The Voyage of the Fier:
An Analysis of a Shipping and Trading Venture to New France, 1724-1728

by James S. PRITCHARD *

I

Historians have drawn attention to the emergence of an Atlantic trading community during the seventeenth and eighteenth centuries and pointed to the underlying importance of the primary means of communication — ocean shipping. Studies have appeared in Europe and the United States devoted to the general growth and development of maritime activity and to the ways and means of measuring and comparing its several elements: profitability, changes in productivity, freight rates, and capital costs. [1] No one has yet extended his examination to include French maritime activity to New France in any but the most general manner. This study is an attempt to add to an already large body of literature on ocean shipping, and to indicate some of the differences between the conclusions that have been drawn concerning the British American colonies and similar developments in New France. It appears that there were important variations. The evidence for such a study is meagre and, in the absence of data, does not lend itself to quantitative measurement. It may therefore be useful to present the information about one voyage for which there is sufficient information to draw some conclusions about the state and conditions under which maritime traffic was carried on in France's northern colony. [2]

* Department of History, Queen's University.

[1] Among recent studies are the monumental work of P. and H. CHAUNU, *Séville et l'Atlantique (1504-1650)*, 12 vols. (Paris, 1955-60); B. and L. BAILYN, *Massachusetts Shipping, 1697-1714: A Statistical Study* (Cambridge, Mass., 1959); J. M. HEMPHILL II, "Freight Rates in the Maryland Tobacco Trade, 1705-62," *Maryland Historical Magazine*, LIV (1959), 36-58 and 153-87; R. DAVIS, *The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries* (London, 1962); P. DARDEL, *Navires et Marchandises dans les ports de Rouen et du Havre au XVIII^e siècle* (Paris, 1963); J. DELUMEAU, *Le Mouvement du port de Saint-Malo 1681-1720, bilan statistique* (Paris, 1966); more recently J. F. SHEPHERD and G. M. WALTON, *Shipping, Maritime Trade and the Economic Development of Colonial North America* (Cambridge, University Press, 1972), have used a theoretical framework in their explanation, as have G. Paquet and J. P. Wallot in several recent articles in the *Revue d'Histoire de l'Amérique française*.

[2] The Admiralty archives for the port of Quebec were returned to France after 1760 and subsequently lost. See "Introduction" to L. G. VERRIER's "Procès-verbal de l'état des registres des greffes du siège de l'Amirauté de Québec," in *Rapport de l'archiviste de la province de Québec, 1920-21*, pp. 106-31. Jean Meyer has noted that "L'examen d'une campagne maritime isolée est fallacieuse: alors que les bénéfices assurés par les 'retours' courent, le capital, aussitôt reinvesti, est deja redevenu productif. C'est le phenomene cumulatif par excellence qui, pour etre vraiment superieur aux placements traditionnels, doit s'effectuer dans les delais les plus courts possibles;" see *L'Armement nantais dans la deuxième moitié du XVIII^e siècle* (Paris, 1969), p. 222. But despite this warning the rarity of data relating to New France, and the commonly held view that enormous profits were made in maritime trade to New France continues to justify this attempt to analyse the results of a shipping venture to Quebec.

Several documents recently discovered among supplementary volumes of the "*juridiction consulaire*" in the departmental archives of the Charente-Maritime at La Rochelle were collated with a waste-book in the same records to provide the information for the present study. [3] The *brouillard* or "waste-book" was used by merchants to keep rough preliminary entries of commercial transactions. In this instance it consists of forty-seven closely written pages of chronologically recorded purchases and other expenses made from 1724 to 1728 to refit and furnish a merchant vessel for a voyage to and from Quebec.

The record is important for the period it covers: in no decade during the *ancien régime* are the port records so scanty as that prior to 1725. At La Rochelle they are virtually non-existent; at Quebec, the years following the death of Louis XIV were very poorly covered by ministerial records, for during the regency the old secretariats were abolished in favour of less efficient councils.

The notebook contains several lists including one of the crew, another of the cargo put on board by the owners, a record of its sale at Quebec, another of cargo laded at La Rochelle for other metropolitan merchants, and also accounts of cargo purchased in the colony for the return voyage and its later sale at La Rochelle. A great deal can be found wanting in the notebook. The careless manner in which entries were sometimes made and withdrawn, the use of the backs of folio pages to record later accounts of expenditures after the initial departure and the errors in arithmetic have all made for confusion. They point to it as a running draft and not a final record. Consequently, several given totals and sub-totals are useless for analytical purposes. Only the raw data in this and other documents have been used in the paper.

Despite its flaws, the source has great significance. Among the French colonial records concerning New France it is perhaps unique in its wealth of detail. It reveals some of the intricacies of ship ownership, the tasks of an outfitter, the nature and cost of materials and labour employed, as well as the size, composition and wages of a French crew. It also provides information about the manner in which cargo shipped to Quebec was estimated, consigned and loaded; and finally, it allows us to examine the relations of these many elements and to indicate to some degree their effect upon the ship's ability to earn profits.

The ship, the *Fier*, of 140 tons burden, was typical. There seems no reason to believe that her voyage to New France was in any way out of the ordinary or that the picture that emerges from the record does not reflect

[3] Archives départementales de la Charente-Maritime [hereafter A.C.M.], Série B, volume 355, is the designation of the *brouillard*; fourteen other documents were found in the same series, bundles no. 4202 and 4203; these consisted of captain's instructions, receipts, lading bills and current accounts which all served to confirm and clarify many of the entries written in the waste-book.

the normal procedures in commercial shipping between La Rochelle and Quebec. In every respect the record seems to concern the business activities of typical Rochelais merchants engaged in the most common sort of Canadian colonial activity involving an ordinary ship, crew and cargo.

The owners of *Fier* were engaged in trading on their own account as well as in shipping. In the Quebec colonial trade this was the most common procedure. Canada produced no bulk cargoes to warrant the use of charter-parties, wherein merchants hired ships from their owners for the delivery or collection of a cargo. In later years numerous ships arrived in the colony under charter, but almost always to the government or its agents for transporting troops, munitions and supplies. Before the outbreak of the Anglo-French wars in the middle of the eighteenth century such passengers and cargoes were most often carried to New France by the single naval transport which called annually. The vast majority of merchantmen sailed under the same circumstances as did the *Fier*. The record, then, reflects the common experience of both colony and metropolitan ports in the years before and after 1725. Unfortunately, the interrelationship between the owners' shipping and trading activities makes it difficult to draw conclusions solely about maritime operations. This itself, however, is an important conclusion about colonial shipping to New France.

II

The men who outfitted the *Fier* were no strangers to ocean shipping, the colonial trade or to New France. André Estournel, the author of the waste-book, had been sending goods to Quebec at least since 1711. At that time his nephew and later co-owner of the *Fier,* Jean-Jacques Catignon, son of a former stores-keeper at Quebec, resided in the colony, receiving trade goods from France and sending back bills of exchange in return. [4] Four years later Catignon was in partnership with a Sieur Guillet, a colonial merchant. [5] In 1718 Estournel purchased a one-third interest in a merchantman. During the next few years the ship sailed regularly to New France carrying cargo for the owners and other merchants. In the fall of 1723 after departing Quebec, the ship gave out and was forced to return and winter in the colony. [6] Probably the news of this moved Estournel to

[4] A.C.M., B 4202, Balance sheet of Catignon's account with Estournel from July 25, 1711 to July 17, 1712; also, he was probably the same Jean-Jacques Catignon who rented a room in lower town Quebec in 1713, *Inventaire des greffes des notaires du régime français,* ed. A. Roy, tomes XVIII and XIX, Louis Chamballon (Quebec, 1960-64), XIX, 425-6; see also A. Godbout, "Familles venues de la Rochelle en Canada," in *Rapport des Archives nationales du Québec,* tome 48, 1970, p. 170, for information that through marriage in 1714 Catignon became a brother-in-law of the Montreal merchant, Pierre Charly.

