3	
40	151.1	38.4	189.5	12.7	18.0	.8	221.0	
41	13.0	92.9	105.9	11.9	-	45.0	162.8	Stevedoring Overtime £45.0
42	93.3	17.3	110.6	16.1	16.7	1.5	144.9	
43	14.3	23.4	37.7	27.3	18.0	3.4	86.4	
44	22.6	33.2	97.0	70.3	20.3	29.6	217.2	Despatch £27.4; Port Charges Harlingen and Delfzijl.
Av.	44.0	64.8	110.5	21.2	19.5	7.5	158.7	Average.

Average figures are shown above, but it will be observed that individual port charges varied greatly from the average. Even taking this into account, both West German port costs look particularly cheap.

M/V. CHERIE - Time On-hire, Time Off-hire, Repairs.

Delivered 1330 28-2-69, redelivered 1700 25-11-69 = 270 days, 3 hours, 30 mins.

Time Off-hire:	DAYS	HOURS	MINS.
1. 1700 1-7-69 to 1145 2-7-69	-	18	45
2. 1430 11-7-69 to 1430 12-7-69	1	-	-
3. 1330 5-8-69 to 2000 14-8-69 = 9 days, 6 hours, 30 mins. of which time 17 hours, 30 mins. was used for timecharterers' purposes, leaving	8	13	-
4. 1400 23-10-69 to 1030 25-10-69	1	20	30
Totals (All for pump repairs)	12	4	15

Total Time On-hire = 257 days, 23 hours, 15 mins.

Repairs NOT Off-hire: 5 hours for pumps;
5 hours for main engine.
Totals 10 hours.

M/V. CHERIE - Sea Time and Port Time.

Total Sea Time 80-11-41 = 80.49 Days.
Total Port Time 189-15-49 = 189.66 Days.
Totals 270- 3-30 = 270.15 Days.

M/V. CHERIE - Fuel Consumption and Cost.

Gas Oil used in long tons:	Port 5.05	Sea 71.86*	Total 76.91
Average per cargo (43 cargoes)	.12	1.67	1.79

* Equates to .8928 long tons per day at sea.

Average Fuel Cost: $\frac{£910.50}{76.91}$ = £11.84 p.l.t.

£10.57 per day at sea (say, 216 nautical miles)

Equates to 4.9p per nautical mile or 4.25p per statute mile.

M/V. CHERIE - Demurrage/Despatch.

Voy.	Demurrage	£ Demurrage	Voy.	Despatch	£ Despatch
4	21- 0	48.1	44	1-10- 0	27.4
6	4 - 0	9.2			
14	1- 0- 0	55.0			
26	1-30	3.4			
Totals	2- 2-30	115.7			
+ Delay not demurrage		25.2 (at Silcocks, London.)			
Totals		140.9			
Less Despatch		27.4 £113.5			

M/V. CHERIE - On Borings Contract, Dagenham - Brussels.

Time from end of sea passage to berth in Brussels:

Voyage	D- H- M	
23 (1)	16-30	Bunkered Antwerp Roads.
24 (2)	18-24	32-24 less 14- 0 lost for bridge.
25 (3)	14- 0	
26 (4)	17- 0	11-12 + 5-48
27 (5)	18-30	
28 (6)	14-54	
29 (7)	17-18	
Totals	4-20-36	= 16-40 on average.
	7	

Voyage	£ Surplus	Days	
23	496.9	4.86	Ballast leg adjusted.
24	467.9	4.86	
25	455.1	3.30	
26	483.5	6.09	
27	501.1	4.04	
28	505.6	5.94	
29	499.4	8.96	
Totals	£3,409.5	38.05	
Average	£ 487.1	5.44	= £89.6 daily.

M/V. CHERIE - On Amsterdam - Rochford Voyages.

Voyages 6 and 7 Surplus = £568.0 over 9.97 days (average 4.99 days per voyage) = £57.0 daily.

On all voyages excluding Borings Contract voyages,
Surplus = £11,372.6 over 219.89 days = £51.7 daily.

On all voyages inside 'the Area' but excluding Borings Contract voys.,
Surplus = £ 7,191.3 over 124.55 days = £57.7 daily.

On all voyages,
Surplus = £14,782.1 over 257.9 days = £57.3 daily.

On all voyages,

Port Charges	22.0%	
Fuel	4.2%	
Commission	3.9%	
Other voyage costs	1.5%	31.6%
Voyage Surplus		68.4%
Totals		100.0%

Appendix U.

"FRIEDERIKE"

A STATISTICAL STUDY OF TRADING IN 1969/1970

JCG/9-70.

M/V. FRIEDERIKE

Eggar, Forrester Ltd. timechartered the M/V. FRIEDERIKE as a replacement when the M/V. CHERIE was redelivered. M/V. FRIEDERIKE was a conventional, low airdraft, canal/coasting vessel built to the 250 GRT limit.

The Vessel

The principal particulars of the M/V. FRIEDERIKE were as follows.

Flag	West German
GRT	249.82
Total Summer Deadweight	400 m.t.
Summer Dwt. Cargo Capacity	380 m.t.
Builder	Jadewerft, Wilhelmshaven.
Yard No.	85
Trials Date	28-9-62
Class	Germ. Lloyd + 100 A4 Nordsee E
Hatchways	One, 20.5 x 5.0 m.
Cargo Capacity Grain	20,000 cu. ft.
Cargo Capacity Bale	19,000 cu. ft.
Main Engine	4 cy. MWM Type RH330 Su.
B.H.P.	250 gross continuous at 600 r.p.m.
Loaded Speed	About 8.5 knots.

The Voyages

Whilst on timecharter to Eggar, Forrester the M/V. FRIEDERIKE performed 29 cargo voyages. Voyages, cargoes and surpluses are detailed. The trading pattern is set out below.

1. By trading area

	Cargo voyages		Percentage of cargo voyages
A.	Loading/discharging Continent within Seine/ Ijmuiden range and England within Thames/ Humber range	83	
B.	To/from North Netherlands	7	90
C.	To Hartlepool		7
D.	To Jersey		3 100

2. By commodity

	Number of cargoes		
Wheat	4		
Maize	4		
Other Grain	8	16	55%
Steel	1		
Scrap	2		
Fertilizers	1	4	14%
Other		9	31%
Totals		29	100%

Voyage Results - May/June/July 1970.

Voy.	From	To	Voy. Days	Total Days	£ Surpluses Voy.	£ Surpluses Total	Voy. Daily	Overall Daily	
17	Isleworth	Merksem	5.75	5.75	311	311	54	54	
18	Rotterdam	Hull	4.00	9.75	327	638	82	65	
19	Hull	Rochford	6.00	15.75	378	1,016	63	65	
20	Lowestoft	Rotterdam	5.00	20.75	344	1,360	69	66	
21	Rotterdam	Hartlepool	4.25	25.00	389	1,749	92	70	
22	Gunness	Ipswich	6.00	31.00	346	2,095	58	68	*
23	Ipswich	Leeuwarden	4.50	35.50	349	2,444	78	69	
24	Groningen	Gt. Yarmouth	4.50	40.00	456	2,900	101	73	
25	Norwich	Rouen	6.00	46.00	439	3,339	73	73	
26	Bonnieres	Norwich	5.00	51.00	586	3,925	117	77	
27	Norwich	Rotterdam	6.50	57.50	357	4,282	55	74	+
28	Rotterdam	Norwich	6.50	64.00	409	4,691	63	73	
29	Rotterdam	Gillingham	5.50	69.50	434	5,125	79	74	
30	Brussels	Wells	13.00	82.50	471	5,596	36	68	=

* Weekend.
\+ Adjustment for damages to add.
= UK Port strike: waiting at Brussels. No demurrage included.

Vessel redelivered to owners at Wells.

M/V. "FRIEDERIKE"

VOYAGES

CARGO LOADED M.	FIXED	VOYAGE NUMBER	FROM	TO	CARGO	FREIGHT RATE	DEMURRAGE	HOURS	COMMISSION	BROKER
CANCELLED	18-12-69	1	ROTTERDAM	TUNNEL WHARF, THAMES	MAIZE	29/- plt	£80	54 AP	3¾	SIDNEY CATER & CO. LTD. CANCELLED
358.157	18-12-69	2	TILBURY	HARTLEPOOL	SOYA BEANS	35/- plt	£80	48 AP	3¾	SIDNEY CATER & CO. LTD.
300.000	5-1-70	3	ROTTERDAM	GT. YARMOUTH	SUNPELLETS	£540 lump sum	£70	54 AP	3⅓	PALTE & HAENTJENS CHARTERING N.V.
370.992	8-1-70	4	KING'S LYNN	LE HAVRE	TIC BEANS	38/- plt	£80	54 AP	3¾	SIDNEY CATER & CO. LTD.
304.800	14-1-70	5	ROUEN	ST. HELIER	DENAT. WHEAT	32/6d. plt	£70	24/30	3⅓	RYE SHIPPING LTD.
350.000	16-1-70	6	ROUEN	NORWICH	MAIZE	46/- plt	£80	54 AP	3¾	SIDNEY CATER & CO. LTD.
351.806	20-1-70	7	NORWICH	DUNKIRK	SCRAP	25/6d. plt	£65	54 AP	2½	T. SMALL & CO. LTD.
360.195	3-2-70	8	ST. VALERY SUR SOMME	ISLEWORTH	L.G.M.	35/- plt dwcc.	£75	54 AP	2½	L. DENS & CO. LTD.
308.359	13-2-70	9	ST. VALERY SUR SOMME	ISLEWORTH	L.G.M.	35/- plt dwcc.	£75	54 AP	2½	L. DENS & CO. LTD.
330.340	2-3-70	10	ST. VALERY SUR SOMME	ISLEWORTH	L.G.M.	35/- plt dwcc.	£75	54 AP	2½	L. DENS & CO. LTD.
294.080	12-3-70	11	ROTTERDAM	IPSWICH	SUNPELLETS	£440 lump sum	£70	54 AP	5	GEBR. VAN WEELDE SCHEEPVAARTKANTOOR N.V.
334.120	19-3-70	12	IPSWICH	ROTTERDAM	TIC BEANS	26/9d. plt	£75	48 AP	5	NORFOLK SHIPBROKERS LTD.
379.550	27-3-70	13	ROTTERDAM	HULL	SOYA BEANS	25/- plt	£75	48 AP	3¾	GEBR. VAN WEELDE SCHEEPVAARTKANTOOR N.V.
33.900	6-4-70	14	GRIMSBY	ROTTERDAM	12 FREEZERS	£500 lump sum	£75	48 AP	5	TEMPLE THOMSON & CLARK LTD.
375.980	15-4-70	15	ROTTERDAM	WISBECH	MILO CORN	27/6d. plt	£75	54 AP	5	SIDNEY CATER & CO. LTD.
296.518	27-4-70	16	ST. VALERY SUR SOMME	ISLEWORTH	L.G.M.	35/- plt dwcc.	£75	54 AP	2½	L. DENS & CO. LTD.
197.748	4-5-70	17	ISLEWORTH	MERKSEM	MAIZE FEED	£420 lump sum	£70	60 AP	3⅓	L. DENS & CO. LTD.
336.000	12-5-70	18	ROTTERDAM	HULL	FLAXSEED	£500 lump sum	£75	54 AP	3⅓	GEBR. VAN WEELDE SCHEEPVAARTKANTOOR N.V.
377.185	13-5-70	19	HULL	ROCHFORD	WHEAT	25/- plt	£80	48 AP	2½	G. T. GILLIE & BLAIR, LTD.
312.473	19-5-70	20	LOWESTOFT	ROTTERDAM	L.G.M.	26/- plt dwcc.	£75	54 AP	4.16	TEMPLE THOMSON & CLARK LTD.
328.040	26-5-70	21	ROTTERDAM	HARTLEPOOL	SOYA BEANS	34/- plt	£85	54 AP	3¾	SIDNEY CATER & CO. LTD.
367.491	29-5-70	22	GUNNESS	IPSWICH	AM. SULPHATE	26/- plt	£75	54 AP	5	SIDNEY CATER & CO. LTD.
		23	IPSWICH	LEEUWARDEN	BEANS	£500 lump sum			5	
351.400	4-6-70	24	GRONINGEN	GT. YARMOUTH	GRAIN PELLETS	Hfl.5,000 lump sum	£75	60 AP	2½	E. WAGENBORG'S N.V., DELFZIJL.
350.028	12-6-70	25	NORWICH	ROUEN	STEEL RAILS	35/- plt dwcc.	£70	54 AP	2½	T. SMALL & CO. LTD.
355.100	15-6-70	26	BONNIERES	NORWICH	MAIZE	45/- plt	£80	48 AP	3¼	M. H. TACONET, ROUEN.
378.679	23-6-70	27	NORWICH	ROTTERDAM	SCRAP	£450 lump sum	£70	54 AP	2½	T. SMALL & CO. LTD.
356.960	29-6-70	28	ROTTERDAM	NORWICH	MAIZE	30/- plt	£85	54 AP	3¾	SIDNEY CATER & CO. LTD.
334.500	6-7-70	29	ROTTERDAM	GILLINGHAM	DENAT. WHEAT	34/6d. plt	£80	48 AP	5	SIDNEY CATER & CO. LTD.
357.000	16-7-70	30	BRUSSELS	WELLS	DENAT. WHEAT	37/- plt	£75	48 AP	5	SIDNEY CATER & CO. LTD.

Appendix V.

Inflation - Consumer Price changes in the UK and West Germany.

Year	UK Index	% change on a year earlier	West Germany Index	% change on a year earlier
1950	100.0	3.1	100.0	- 6.2
1951	107.3	7.3	107.7	7.7
1952	115.0	7.2	110.0	2.1
1953	116.7	1.5	107.9	- 1.9
1954	117.9	1.1	108.1	.2
1955	122.6	4.0	109.9	1.7
1956	128.6	4.9	112.8	2.6
1957	133.3	3.7	115.2	2.1
1958	136.3	2.2	117.6	2.1
1959	136.3	-	118.7	1.0
1960	137.6	.9	120.5	1.5
1961	142.3	3.4	123.3	2.3
1962	148.3	4.2	126.9	2.9
1963	151.3	2.0	130.7	3.0
1964	156.4	3.4	133.8	2.4
1965	163.7	4.6	138.1	3.2
1966	170.1	3.9	143.1	3.6
1967	174.4	2.5	145.4	1.6
1968	182.5	4.7	147.7	1.6
1969	192.3	5.4	150.5	1.9
1970	204.7	6.4	155.6	3.4
1971	223.9	9.4	163.7	5.2
1972	239.7	7.1	172.7	5.5
1973	262.0	9.3	184.8	7.0
1974	303.8	16.0	197.7	7.0
1975	377.4	24.2	209.4	5.9
1976	440.2	16.7	218.4	4.3
1977	509.8	15.8	226.5	3.7
1978	552.1	8.3	232.6	2.7
1979	626.1	13.4	242.1	4.1
1980	738.5	18.0	255.2	5.4
1981	826.5	11.9	271.3	6.3
1982	897.4	8.6	285.7	5.3
1983	938.9	4.6	295.1	3.3
1984	985.9	5.0	302.2	2.4
1985	1,045.7	6.1	308.8	2.2
1986	1,081.6	3.4	308.5	- .1
1987	1,126.9	4.2	309.1	.2
1988	1,182.1	4.9	313.1	1.3
1989	1,274.4	7.8	321.9	2.8
1990	1,395.3	9.5	330.6	2.7

Source: Extracted from The Economist Pocket Britain in Figures, 1997 Ed, pp 60 and 62.

