

Management Response in British Coastal Shipping Companies to Railway Competition

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This essay will examine the ways in which British coastal shipping businesses reacted to competition from railways. It is divided broadly into five sections. The first sketches the role of coastal shipping before the advent of the railways and explores the impact of steam on short-sea shipping. The second analyses the part played by the short-distance early railways, which were perceived initially as at best minor threats to coastal shipping. Indeed, many were seen as beneficial because they enhanced the flow of goods to and from ports. The third section examines the threat from the long-distance national rail lines that began to appear in the 1840s. The fourth considers the range of responses, including attempts at intra- and inter-modal collusion; a search for technological improvement; a more positive market segmentation; and a re-appraisal of pricing methods. Finally, I will evaluate the success of these responses in securing market shares for the coaster.

As a method of moving goods and people, coastal shipping has a long history. In the early modern period it was an important industry in Britain, even if estimates of its significance vary enormously.¹ With an extensive coastline and many navigable rivers, Britain became particularly reliant on coasters to move coal, grain, ore and a wide range of agricultural and extractive goods.² Despite having been virtually ignored by some recent historians of the industrial revolution, coastal shipping was crucial to British industrialisation and its growing trade.³ Coasters linked the various regions into something approaching a national economy, carrying not only bulky, low-value products but also manufactures, such as linen, cheese, iron goods, and beer and spirits. They were ubiquitous, as a perusal of directories for port cities or early local newspapers reveals.

The value of the coaster was much enhanced with the advent of steam. Although there were earlier experiments, the first commercial steamboat service in the UK was inaugurated in 1812 by Henry Bell, who ran the *Comet* on the Clyde and its estuaries between Glasgow and Gourock.⁴ This service, which spawned many others, began thirteen years before the pioneering Stockton and Darlington Railway and eighteen before the Liverpool and Manchester.⁵ In other words, steam was exploited much earlier on water than on rails. The advantages of steam to water transport were enormous. Although largely confined to rivers, estuaries, and coastal routes, steam provided a predictability that sailing ships lacked.⁶ No longer subject to tides and fickle winds, steamers could proceed at steady speeds in almost all conditions, in marked contrast to the sailing coaster, which could and did make some fast passages, but could also be becalmed for days or trapped in harbours by contrary winds. On tidal rivers, sailing vessels frequently could

make no headway against a tide or current and hence could only use half the working day. Steamboats brought speed and punctuality to transport well before the railways, allowing both more regular exchanges of information and reductions in inventories.

Yet there were also drawbacks to the early steamboat. One was safety, for the new technology posed novel problems.⁷ Unreliable boilers and a poor understanding of safety procedures led to fairly frequent explosions that attracted press attention and parliamentary enquiries. Moreover, the steamboat's ability to make good progress when other ships were stationary could itself be a problem. For instance, while it could maintain its usual speed in fog, this could lead to collisions if lookouts were not alert. Still, such dangers did little to constrain the demand for steam. Much more important in this regard were the inefficient boilers and the voracious demands of the engines for fuel, both of which prevented early steamers from making long journeys economically. Even on short coastal, estuarine and river passages there was little room for cargo by the time the engines and boilers had been accommodated and the bunkers filled.

As a result, early steamboats were restricted in their routes and cargoes. Compared to sailing vessels, they had to charge a premium to cover the additional capital and fuel costs. Only those goods which benefited most from rapid and predictable transport could bear the higher freight rates. The early steamers thus concentrated on post, parcels, passengers, perishables and livestock, all of which were either light and lacked bulk or benefited from speedy carriage by virtue of rapid deterioration or high value. By the late 1820s there was a range of short steam services to complement the more ubiquitous, cheaper, but less predictable sailing coaster, which continued to carry bulky goods and general cargoes. It was into this environment that the early railways intruded.