[5] A.C.M., B 4202, Bill of Lading, 11 May, 1714; and B 4203, invoice, 17 April, 1717.

[6] A.C.M., B 5715, no. 29, "declaration de presence," 14 June, 1718; B 4202, crew rolls for 1721 and 1723. While in Quebec during the winter of 1723 the captain became involved in a law suit regarding the payment of the crew's wages, *Inventaire des jugements et délibérations du conseil supérieur de la Nouvelle-France de 1717 à*

purchase a new hull. In March, 1724, he paid 4,600 *livres* to M. de Maulusson, an agent of a *fermier-général,* for a *patache* that had been used on the Île de Ré, [7] and subsequently named it the *Fier.*

Estournel met most of the costs, but the same day that he purchased the ship, Catignon made over to him a bill of exchange worth 2,820 *livres* 10 *sols,* and a year later transferred several accounts to meet some of the mounting costs. Before the ship left La Rochelle, Catignon had paid his associate a little less than one-quarter of the total capital outlay to that date. The third and major interest holder was a somewhat enigmatic M. de Courcy who may have been a naval officer. In 1718 a Chevalier Pothier de Courcy had commanded His Most Christian Majesty's frigate, *Mutine,* on a voyage to Quebec. There had been insufficient funds in the marine treasury that year and the ship had been outfitted by a private merchant from La Rochelle. [8] This experience may have convinced Courcy of the profits to be made from similar ventures and led him six years later to invest in the refit and voyage of the *Fier.*

Like Catignon, Courcy also put up some cash soon after the original purchase in order to meet the current expenses of the refit. Throughout the year he continued to pay for various materials used and before the ship sailed he had contributed almost one-third of the total investment. Estournel, himself, contributed the remainder. The total of 24,816 *livres* 3 *sols* does not represent any final figure but illustrates the approximate investment required to get a ship of 140 tons burden ready for sea, and the flexibility of the financial arrangements needed. A more accurate and useful presentation of the capital outlay is presented in Tables I-III.

The sums contributed in the initial venture by each of the owners over the fourteen months following the purchase represented both the investment in the ship and a portion of its cargo. Although it is well known that individuals most often owned only portions of different vessels in order to spread the risk of financial loss and to limit the liability of their total investments, it is apparent that no shares in the vessel were sold. Estournel made the initial purchase of the hull but that did not prevent Catignon from paying for the construction of the ship's figure head and for some of the victuals, or Courcy from contributing the ship's longboat, twenty empty barrels, several more of nails, tallow and a set of blocks and pullies. The three men owned the ship jointly.

1760, par P. G. Roy, 7 volumes (Quebec, 1932-35), I, 191, 201; also Archives nationales [hereafter, A.N.], Colonies, C11A, XLVII, f. 144 and F3, f. 418 also contain references to this ship.

[7] *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers,* 17 vols. (Paris, 1755-74), Vol. XII, 159, defines *patache* as a stationary ship used as lodgings and offices by clerks of the *fermier-général* charged with visiting, entering and departing ships for purposes of collecting duties and examining passports.

[8] A.N., Col. C11A, CXXIV, *pièce* no. 74, Decision du Conseil de Marine, 3 May, 1718; and *ibid.,* XXXIX, f. 3, Vaudreuil and Bégon to the minister, Quebec, 4 October, 1718, for a report of the ship's arrival at Quebec.

No declaration of ownership has been found, but a single entry in the waste-book and the discovery of two current accounts drawn up later between Estournel and his partners' widows provide the key to ownership. Initially Estournel and Catignon each held one-quarter interest in the ship while Courcy and a Richard Gauthier held five-twelfths and a one-twelfth interest respectively. Before sailing, however, Gauthier dropped out, and the three partners split his holding equally between them. [9]

The details of ownership noted part of the total investment in the venture, but it is important to see what this total amount consisted of in order to obtain an estimate of shipping production costs. The generalized and imprecise nature of some of the amounts given in the waste-book are a hindrance to accurate calculation and several accounts for work done and materials bought were not paid for until after the ship had departed La Rochelle thereby adding to the total capital outlay. Nevertheless a list of items including more than three hundred entries has been drawn and arranged in several categories to attempt to reveal the fixed and replacement costs which, along with the investment in cargo, made up the total capital outlay in the venture to New France.

The *Fier* did not undergo a normal armament for the colonial trade. Before it was purchased by Estournel it had been moored in the harbour on the Île de Ré. Much of her hull timber was unfit for the high seas. The ship had to undergo a major refit which took more than a year to complete. One may discern the ship's original condition in the list enumerating beams, knees and futtocks, the thousands of running feet of deck and hull planking, a new bowsprit, a mainmast and three new topmasts. More than 2,135 man-days of labour were expended on her, 1,469 man-days by carpenters alone. The ship was practically rebuilt.

The capital expended represented considerably more than a normal armament which would have entailed only victualling, advances to the crew and replacement of worn out material: sails, rigging, running gear and planking where necessary. The totals in Tables I-III represent the capital invested in a nearly new ship of one hundred and forty tons burden. [10] A

[9] On page 18 of the waste-book appears the following, "*Les 5 douzieme a Mr. de Courcy est de 11,854 8/9; 2,370 17/9 p[ou]r la 12*ᵉ *de M. Gautier que nous avons pris par tiers.*" These figures indicate that the *Fier* was valued at 28,450 *livres* 13 *sols*. Thus, Gautier removed himself before the outfit was completed.

[10] A.C.M., B 4202, The burden of the *Fier* is noted on a lading bill signed by the captain for the owners' cargo, 22 May, 1725. Nothing is more difficult to unravel than the units of measurement used during the *ancien régime*. Historians have confounded the problem by confusing displacement, tonnage and weight. Tons burden, dead-weight tonnage and capacity are synonymous terms. They are the units used in this paper where tons refers to *tonneaux de mer* of 2,000 French pounds. In 1681 the Ordonnance de la Marine fixed the volume equivalent of this unit at forty-two French cubic feet although a ton weight of wine does not fill quite twenty-eight cubic feet. One explanation assumes that a ship's load was two thirds its capacity to carry it; hence forty-two cubic feet of interior space was needed for each ton of weight carried. For further details see the very good articles by Paul GILLE, "La jauge au

portion of this amount was considered along with the crew's wages, victuals and incidental contingency expenses as a replacement cost rather than as part of the fixed cost of the total capital outlay. It is difficult, however, to determine what portion of this total is replacement cost. By subtracting the sum of the replaceable items in the expenditures: rigging, running gear, rope, cordage, sails, artisan labour and other miscellaneous expenses, one may reduce the fixed element in the total capital outlay to 15,789 *livres* 5 *sols* 6 *deniers*. This final sum is an estimate of the cost of building a ship as opposed to making it ready for sea. Equally important it represents the amount of capital investment, minus the depreciation that remained to the owners after the ship returned from her voyage to Quebec.