Appendix W.

Principal Particulars - WILKS, WIS and WIB

Vessel	WILKS	WIS	WIB
Port of Registry	London	London	London
GRT	494.51	490.87	498.11
LOA	43.86 m.	45.54 m.	45.54 m.
LBP	40.76 m.	42.44 m.	41.88 m.
Moulded Breadth	9.50 m.	9.50 m.	9.40 m.
Moulded Depth	4.75 m.	4.75 m.	4.75 m.
Even Keel,Full Load Draft on S. Marks	3.92 m.	3.88 m.	3.88 m.
Summer Displacement	1,295 mt	1,348 mt	1,349 mt
Lightweight	293 mt	312 mt	304 mt
Summer DWT	1,002 mt	1,036 mt	1,045 mt
TPI on Summer Marks	9.70 mt	9.84 mt	10.00 mt
FW Allowance	82 mm	84 mm	85 mm
Total DWT on Winter Marks	971 mt	1,005 mt	1,014 mt
Total Water Ballast capacity	205 mt	207 mt	197 mt
Total FW capacity	3.74 mt	4.91 mt	5.30 mt
Total Bunker capacity (98% full)	14.28 mt	14.28 mt	15.62 mt
Cargo capacity Grain cu. ft.	42,285	43,624	46,035
Cargo capacity Bale cu. ft.	38,890	40,614	42,700
Airdraft with full Fuel/Ballast	7.32 m. (24')	7.32 m. (24')	6.70 m. (22')
Hatchway clear length	20.12 m.	20.12 m.	22.16 m.
Hatchway clear width	6.50 m.	6.50 m.	6.50 m.
Hold length, bulkhead to bulkhead	28.35 m.	30.03 m.	30.03 m.
Hold Ceiling/Tank Top	Steel	Wood	Wood
Hatchcovers	MacGregor single-pull, steel		
Main engines (Caterpillar)	2 x D343	2 x D343	2 x 3408 TA
Derated bhp	2 x 230	2 x 230	2 x 230
Speed on derated bhp - Loaded, knots	6.75	6.75	6.75
Ballast, knots	9.00	9.00	9.00
Fuel consumption on derated bhp (Gas Oil)	2.50 mt per day	2.50 mt per day	2 mt per day
Builder	The Yorkshire Dry Dock Co.		
Classification	LR 100 A.1, DOT Class 8.		

Appendix X.

Principal Particulars - LU, WIGGS and WIRIS

Port of Registry	London
GRT	496.51
LOA	45.55 m. (149' 5¼")
LBP	42.00 m. (137' 9½")
Moulded Breadth	9.40 m. (30' 10")
Moulded Depth	4.75 m. (15' 7")
Even Keel Full Load Draft on S. Marks	4.05 m. (13' 3½")
Total DWT on Summer Marks	1,140 mt
TPI on Summer Marks	10.13 mt
FW Allowance	91 mm
Total DWT on Winter Marks	1,106 mt
Block Coefficient at LWL	.85
Total Water Ballast capacity	470 mt
Total FW capacity	5.10 mt
Total Bunker capacity (98% full)	26.97 mt
Cargo capacity Grain	44,560 cu. ft.
Cargo capacity Bale	40,260 cu. ft.
Airdraft with full Fuel/Ballast	7.01 m. (23')
Hatchway clear length	24.20 m. (79' 4½")
Hatchway clear width	6.50 m. (21' 4")
Hold length, bulkhead to bulkhead	31.19 m. (102' 4")
Hold Ceiling/Tank Top	Steel
Hatchcovers	MacGregor single-pull, steel, 12 panels.
Main engines (Caterpillar)	2 x 3408TA
Derated bhp	2 x 230
Speed on derated bhp - Loaded	6.75 knots
Ballast	9.00 knots
Fuel consumption on derated bhp	2 mt Gas Oil per day.
Builder	A/S. Nordsøvaerftet.
Classification	LR 100 A.1, DOT Class 8.

Appendix Y.

Capital Costs - WILKS, WIS and WIB

Vessel		WILKS	WIS	WIB
The Yorksire Dry Dock Co. Ltd. No.		238	241	257
Shipbuilding Agreement Date		10-6-75	16-2-76	31-3-78
Entered Service		9-4-76	2-2-77	16-2-79
Summer DWT mt		1,002	1,036	1,045
Basic Contract Price	£	275,000	340,000	450,000
+ Extras (net of Rebates)	£	3,613	1,767	3,663
+ Net Cost Variation due Builders	£	6,709	11,087	18,240
Total paid to Builders	£	285,322	352,854	471,903
+ Owners' Expenses *	£	5,517	10,856	3,097
Total Capital Cost	£	290,839	363,710	475,000
Cost pmt of Summer DWT	£	290	351	455
Inflation Adjustment to 4/76 Cost			14.0%	42.7%
Calculated 4/76 Cost	£		319,044	332,866
Calculated 4/76 Cost pmt of S. DWT	£		308	319

* Includes launching gratuities, commissioning and trials expenses, superintendence, crew standby costs, initial outfit of charts, equipment, carpet, crockery, linen, etc. and supervision/ installation of R/T, VHF and Radar.

JCG/14-4-80.

Appendix Z.

Capital Costs - LU, WIGGS and WIRIS

Vessel		LU	WIGGS	WIRIS
A/S. Nordsøvaerftet No.		144	145	153
Shipbuilding Agreement Date		9-6-80	9-6-80	9-7-80
Keel laid		10-80	11-80	10-81
Entered Service		15-12-80	12-1-81	15-3-82
Basic Contract Price	£	513,389	513,389	577,144
+ Extras (net of Rebates)	£	1,271	1,606	2,515
+ Cost of Bank Guarantee	£	820	820	883
Total paid to Builders	£	515,480	515,815	580,542
+ Owners' Expenses (incl. launching gratuity, commissioning and trials expenses, superintendence, crew standby costs, initial outfit of charts, equipment, carpet, linen, crockery, etc.)	£	14,349	11,714	15,646
Total Capital Cost (excl. Financing)	£	529,829	527,529	596,188
Total DWT in mt		1,140	1,140	1,140
Cost pmt of total DWT	£	464.76	462.75	522.97

JCG/17-3-83.

COST BREAKDOWNS

Appendix AA.

Item	% of as delivered total cost					
	"WILKS" (238)			"WIS" (24I)		
Shipyard labour		29.3			29.8	
Steel		2I.9			I5.7	
Main engines incl. alternators, pumps and wheelhouse instrumentation	7.4			7.3		
Aquamaster units incl. hydraulics, flexible couplings and wheelhouse instrumentation	I2.9	20.3		I3.9	2I.2	
Hatch covers		5.3	76.8		4.7	7I.4
Electrical subcontractor		2.5			2.6	
Joinery subcontractor		3.5			2.7	
Plumbing subcontractor		I.0	7.0		.8	6.I
Windlass with engine and cable stoppers		I.I			I.4	
Paint		.9			.7	
Ground tackle comprising 3 anchors and cable		I.3			I.I	
Timber		-			.9	
Auto-pilot incl. installation and testing		.8	4.I		.7	4.8
Lloyds Register and Dept. of Trade costs			I.7			I.6
Totals			89.6			83.9
Other (incl. profit) *			I0.4			I6.I
TOTALS			I00.0			I00.0

* No other single identifiable item of .5% or over.

JCG/2I-6-78.

Appendix BB.

WILKS-type tonnage: a summary of Advantages and Disadvantages.

ADVANTAGES

1. Very low initial cost.
2. Ability to trade to most small ports (e.g. Gainsborough).
3. Very economical on fuel.
4. Economical on port disbursements (low GRT, low LOA).
5. Low manning (on short voyages).
6. Very strong hulls.

DISADVANTAGES

1. Limited sea-going capacity.
2. Low speed (particularly loaded).
3. In bad weather, speed drops off more than on a conventional vessel.

JCG/17-3-83.

Directors:
P. D. R. Talbot Willcox
(Chairman)
J. C. Golding
[redacted]

Appendix CC.

Telephone 01-377 8366
London Telex 8811671
Answer back "CHENEG G"
Cable Address:
EGGARSHIP, LONDON, E.1
Registered in London
No. 875792

Wilks Shipping Co., Limited

RODWELL HOUSE, MIDDLESEX STREET, LONDON, E1 7HJ
(REGISTERED OFFICE)

REF. JCG

13th. August, 1981.

Department of Trade,
Chief Examiner of Engineers Branch,
Export House,
50, Ludgate Hill,
London, EC4M 7HU.

For the attention of Mr. T. Balmer. BY HAND.

Dear Sirs,

WILKS-type vessels.

We hereby formally request you to grant exemption for WILKS-type vessels from the requirement to carry Class 4E certificate holders as from the 1st. September, 1981. The vessels in question are:-

1. "WILKS" O.N. 366 101;
2. "WIS" O.N. 377 191;
3. "WIB" O.N. 379 856;
4. "LU" O.N. 390 744;
5. "WIGGS" O.N. 390 745;
6. A/S. Nordsøvaerftet Yard No. 153 due for delivery first quarter 1982 and a sister vessel to M/Vs. "LU" and "WIGGS".

M/Vs. "LU" and "WIGGS" are presently being run with each of their main engines de-rated to 230 b.h.p., which brings them just below the 350 Kw limit. However, this de-rating, which is in the nature of an experiment, has been done on the engine fuel racks: both vessels have the same propulsion units and main engines as the M/V. "WIB", and these engines have a combined rated gross continuous b.h.p. of 730 per vessel. We wish to be able to increase the power of the M/Vs. "LU" and "WIGGS" at our convenience upto a maximum of 730 b.h.p. gross continous per vessel, and, therefore, we include them in this application.

The essential features of the vessel-type for which we request exemption we see as being as follows:-

1. That the vessel is of less than 750 Kw total propulsive power.
2. That the vessel is operating within the Near Continental Trading Area.
3. That the vessel has two propulsion systems each capable of independent operation.
4. That the vessel has adequate wheelhouse control and instrumentation.
5. That at least one person serving on board the vessel has an adequate level of familiarisation with the type of vessel in question and with what is necessary for its proper operation.

Concerning 1. above, we confirm that the maximum gross continuous total b.h.p. for any of the subject vessels is 730.

Concerning 2. above, we would direct your attention to the trading of the subject vessels as set out in part A. of the enclosed folder of supporting information.

Cont.

Department of Trade, Chief Examiner of Engineers Branch. 13th. August, 1981.

In connection with our trading, we would further draw to your attention to the very low level of total engine hours involved. The M/V. "WIB", which has operated as intensively as any of our vessels, had a total of 2,459 engine hours during its first 12 months of operation, and reached 5,000 engine hours at 2 years, 2 months.

We would amplify 3. above to be:-

(a) Separate source of fuel for each main engine.
(b) Separate source of cooling water for each main engine.
(c) Separate gearbox/propulsion unit (as applicable) for each main engine.
(d) Separate propeller for each main engine.
(e) Separate controls and instrumentation for each main engine.
(f) A minimum of two means of steering the vessel.

We would amplify 4. above to be:-

(g) Steering control for each of two means of steering.
(h) Steering indicator for each of two means of steering.
(i) Clutch control for each engine/propulsion unit.
(j) Clutch position indicator for each engine/propulsion unit.
(k) Speed control for each main engine.
(l) Remote stop for each main engine.
(m) Rev. counter for each main engine.
(n) Oil pressure gauge for each main engine.
(o) Coolant temperate gauge for each main engine.
(p) High level alarm for engine room bilges.

In addition, we would point out that the WILKS-type vessels have a clutch fail-safe system whereby in the event of malfunction the clutches will lock into the engaged position.

So far as 5. above is concerned, our view is that service on a vessel of the type in question is the best possible method of familiarisation. In this connection, we would draw your attention to part C. of the enclosed folder of supporting information - Ages, Certification and Experience of Wilks Shipping Company Masters. However, it is also our view that the degree of technical knowledge required on board the vessel is related to the extent to which the vessel has been designed from scratch to operate without seagoing engineers, and to the level and availability of shore servicing, technical assistance and backup. In this connection, we draw your attention to part B. of the enclosed folder of supporting information. B.1. and B.2. illustrate that proper and regular shoreside attendance does take place. B.3. illustrates, we think, that proper thought has been given to the operation of WILKS-type vessels, and that adequate information of simple format has been produced for those on board.

Finally, we would stress that in this application for exemption we are not seeking to introduce a new system of operation whereby we dispense with the carriage of seagoing engineers: we are seeking exemption to enable us to continue with a method of operation which this company has followed since its inception, more than a decade ago, and which has proved to be satisfactory and particularly suited to the type of trading in which we are involved.

We look forward to hearing from you in this matter.

Yours faithfully,

For and on behalf of
WILKS SHIPPING CO. LTD.

J. C. Golding ..... Director

Encl.

Appendix DD.

Telephone 01-377 9366
London Telex 8811671
Answer back "8811671 CHENEG G"
Cable Address:
EGGPROJECT, LONDON, E1
Registered in London
No. 465334

Eggar, Forrester (Holdings) Limited

RODWELL HOUSE, MIDDLESEX STREET, LONDON, E1 7HJ
(REGISTERED OFFICE)

Ref: JCG

25th. Sept., I98I.

Capt. B. M. Small,
Department of Trade,
Marine Division,
Sunley House,
90, High Holborn,
London, WCIV 6LP.

Dear Capt. Small,

Thank you very much for your time yesterday.

I enclose within the blue folder all that I sent to Mr. Balmer. I also include a couple of folders which may be interesting to you as general background. From the contents of the blue folder I have extracted those sheets which are particularly pertinent to our discussions yesterday: mainly, the voyages undertaken by the WILKS vessels during the past year. On these sheets I have highlighted the "longer" trips: obviously, 'longer' is a bit subjective in this context, but I think I have done it reasonably. I have also indicated on the sheets the Winter Loadline period in each case.

One of my main points in our discussions yesterday was the peculiarly low annual mileages and intensity of use of the WILKS vessels. This is illustrated by the figures on total engine hours provided to Mr. Balmer. In addition, I have taken the sheet of voyages for the M/V. "WIB" (which, of our vessels, carried the largest number of cargoes during the year in question) and listed thereon each trip mileage. In as much as these are mainly distance book mileages, there is probably a small degree of understatement of the actual mileages run by the vessel, but I am confident that this difference is not material. The following figures have resulted:-

(a)	Total number of cargoes carried in the year	54
(b)	Total mileage for the year	I9,I44
(c)	Total ballast mileage for the year	5,368
(d)	Total loaded mileage for the year	I3,776
(e)	Average mileage per cargo	355
(f)	Average ballast mileage per cargo	I00
(g)	Average loaded mileage per cargo	255
(h)	Average mileage per day	53
(i)	Average mileage per week	368.

Yours sincerely,

J. C. Golding.

Encl.

"WIR"

Appendix EE.

Entered Service I6-2-79 at Hull.

2 x Cat. 3408TA at 365 BHP at I,800 RPM = 730 BHP at I,800 RPM gross continuous.