Early railways were not perceived as threats to coastal shipping. On the contrary, they were seen as beneficial since they promised to increase coastal traffic. Many of the earliest, such as the colliery lines in the northeast, were no more than economical methods of moving coal from pitheads to the nearest navigable waterway, be it river or coast, where it could be loaded into coastal colliers for shipment south.⁸ In this respect they were feeders to the coastal shipping network. Some of the early short-distance public steam railways were essentially extensions of this principle. For example, the Stockton and Darlington Railway (SDR) was intended to link the inland collieries of south Durham and northeast Yorkshire to the Tees, where coasters could take the cargo to London to compete with coal from further north on the Tyne and Wear. The importance of coal to this railway is shown by its seal, which depicts horse-drawn coal carts. To facilitate this coastal coal trade, the leading financiers of the SDR in 1831 established Middlesborough as a reliable deep-water port. As a result of the construction of the line, the number of colliers clearing the Tees with cargo rose from ninety-seven in 1826 to 2415 in 1832. It is hardly surprising that the line was considered a boon to coastal shipping. On the opposite side of the country, promoters of the Liverpool and Manchester Railway were motivated by the extensive raw cotton trade between the two centres. The greater speed and ease of communication by rail also opened the Manchester market to Irish farm produce, especially with the rapid, reliable steamboat able to carry perishables like butter, cheese and livestock.⁹ Again, coastal traffic was enhanced by this railway, and the tale was repeated with many other early rail lines. Few paralleled the coast; most ran from the interior to a port or connected two inland towns, as did the Cromford and High Peak.¹⁰

Early railways also created traffic for coasters by increasing demand for materials and components. Railway construction involved gargantuan quantities of ballast, bricks, sleepers and chairs, rails, locomotives and rolling stock. Many of these could be obtained locally, but some had to come from a distance and were transported for a substantial part of their journey by coaster. For example, Edwin Pratt points out that the sleepers and rails for many of the early northeastern lines came from Sussex and Hampshire as back cargoes for coastal colliers." Maurice Kirby explains that the SDR used "wood blocks to act as foundations for the chairs [which were] imported via the Tees from Portsea in Hampshire." Similarly, rails came from both the Bedlington Iron Co. in Northumberland and Neath Abbey Ironworks in South Wales; chairs also came from the latter.¹² These were delivered to the Tees by ship, for rails were heavy and road carriage was a last resort. In the construction of the Liverpool and Manchester Railway, similar components were needed and many were brought by sea. The first locomotives built by the Stephenson in Newcastle were dismantled, transported overland to Carlisle, and brought by boat to Liverpool, where they were rebuilt.¹³ An initial order of 160 tons of wrought iron rails was filled by John Bradley of Stourbridge and further supplies were shared between this firm and Michael Longridge's Bedlington Iron Works.¹⁴ An examination of the Bills of Entry reveals the extent of this construction-related coastal traffic. To take one instance, the Clyde Bills for 1850 show that 225 tons of iron rails entered Glasgow from Newport, and that Glasgow despatched by sea 750 tons of railway iron to Dumfries and 200 tons to Runcorn. Twenty-five tons of wooden sleepers were sent by sea from Arbroath to Grangemouth and 1995 pieces of sleeper wood were sent from Aberdeen. Grangemouth also received one cargo of "scotch fir sleepers" from Arbroath, one consignment of railway sleepers from Lossiemouth, and two from Speymouth. In return, Grangemouth sent 448 tons of iron railway chairs to Rye, 346 tons to London, 159 tons to Hastings and 115 tons to Lynn. It also sent iron railway sleepers: 380 tons to Hastings, 293 tons to Rye, 180 tons to London and 120 tons to Whitstable." One port thus sent over 2000 tons of railway iron by sea inside Britain in a single year. These examples could be multiplied, but the point is that railway construction created considerable coastal traffic. Once operational, railways channelled goods onto the coasters. The Manchester and Leeds Railway, for instance, sent large quantities of textiles to London for marketing in the early 1840s. They went by rail to Hull and by steamer to London, a journey that took thirty-six hours. Previously, the goods had been sent by canal, a trip of about five days.¹⁶ It is clear that in many ways early railways complemented coasters, as many ran from the interior to a port and hence generated traffic for coastal shipping.