In 1725 the cost of a relatively new merchantman of 140 tons burden amounted to approximately 15,790 *livres,* or 113 *livres* per ton. Using an approximate currency equivalent of one *livre* to one shilling sterling, this amount compares very favourably with the estimated peacetime price of 6½ pounds sterling per ton for an English ship of similar size, considering only the fixed element in the price. [11] The two figures would be even more comparable if the true replacement cost were known.

It is all too easy to forget just how much of a wooden ship needed replacing after a single trans-ocean voyage. Suits of sails, rope, blocks and spars were in need of replacement. Rope alone for the *Fier* represented nearly eight percent of the capital outlay necessary to ready the ship for sea and twenty percent of the total replacement expenditure. Following the ship's return to La Rochelle Estournel sold 2,736 *livres weight,* or between one-quarter and one-fifth of the rope used during the voyage, to oakum pickers but this act represented only a small return on a large investment. Similarly, all of the ship's running gear had to be replaced, but probably at less frequent intervals than after every voyage.

Which of the many expenditures ought to be classified as fixed or replacement? It is obvious that the above subtraction of the total cost of items which needed replacement errs on the side of excess. Using the English figure given above, a ship of 140 tons burden had a fixed cost of 18,200 *livres*. The fixed cost of the *Fier* was probably somewhat higher than the 15,789 *livres* determined.

The total replacement cost, however, consisted of more than the replaceable items in the ship. The crew had to be paid and victuals provided. It is from the sum of the fixed cost and the total replacement cost that the ship's earnings were determined, but in the case of the *Fier* the owners also

XVIII[e] siècle," in M. MOLLAT, éd., *Les Sources d'histoire maritime en Europe* (Paris, 1952), pp. 465-70; and F. C. LANE, "Tonnages, Modern and Medieval," *The Economic History Review,* 2nd Series, XVII (1964), 213-33.

11 R. DAVIS, "Earnings of capital in the English Shipping Industry, 1670-1730," *Journal of Economic History,* XVII (1957), 410. This essay has been a constant guide in the preparation of this paper.

purchased a cargo worth 9,781 *livres* 2 *sols* 8 *deniers* and loaded it onboard for the voyage. A statement of their total capital outlay appears in Table IV.

Two features of these totals and sub-totals are not altogether obvious. First, the replacement cost per ton is much less than the fixed cost per ton. The *Fier*'s replacement cost amounted to approximately 66 *livres* per ton (see Table IV) which again is somewhat less than the equivalent figure of 4½ pounds sterling for a similar English vessel. [12] Second, taking the round figure of 25,000 *livres* as the cost of making the ship ready for sea, one finds a ratio of 3:2 between fixed costs and replacement costs. In other words, a French colonial merchantman of median tonnage required about 179 *livres* per ton of capital investment when undertaking a voyage to New France. [13] This figure probably holds good only for the period of peace and growing financial stability following 1725.

The accuracy of the figure for Total Capital Outlay (Table IV) is, of course, open to question but it is remarkably close to the given total of 35,173 *livres* 4 *sols* 8 *deniers* which appeared in Estournel's waste-book as the total amount involved in the purchase, refit, armament and cargo on which he levied a commission of two percent for services rendered to the association. [14] The difference between the two totals is 1.1 percent. Even if the figures are not strictly accurate, however, the general principle they illustrate remains valid, and they lead to some suggested conclusions about colonial shipping using very limited amounts of data.

III

On May 25, 1725 the *Fier* departed the roads at La Palisse for Quebec where she arrived on August 22 after a normal crossing of ninety days. [15] As usual she carried a greater complement than either English or Dutch ships of a similar size. The *Fier*'s inefficiency can be seen by comparing the ton-man ratio of 6.1 with those for unarmed English merchantmen of similar size that sailed from England to Jamaica in 1729-31 and to Charleston in 1735-39, which are 8.8 and 11.9 respectively. [16] The larger French crew may be explained by different and less efficient hull and rig design, but

12 *Ibid.*, 410.

13 A similar calculation for a 160-ton merchantman, bought and outfitted at Bordeaux in 1725 for 28,805 *livres* 10 *sols* would give the same *livres*-ton ratio, 179 *livres* 9 *sols*. In this case, however, the ratio of purchase price to outfitting costs was closer to 4:1 (see J. Cavignac, *Jean Pellet commerçant de gros 1694-1772 : contribution a l'étude du négoce bordelais du XVIII^e siècle* (Paris, 1967), p. 48).

14 *Brouillard*, f. 22. This differs slightly from the figure of 34,597 *livres* 5/8 that appears on f. 18 of the same.

15 A.N., Col. C11A, XLVII, f. 308v for date of arrival.

16 See Shepherd and Walton, *Shipping, Maritime Trade and the Economic Development*, pp. 201-3. *Fier*'s ton-man ratio is low even when compared to those for five ships of similar size that sailed to Quebec from La Rochelle between 1676 and 1687 ! (See A.C.M., Série B, 5675:210; 5679:381; 5682:391; 235:107 and 137.) During the later portion of the eighteenth century ships of similar tonnage entering Quebec from England were much more efficient. See G. Paquet and J. P. Wallot, "International Circumstances of Lower Canada, 1786-1810: Prolegomenon," *Canadian Historical Review*, LIII (1972), pp. 396-99. Table V, "Tons per Man on Ships in and out of Quebec by Ship's Size and Origin or Destination, 1786-1810."

more likely by regulation from the era of Colbert and his successors. The Ordonnance de la Marine required commercial vessels to ship various inexperienced personnel as trainees.[17] The case of the *Fier* proved to be no exception. Besides the captain there was a second in command, six petty officers, a surgeon, ten seamen, two boys, a cook and a pilot in training for a total complement of twenty-three. All, with the exception of the *pilottin*, were paid a monthly wage and even he received a bonus at the end of the voyage adding to the already large expense for food and wages that such a crew required.

The salary scale varied widely. The two ship's officers each received one hundred and ninety *livres* per month, which set them well above the remainder of the crew. The pilot, boatswain's mate and ship's carpenter were each paid forty-five *livres*. The other petty officers, the bosun, coxswain and steward were paid between thirty and thirty-four *livres* monthly while the surgeon with twenty-eight *livres* was ranked very low. His replacement on the return voyage — for the first one deserted at Quebec — received an even lower wage.

The surgeon was one of the crew members required by law on all French ships, but he seems to have been treated almost as though he were superfluous. Others, too, were so treated, if one may judge from the disparity between the wages and special treatment given to three seamen and the remainder. At the beginning of the voyage the three highest paid sailors received a bonus of one week's wage for signing on and at the conclusion they were paid off at a higher rate than the one originally set. There were no formal distinctions in France between able and ordinary seamen but the wide range in rates of pay among the deck hands does reflect the degree of skill among them. Ordinary seamen earned monthly rates of pay between sixteen and twenty-two *livres*. Two others earned two *livres* more per month while the senior crewmen had their rate of pay increased to twenty-seven *livres* for each of the last four months of the voyage. These men were paid for the complete voyage almost three times the rate for boys in training. Along with the boastwain, who received the highest wage of those serving on deck, they provided the backbone of the crew.