Voyages (incl.)	Miles Loaded	Miles Ballast	Engine Hours	Days Running	M.T. Gas Oil Overall
I-I0	2,8I2	I,26I	49I	20.4583'	63.7I
II-20	2,483	2,0I8	526	2I.9I6'	48.57
2I-30	2,952	I,573	49I	20.4583'	49.75
3I-40	2,I6I	I,425	428	I7.83'	36.02
4I-50	2,9I5	I,468	523	2I.79I6'	6I.47
Totals	I3,223	7,745	2,459	I02.4583'	259.52
5I-60	2,544	280	296	I2.3'	35.I9
6I-70	2,03I	I,266	407	I6.9583'	43.33
7I-80	3,I77	I,I35	483	20.I25	47.62
8I-90	2,475	854	388	I6.I6'	47.98
Totals	I0,227	3,535	I,574	65.583'	I74.I2
OVERALL	23,450	II,280	4,033	I68.04I6'	433.64

(A) Voyage 50 ended I6-2-80.
(B) First Year = 50 cargoes.
(C) Upto and incl. I6-2-80, on which Voyage 50 ended:-
  (I) Total mileage = 2I,068.
  (2) Loaded mileage = 63.2%.
  (3) Ballast mileage = 36.8%.
  (4) Average mileage per cargo = 42I.
  (5) Average loaded mileage per cargo = 266.
  (6) Average ballast mileage per cargo = I55.
  (7) Average fuel consumption per cargo = 5.I90 m.t.
  (8) Average overall speed, miles/engine hours, = 8.568 knots.
  (9) Average overall daily fuel consumption = 2.533 m.t. for all purposes.
(D) Upto and incl. 4-II-80, on which Voyage 90 ended:-
  (I) Total mileage = 34,730.
  (2) Loaded mileage = 67.5%.
  (3) Ballast mileage = 32.5%.
  (4) Average mileage per cargo = 386.
  (5) Average loaded mileage per cargo = 26I.
  (6) Average ballast mileage per cargo = I25.
  (7) Average fuel consumption per cargo = 4.8I8 m.t.
  (8) Average overall speed, miles/engine hours, = 8.6II knots.
  (9) Average overall daily fuel consumption = 2.58I m.t. for all purposes.
(E) On Voyages 5I-90, both incl.,:-
  (I) Loaded mileage = 74.3%.
  (2) Ballast mileage = 25.7%.
  (3) Average mileage per cargo = 344.
  (4) Average loaded mileage per cargo = 256.
  (5) Average ballast mileage per cargo = 88.
  (6) Average fuel consumption per cargo = 4.353 m.t.
  (7) Average overall speed, miles/engine hours, = 8.743 knots.
  (8) Average overall daily fuel consumption = 2.655 m.t. for all purposes.

"WIGGS"

Appendix FF.

Entered Service I2-I-8I at Esbjerg.

2 x Cat. 3408TA derated to give 230 BHP at I,800 RPM = 460 BHP at I,800 RPM gross continuous.

Voyages (incl.)	Miles Loaded	Miles Ballast	Engine Hours	Days Running	M.T. Gas Oil Overall
I-I0	3,I37	770	572	23.83'	5I.I70
II-20	2,588	I,357	523	2I.79I6'	39.964
2I-30	3,229	I,2I0	64I	26.7083'	55.I30
3I-40	2,5I3	966	525	2I.875	46.000
4I-50	2,629	599	570	23.75	48.380
Totals	I4,096	4,902	2,83I	II7.9583'	240.644

(A) Voyage 49 ended I4-I-82.
(B) First Year = 49 cargoes.
(C) Upto and incl. 22-I-82, on which Voyage 50 ended:-
  (I) Total mileage = I8,998.
  (2) Loaded mileage = 74.2%.
  (3) Ballast mileage = 25.8%.
  (4) Average mileage per cargo = 380.
  (5) Average loaded mileage per cargo = 282.
  (6) Average ballast mileage per cargo = 98.
  (7) Average fuel consumption per cargo = 4.8I3 m.t.
  (8) Average overall speed, miles/engine hours, = 6.7II knots.
  (9) Average overall daily fuel consumption = 2.040 m.t. for all purposes.

JCG/3-82.

Appendix GG.

Fate of Clelands XL400 series vessels

TOWER DUCHESS	1984 sold to R. B. Berkshire, Placentia, Newfoundland, and renamed PARADISE SOUND. No further report; continued existence doubtful (1998).
TOWER MARIE	1998 sold to West African traders; no further report.
TOWER VENTURE	1989 sold (as SUBRO VEGA) to Claymore Shipping Ltd., St. John's, Newfoundland. Sld. Ipswich 28-6-89 for St. John's, NFL. Sank 22-12-94 soon after sailing from Esmeraldas, Ecuador.
TOWER PRINCESS	1981 sold to Mathew Ship Chartering Ltd., Georgetown, Cayman Islands. Sank 12-5-90 off NW coast of Cuba.
TOWER CONQUEST	1979 left UK flag. 1984 returned to UK flag. Sailed Gillingham 4-5-89 for the Caribbean. April 1995 seized with contraband on board by Coast Guard and taken to St. George's Harbour, Grenada, where sank 29-10-97. Eventually cut up and hull used for landfill in a harbour extension project.
FUTURITY	1987 left UK flag. Last reported sold to Naviera Regal S.A., Panama City, 1992.
FORMALITY	1995 arrived Banjul, Gambia, prior to 3 May for lay-up and in 1999 reported still laid up in Banjul.
FERRYHILL II	1991 left UK flag. Last reported sold to East African traders December 1999.
WIS	Nov. 1991 CTL as SEALIGHT in Glenlight Shipping fleet.
WIGGS	Feb. 1989 TL as POLARLIGHT in Glenlight fleet.
WILKS	1991 sold by Glenlight Shipping as GLENROSA and laid up in Leith. Broken up 1992.
WIB	1990 left UK flag and sold by Glenlight Shipping as GLENETIVE. Sank 30-7-91 125 miles off Maputo, Mozambique, on passage Durban for Pemba, cargo beer.

Source: Graham Atkinson and Gil Mayes in SHIPS MONTHLY, Feb. 2000.

Appendix HH.

British Governments 1945-1990

From	To	Years	C/L	Prime Minister
26-7-45	25-10-51	6.25	L	Attlee
26-10-51	15-10-64	12.97	C	Churchill/Eden/Macmillan/Douglas-Home
16-10-64	17-6-70	5.67	L	Wilson
18-6-70	3-3-74	3.71	C	Heath
4-3-74	3-5-79	5.17	L	Wilson/Callaghan
4-5-79	22-11-90	11.55	C	Margaret Thatcher
Totals		45.32		

C = Conservative 28.23 years. L = Labour 17.09 years.

Source: Castleden, R. (1994).

List of Enclosures

1. ELATION/FUNCTION Reprint from CONOSHIP Newsletter 3/1966.

2. LADY SARITA/LADY SHEENA Reprint from CONOSHIP Newsletter 3/1966.

3. EDWARD STONE Reprint from SHIP AND BOAT BUILDER INTERNATIONAL, November 1965.

4. COMMODORE TRADER Reprint from FAIRPLAY INTERNATIONAL SHIPPING JOURNAL, 30 December 1971.

5. WILKS (II) Brochure.

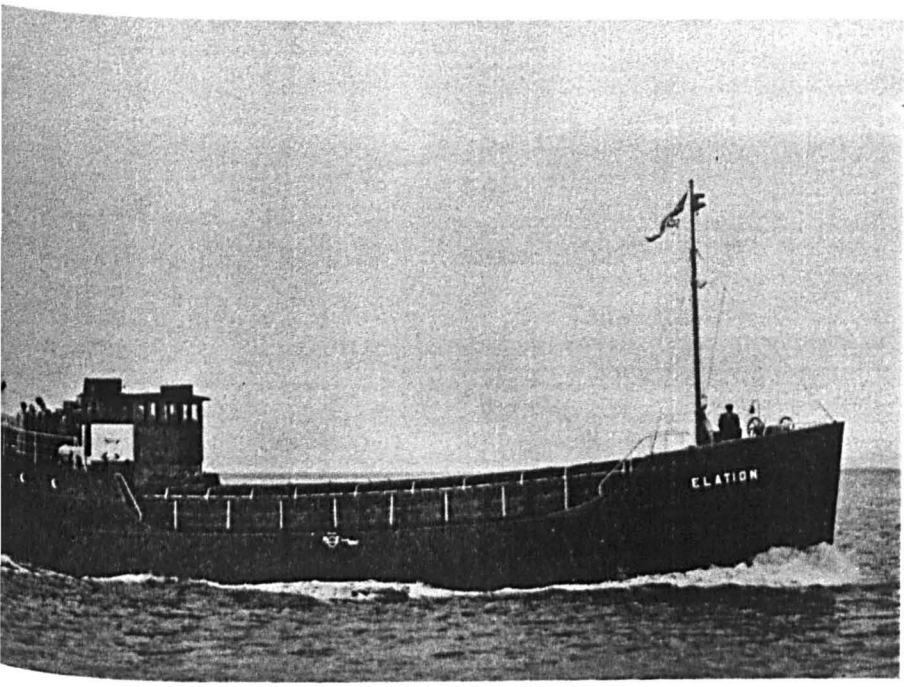
6. WIB (II) Particulars Sheet.

7. WIGGS (II)/LU Reprint from FAIRPLAY INTERNATIONAL SHIPPING WEEKLY, 26 February 1981.

8. The Yorkshire Dry Dock Co. Ltd. Standard Data Sheets for
   (a) 50 metre coaster;
   (b) 55 metre coaster;
   (c) 58 metre coaster.

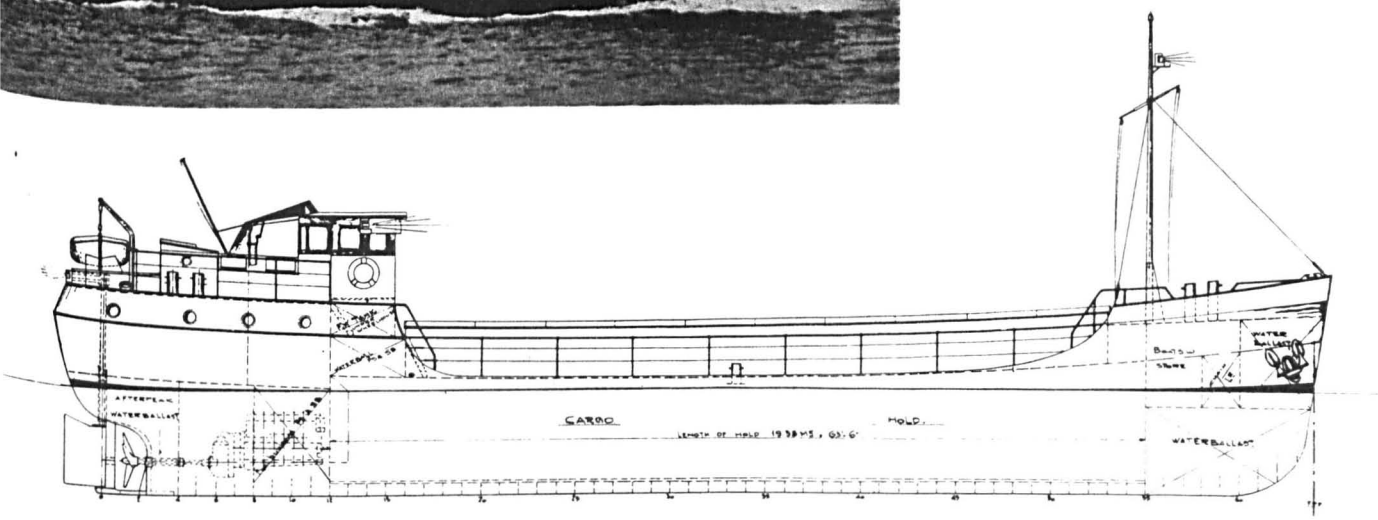
9. Map 1. Barge Country.
   Map 2. The North East Coast.
   Map 3. Barge Country, Down Channel and the Near Continent.

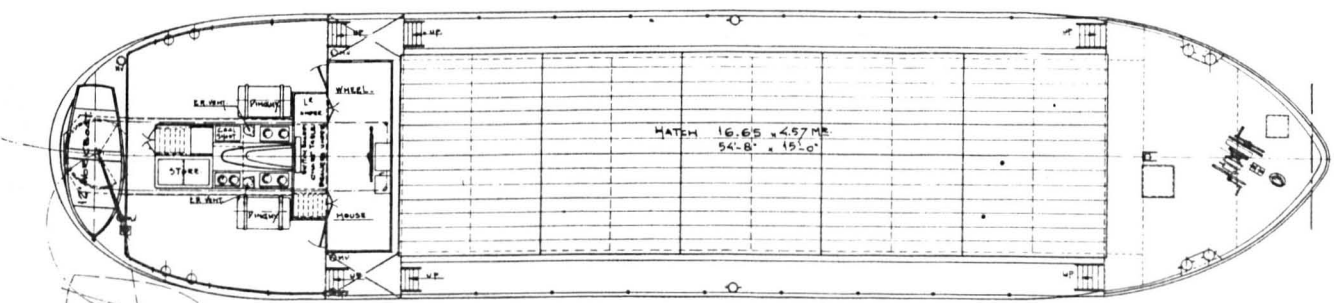
COASTAL BARGES



mss "Function" and "Elation" built for London & Rochester Trading Co. Limited, Rochester, according to the M.O.T. rules for coastal trade between U.K. and Brest-IJmuiden.

The ships are built with single bottom, having a total ballast capacity of 35 tons.