The mania of the mid-1840s inaugurated an era of truly national railways. In 1840 the basic backbone of about 1500 miles of mainline was in place. By 1850 all large urban centres had been linked and the country boasted about 6500 miles of track.¹⁷ There was not only a quantum leap in track mileage but also a change in the way railway managers thought, as strategic and national concerns became paramount. Long-distance trunk routes were their objective rather than local or regional lines serving limited markets. Among the new mainlines were the Great Western, Midland, London & North Western and London & South Western. Lines now linked London to Aberdeen, as well as to Plymouth, Holyhead and Glasgow. The establishment of the Railway Clearing House (RCH) in 1842 further facilitated long-distance traffic by providing an impartial mechanism to allocate

ticket receipts when passengers or goods required transport by more than one company.¹⁸ The practice of allowing one company's trains onto another firm's tracks, along with more powerful locomotives and continuing mergers, created a truly national network. As a result, in the 1850s railways began to pose a real threat to long-distance coastal traffic. The railways captured long-distance passenger traffic completely at an early date and retained it. Until the 1850s the railways earned more revenue from passengers than from freight. Despite emphasising the health and recreation aspects of a sea trip the coaster could not compete on speed or comfort with railway travel for passengers.

Initially, though, the threat was minimised, for the strategies employed by the railways did not include creating a demand for mass travel by radical reductions in transport charges. Rather, they were keen to capture existing traffic and to cater for high-value products at premium prices: "The country's trunk lines established themselves by specialising in high tariff business, quality rather than quantity...they sought to capture high-value merchandise from the road carriers by cutting rates just sufficiently to ensure it."¹⁹ For example, despite the construction of the South Devon Railway in the late 1840s, the ball clay trade remained essentially the province of coasters through the port of Teignmouth. Railway interests did not want bulky, low-value goods like clay and coal.²⁰

The nature of the railway challenge lay mostly in non-price features. One of the most important was speed. While the steam coaster could make a steady eight or nine knots (about nine or ten miles per hour), steam locomotives could sustain speeds several times as high. When goods needed rapid transit, railways could provide it much more efficiently than coasters. Perishable cargoes, such as meat or fish, could be catered for by special express trains given precedence over ordinary goods traffic and nearly on a par with passenger trains. As Geoffrey Channon has shown for the Aberdeen-London route, by the mid-1850s railways were carrying the vast majority of fresh meat, with steamers relegated to a minor role. This was achieved by "special express goods trains," which took twelve hours less than the steamers and which were by the 1860s operating nightly.²¹ Similarly, fresh fish, which had previously been brought from the Yorkshire coast by steam packet to towns along the North Sea, like Newcastle, London, Sunderland and Hull, and even up the Humber and its tributaries, began to be conveyed by rail from the 1840s.²² Initially rates were high and the emphasis was on premium traffic. But from the mid-1840s, lower rates were introduced to accommodate less expensive varieties, like haddock and plaice. Traffic subsequently grew in volume and revenue. Aberdeen salmon, as well as fresh fruit, vegetables and seasonal produce, were commodities the railways desired and captured. They were not at first concerned with increasing the quantity of goods to maximise revenue as much as maximising the carriage of high-value freight. This was a strategy similar to that adopted by the early steamboats several decades earlier.

By the 1850s, however, railway strategy had changed, as companies began to compete for long-distance, lower-value bulk freight and were willing to cut freight rates to attract it. This was a result of a number of factors. The RCH made it easier to sort out financial implications when wagons traversed the lines of a number of companies. Amalgamations gave the firms a more national outlook and reduced the number of distinct enterprises.²³ Improvements in locomotive technology made the running of a large number of heavily loaded wagons over long distances more feasible, and improved methods of goods handling, monitoring and billing obviated some of the problems of logistics and

paperwork. In addition, by the late 1840s or early 1850s, the railway companies, like the overall economy, were in a depression, and hence sought new revenues to bolster their lagging profits and poor dividends.²⁴ They became more aggressive in searching for freights they had previously shunned. An example is the coal trade from the northeast to London. In 1850 the railways had carried less than two percent of this trade, which was still dominated by the coastal ship, initially the collier brig but increasingly the screw-propelled steam collier. By 1857, however, the railway share had risen to twenty-eight percent, and by 1867 railways carried more coal into London than did the coasters.²⁵