The crew were paid for the full time away from La Rochelle, and the long lay over spent by most ships at Quebec ate into the ship's earning capacity. The long delays often encountered in the St. Lawrence River where captains were forced to wait for the proper winds before moving upstream also served to increase sailing time. These two factors combined to make the New France run more costly than others in the French colonial network, especially as the increased cost of the large crew's wages and victuals was a part of the replacement cost of capital outlay or was charged against earnings before profit could be taken. One month's wage for this

[17] P. W. Bamford, *Forests and French Sea Power, 1660-1789* (Toronto, 1956), p. 166.

oversized crew represented almost two percent of the owner's total capital outlay (see Table XII).

The absence of any commission or bonus paid to the captain who sold the owners' cargo at Quebec is surprising. Usually such activity entitled a captain to a percentage of the gross sales but there is no record of it in this case. This appears to have been the captain's first voyage for the owners and they may have placed him on salary for that reason. Certainly their instructions to him suggest that he lacked experience: several persons at Quebec were recommended to him in case he needed advice. [18]

Before leaving La Rochelle the crew received two months' advance on their wages; when signing-on bonuses were added, this amounted to 1,416 *livres*. On the ship's return nearly seven months later the remaining wages were paid and the crew dismissed. The whole amount of their wages came to 4,735 *livres* 10 *sols* and with the cost of their victuals was deducted from the ship's earnings. These figures show how the expense of large crews might reduce the earning power of French ships. The owners endeavoured to increase their earnings by other means such as, for example, the practice of returning from Quebec with specie and coin as a result of trading activity. It was used to pay off the crew at La Rochelle and thereby avoided the necessity for the merchants to tie up any more capital for that purpose than what had been required for the initial outlay.

IV

The *Fier* carried approximately one hundred and thirty tons of cargo and more than ten tons of victuals for her crew. In France, and on this voyage, the various bales, packets, bundles and barrels of merchandise were estimated by the shipper into standard volumes of *barriques, tierçons, quarts, ancres* and *demi-ancres,* representing a quarter, sixth, eighth, sixteenth and thirty-second of a *tonneau de mer* respectively. For instance, one consignment of two *ballots,* two *caissons,* four *pacquets* and one *baril* was estimated as four *barriques,* two *tierçons,* one *quart* and a *demi-ancre,* or one and forty-seven ninety-sixths tons of freight.

These freight-tons were the units recorded by port officials on the arrival and departure of ships of the period. The totals of these figures reveal the amount of cargo imported and exported, not the tonnage of shipping entering the port. On her arrival at Quebec in 1725 and again four years later the *Fier* was reported carrying one hundred and thirty and one hundred and twenty tons respectively. [19] The historian cannot, then, assume that a ship always carried full ladings and he must consider the differences between potential and real load when relating the requirements

[18] A.C.M., B 4203, "Ordre pour le capitaine Chiron lorsque Dieu lui aura conduit a Quebec," 24 May, 1725.

[19] A.N., Col. C11A, XLVII, f. 308v; A.C.M., B 247, f. 115v; and *Ministère de la France d'outre mer,* Série G 1, 464, no. 1.

for capital outlay to the earnings to be made based on freight and cargo carried. Fortunately in the present case the cargo space appears to have been filled so that no additional calculations concerning real and potential earnings needed to be made.

The owners' cargo was largely wine and brandy but also included salt, vinegar and household wares (see Table V). It filled less than seventy tons of cargo space. Estournel hired out a bit more than sixty tons of remaining space at one hundred *livres* per ton to other merchants who wished to consign goods to agents and merchants at Quebec. Eleven metropolitan merchants dispatched to thirty different merchants at Quebec forty-seven loads varying in size from one small bale of general merchandise to ten bales and two *barriques* of general wares, two *quarts* and one *ancre* of nails, one packet of steel, one case of muskets and ten barrels of lead. At each end of the maritime link both large and small commercial houses were represented. Undoubtedly there were even some consignments sent not to merchants but to clients in the colony for their own consumption. Fully one-half the space was taken by one of the owners, Jean-Jacques Catignon, whose major consignment went to Jean Crespin, already *colonel de la milice* at Quebec and soon to become a councillor on the Superior Council. [20]

The captain sold the owners' cargo for slightly more than twice its original value (see Table VI). Nearly half the amount was received in colonial goods and the remainder in specie and bills of exchange drawn on commercial houses and institutions in France. Almost one-third of their cargo was purchased by Mme. Soumande, widow of a prominent local merchant. In return for 200 *minots* of salt, 50 *barriques* of wine and 362½ *velts* of brandy valued at 6,987 *livres* 10 *sols*, she exchanged 23 packets of moose and deer hides, two bales of lynx and bearskins all valued at 5,537 *livres* 10 *sols*. Mme. Soumande made up the difference with a bill of exchange and 753 livres in cash. [21] This was a typical exchange between colonial and metropolitan merchants in that Mme. Soumande needed to make over ten percent of her payment in cash. For in general the colonists were unable to supply colonial goods for the full equivalent of French goods delivered to them. Captain Chiron took more than 3,000 *livres* in coin out of the colony as a result of his single trading operation, which provides a good illustration of the constant difficulty the Canadian colonists had in paying for their manufactures (see Table VIII). In view of this flow of specie eastward across the Atlantic we shall not be surprised to learn that the specie was devalued on arrival in France.

Almost four thousand *livres* from the sale of goods remained in New France in the form of duties levied on wine and brandy, loading and

[20] *Rapport de l'archiviste de la province de Quebec, 1949-1951*, p. 285, "notice biographique." Crespin's close relations with the owners is revealed in the captain's instructions to seek him out for advice when confronted by any business problems.

[21] A.C.M., B 4202, "*Madame Soumande, son compte courant avec Capitaine Chiron de la Rochelle.*"

lightering costs, and expenditures for revictualling (see Table VII). In all, the captain returned with goods, coin and bills which eventually realized 17,955 *livres* 1 *sol* 6 *deniers* in La Rochelle. When added to the amounts earned from carrying freight in both directions the total gross earnings of the ship amounted to 25,556 *livres* 14 *sols* (see Table X). This figure represents earnings from both trading and shipping.

The proportion of one type of earning from the other is significant. Only 29.3 percent of the total earnings were derived from freight. Slightly more than seventy percent of the earnings came from selling about 54 percent of the total cargo carried. To have earned a similar amount on freight alone the *Fier* would have had to carry 256 tons of cargo, or in other words had a full lading while sailing to and from New France (see Table XII). There was little or no hope of earning sufficient profits from shipping activity alone. It was probably a characteristic that shippers customarily owned a large portion of the cargo being carried on ships sailing to New France, that trading activity was an integral part of the growth of maritime activity in the colony, and that the shipper-traders from France occupied a paramount position.