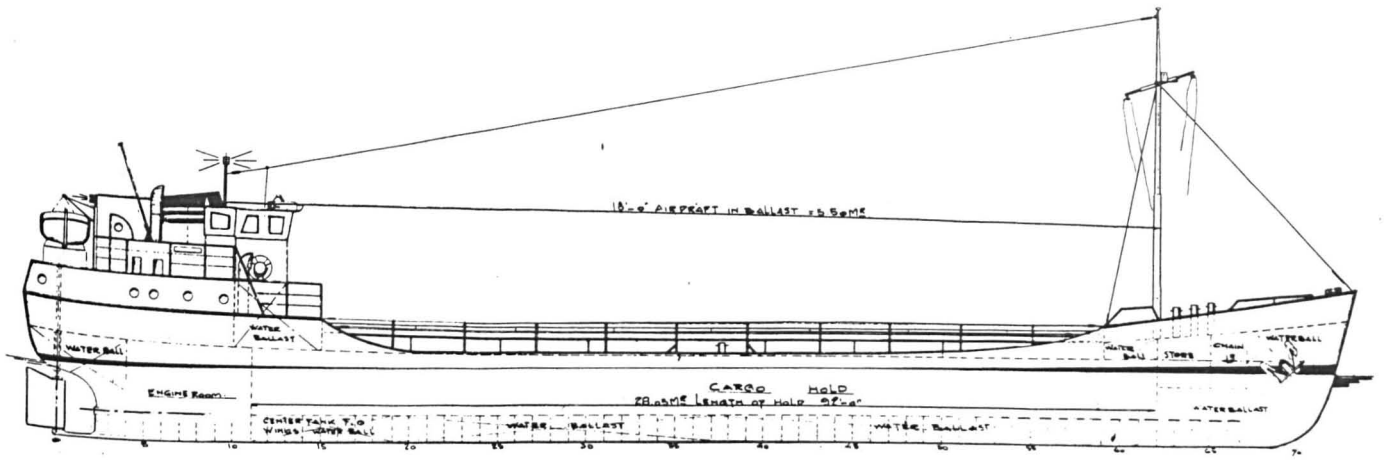


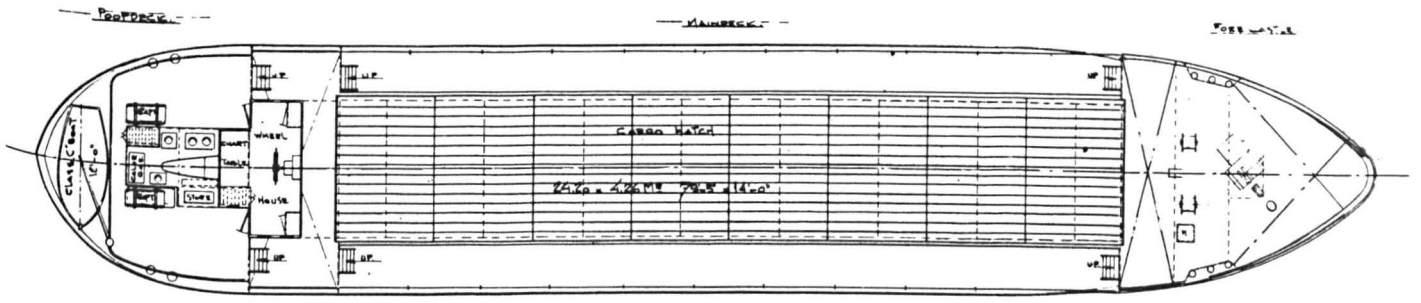


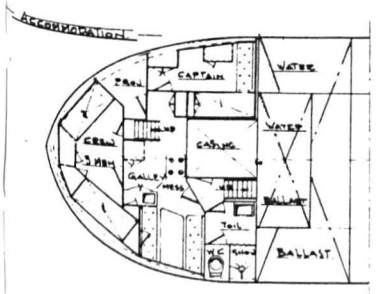
Length over all	99'–6"	Deadweight, all told on summerdraft	278 long tons
Length b.p.	94'–2"	Bale space	14300 cub. ft.
Breadth moulded	22'–0"	Grain space	15230 cub. ft.
Depth moulded	9'–0"	Gross tonnage	216 R.T.
Summerdraft	8'–2 13/16"		

Central heating and running hot and cold water.
Propulsion by means of a Kelvin diesel motor type TS 6-180 H.P./1000 r.p.m., driving also a 1000 watt generator and a bilge and ballastpump.
Hand steering-gear.

Reprinted from CONOSHIP Newsletter 3/1966.







Length over all	135′–11″	Deadweight	372 long tons
Length b.p.	130′– 0″	Waterballast	231 tons
Breadth moulded	25′– 0″	Grain space	17500 cub. ft.
Depth moulded	8′– $8^{5}/_{16}$″	Bale space	16170 cub. ft.
Draught	7′– 6″	Gross tonnage	199.9 R.T.

Engine: M.A.K. diesel 260 H.P./1000 r.p.m., reduction 3:1; remote controlled from wheelhouse.

Speed: $8^{1}/_{2}$ knots.

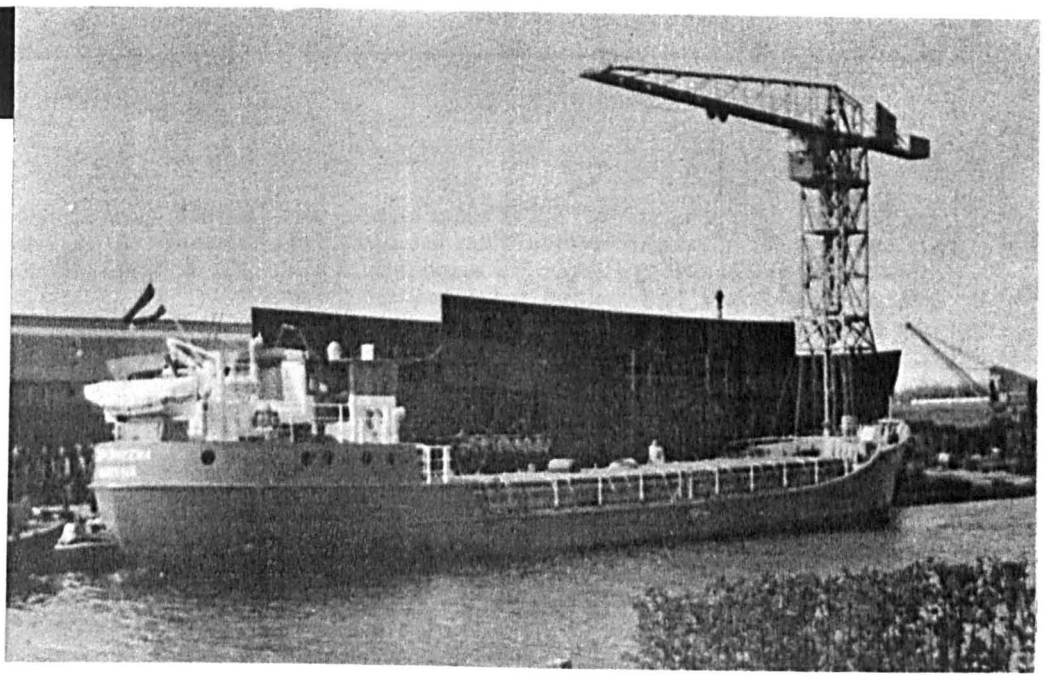
COASTAL BARGES

mss "Lady Sarita" and "Lady Sheena" built for Messrs. Thom. Watson Shipping Limited, Rochester.

These ships are built according to the M.O.T. rules, for the trade between U.K. and Brest-IJmuiden.

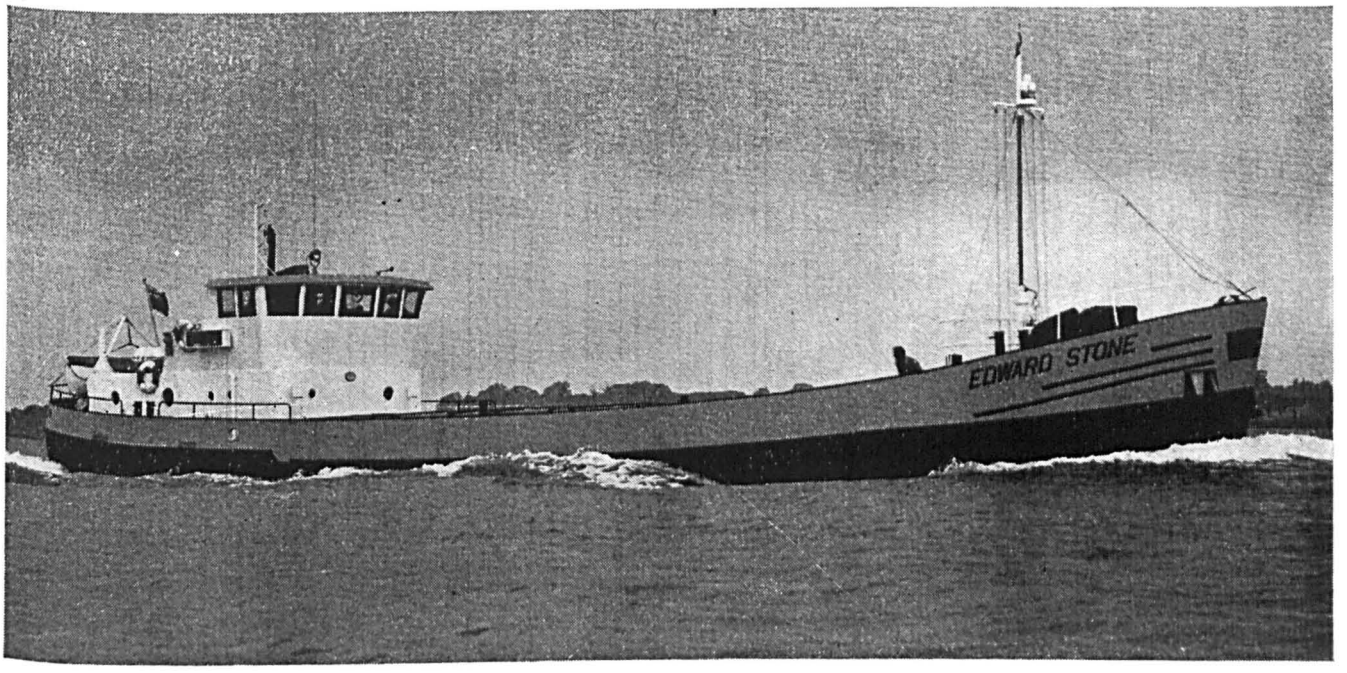
24 Volt electric; handhydraulic steering-gear; Decca radar; radio and echo sounder.

Accommodation, central heated, for 4 men.



Reprinted from CONOSHIP Newsletter 3/1966.

EDWARD STONE COASTER



Length b.p.	**102 ft. 6 in.**	**31.23 m.**	**Engine**	**Bergius Kelvin TS6**
Breadth mld.	**21 ft. 6 in.**	**6.55 m.**	**B.h.p.**	**240**
Depth mld.	**9 ft. 3 in.**	**2.81 m.**	**R.p.m.**	**1,000**
Deadweight, tons	**300**		**Gearbox**	**3.5 : 1**
Gross tonnage	**196**		**Windlass**	**Gemmell & Frow**
Speed, knots	**8**		**Draught**	**8 ft. 4 in. 2.54 m**

Builder James W. Cook & Co. (Wivenhoe) Ltd., Wivenhoe.
Owner The Eddystone Shipping Co. Ltd., Rochester.

The motor coaster *Edward Stone* was recently handed over to her owners, and is a sister ship of the *Hooness,* completed early this year by James W. Cook & Co. (Wivenhoe) Ltd.

The hull form was designed by the builders, and is of all welded round bilge form, except in way of the counter where a chine is introduced. The rubbing bar at the chine is continued forward at the upper turn of the bilge.

The rudder is to the builder's own design, and has three blades to improve manœuvrability. Steering gear is by Vickers Ltd., and is of the hand hydraulic type.

The Gemmell & Frow windlass is driven by a Petters Diesel engine through a reduction gear and belt drive, this arrangement being "built on" by the builders.

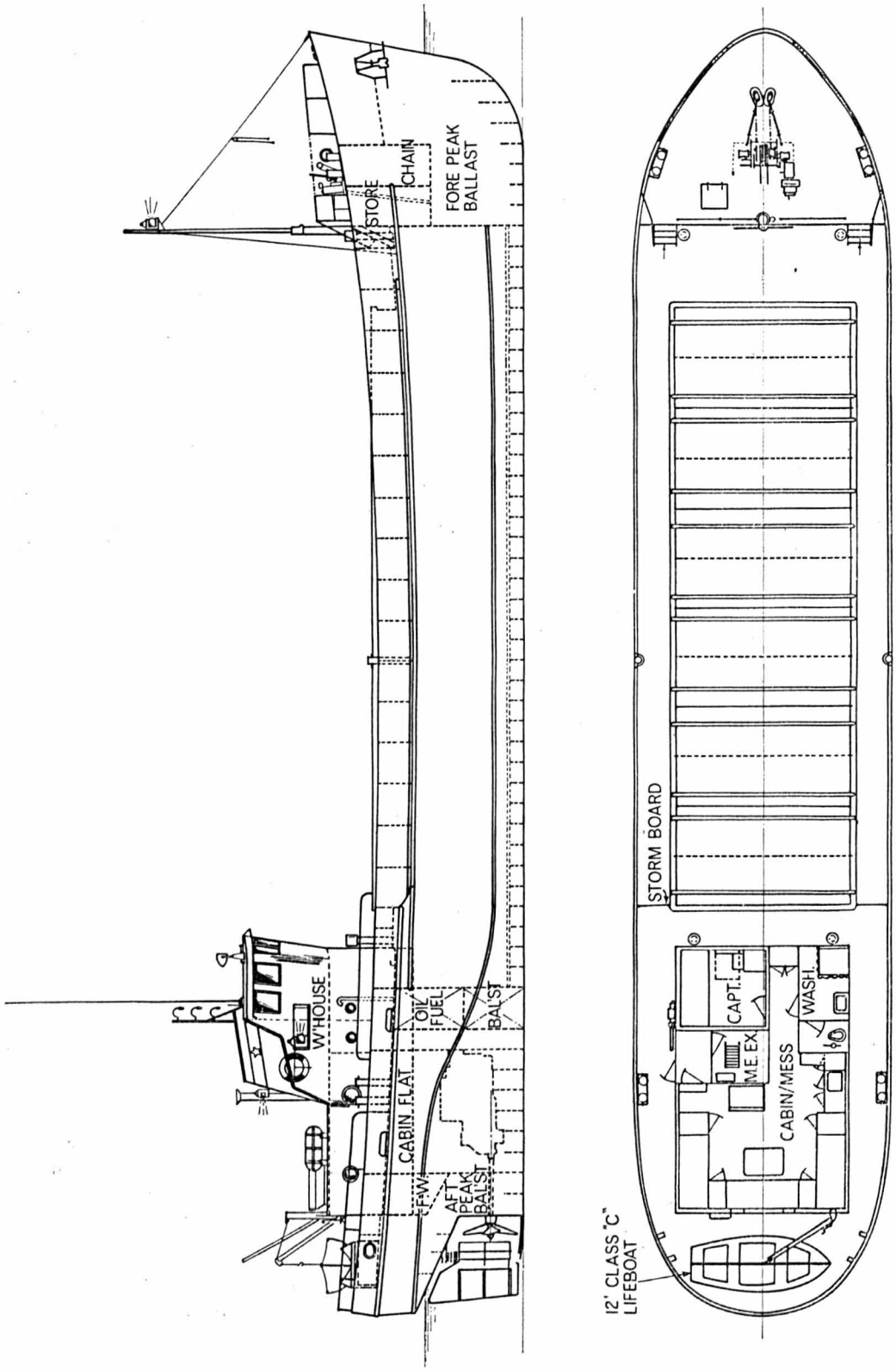
At the after end the deckhouse is sunk into the raised quarter deck, and houses the crew of three. The captain has a single cabin at the forward end, while the crew are in a combined cabin/messroom/galley at the after end. In this latter space is a Kempsafe cooker which also provides hot water and cabin heating, and a sink with draining board. A washplace with shower and washbasin is provided at the forward end, with a separate W.C. alongside.

A class "C" 12 ft. lifeboat is stowed athwartships, under a davit manufactured by the builders, and an inflatable raft is stowed on the deckhouse top.

To provide sufficient air-draft, the fore mast was manufactured by the builders and is of tubular telescopic type. The hatch beams, also manufactured by the builders, are made to slide fore and aft.

A wireless and echo sounder by Ajax Electronics, are fitted.