Having outlined the threat from the railways, we need to consider how the coastal shipping industry responded. The initial reaction to competition was often to cut costs. Even before the railway was fully operational the mere threat was often enough to cause the coastal sector to try to reduce rates to retain customers. In this way shipowners lowered the economic rent earned and brought prices more closely in line with costs. That they were able to earn any economic rent was an indication of the superiority of steamboat travel over previous methods in terms of speed, reliability and punctuality. It was only the railways, also utilising steam, which could match them in punctuality and could exceed their speed, at least for passenger and special fast goods trains. Even so, by the 1840s the cost structure for coastal steamers was such that they could offer a cheaper service than railways over long distances, although they could not compete on speed.

It would be wrong to suggest that only competition from the railways caused the coasters to collaborate. Indeed, as early as 1832 there was a pool comprising a number of steamboat owners plying between Glasgow and Liverpool, with mutually-agreed rates, coordinated schedules, and a form of revenue-sharing.²⁶ In 1836 there was a similar pool on the east coast among operators running between Scottish ports and London.²⁷ Thus, even before the railway began to compete in earnest coasters were demonstrating the validity of Adam Smith's aphorism about businessmen and the suppression of competition. But two things happened after railways became national. The first was an attempt to increase the degree of collaboration between coastal steamboat companies in liner trades. The second was to extend cooperation between the two modes, as railway companies developed conferences into which they admitted some "rival" liner firms.

By their nature pools and conferences were usually kept hidden from the public since the parties wished to give the impression of competition. As far as objective economic information is concerned, the outside observer cannot easily discern the difference between a perfectly competitive market and one where collusion occurs. For example, in both cases the prices for similar services will be identical. If the market were competitive this would be because both firms had cut their charges to the point where marginal revenue equalled marginal cost; where the market is collusive, the result will be the same, albeit for different reasons. As a result, except where formal institutions were established to administer such agreements, few relevant records are likely to have survived. Nonetheless, we know that there were a large number of these agreements in the nineteenth century, covering a range of routes and involving a large proportion of the coastal liner companies.²⁸ The increased competitive capability and strategy of the railways played a part in this upsurge, although it is difficult to determine how big a part.

Perhaps more important was the innovation of intermodal collaboration. Once railways had long-distance routes, they established the RCH, and because there were often

multiple routings between two cities, they began to establish conferences to reduce price competition and to share revenues.²⁹ Examples, such as the Octuple Agreement (1851), the Humber Conference (1855) and the English and Scotch Traffic Agreement (1856), spring to mind. But because coastal liners enjoyed a cost advantage over railways, and hence could charge lower rates, the latter thought it prudent to allow coastal liners into some of the conferences.³⁰ The railways retained a speed advantage for passenger and express freight trains, but not for ordinary goods trains, which had low priority. The two modes thus complemented each other in this respect: the coaster could offer cheaper travel, the railway faster. That the coaster was cheaper was reflected in these agreements, for whenever rates were agreed and printed the coaster's rates were significantly less than the railway. The functions of these rail-coaster conferences varied in detail, but ran the gamut from mutually-agreed freight rates which could not be altered without all-party consent, to agreements about the frequency of departures, revenue-sharing, and sometimes even the charges for ancillary services, such as cartage.

That such collusion was not contrary to the interests of the coastal companies is shown by the number of complaints from railway representatives at RCH meetings about the low share of traffic — as varied as meat from Aberdeen to London and baled textiles from Dundee and Perth to the capital — carried by rail.³¹ The advantages to the coaster appear to have been three-fold. First, by fixing rates which reflected differential costs, coasters were given a price advantage which allowed them to retain the lion's share of bulk traffic, such as baled jute, cloth and yarn, that did not require rapid transit. For instance, on the Dundee-London route from 1870 to 1879 — the only period for which continuous figures have been found — coasters carried on average over ninety percent of baled jute.³² This suggests that the conference did not disadvantage the coaster. Second, fixing rates allowed both sides to implement higher charges than if collaboration had not occurred. For instance, on the Dundee and Perth to London route, the pre-1870 sea rate was fifteen shillings per ton. In 1870 this was raised to twenty-five shillings, a massive increase of sixty-seven percent. This rate remained in force until at least 1879.³³ Given that the 1870s was a decade of falling prices, coasters would seem to have made good returns. Railways advanced their rates at the same time, but by a smaller percentage. It thus appears that the two modes charged higher prices than if there had been no collaboration and so raised profits. This gives a clue to the third advantage for coasters: their ability within a conference to beat off any opposition from "outside ships." When such competition threatened, the coastal companies had the financial strength to enable them to withstand a period of intense rate cutting and eventually to see off the opposition. Most conferences were sufficiently flexible to allow the shipping lines a temporary departure from agreed rates to fight such external competition.