In order to obtain a complete picture of the commercial venture under discussion see Tables V to X. The value of the figures in the tables is that they show the earnings of the outbound cargo, the reduction in the quantity of items sold at Quebec from that loaded at La Rochelle, the devaluation of specie and the failure of the return cargo to earn any profit. The striking feature is the difference between the earnings of the French and Canadian cargos. Purchased at La Rochelle for 9,781 *livres* 2 *sols* 8 *deniers,* the cargo sold at Quebec for 21,482 *livres* 2 *sols* (Colonial value), an increase of ninety-three percent after the currency equivalent is taken into account. By comparison, the cargo purchased at Quebec for 17,538 *livres* 6 *sols* 10 *deniers* (Colonial) sold at La Rochelle for 17,596 *livres* 13 *sols* 1 *denier* (tournois), an increase of only fifteen percent. As in the case of freight the merchant had to count on the earnings of the outbound run to provide his profits. [22]

It may be objected that in 1725 specie no longer circulated in the French colonies at higher fixed rates than in France. But nevertheless Estournel made a devaluation of 12.5 percent on the coins after they arrived in La Rochelle, and this illustrates another feature of the finances of the period which, together with the refusal by the central government to permit card money to circulate, led to the demoralization and decline of trade in the colony. According to letters patent issued and put into effect by order of the *Conseil de Marine* in April, 1717 all different rates at which specie circulated in the empire were abolished. Henceforth the coin of the realm was to circulate equally within the empire. Economic circumstances, however, dictated otherwise. Owing to the failure of the Crown to meet its financial obligations and to the collapse of John Law's "System," the govern-

22 By considering the equivalent, the profits from the outbound voyage were reduced, but those from the homebound trip were increased, over the apparent rates.

ment pushed through a bewildering series of specie devaluations during the next decade. Financial stability was not achieved in France until June, 1726, when Cardinal Fleury, who then became chief minister, insisted that the devaluations cease. The rate set then did not change until 1785.

Until 1726, then, the devaluations always placed the colonial merchants at a disadvantage in their dealings with their metropolitan counterparts. Currency was always over-valued in New France.[23] In the case of the trading which originated from the voyage of the *Fier*, the colonists followed the rates set for specie in an *arrêt* of September, 1724, which had established the *Louis d'or* at 16 *livres*. By the time the *Fier* had returned to La Rochelle another *arrêt* of September, 1725, had further reduced the *Louis d'or* to 14 *livres*.[24] Estournel devalued the specie accordingly.[25]

A second significant feature, made all the more important by the profit-earning role of the outbound voyage, was the decline in the size of the cargo sold relative to the cargo initially laded in France. For instance, of the forty-five *barriques* of Saintonge wine carried, only twenty-seven were sold. Every other item in the cargo was in a similar case. A statement of the "coullage" [*sic*], or leakage, reveals that an eighteenth century merchant expected to absorb fairly high losses through spoilage, leakage and breakage; in the case just mentioned, this amounted to forty percent.[26] The type of commodity seems to have little bearing upon the degree of loss, for while the Saintonge registered the highest rate, the Bordeaux registered the lowest, which was not more than three percent. On an average, eleven percent of the wine was lost, and ten percent brandy and drinking glasses. The earthenware suffered heavily, with losses amounting to twenty-two percent of the total while, not unexpectedly, the relatively indestructible ironware experienced losses of only three percent. These losses show how the historian may easily be misled if he only compares the per unit prices in France with those in the colony without taking into consideration the losses which the merchant trader was expected to absorb and (before 1726) the specie devaluations in the calculation of his selling price.[27]

[23] A. Shortt, ed., *Documents relating the Canadian currency, exchange and finance during the French regime*, 2 vols. (Ottawa, 1925), I:375-93 for the letters patent; some of the devaluation arrets are also included.

[24] *Ibid.*, I:529 and 551, n. 1.

[25] *Brouillard*, page 29. The owners had to make this currency calculation only for the specie brought back to France. Due to the usual commercial practice of keeping accounts in local currencies no other reduction was required. Cargo was sold and purchased at Quebec at the prevailing rate. In attempting to determine profit on the items traded, rather than on the whole venture, however, it was necessary to use a common rate and so reduce the prices in New France to *livres tournois*. If this was not done the profit rates would have appeared to be 12.5 percent higher than those given.

[26] A.C.M., The previously cited "*Estat de la vente de la cargaison...*" included a statement of *coulage*. It reveals that cargo could sometimes be used by the crew for victuals, as was the case for an *ancre* of vinegar, or could disappear completely as did a *barrique* of Bordeaux which was found to be empty on arrival at Quebec.

[27] Salt was measured in *muids*, *boisseaux* and *minots* which themselves varied according to the items being measured. The *Fier* carried thirty-four *muids* or 1632

Wine and brandy carried an additional burden of entry duties. These had been set in the seventeenth century at ten percent of their sale value at Quebec but in the present instance were levied at a fixed rate of nine *livres* per *barrique* of wine and twenty-two and a half *livres* for a similar quantity of brandy. In this venture 2,195 *livres* 3 *sols* 4 *deniers* were paid into the coffers of the *Domaine d'Occident* at Quebec. When the duty is compared to the price received after the sale of the wine and brandy, the duty appears to represent nearly twelve percent of the amount received. This suggests that the prices obtained were not as high as might have been expected. [28]

Before the net profit to the owners of the wine and brandy can be determined, the carriage charges must be added. These were hidden in the outfitting costs, but rather than attempt to fix a portion of those costs against the cargo, it seems reasonable to use the prevailing freight rates. Wine and brandy occupied 50 7/12 tons of cargo space. At one hundred *livres* per ton a charge of 5,058 *livres* 6 *sols* 8 *deniers* must be put against the earnings from the sale at Quebec. By subtracting the sum of the original cost and the carriage charges from the sale price less the duties levied, and taking into consideration the difference between current metropolitan and colonial currency values, we establish that the merchants were left with a net profit from the sale of wine and brandy of ten percent.

The remainder of the outbound cargo of salt, vinegar and household wares, amounting to approximately fifteen tons, was worth 1,372 *livres* 12 *sols* 8 *deniers* and earned 2,587 *livres* 14 *sols* in equivalent *livres tournois*. [29] After freight charges were deducted this portion of the cargo resulted in a net *loss* of ten percent to the owners. Certainly these figures are only approximate. The amount of space occupied by these items remains unknown except for the drinking glasses. They were packed in four *quarts*, or half a ton, and the proceeds from their sale resulted in a net *loss* of twenty-three and a half percent. The most profitable item was the iron pots. We do not know their bulk but they were transported for other merchants at a flat rate of thirty *livres* for forty and forty-eight units respectively. Even allowing for the currency equivalent it is possible that the owners realized a net profit of slightly more than thirty percent. The thirty-four *muids* of salt occupied 11⅓ tons of cargo space, but as only about one quarter of the total was sold the remainder may have been carried as ballast and would not have had a charge levied against it. In that case the freight charge of 1,500 *livres* determined for the additional cargo is far too high and the loss exaggerated. Nevertheless the case of the glassware must be considered against such a view.

minots of which only 443 were sold. There are several possible explanations of this fact anyone of which is probable, but the lack of any indication has forced an exclusion of this discrepancy of seventy-three percent from these calculations. Cf. *Encyclopédie,* X:558 "muid."

28 A.C.M., B 4202, "*Acquit de payment du Bureau de Quebec,*" 15 Oct., 1725. The duties on 1 *barrique* that was not sold, but was presented to the governor, have been substracted from the above calculation.