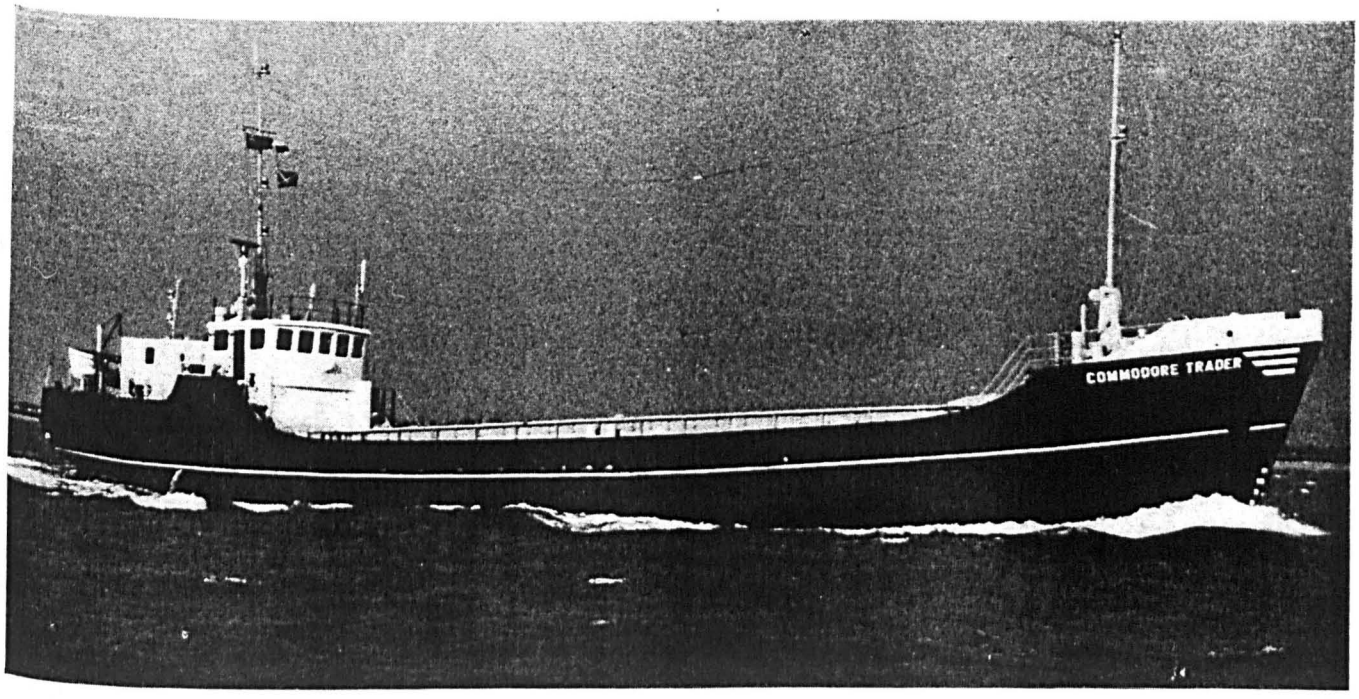
General Arrangement of "Edward Stone"



Reprinted from "Ship & Boat Builder International", November, 1965

Reprinted from FAIRPLAY INTERNATIONAL SHIPPING JOURNAL, *30th December, 1971*

"Commodore Trader"—Sophisticated Coastal Motor-Barge



THE sophisticated coastal motor-barge *Commodore Trader* was put into service recently by Commodore Transporters, Ltd. Designed by James W. Cook & Co. (Wivenhoe), Ltd., the builders—in consultation with the owners' chief superintendent engineer—to meet the specific requirements of the owners' particular trading activities, this versatile vessel has a length overall of 162 ft. 2 in. (49.4 m.), a breadth moulded of 28 ft. 6 in. (8.68 m.) and a deadweight of 645 metric tons when operating on a summer load draft of 10 ft. 1½ in. (3.09 m.). Fitted with MacGregor single pull type steel hatches, the hold-plus-hatch-area capacity for grain is 34,800 cu. ft.

She is built to Lloyd's Class +100A1 for U.K. coastal and Elbe to Brest trading limits and D.T.I. marine survey Class VIII certificates. The main propulsion machinery is a Lister Blackstone type ETSL6M marine diesel, turbocharged and intercooled, developing 630 b.h.p. continuously at 750 r.p.m., and fitted with a Lister Blackstone oil-operated reverse/reduction gearbox providing a reduction ration of 2 : 1. A bronze propeller of Novoston design is fitted.

In line with modern practice, accommodation is to a very high standard throughout and incorporates a hot-water radiator system powered by an oil-fired Perkins boiler installed in the engine room. This system also provides heating in the bridge area. Accommodations consists of a master's cabin, situated on the poop deck abaft the bridge, and an engineer's cabin, plus two single-berth cabins, together with a double-berth cabin, mess room, galley, galley store, washroom and toilets. Both the captain's cabin and the engineer's cabin are additionally fitted with washbasins, and the captain's suite includes W.C. facilities. A small heated drying room, together with oilskin locker, bosun's store and a deckstore are added facilities.

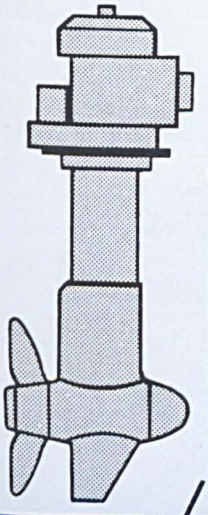
All accommodation and alleyway deckheads, together with external steel boundary bulkheads are fully insulated and cabins are panelled with plastic-faced Hardec, giving a pleasing and hygienic finish with minimum maintenance. Ventilating grid panels are fitted at the bottom of each cabin door. All cabin beds and furniture are of fitted timber construction, upholstery being best quality Vinide. Settees have foam rubber cushions and backs. To complete the *décor*, curtains are fitted to all cabin windows and port-holes.

Electronic navigation equipment includes Kelvin Hughes Finisterre radio-telephone; there is also a depth indicator and radar.

Under trial conditions and ballasted to a mean draft of 6 ft. 3 in., the *Commodore Trader* recorded an average speed of 11 knots over the measured mile. She is typical of the range of modern coasters and small bulk carriers within the 1,000-ton-deadweight class currently being turned out at Wivenhoe.

A new concept in coastal dry cargo vessels

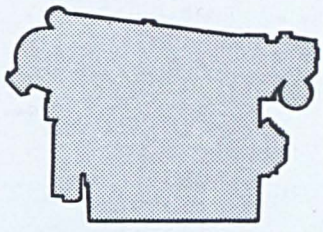
FEATURING



AQUAMASTER UNITS BY

OUTBOARD ENGINEERING LTD.

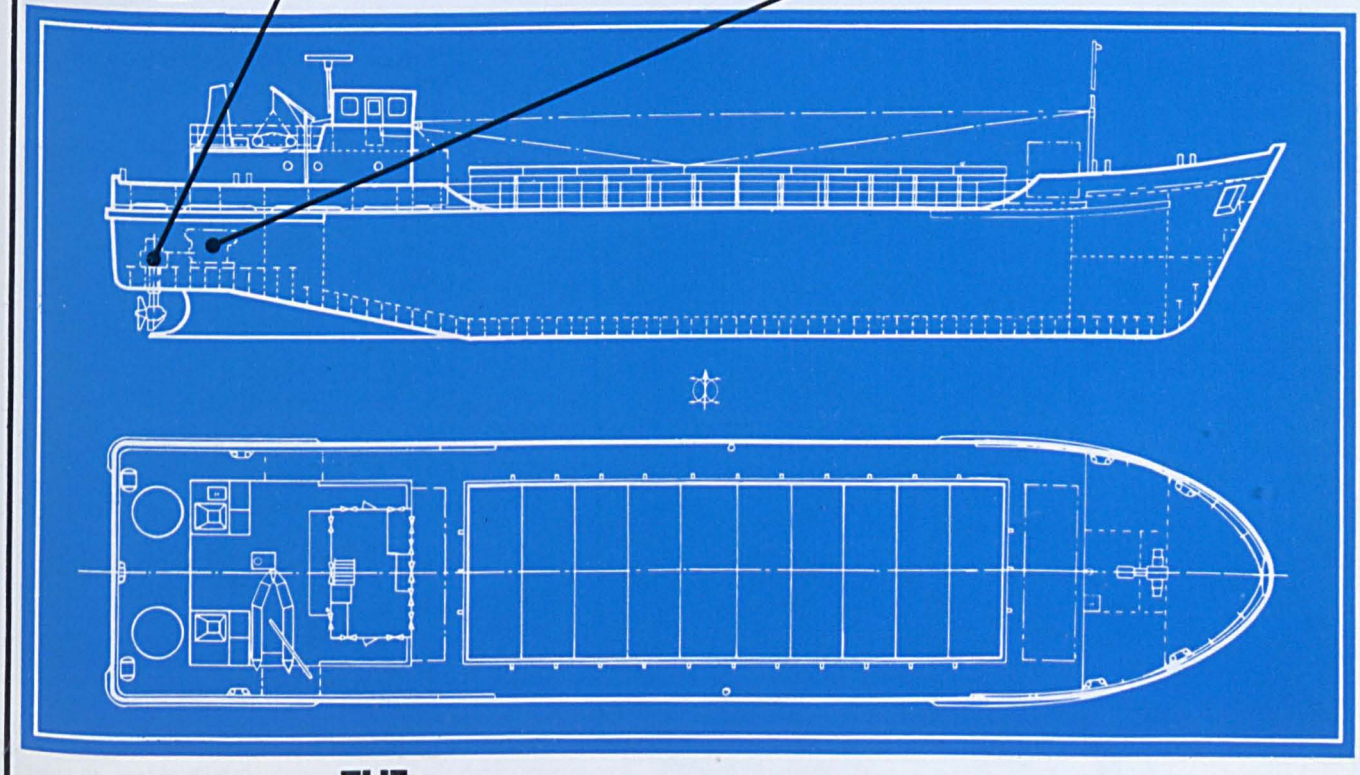
BOUNDARY HOUSE
STANSTEAD ROAD
BISHOP'S STORTFORD
HERTS.



CATERPILLAR ENGINES BY

H. LEVERTON & CO. LTD.

MAIDENHEAD ROAD
WINDSOR, BERKS.



BUILT BY **THE YORKSHIRE DRY DOCK CO LTD**

LIME STREET HULL

FOR **WILKS SHIPPING CO LTD**

RODWELL HOUSE MIDDLESEX STREET LONDON E1 7HJ

GENERAL PARTICULARS AND DESCRIPTION OF M.V. "WILKS"

Length o.a.	**43.86 m**	Engines	**2 Caterpillar D343 turbo-charged**
Length b.p.	**40.76 m**	Bhp	**365 each**
Breadth mld.	**9.50 m**	Rev/min, engine	**1800**
Depth mld.	**4.75 m**	Propulsion units	**Twin Aquamaster US 400**
Draught, loaded	**3.92 m**	Propellers	**4-bladed manganese-bronze**
Air draught, max.	**7.32 m**		
		Complement	**6**
Gross tonnage	**495 tons**		
Deadweight	**1002 t**	Trial speed	**10 knots**
Fuel capacity	**15 tonnes**	Auxiliaries	**2 main-engine driven CAV alternators**
Freshwater capacity	**3 tonnes**		**1 Lister SR3MA + CAV alternator**
Hold capacity, grain	**42,300 ft³**		**Supply 24V d.c.**
Water-ballast capacity	**205 tonnes**	Pumps	**DESMI, auxiliary-driven**
Windlass	**Gemmell & Frow, with Lister diesel drive**	Hatchcovers	**MacGregor single-pull**
		Autopilot	**Robertson, Norway**
		Radar and radio-tel.	**Kelvin Hughes**

Builder	**The Yorkshire Dry Dock Company Ltd., Hull, England. Yard No. 238**
Owner	**Wilks Shipping Co. Ltd., England**
Classification	**Lloyd's Register ✠ 100 Æ1. Dept. of Trade. Class VIII.**

This single-deck dry cargo coastal motor barge was completed in early 1976 for a subsidiary of Eggar Forrester (Holdings) Ltd for service within U.K. Home Trade limits. The half-round rubbing bars and the massive rubber fendering (by Firestone Burleigh) reinforce the general impression of a sturdy, commonsense craft designed for a long life of hard service and able to take the knocks and bumps of coastal and inland waterways operation.

The mast and radar scanner can be lowered to reduce the air draught.

Four watertight bulkheads divide the vessel into compartments comprising fore peak, water ballast tank forward, hold, water ballast tank aft and engine room.

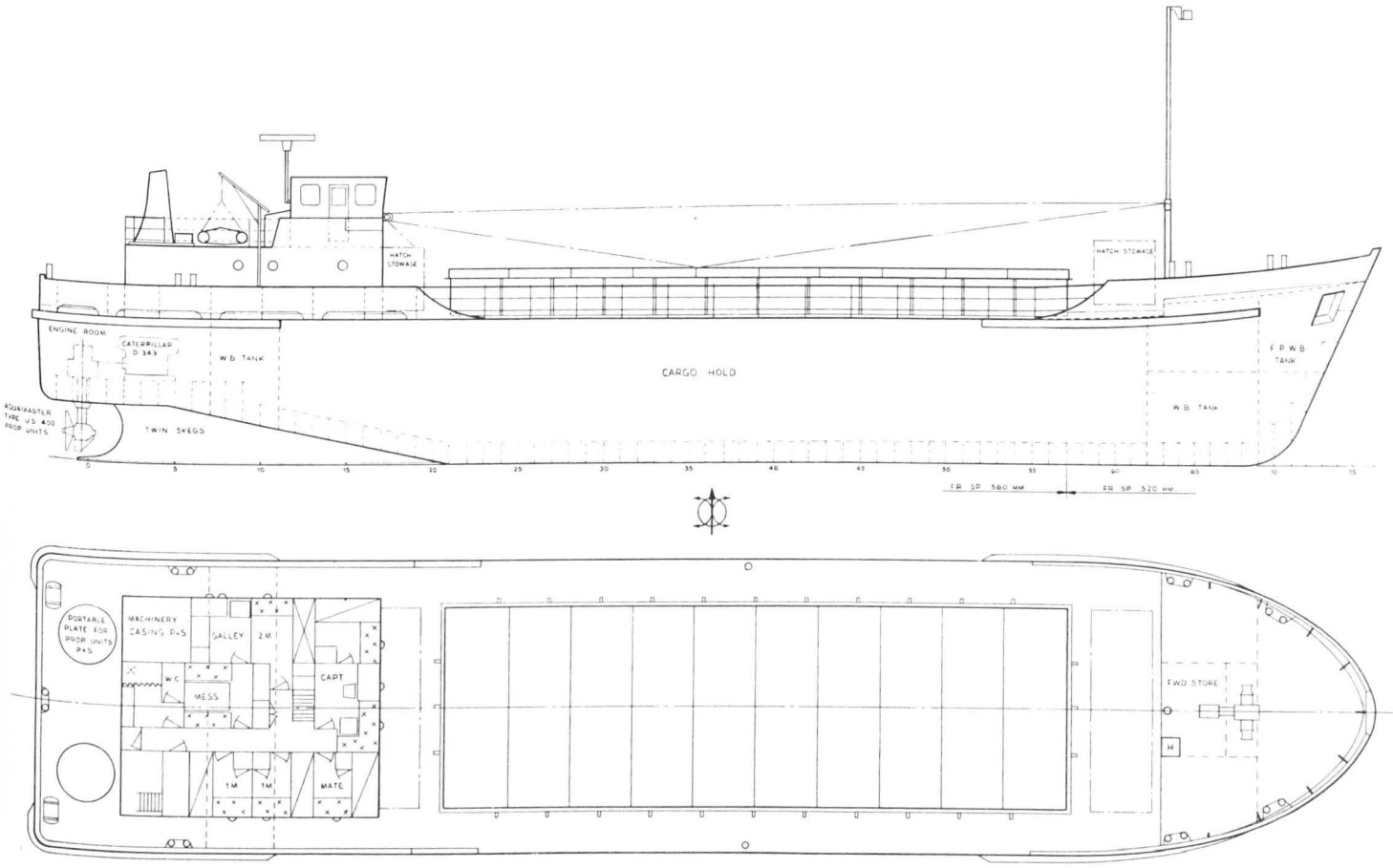
The single hatchway measures 20.15 m inside length x 6.50 m inside breadth. The covers stow both forwards and aft of the coaming. They are operated by a diesel-driven windlass.