Participation in conferences was one method by which the owners of coastal ships responded to railway competition. Another was the deliberate copying of the methods used by railways to charge for freight. Railways used eight categories, depending on the value of the commodity: A, B and C were used for cheaper products and 1-5 for more valuable goods, with five being the highest rate. The first three groups were often "station to station," while the latter five were normally "collected and delivered," meaning the railway company was responsible for cartage at both ends. In addition the railways created a profusion of "exceptional" rates, which by the late nineteenth century had become the

norm.³ These special rates gave the railways flexibility and hence bargaining room while being concealed behind published tariffs. At a time of widespread criticism, railways needed published rates as a smoke screen while actually charging much lower rates, without setting a precedent enforceable by the Railway Commissioners.

The owners of coastal liners based their charges on the same eight groupings as the railways and assigned exactly the same commodities to each class. In addition, they fixed an exceptional rate to undercut most of those established by the railways.³⁵ It might seem strange that shipping firms knew about these supposedly confidential exceptional rates, but that they did know seems unarguable. At the more conspiratorial end of the explanatory spectrum, it is possible that coasting firms had spies either in the RCH or the railway companies. But a more plausible explanation is that the information came from on-going collaboration in one of the many pools or conferences. Regardless, by aping the railways' method of charging, shipping firms made it easy for potential customers to compare and hence to see the price advantage of the coaster.

A quite different approach toward railway competition was to upgrade technology. Shipping technology changed rapidly in the nineteenth century.³⁶ Improvements in boilers allowed higher pressures and more efficient coal use, while higher pressures paved the way for compound and then triple-expansion engines that consumed less coal. Screw superseded paddle; iron replaced wood, to be in turn supplanted by steel, which permitted stronger yet lighter hulls and larger ships. Less expensive water ballast replaced stones, bricks, and pig iron. Cargo-handling was improved by the use of winches, derricks, and other gear, and the design and placing of hatchways provided easier access. There were also improvements in dockside infrastructure. While these advances are well known and require no elaboration, the important point is that all had economic consequences. The ability to reduce coal consumption diminished costs; increased the steamer's economic range; facilitated manoeuvrability; and increased speed. Larger ships provided economies of scale in capital and crewing costs, and so allowed lower freight rates. Water ballast reduced operating costs and speeded up turnaround times, while the various aids to cargo-handling gave the customer quicker service and the owner more revenue-generating voyages per annum. All these improvements lowered costs while allowing better service.

Yet what is interesting is whether technological improvements favoured the railway or the steamboat. On balance the costs of moving large quantities of bulky goods fell much more on the coaster than the railway. The large coastal collier in the late-nineteenth and early-twentieth centuries was capable of carrying 1000-1500 tons of coal.³⁷ Compare this with the average train load, estimated by Peter Cain as sixty-three tons between 1880 and 1900 and about ninety-six tons by 1911.³⁸ Even allowing for this increase and for the fact that mineral trains may have been longer than average, the coaster had an enormous advantage. Where the railway had an edge was in its greater speed. The power output of locomotives was significantly increased, which allowed faster speeds and higher pulling power. Where railway managers chose to maximise the former — for passenger trains carrying parcel traffic, or with a dedicated meat or fish van attached — it extended rail's advantage. At the minimum, changes in technology kept the coaster in the same position relative to the railway, and at best improved its cost structure.