29 The actual price received at Quebec was 2,957 *livres* 7 *sols.*

Turning to the return cargo (see Tables VIII and IX) the results reveal the third major feature of the trading portion of the venture. The total cargo obtained in New France was disbursed at La Rochelle for about fifteen percent more than was paid for it at Quebec. This figure included not only colonial products, but also specie and bills of exchange. When exchange commodities are considered alone the picture is enlightening. Cod fish, wood products, furs and hides purchased for 10,764 *livres* 14 *sols* (9,420.1 *livres tournois*) sold in France for 11,226 *livres*, an increase of nineteen percent. The greater the amount of colonial products laded, the better the financial picture. But this gross figure could not begin to pay for the operational costs of the ship let alone yield significant profit. The largest item of the return cargo, cod, occupied less than ten tons of cargo space. The earnings on the return freight amounted to no more than 1,455 *livres*. Even if the return rates were lower than those for the outbound voyage, it is doubtful whether the freight totaled to more than eighteen or twenty tons. The ship probably carried no more than forty tons of cargo across the Atlantic; and it is not surprising that at least one street in La Rochelle is paved with ballast stones from Canada.

Although the *Fier's* return cargo consisted of Canadian products that "helped to provide France with the raw materials which she needed", it would be completely erroneous to see in this traffic, as one student has done, an opportunity to "double profits" compared to those being earned for a single crossing of the Atlantic. [30] These Canadian products bore no resemblance to sugar or tobacco which were valuable enough to bear high freight rates and to pay for outbound as well as inbound voyages. Furs could carry high freight rates, but even during the most prosperous years of the *ancien régime* all the furs exported from the colony in any one year could be carried in one good-sized merchantman. [31] It seems doubtful, indeed, whether furs can really be considered a staple in the same sense as tobacco or sugar.

Tobacco and sugar were bulky valuable cargoes which could earn large profits. When a ship was under charter to carry bulk cargoes homeward, it presumably provided the owners with their main earnings, but there was nothing to prevent them from shipping their own cargoes on the outward run like the owners of the *Fier*. In other colonies shippers could expect to earn profits from transporting in two directions.

In Europe it was not unusual for a shipper to earn a profit by transporting a cargo in only one direction. But it may well have been the exception in colonial shipping where distances were greater, navigation less certain

30 A. G. Reid, "Intercolonial Trade during the French Regime," *Canadian Historical Review*, XXXII (1951), 236, 248.

31 A. J. E. Lunn, "Economic Development in New France, 1713-1760" (Unpublished Ph.D. thesis, McGill University, 1942), p. 456 for estimates of annual fur exports after 1716.

and the risk generally increased. The triangular trade routes which developed between several colonies might best be viewed as attempts to improve the earning power of ships by moving cargo for a profit along two sides of a triangle rather than as the outgrowth of a desire to exchange mutually beneficial commodities between temporate and tropical colonies. It is notable for instance, that New England, with an economy somewhat similar to that of New France, developed triangular trade routes with the West Indies, whereas Virginia, with a bulk cargo export commodity, provided shippers with the opportunity to earn profits by moving goods in both directions directly between the colony and England, no time being wasted moving along an unprofitable route.

In New France, on the other hand, shippers and owners had to forego such expectations. The return cargo for most was not a means to increase earnings, but a necessary result of the barter system employed wherein one commodity was exchanged for another. Despite the existence of about a hundred tons of empty cargo capacity on the voyage home, the owners made no attempt to fill it. Profits were earned by transporting goods from the mother country to the colony and selling them to the inhabitants. There was little profit to be had from carrying Canadian products to France.

Several questions arise from this examination of the owners' cargo. In view of the great difference between profit and loss on certain items, were the earnings on non-luxury goods sufficient to justify their carriage to New France at all? The answer seems to be a qualified yes, but only provided that luxury items made up the bulk of a cargo and that no other goods were available to a shipper. It was certainly better to carry something if only to reduce the carriage costs of the luxury goods.

This in no way implies that manufactures of daily use were not carried to the colony. Historians have recently found evidence that during the *ancien régime* large quantities of French manufactured goods especially clothes, were present in New France, among the common people. [32] The failure of return cargoes to earn profit in the traffic with New France poses the additional question not just whether the colonial merchants ever dominated the trade, but whether they ever could have dominated the maritime trade and traffic between New France and the mother country given additional adverse factors of climate and geography. Does not the picture portrayed suggest a reason for the little enthusiasm shown by merchants in New France to accept molasses from the Antilles in exchange for local products? Can there be any wonder at the vigorous reactions displayed on any occasion when the suppression of liquor in the fur trade was discussed? Did the low profit margins on household goods — iron pots excepted — lead to their being imported by colonial merchants rather than metropolitan merchants?

[32] See R.-L. SÉGUIN, *Le costume civil en Nouvelle-France*, Musée national du Canada, Bulletin 215, Ottawa, 1968.

Unfortunately on this point we have perhaps carried our speculation beyond what the evidence will bear. Certainly profits were sufficient to encourage merchants to venture into the colonial trade of New France, but the margin was narrow enough to bring about many failures. The Canadian trade was not a gateway to instant riches. Knowledge, experience and not a little luck were keys to commercial success on the route to New France.

V

It has been useful thus far to divide the total capital outlay into three parts; the fixed cost, the replacement cost and the amount invested in the cargo. The returns from this last portion of the outlay we have considered in some detail for they lead to conclusions regarding trade to New France. It remains now to examine the earning of the maritime and trading portions of the venture considered as a whole and to determine net earnings. But this cannot be done without first making three final calculations of factors in the fixed cost element of the ship's capital. They are the depreciation of the ship, the insurance risk against loss or peril of the sea and the interest on the capital investment represented in the fixed cost.

It was in order to arrive at some approximate idea of these elements that I attempted earlier to distinguish between building a ship and making it ready for sea. The division of capital into two parts arose from the great difference in the longevity of the portions thus split, and hence in determining the rate of depreciation of the two parts of the investment. Only the first portion depreciated very slowly. A wooden ship that had been properly maintained and which sailed in northern waters might last beyond the quarter century mark, even to the half century although this was unlikely. Nevertheless the fixed portion of the outlay had to be depreciated at between two and four percent annually. This figure naturally increased when, as in the case of the *Fier,* the ship did not sail to New France every year and was laid up in her home port, continually losing value without earning any profits. The *Fier* did not sail again from La Rochelle until the spring of 1729.

The other portion of the outlay in the ship was not depreciated at all but was considered along with victuals and advances as replacement expenditure. Not all of the replacements were made every year, but at frequent intervals. Also, the ratio between the two kinds of outlay fixed: replacement was 3:2. In attempting to find a rate of depreciation for the whole amount needed to get the ship ready for sea the figure of four percent seems to be on the high side. [33] Applying this rate to the *Fier,* the depreciation charge would have amounted to 1,000 *livres.*

The element of risk is even more difficult to estimate. One could well imagine that special rates existed on voyages to New France where long

[33] R. DAVIS, "Earning of capital...," p. 411.

periods of close navigation were involved in the confines of the Saint Lawrence River and where delayed departures increased the danger from ice and snow, but no such development seems to have occurred. Like the differences between old and new ships, other factors served to balance the risks on any particular trade route in peacetime. Nevertheless French marine insurance rates were high, higher than in either England or the Netherlands, and this prevented the owners from insuring their whole investment. The high rates were due to the failure of any central clearing house to develop and to the control of Parisian underwriters who were notorious for their delays and their failure to pay claims. In the third decade of the eighteenth century the merchants of La Rochelle depended largely on their own and other merchant communities to insure their vessels and were naturally unable to deal in low rates. The owners of the *Fier* insured their venture at the rate of ten percent of the coverage, which was high even for France. Consequently they only took out protection for 16,000 *livres* on both the ship and the cargo. It is probably no accident that this amount covered the fixed cost value of the ship.