In common with the usual practice of the builders, all steel was shot-blasted and primed at the mills prior to delivery.

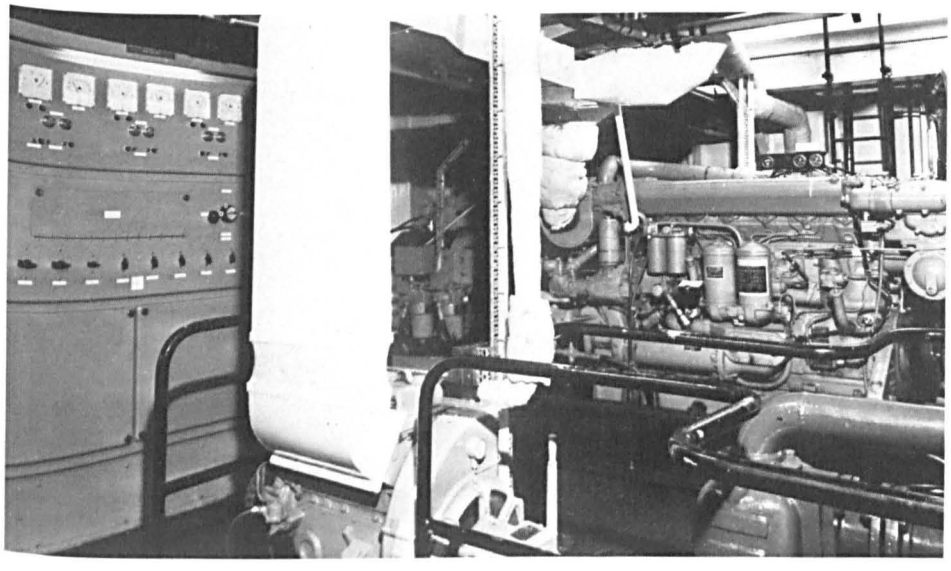
Besides a Dunlop C-type raft under a davit abaft the wheelhouse, there there are two six-man inflatable liferafts in fibreglass containers on deck cradles.

The Aquamaster propulsion units are mounted in individual integral cylindrical wells whereby they may be removed for servicing whilst the vessel is afloat at light draught. Removable plates are fitted in the main deck above the units for this purpose.

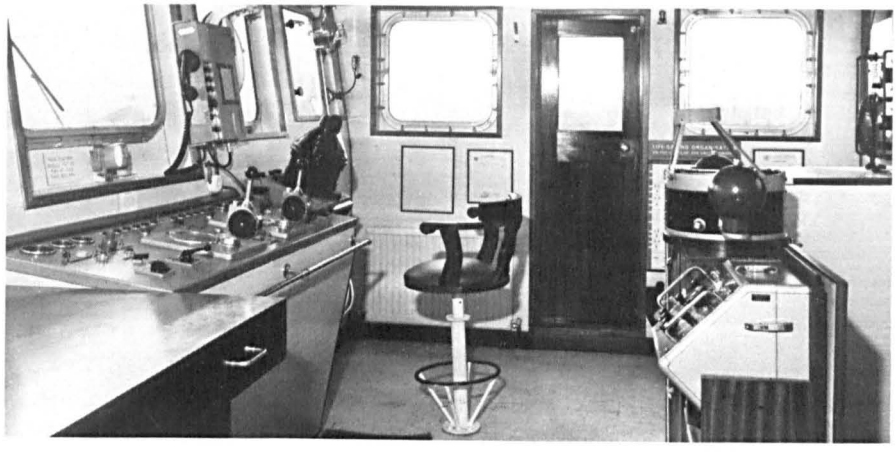
The autopilot which is fitted steers on one Aquamaster only. For improved directional stability and the protection of the propulsion unit when lying aground, heavy steel skegs are fitted ahead of each propeller.



General arrangement of the Wilks



This engine-room view shows one of the two Caterpillar engines driving the Aquamaster propulsion units. The Lister-powered auxiliary alternator is in the foreground, with the main switchboard to the left (i.e., aft).



The wheelhouse is uncommonly roomy and well-equipped. Beyond the bridge control console is the radar and, above, the radio-telephone set.

The vessel is designed to carry a general cargo load in a single hold to give maximum flexibility of operation for coastal tramping. The stern and machinery design enable the engines to be positioned well aft, thereby increasing the available space for cargo within the hull. This gives a remarkably high proportion of freight earning space without reducing engine accessibility or crew amenities.

The Caterpillar D343 T.A. Marine diesel engines are high range engines with extensive service experience throughout the world. Spare parts are available very rapidly from stocks thereby reducing possible down time to a minimum.

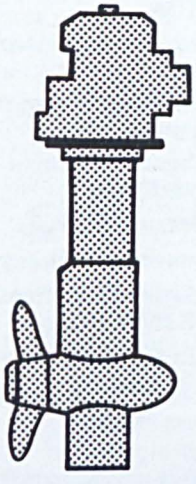
Each engine drives an Aquamaster propulsion unit with its own integral clutch and hydraulic steering system. As the propellers can be rotated through 360 degrees in the horizontal plane, the vessel has a very high manoeuvrability, which is most useful in confined inland waterways. The thrust of the propellers can be reversed in seven seconds without changing the rotation of the shafting so the stopping cabability of the vessel is also excellent.

The system gives simple remote control of the main machinery through the Aquapilot control heads in the wheelhouse console. Horizontal rotation of the levers gives full steering control through 360 degrees whilst vertical rotation of the levers operates, initially the clutch and then the engine speed through a mechanical cable connection.

The vessel being twin screw remains operational with only a small reduction in speed in the event of a machinery failure.

A better concept in coastal dry cargo vessels

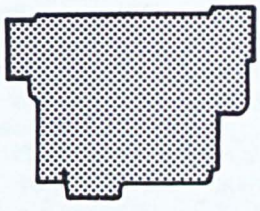
FEATURING



AQUAMASTER UNITS BY

OUTBOARD ENGINEERING LTD.

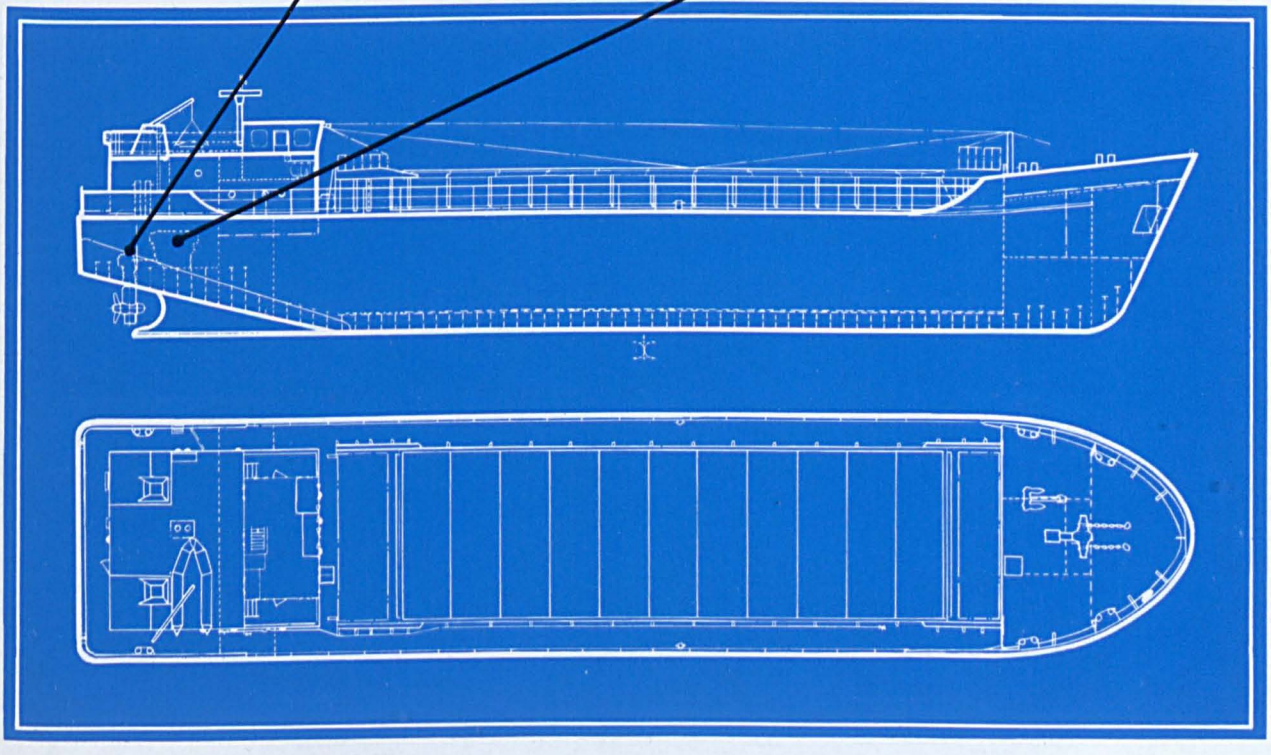
14 SILVER STREET
STANSTED,
ESSEX
☎ 0279-814716



CATERPILLAR ENGINES BY

H. LEVERTON & CO. LTD.

MAIDENHEAD ROAD
WINDSOR, BERKS.
☎ 07535-68121



BUILT BY **THE YORKSHIRE DRY DOCK CO LTD**

LIME STREET HULL ☎ 0482-29955

FOR **WILKS SHIPPING CO LTD**

RODWELL HOUSE MIDDLESEX STREET LONDON E1 7HJ ☎ 01-377-9366

Principal Particulars

The Yorkshire Dry Dock Co. Ltd.

New Vessel No. 257

Building for Wilks Shipping Co. Ltd., London

Type—Single-deck dry cargo coastal motor barge for service within U.K. Home Trade limits.

Length o.a.	**45.54m (149′ 5″)**
Length b.p.	**41.88m (137′ 5″)**
Breadth mld.	**9.40m (30′ 10″)**
Depth mld.	**4.75m (15′ 7″)**
Fuel capacity	**15 tonnes**
Fresh water capacity	**5 tonnes**
Ballast capacity	**196 tonnes**
Hold capacity, grain	**45,000 ft³**
Gross tonnage, max.	**499 tons**
Deadweight, total on Summer Mark	**1,040 tonnes**
Summer Draft even keel S.W.	**3.90m (12′ 9½″)**
Air draft, max. F.W.	**6.70m (22′ 0″)**
Hatchway	**22.16m (72′ 8″) × 6.50m (21′ 4″)**
Hatchcovers	**MacGregor single-pull steel**
MAIN ENGINES	**2 × Caterpillar type 3408TA each 365 BHP at 1,800 RPM**
PROPULSION UNITS	**2 × Aquamaster US400**
Propellers	**4-bladed manganese-bronze**
Speed	**About 10 knots in ballast condition**
Auxiliary Engine	**Lister SR3MA**
Ballast Pump	**Desmi, auxiliary driven**
Windlass	**Gemmell & Frow, Lister SR2MA driven**
Electrical Installation	**Vic Coupland Ltd., 24V d.c. supply**
Accommodation	**max. 6 men**

Classification Lloyd's Register + 100 AI
Dept. of Trade Class VIII

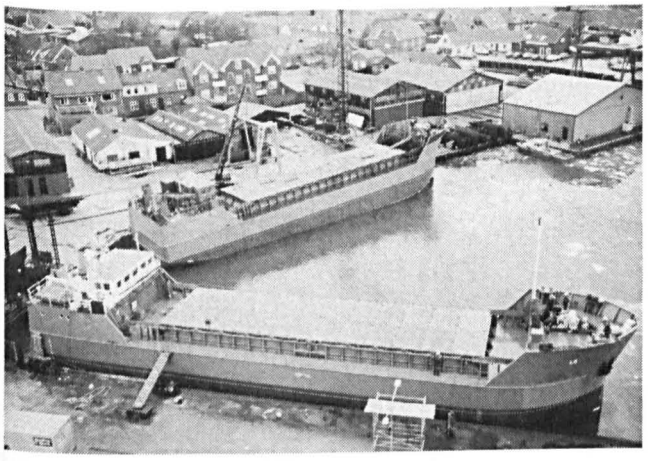
The above particulars refer to the vessel currently building for Wilks Shipping Co. Ltd., which is a development of the WIS, the last vessel built for this company.

Reprinted from FAIRPLAY INTERNATIONAL SHIPPING WEEKLY *26th February, 1981*

Wilks Shipping boosts fleet with Nordsovaerftet newbuildings

NOW in service with the U.K.'s Wilks Shipping Co., are the first two vessels in a three-ship series ordered by the London-based owner from the "energetic" Danish short sea specialist Nordsovaerftet at Ringkobing. Named *Wiggs* and *Lu*, these 45.55 m. long vessels have joined three almost identical vessels already trading with Wilks, and continue the company's policy of keeping the vessels in its fleet basically simple in design and therefore simple to operate.

Wiggs and *Lu* are an adaptation of their predecessors, *Wiks, Wib* and *Wis*, built in the U.K. by the Yorkshire Dry Dock Co. Ltd. at Hull, being basic motor barges, designed as sturdy workhorses for a long hard life, with few frills. They are both single deck dry cargo motor barges, with a cargo earning capacity of around 1,000 d.w.t. Following their U.K.-built sisters, both the Ringkobing vessels employ Aquamaster propulsion units, continuing Wilks Shipping's preference for this type of prime mover in its fleet.



The two 499 g.r.t. motor barges "Lu" and "Wiggs" fitting out at the Danish shipyard Nordsovaerftet in Ringkobing. Both 45 m.-long vessels are now in service for Wilks Shipping, and will be followed by a third vessel in the early part of 1982.

The reason for the owners decision to cross the North Sea for this series of vessels, revolved around two contributing factors; price and delivery. The Danish shipyard, which has been making great inroads into the traditional short sea market of North European builders, quoted a "remarkably low" price for the first two ships and offered rather short construction time, as their size and un-sophisticatedness, fitted neatly into a "hole" in the yard's orderbook. Wilks also looked at shipyards in the U.K. and Holland, but was persuaded by the very attractive proposition offered by Nordsovaerftet. The contract, for the first two ships, was signed on June 9th, 1980, with the *Lu* being handed over on December 15th, 1980, and the *Wiggs* following on January 12th, 1981.

Both *Wiggs* and *Lu* have been built to Lloyd's Register of Shipping class +100A1, and to the U.K.'s Department of Trade Class VIII Home Trade Limits and, as mentioned before, are updated versions of the trio bult by the Yorkshire Dry Dock Co. Ltd. The design for the Nordsovaerftet series, though, has not been produced by the shipyard, but by a combination of the owners and U.K. designers Fairmile Ltd., of Cobham, Surrey. The main design criteria was that the vessels should be less than 150 ft. long; which has resulted in principal particulars of: 45.55 m. length o.a.; 42 m. length b.p.; 9.4 m. moulded breadth; 4.75 m. depth and a g.r.t. of 496.51 tonnes. The stern and machinery design enables the propulsion system to be positioned well aft, thereby increasing the cargo earning capabilities of the vessels. This gives a remarkably high proportion of freight earning space without reducing engine accessibility or crew areas. Cubic capacity is 44,560 ft.^{3} grain and 40,260 ft.^{3} bale. Outwardly, the most noticeable differences between the Yorkshire Dry Dock built trio, and the Danish vessels, is that the latter have full-height poops and full-height forecastles.