A further response of coastal shipping firms grew from an evolving perception that distinct customers required different services. Strategies to build on this insight led

to market segmentation.³⁹ If a customer wanted the lowest possible transport price, was in no hurry for the goods and did not care precisely when they would be delivered, sailing ships were available. They offered low freight rates, a function of no fuel costs, low manning requirements, and no loading or unloading costs (at least as long as the crew was required to carry out these tasks). In some cases harbour or port charges could be evaded by sailing up a sloping beach at high tide, awaiting the ebb, and discharging over the side. The schooners and ketches in the coastal trades have been described as "floating storehouses." If low costs were vital, or goods needed slow and careful loading (such as bricks, clay pipes, chimney pots or other frangible products), a factor that was likely to lead to high demurrage charges, sailing vessels were most suitable. Since managers preferred full holds to maximise revenue, this made sail especially suitable for bulky goods.

If shippers wanted predictable arrivals, they needed steam. The coastal tramp as operated by firms such as Coppack Bros, of Connah's Quay provided a more reliable and usually faster service, since it could make a steady eight or nine knots in virtually any weather, twenty-four hours a day.⁴⁰ Like the sailing coaster, it required full holds, but was a little dearer than sail because of higher operating costs. Since by definition tramps did not provide regular service, a shipper might have to wait for a suitable ship. But the telegraph and a dense network of agents gave the tramps good employment while providing shippers reasonable assurance of the availability of an appropriate craft.

Where there was a need for frequent consignments of a bulk good, like coal, china clay, or iron ore, coastal shipping firms provided "regular traders." They were often built for a particular trade or commodity and might be owned by specialty merchants, such as Cory or Charrington, coal dealers who had their own colliers for the east-coast coal trade. These firms found an advantage in backward vertical integration because they had a large regular demand for the coal and could therefore keep their vessels fully employed. The transaction costs of hiring outside vessels were internalised, saving money and providing a greater certainty of supply. These firms negotiated large contracts with electricity-generating stations, gas works and other large industrial users, such as the Gas Light and Coke Co., Metropolitan Water Board or City of London Electricity Supply Co., which were located on or near the sea or a navigable river.⁴¹ There was thus a large regular demand that was relatively unaffected by seasonality. The degree of specialisation is demonstrated by the up-river colliers, which had hinged masts and funnels to allow easy passage under London's bridges. These regular traders provided fast turnaround and reliability for large-scale consumers who could not afford an interruption in supply.

At the top end of the market were customers who wanted fast, reliable, scheduled collection and delivery. They moved high-value goods, such as manufactures, and were willing to pay a premium (in coastal shipping terms) to have them delivered quickly and on schedule. Lever's soap, Bovril meat extract, cigars, pianos and books all travelled by this method. They used large, well-appointed steamers incorporating the latest technology, owned by companies such as Tyne-Tees, Aberdeen Steam, Powell, Bacon, and Hough. In addition, they usually owned or leased a dedicated berth at the ports they served to minimise delays in docking and moving cargo. These ships usually carried passengers and livestock as well as cargo, and so eschewed dirty, dangerous and malodorous goods, such as coal, dynamite and kips. They carried mixed cargoes and usually required no minimum quantity, thus making them ideal for small but frequent deliveries of low-bulk goods.

In short, one response by the owners of coasters to competition from railways was to diversify the services offered, ranging from inexpensive but unreliable for bulky, low-value raw materials, to fast, scheduled reliable services for high-value, low-bulk manufactures. As the railways attacked the coastal trade and adopted a more national strategy, the coastal shipping industry endeavoured to retain, and even attract, customers by tailoring its services more closely to the economic characteristics it perceived important to them. In this way it retained a large share of the internal trade of the UK.

Perhaps the ultimate expression of intra-modal collaboration occurs when two or more firms in the same industry decide to merge. This may reflect competitive pressures within the industry or from competing modes, or perceptions that economies of scale may be available at a higher level of aggregate output. Sharing berths, agents, or office administration might offer some savings, and better coordination of previously independent schedules might provide a faster service and hence attract additional traffic. There would also be a degree of risk-spreading due to a greater number of ships, and there might be savings in insurance for a larger fleet. Simply reducing competition might be a sufficient motive, since it would allow freight rates to be raised and might well yield higher profits. Whatever the theoretical gains, many railway companies thought them sufficiently real to indulge in corporate marriage. The ten largest companies (of a total of about 120) in both 1870 and 1913 accounted for nearly three-quarters of aggregate revenue, which was £50 million in 1870 and £140 million in 1913.⁴² The coastal shipping companies followed a similar strategy, albeit more slowly and with a lag of several years.