The reduction in coverage may have been made in order to bring the risk into closer agreement with the rate of loss in French shipping which was considerably lower than ten percent and to give a more accurate reflection of reality. In determining the English rate of loss, five percent has been suggested as a reasonable, if largely approximate figure. [34] There seems no reason not to use the same rough figure in the French instance. Also, 16,000 *livres* represents forty-six percent of the total gross capital outlay, on the ship and cargo. By covering this percentage of their investment at the high rate of ten percent, the French owners may have been estimating the real risk at a loss rate of approximately 4.6 percent and compensating for it, thereby refusing to overinsure their venture.

The third element, the interest on the capital invested in fixed cost, is the sum of the insurance, 4.6 percent of the total investment or 1,600 *livres* (1,600 *livres* was the actual premium paid), and the depreciation of the fixed cost, 645.6 *livres* in the first year of operation. In the years to come the owners would diminish the accumulated depreciation charge by a similar amount after each voyage. The total from this addition had to be earned each year, more if the voyages took place at greater intervals, before there was any return on the investment. In the case of the *Fier*, approximately 6.5 percent of the total capital outlay, or 2,245 *livres* went toward depreciation and provision for sea risks before any interest or profit became available to the owners. It is significant in this respect that the *Fier*'s insurance premium was not paid until four months after the ship's return from Quebec. [35]

The foregoing estimates cannot pretend to a high degree of accuracy, but the main point of the exercise has been to show that the amount involved

[34] R. Davis, "Earning of capital...," p. 411.
[35] *Brouillard*, fol. 45.

was considerable and must not be ignored. No record of such calculations have been discovered but this was to be expected in a period when fixed assets in commercial enterprises were a novelty. Nevertheless in the eighteenth century merchants must have begun making such calculations in order to consider the feasibility of commercial ventures of the kind undertaken by the *Fier*, which included fixed assets.

The total earnings from the *Fier*'s voyage to Quebec amounted to 25,556 *livres* 14 *sols*. After all the deductions are made (see Table XI) net earnings of 4,640 *livres* 3 *sols* 6 *deniers* were obtained from a capital outlay of 34,777 *livres* 9 *sols* 8 *deniers*, or a return of approximately 13.3 percent was realized on the owners' investment. By this time, however, the initial investment had been reduced to the fixed cost element of the ship, or by less than fifty percent of the total. The question remains why the owners, or anyone else, were willing to accept such small returns for such risky investment as ocean shipping, compared with *rentes* yielding between three and five percent annually, the profits from this venture were not enormous. When the risks of the two kinds of investment are compared, the question only increases in significance.

Several reasons have been suggested which indicate why the shipping industry attracted capital and grew in France throughout the eighteenth century. At that time merchants did not depreciate their fixed assets, and therefore they might consider a ship's earnings to be larger than was the case, but in the example of the *Fier*, the failure to determine depreciation would raise net earnings on investment only slightly to 15.2 percent of the total outlay. Nevertheless, as in the case of the *Fier*, the combination of trading with shipping gave the forwarder greater control and security over his goods while *en route* to their destination and permitted him to set departure and arrival dates with greater accuracy so as to avoid tying up large amounts of capital in unprofitable waiting periods. Convenience might well encourage merchant traders to own their own ships especially in the New France trade where margins appeared so narrow. It has already been suggested that it was nearly impossible to earn a profit through shipping alone. Also, the position of the co-owner who outfitted the *Fier* is revealing. Although the capital outlay was equally owned by three men, André Estournel alone outfitted the ship. He charged himself and his co-owners a commission of two percent on 35,173 *livres* for his services. Thus, in addition to his share of one-third of the net earnings (1,860 *livres*), he also received 702 *livres* for outfitting the venture.[36] Finally the figures in Table XII reveal the manner in which shippers *could* obtain significant returns. *Fier*'s voyage took approximately 6.75 months to complete during which time 13.1 percent profit was realized on the investment. The estimated annual rate of return, however, was nearly double that figure. Thus, the ship owner made significant

[36] See MEYER, *L'Armement nantais*, pp. 154-7, for a discussion of the significant profits earned by *armateurs* above those of other co-owners.

returns when he was able to re-invest his capital as rapidly as possible. Every delay, however, cut into his ability to profit from his venture. As the *Fier* did not sail again until 1729, the annual rate of return might be said to have dropped to a mere 3.4 percent when spread over four years. Nevertheless, ship owning could be quite attractive to individuals who were willing to pay attention to their ventures and exploit every available opportunity.

Perhaps the nature of shipowning also provides a partial explanation. Ships became a source for the investment of surplus capital. Shares in ships, unlike ordinary commercial partnerships, were freely transferable and there was a considerable market for them. [37] The dangers of non-limited partnerships generally were not as great on the continent as they were in England, but the limited amount of the total capital outlay was attractive everywhere. Shipowning represented a limited liability operation in two senses. First, unlike ordinary commercial partnerships shipping ventures were for relatively short terms and had a specific object in view. Second, a ship represented in its fixed cost a tangible asset, a piece of property with a low rate of depreciation. The only liability to be registered against it would be wages which would hardly exceed the value of the ship. In the case of cargo liability it could be assumed that were the ship to be lost the liability would be covered by insurance. In practice, then, shipowning was a form of limited liability in a period when such a form of investment was almost unheard of, and attractive to surplus capital despite possible low rates of return.

Finally, unlike most commercial partnerships of the period in which capital outlay was tied up in goods to be exchanged, the ship represented a very large lump sum investment which held out possibilities, given the right combination of circumstances, of great gains through fluctuating freight rates. This was a distinct advantage over the normal commercial partnership that had very little fixed element. In the ordinary course of events most of the capital went into exchangeable commodities with a consequent higher rate of risk on return.

It has recently been argued that the distinctive feature of eighteenth century French capitalism was its lack of fixed assets and that maritime voyages were viewed as joint ventures at the end of which the ship was sold and the loss or profit from this transaction entered into the total statement of the voyage. [38] This was undoubtedly the normal case and because of the absence of fixed assets eighteenth century books of account contain no evidence of the concept of depreciation. But it must by now

[37] DAVIS, "Earnings of capital...," p. 424, refers to England, but MEYER, *L'Armement nantais*, provides many French examples.

[38] G. V. TAYLOR, "Types of Capitalism in Eighteenth Century France," *English Historical Review*, LXXIV (1964), 478-501, see especially p. 483. TAYLOR continues his discussion in "Non-capitalist wealth and the Origins of the French Revolution," *American Historical Review*, LXXIII (1967), 469-96.

be clear that the *Fier* was not a short term asset to its owners. The ownership of the *Fier* represents something new in the development of capitalism. May not it and shipowning generally represent an intermediary step in the development from commercial to industrial capital investment? If so, we have yet another reason why investors or merchants were not deterred from entering shipping activities. Even so the case of *Fier* illustrates the need for these individuals to pursue their activities with great care in order to avoid losses.