It has been the owners intention to standardise as much as possible throughout its fleet, and as a consequence the deck machinery, hatch covers and propulsion machinery fitted to the *Wiggs* and *Lu* is of the same make as that fitted to the *Wiks, Wib* and *Wis*. Once again Gemmell & Frow windlasses (driven by Lister diesels) have been installed, as have MacGregor single-pull, wire-operated steel hatch covers.

The most distinct feature of the Wilks Shipping fleet is the fact that the company is one of the leading advocates of the Aquamaster-type of propulsion system, with the Danish-newbuildings continuing this tradition. According to the owners, the Aquamaster unit provides the best possible manoeuvring system available on the market (pertaining the vessels dimensions), more so than the more common Schilling, Jastram rudders, etc. The *Wiggs* and her sistership *Lu* are both fitted with twin Aquamaster US400 units, each driven by a Caterpillar 3408T diesel engine, derated to 230 b.h.p. at 1,800 rev./min. Both Cat diesel run on gas-oil and burn 1.75 tonnes per day, giving a speed of 7.4 knots in a loaded condition. Each Cat diesel drives, directly, an Aquamaster propulsion unit with its own integral clutch and hydraulic steering system. As each unit's propeller is fully rotatable through 360° in the horizontal plane, a high degree of manoeuvrability is provided, with direction stability being further enhanced by the fitting of heavy steel skegs ahead of each propeller. These skegs also act as protection for the propulsion units when the vessel is lying aground. The vessels are expected to spend at least one third of their service life in confined waters, such as rivers, estuaries, docks and inland.

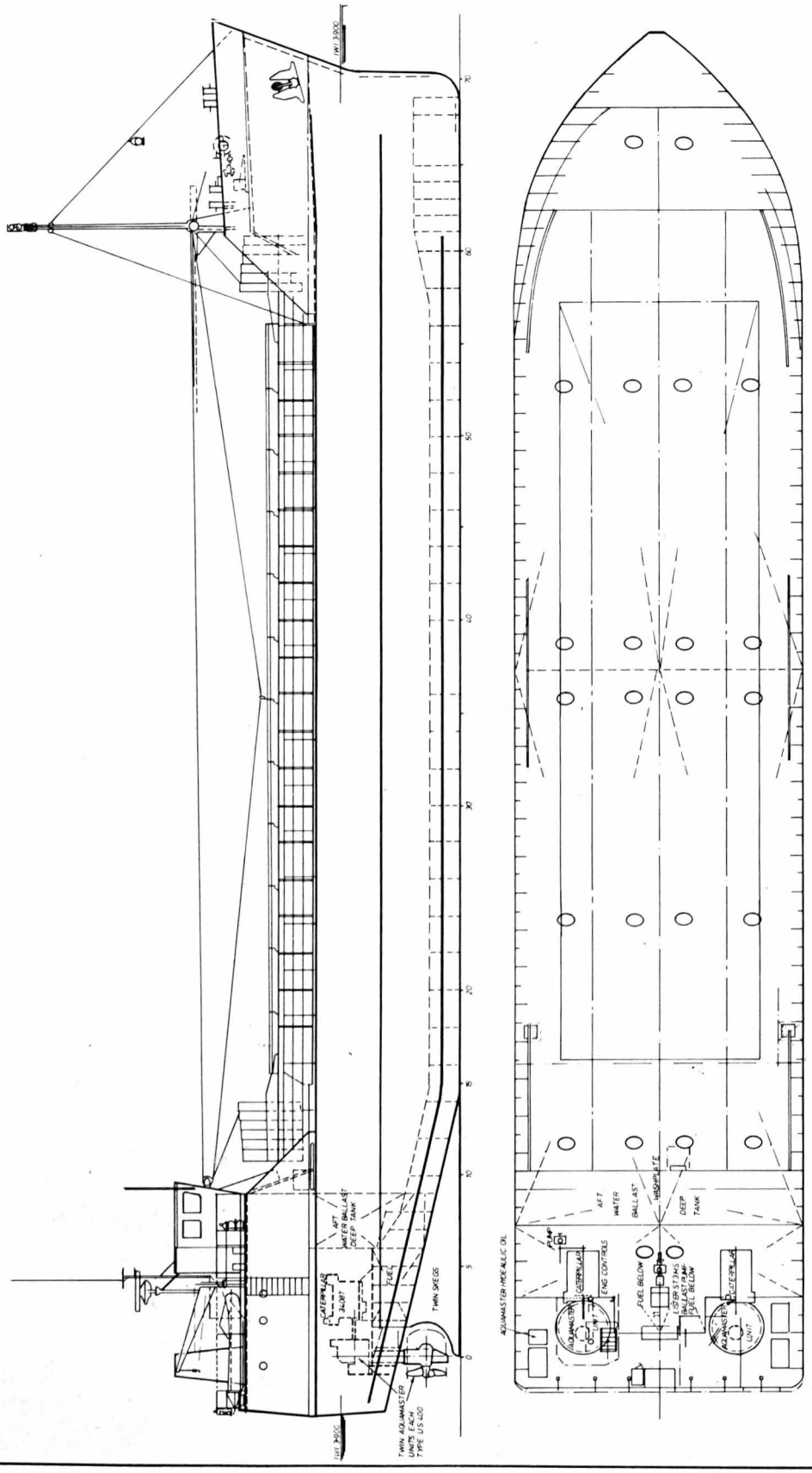
Machinery control is remote from the wheelhouse, via Aquapilot controls. Horizontal rotation of the levers gives full steering control through 360°, while vertical rotation of the levers operates, initially the clutch, and then the engine speed through a mechanical cable connection. The wheelhouse is compact, with a Decca 450 auto-pilot and Decca 1500 radar being provided, as well as Sailor radio equipment (a mf set and a vhf unit). Accommodation is provided for a crew of four, master, mate and two seamen, each in single berth cabins. A spare two-berth cabin also being provided. The ships do not carry a seagoing engineer, maintenance and servicing being provided by shore-side personnel.

Wilks Shipping, a member of the Eggar, Forrester (Holdings) Group, predominently operates out of the ports on the East Coast U.K. (between Shoreham and the Firth of Forth) to near Continental ports, between Cherbourg and Delfzil, with a heavy emphasis of trading into and out of the Schelde. Main cargoes carried are steel, fertiliser, scrap and grain.

● It seems that Nordsovaerftet has produced another new design for a short sea trader which has attracted the attention of a number of Danish operators.

General Arrangement
"Wiggs"

owned by Wilks Shipping Co., London, U.K.



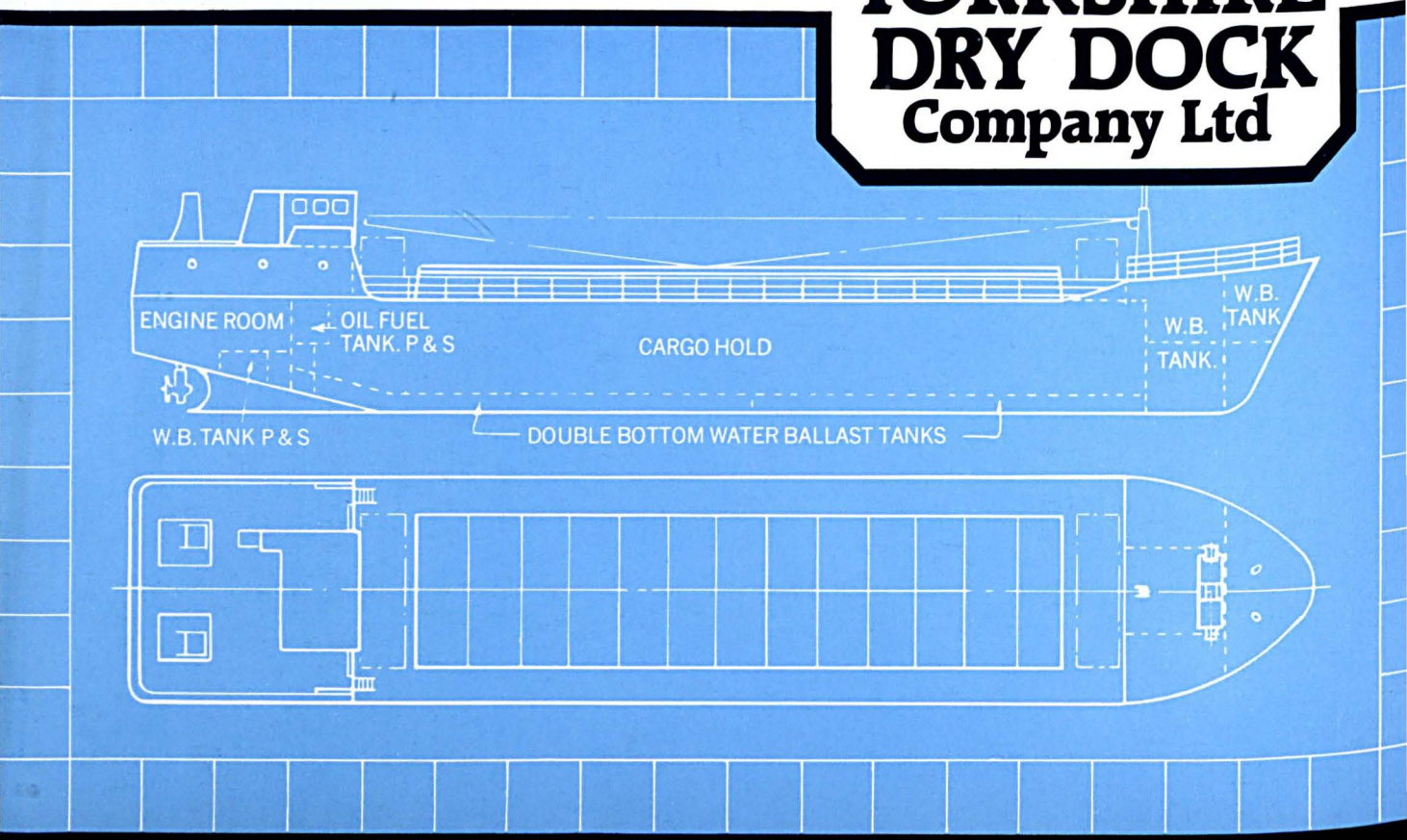
The YORKSHIRE DRY DOCK Company Ltd

Lime Street, Hull HU8 7AG Telephone: 0482 29955 Telex: 597632

50 metre Standard Coaster

Standard Data Sheet

The YORKSHIRE DRY DOCK Company Ltd



50 metre Standard Coaster

CLASSIFICATION ..... D.O.T. Class VIII
Bureau Veritas I. 3/3 E✠Cargoship
Deep Sea — European Coasting Service.
✠M.O.T.

LENGTH OVERALL 49.99M

LENGTH B.P......46.42M

BREADTH MLD. 9.40M

DEPTH MLD......4.75M

LOAD DRAFT.....4.05M

AIR DRAFT.....7.20M

GROSS TONNAGE .....499 T

DEADWEIGHT.....1230 T

FUEL CAPACITY .....23 T

FRESH WATER .....7 T

WATER BALLAST .....483 T

GRAIN CAPACITY.....1484 cu.m.

ENGINES ..... Twin Cummins KT. 1150M diesels each 365 b.h.p. cont. at 1800 r.p.m.

PROPELLER UNIT ..... Twin Aquamaster US.400

SPEED ..... 9.5 knots

AUXILIARY ..... Lister ST3MA diesel 30 b.h.p. at 2600 r.p.m. driving a Desmi type SA/100 ballast pump

FOR'D AUXILIARY ..... Lister ST2MA diesel 20 b.h.p. at 2600 r.p.m. driving a Desmi type S.70 Fire/Washdeck pump

HATCHES ..... One

HATCH COVERS ..... MacGregor 'single pull' type

WINDLASS ..... Ten Horn B.V. Hydraulic Windlass

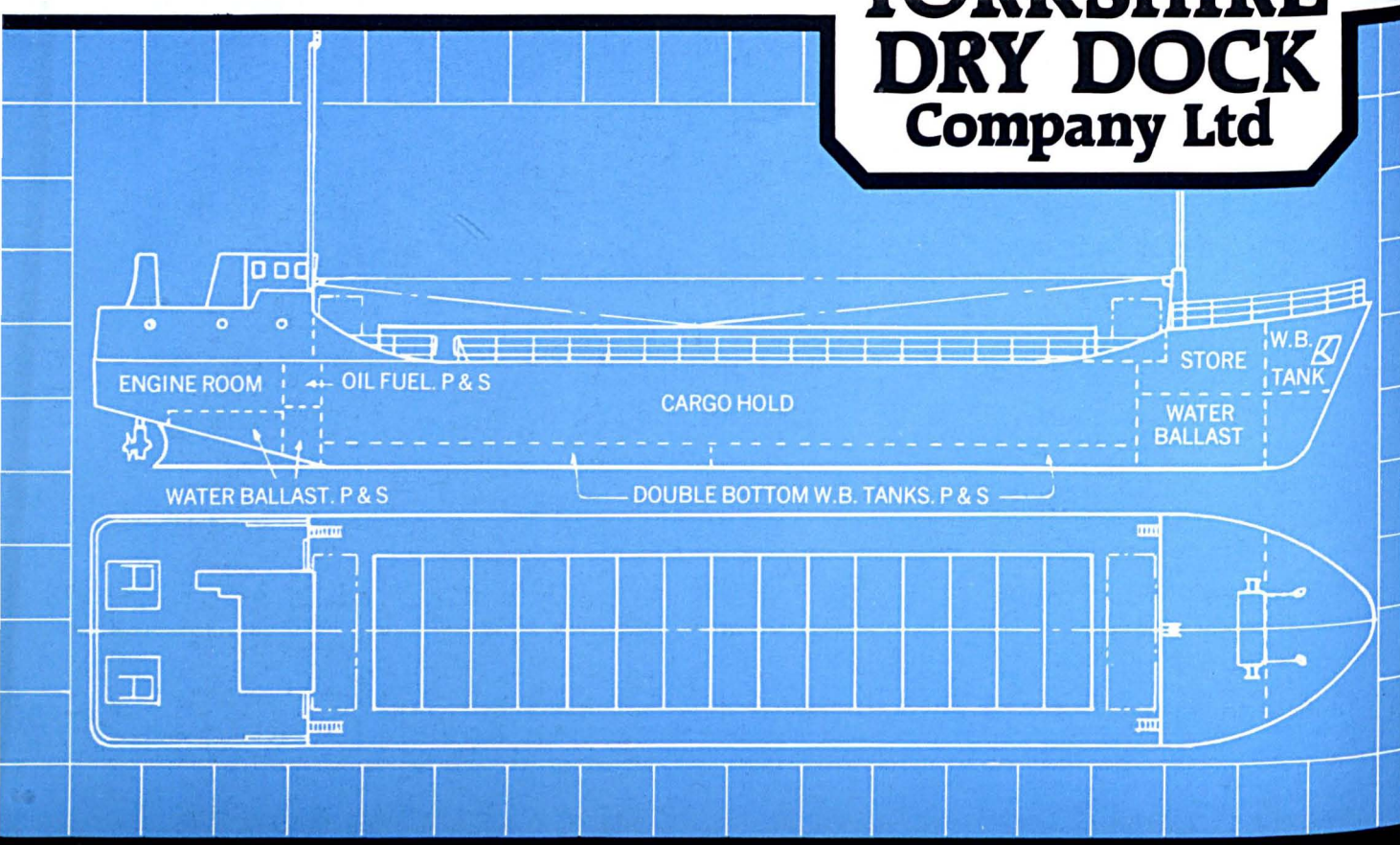
The YORKSHIRE DRY DOCK Company Ltd

Lime Street, Hull HU8 7AG Telephone: 0482 29955 Telex: 597632

55 metre Standard Coaster

Standard Data Sheet

The YORKSHIRE DRY DOCK Company Ltd



55 metre Standard Coaster

CLASSIFICATION ..... D.O.T. Class VIII,
Bureau Veritas I 3/3 E ✠ Cargoship
Deep Sea — European Coasting Service
✠ M.O.T. with AUT - MS.