Before 1870 most amalgamations in coastal shipping were on a small scale, usually when an existing concern absorbed a potential or actual competitor on their route. In some cases these were almost certainly "greenmails," where a firm placed a ship onto a route in order for it to be bought out. The motive in some cases was purely pecuniary, while in others it was because the owners of the competing ship wished to force a way into what were usually private companies with a closed, limited shareholder base. Since when shareholders wished to dispose of shares they often had to be offered first to existing investors, if a coastal shipping company appeared to be paying steady dividends outsiders often tried to force their way in using this strategy. There are numerous examples of one-ship businesses being absorbed by a successful coastal liner company.

From the 1890s a greater urgency and formality emerged; in the next two decades there were a number of large mergers and takeovers. In 1893, for example, C.R. Fenwick, W.M. Stobart and William France combined to become the largest manager of colliers.⁴³ This seems to have concerned Cory, whose ships were managed by Fenwick. In 1896 Cory, long a major player in the London coal trade and the owner or part-owner of a number of steam colliers, organised the merger of eight separate firms into a public limited-liability company. The businesses absorbed included Lambert Bros., J. & C. Harrison and Green Holland & Sons, all long-established coal merchants and collier owners.⁴⁴ As a result, the new firm owned about thirty ships and handled about seventy percent of seaborne coal carried to London. These two mergers caused the coastal coal trade from the northeast to resemble a duopoly.

Mergers also occurred among coastal liner companies. In 1903 the Tyne Steam Shipping Company merged with the Tees Union Shipping Company to create a near-monopoly over liner traffic from the northeast to Hull and London. In 1910 the Powell

Line, operating between Liverpool and London and calling at Bristol, Plymouth and Southampton, merged with the Bacon Line, also offering similar services out of Liverpool. In 1912 the merged firm also absorbed the Hough Line. These manoeuvres were minuscule compared to what was to occur after 1917 when the Powell Bacon and Hough Line was absorbed by the Royal Mail Steam Packet Group and changed its name to Coast Lines. Between 1917 and 1920 Coast Lines absorbed thirteen separate coastal and Irish Channel firms, and engulfed another seven during the 1920s.⁴⁵ By the onset of the Great Depression the British coastal liner trade was close to being a monopoly.

How effective were these strategies? It is much easier to answer in the aggregate. On this level it may be argued that since coastal shipping still played an important part in British internal transport in 1914, the policies must have worked.⁴⁶ The volume of transport provided by coasters expanded, and they were the most important carriers of long-distance and high-bulk cargoes; in total, they probably provided about the same ton-mileage as railways. The registered tonnage of entries and clearances of ships with cargo in the coastal trade grew steadily before 1913, and the network of coastal liners was dense and comprehensive. In aggregate terms, coastal shipping firms retained their positions.

Yet there is always the counterfactual. If coastal shipping firms had pursued alternative strategies, would they have done even better, perhaps increasing their shares of traffic or driving some railway companies out of business? The latter seems highly unlikely. By the late nineteenth century the railways were financial giants, beside which even the largest coastal liner firms were financial pygmies. If the coasters had waged war against the railways, the latter had the financial muscle to survive a period of intense price and service competition which could only have led to the withdrawal of the coastal company. In any case, such a scenario would not have pitted the coastal firms against the railways, but one coastal firm against an individual railway, let us say Cory versus the North Eastern Railway for the carriage of coal from the northeast to London. Again, the disparity is huge. When it went public in 1897, Cory was capitalised at £2 million; the North Eastern Railway at the same date had a capitalisation of over £60 million.⁴⁷ The conclusion is that the coastal firms were irritants as far as goods were concerned but had no impact on the large and lucrative passenger traffic. The railways tolerated them while they were not too much of a problem and were mainly carrying low-value, bulky commodities. But if a coastal firm had tried seriously to impinge on the traffic of a particular railway, the latter would have retaliated, likely with great success. The railways had the formal institutions to facilitate cooperation and might have closed ranks in the face of a severe coastal threat. The coaster and railway co-existed in the late nineteenth century because it was in the interests of both not to upset this delicate balance.