TABLES OF EXPENDITURE AND REVENUE RELATING TO THE VOYAGE OF THE *FIER* TO QUEBEC IN 1725

(all figures are in French *livres, sols* and *deniers*)

Table I: Total Cost of Material

Wood [1]	3.414	17/6
Pitch, Tar and Oakum	510	18
Masts and Spars	529	
Nails, Ironware and Fixtures	1,913	12
Miscellaneous fixed expenditures	276	19
Rigging and Running gear	1,270	
Rope and Cordage	2,090	14
Sails	940	15
Miscellaneous replacement expenditure [2]	966	8/4
Total	11,913	3/10

Table II: Total Cost of Labour

Sailors, 557 1/6 days @ 30 *sols* each	761	5
Carpenters, [3] 1,469 5/6 days @ 30 *sols* each	2,395	
Soldiers (unskilled), 89 days @ 20 *sols* each	94	
Gardien during refit	73	18/6
Artisans (fixed cost)	488	8/6
Artisans (replacement cost)	276	
Towing, Haulage and Transportation	165	16
Total	4,454	8

Table III: Total Capital Outlay

Hull (purchase price)	4,600	
Materials	11,916	3/10
Labour	4,454	8
Miscellaneous [4]	365	11
Total	21,333	2/10

1 This sum includes 1,112 *livres* for oak planks *and* some pitch and tar.

2 This represents an arbitrary attempt to separate those items which last for only one or two voyages from more permanent fixtures of construction.

3 Ship's carpenters' wages in New France were considerably higher than those in La Rochelle. In 1735 master shipbuilders were paid between sixty and seventy *livres* per month, or 2½ *livres* per day; at the same time unskilled labour earned 30 *sols* per day. A.N., Col., C11A, CXIV, f. 9.

4 Includes rent of a berth and expenditure made while away from La Rochelle in search of materials.

Table IV: Total Capital Outlay of the Owners

Fixed cost of the *Fier*			15,789	5/6
Replacement cost of the *Fier*	5,543	17/4		
Ship's victuals [5]	2,247	4/2		
Advances to the crew	1,416			
Total Replacement cost			9,207	1/6
Cost of Cargo onboard			9,781	2/8
Total			34,778	9/8

Table V: Value of the Ship's Cargo Purchased at La Rochelle

34 *Muids* salt @ 8#5s/*muid*	280	10
40 Tonneaux Bordeaux @ 135#/tx.	5,400	
11¼ Tonneaux Saintonge @ 110#/tx.	1,237	10
8 *grosses barriques* and 28 *quarts* brandy @ 66#/barrique of 27 *velts*	1,771	
8 Quarts vinegar	90	
60 Dozen pieces of Earthenware	144	
55 Dozen drinking glasses in 4 *quarts*	82	10
296 Cooking pots and 300 each covers and handles	775	10/8
Total	9,781	2/8

Table VI: Value of the Owners' Cargo Sold at Quebec

443 *Minots* salt @ 45s & 50s/*minot*	1,001	10
155 *Barriques* Bordeaux @ 80#/*barrique*	12,400	
27 *Barriques* Saintonge @ 50# & 60#/*barrique*	1,590	
640¼ *Velts* Brandy @ 7# & 8#/*velt*	4,534	15
6½ *Quarts* Vinegar @ 30#/*quart*	195	
47 Dozen pieces of Earthenware @ 4# 10s and 4#/5s/dozen	218	15
49½ Dozen drinking glasses @ 36s, 40s, 45s and 50s/dozen	107	2
287 Cooking pots, covers and handles @ 5# each	1,435	
Total	21,482	2

Table VII: Total Expenditures Made at Quebec

Value of cargo purchased at Quebec	17,438	6/10
Duties paid on Wine and Brandy	2,195	3/4
Revictualling charges	1,534	18/10
Lightering and Lading costs	204	13
Total	21,473	2

[5] The cost of revictualling the ship at Quebec, 1,534 *livres* 18 *sols* 10 *deniers*, is not included as part of the capital outlay but as a charge against earnings. This only arose, however, because the owners loaded their own cargo. In another instance the owners would have had to give the captain this amount to purchase supplies for the return voyage and thus increase their investment.

Table VIII: Value of Owners' Cargo Purchased at Quebec

188 Quintals of Dry Cod @ 14#/quintal	2,632	
Planks, Staves and Caskwood	1,480	19
3 Bales of Mixed Furs	903	15
23 Packets and 2 Parcels of Hides	5,748	
64 *Louis d'or*, 550 *Ecus & monnaye*	3,224	9/10
10 Bills of Exchange	3,549	3
Total	17,538	6/10

Table IX: Value of Owners' Cargo Sold at La Rochelle

180 *Quintals* of Dry Cod [6] @ 15#, 16# & 21#/*quintal*	3,394	2
Planks, Staves and Caskwood	2,188	12
3 Bales of Mixed Furs	1,248	5
Moose and Deer Hides	4,395	1/3
64 *Louis d'or* and 550 *Ecus* diminished by 1/8th of their value in France	2,821	9/10
10 Bills of Exchange	3,549	3
Total	17,596	13/1

Table X: Gross Earnings from the Voyage

Total Value of Owners' cargo sold at La Rochelle	17,596	13/1
Additional amounts realized from other sales [7]	358	8/5
Freight earned outbound	6,146	12/6
Freight earned inbound [8]	1,455	
Total	25,556	14

Table XI: Net Earnings from the Voyage

Gross Earnings				25,556	14
Deductions:	Cost of Original Cargo	9,781	2/8		
	Provisions for depreciation and Sea Risk	2,245			
	Replacement costs (victuals and crew's advance)	6,982	14/2		
	Post-voyage expenses [9]	1,825	10/10		
	Duties and Charges at La Rochelle	82	2/10		
				20,916	10/6
Total				4,640	3/6

[6] The discrepancy between the two amounts is explained by the five percent normally deducted for "bon poid et trait," the figure given includes 380 *livres* weight of scraps sold to a street vender in the port at 8#/quintal.

[7] This amount includes prices received for one of the ship's pumps, a broken mast sold for use elsewhere as a bowsprit, and 2,736 *livres* weight of used rope sold to oakum pickers.

[8] Freight inbound was earned on the carriage of mixed furs worth 21,362 *livres* 10 *sols* laded at Quebec for other merchants. (See waste-book, f. 28.) Cargo is noted in A.C.M., Série B, 4202, "Estat des pelleteries chargees a fret dans le navire Le Fier cap^ne^ Chiron venant de Quebec."

[9] It may seem unreasonable to include this amount but most of these expenses occurred immediately after the ship's return and include fresh food for the crew, lightering costs, disarmament and storage charges.

Table XII: Estimated Annual Rate of Return

Length of Voyage			6.75 months
Total Capital Outlay			34,778.5 *livres*
Total Capital Outlay, less owners' cargo			24,996.3 livres
Gross Earnings			25,556.7 livres
Net Earnings			4,640.2 livres
Monthly Costs:	Wages	701.6 livres	
	Victuals	322.9 livres	
	Ship Replacement	339.5 livres	
	Ship Fixed	2339.0 livres	
			3703.0 livres
Monthly Gross Earnings			3786.2 livres
Monthly Net Earnings			687.4 livres
Monthly rate of return on investment			2.0 percent
Estimated Annual Rate of Return			24.0 percent