LENGTH OVERALL 55.00M

LENGTH B.P......51.65M

BREADTH MLD. 9.40M

DEPTH MLD......4.33M

LOAD DRAFT.....3.56M

AIR DRAFT.....6.50M

GROSS TONNAGE .....499 T

DEADWEIGHT.....1175 T

FUEL CAPACITY .....22 T

FRESH WATER .....12 T

WATER BALLAST .....548 T

GRAIN CAPACITY.....51000 cu.ft.

ENGINES ..... Twin Cummins KT. 1150M diesels each 365 b.h.p. cont. at 1800 r.p.m.

PROPELLER UNIT ..... Twin Aquamaster US.400

SPEED ..... 9.5 knots

AUXILIARY ..... Lister ST3MA diesel 30 b.h.p. at 2600 r.p.m. driving a Desmi type SA/100 ballast pump.

FOR'D AUXILIARY ..... Lister ST2MA diesel 20 b.h.p. at 2600 r.p.m. driving a Desmi type S.70 Fire/Washdeck pump

HATCHES ..... One

HATCH COVERS ..... MacGregor 'single pull' type

WINDLASS ..... Ten Horn B.V. Hydraulic Windlass

Equipment fitted to vessel to allow navigation on the River Rhine.

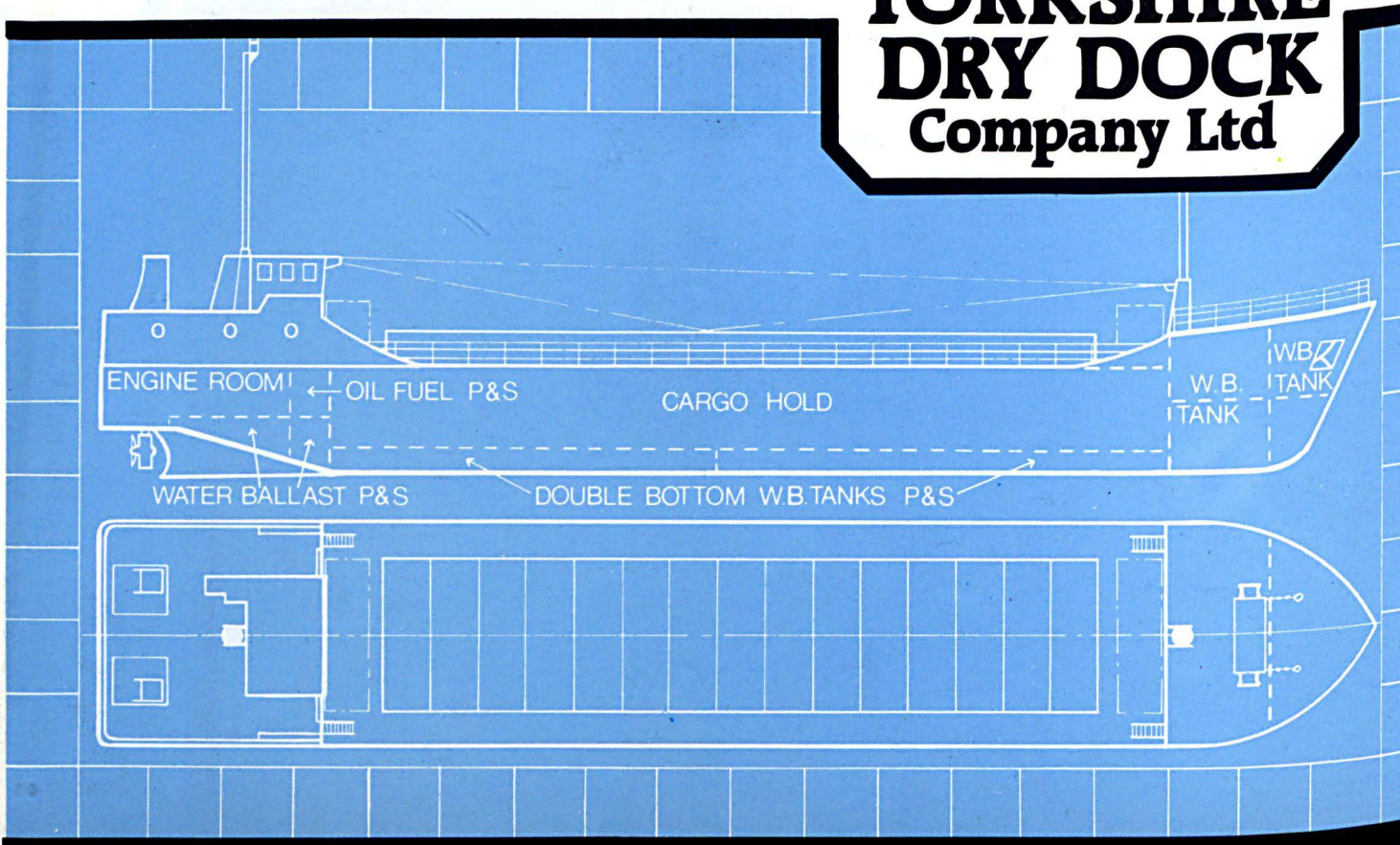
The YORKSHIRE DRY DOCK Company Ltd

58 metre Standard Coaster

Lime Street, Hull HU8 7AG. Telephone: 0482 29955 Telex: 597632

Standard Data Sheet

The YORKSHIRE DRY DOCK Company Ltd



58 metre Standard Coaster

CLASSIFICATION ..... D.O.T. Class VIII,
Bureau Veritas I 3/3 E ✣ Cargoship
Deep Sea — European Coasting Service
✣ M.O.T. with AUT - MS.

LENGTH OVERALL 58.27M

LENGTH B.P. 54.70M

BREADTH MLD. 9.40M

DEPTH MLD. 4.75M

LOAD DRAFT 3.898M

GROSS TONNAGE 794

DEADWEIGHT 1400T

FUEL CAPACITY 30T

FRESH WATER 7T

WATER BALLAST 626T

GRAIN CAPACITY ..... 62000 cu.ft.

ENGINES ..... Twin Cummins KT. 1150M diesels each 365 b.h.p. cont. at 1800 r.p.m.

PROPELLER UNIT ..... Twin Aquamaster US.401

SPEED ..... 9.5 knots

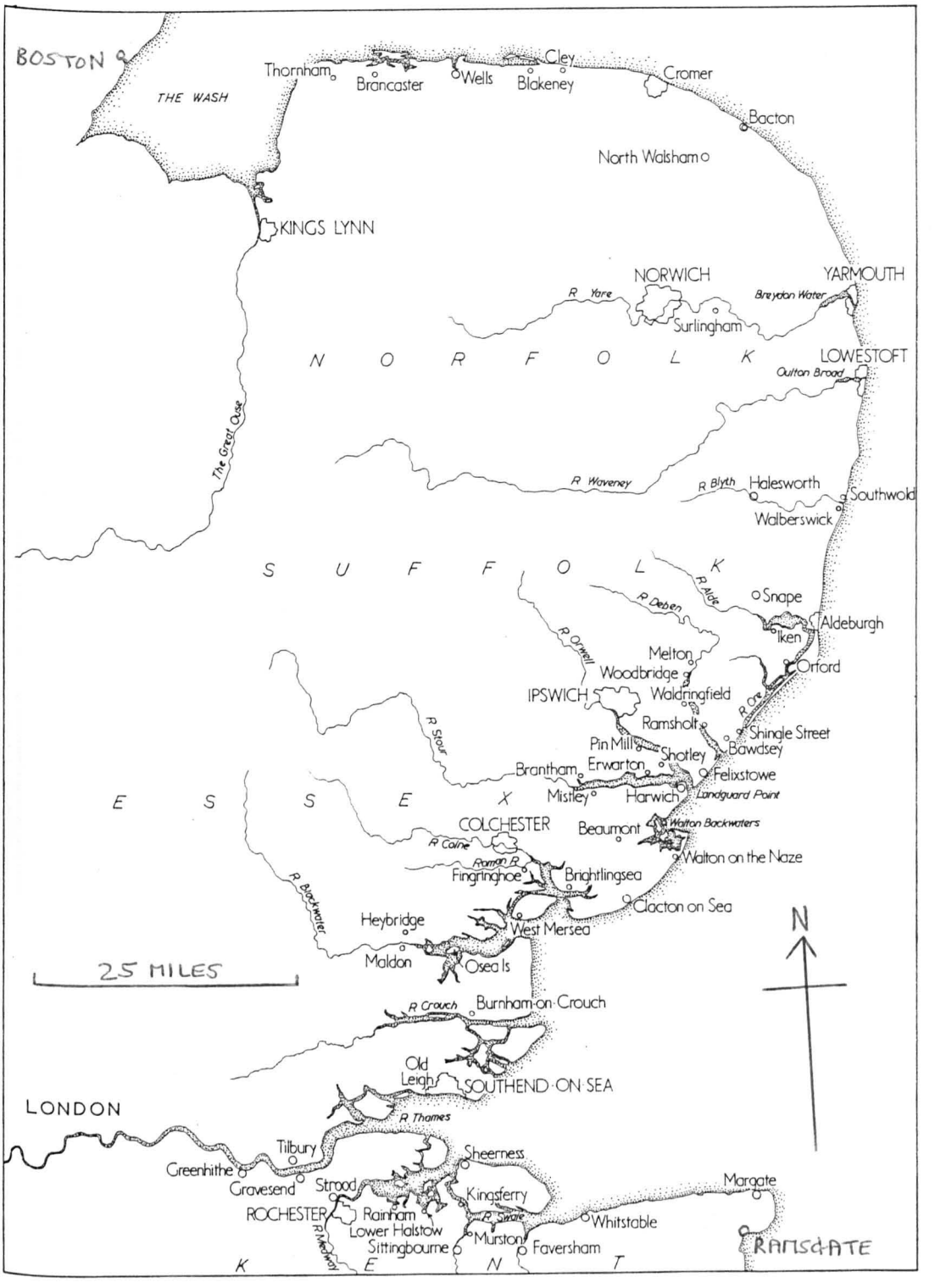
AUXILIARY ..... Lister ST3MA diesel 30 b.h.p. at 2600 r.p.m. driving a Desmi type SA/100 ballast pump.

FOR'D AUXILIARY ..... Lister ST2MA diesel 20 b.h.p. at 2600 r.p.m. driving a Desmi type S.70 Fire/Washdeck pump

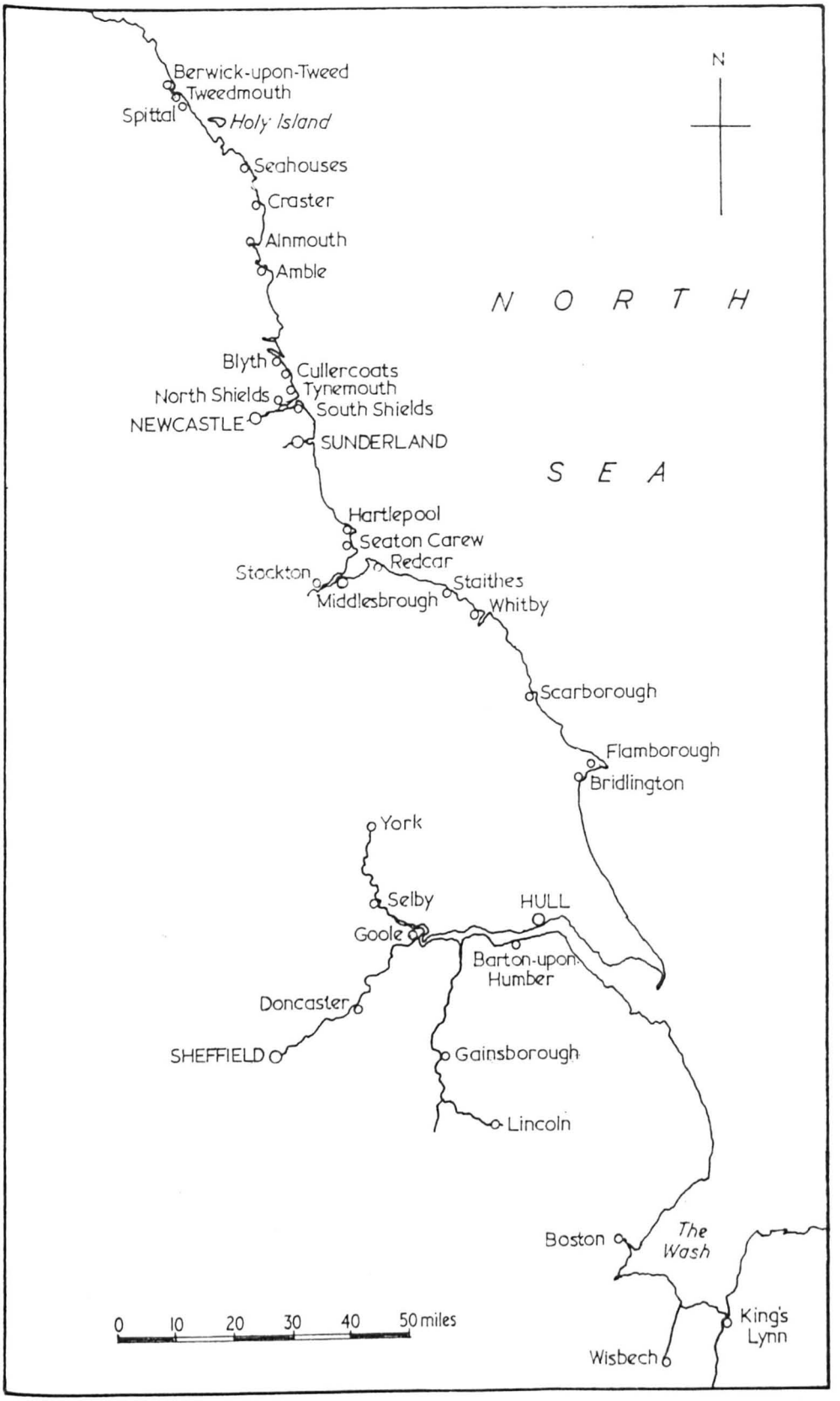
HATCHES ..... One

HATCH COVERS ..... MacGregor 'single pull' type

WINDLASS ..... Ten Horn B.V. Hydraulic Windlass



Map 1. Barge Country. Source: Simper (1972) p 109.



Map 2. The North East Coast. Source: Simper (1975) p 93.

Map 3. Barge Country, Down Channel and the Near Continent.

Source: The author.