NOTES

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essays on the role of the coasting trade.

1. Ralph Davis, *The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries* (London, 1962), 395-406; Dwight E. Robinson, "Half the Story of *The Rise of the English Shipping Industry*," *Business History*

Review, *XLI*, No. 3 (1967), 303-308; Davis, "Well Maybe Three Fifths," *Business History Review*, *XLI*, No. 4 (1967), 308-311; Robinson, "Secret of British Power in the Age of Sail: Admiralty Records of the Coasting Fleet," *American Neptune*, *XLVIII*, No. 1 (1988), 5-21.

2. Simon P. Ville, *Transport and the Development of the European Economy, 1750-1918* (London, 1990), 101-103; John Armstrong, "The Significance of Coastal Shipping in British Domestic Transport, 1550-1830," *International Journal of Maritime History*, *III*, No. 2 (1991), 63-94.

3. An example of an historian with little to say about coasting during the industrial revolution is Rick Szostak, *The Role of Transportation in the Industrial Revolution: A Comparison of England and France* (Montréal, 1991). For a corrective, see John Armstrong and Philip S. Bagwell, "Coastal Shipping," in Derek Aldcroft and Michael Freeman (eds.), *Transport in the Industrial Revolution* (Manchester, 1983), 142-161.

4. Brian D. Osborne, *The Ingenious Mr. Bell* (Glendaruel, 1995), 19-25; and H. Philip Spratt, *The Birth of the Steamboat* (London, 1958), 87-88.

5. Maurice W. Kirby, *The Origins of Railway Enterprise. The Stockton and Darlington Railway, 1821-1863* (Cambridge, 1993); and Thomas J. Donaghy, *Liverpool and Manchester Railway Operations, 1831-1845* (Newton Abbot, 1972).

6. Sarah Palmer, "Experience, Experiment and Economics: Factors in the Construction of Early Merchant Steamships," in Keith Matthews and Gerald Panting (eds.), *Ships and Shipbuilding in the North Atlantic Region* (St. John's, 1978), 233-235.

7. See, for example, Great Britain, Parliament, House of Lords, *Parliamentary Papers (BPP)*, 1839, *XXV*, "Report on Steam Vessel Accidents."

8. Much of this paragraph draws on evidence in Kirby, *Origins*, esp. chapter 2.

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11. Edwin A. Pratt, *A History of Inland Transport and Communications* (London, 1912), 199-200.

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13. Stephen Greaves, *The Liverpool and Manchester Railway: Newton's Story* (Newton, 1980), 1.

14. Carlson, *Liverpool*, 191-192.

15. Clyde Bills of Entry for 1850.

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21. Geoffrey Channon, "The Aberdeenshire Beef Trade with London: A Study in Steamship and Railway Competition 1850-69," *Transport History*, *II*, No. 1 (1969), 12 and 23.

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23. Gourvish, *Railways*, reports that 187 amalgamation acts were put before parliament in the 1860s alone. While in 1850 the top fifteen railway companies accounted for three-quarters of the turnover, in 1874 the top ten had the same share.

24. *Ibid.*, 27-28.
25. Brian R. Mitchell and Phyllis Deane (comps.), *An Abstract of British Historical Statistics* (Cambridge, 1962), 113.
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27. Aberdeen University Library, Ms. 2479/1, Directors Minute Book of the Aberdeen Steam Navigation Co..
28. John Armstrong, "Conferences in British Nineteenth-Century Coastal Shipping," *Mariner's Mirror*, LXXVII, No. 1 (1991), 55-65.
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30. John Armstrong, "Railways and Coastal Shipping in Britain in the Later Nineteenth Century: Cooperation and Competition," in Chris Wrigley and John Shephard (eds.), *On the Move* (London, 1991), 76-103.
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