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Abandoning Ship at Scandia, Inc.: Part A

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Case Study

Abandoning Ship at Scandia, Inc.: Part A

Barry Armandi (deceased)
Adva Dinur
Herbert Sherman

Scandia, Inc., is a commercial vessel management company located in the New York Metropolitan area and is part of a family of firms including Scandia Technical; International Tankers, Ltd.; Global Tankers, Ltd.; Sun Maritime S.A.; Adger Tankers AS; Leeward Tankers, Inc.; Manhattan Tankers, Ltd.; and Liu’s Tankers, S.A. The company’s current market niche is the commercial management of chemical tankers serving the transatlantic market with a focus on the east and gulf coast of the United States and Northern Europe. This three-part case describes the commercial shipping industry as well as several mishaps that the company and its President, Chris Haas, have had to deal with including withdrawal of financial support by creditors, intercorporate firm conflict, and employee retention. Part A presents an overview of the commercial vessel industry and sets the stage for Parts B and C (to be published in the Spring 2011 issue) where the firm’s operation is discussed.

Keywords: shipping industry, macro environmental analysis, industry analysis, market structure, competitor analysis, case study

It was a gloomy late Friday afternoon in 1996 and all that Chris Haas, founder of Scandia, Inc., wanted to do was to crawl into a cool, long drink. But that was not to be the case. His office phone rang and a hurried and excited voice at the other end of the phone, barely audible at times, was delivering one of the worst pieces of news in the history of the company. “What do you mean both boats were seized?” shouted Chris. “You’ve got to be kidding me! No one has the right to seize our ships, I don’t care who they are, and I want names and numbers fast. I want facts and I want them quickly!” He hung up the phone but had a sinking, queasy feeling in his stomach. So much for a restful weekend!

The Deep-sea Shipping Industry

Deep-sea shipping services include international freight transportation (95% of industry revenue) and cargo loading and unloading, known in the industry as stevedoring (4%). The ships, which are the primary business unit, are owned by 4,795 companies with an average of 5 ships each. These vessels are registered under 144 different flags and are subject to international and port state regulations. The business is conducted in international market places using the U.S. dollar as currency, which has no tariffs or other impediments to free trade (Clarkson Research Studies, 2004).

The United States is the world’s largest importer and exporter, shipping 1.2 billion metric tons of cargo annually. Worldwide, more than 30,000 large privately owned vessels transport merchandise across oceans. Less than 500 (2%) of these ships are registered in the United States. An additional 700 ships are owned by American companies but registered in so-called “flags of convenience,” primarily the Bahamas, Liberia, the Marshall Islands, and Panama.

Ships, Shipping Services, and Vessel Management

Ships are technically sophisticated, high-value assets (larger hi-tech vessels can cost more than U.S. $150 million to build), and the operation of merchant ships generates an estimated annual income of U.S. $380 billion in freight rates, representing about 5 percent of the total global economy. Vessels include dry bulk carriers, which transport commodities such as iron ore, coal, and food; liquid bulk carriers such as tankers that ship crude oil, chemicals, and petroleum products; diesel-powered containerships; general cargo ships; and roll on-roll off (RORO) vessels that transport wheeled cargo such as cars, trucks, and trains.

Containerships carry most of the world’s manufactured goods and products, usually through scheduled liner services while bulk carriers are the workhorses of the fleet. These ships transport raw materials such as iron ore and coal, and are identifiable by the hatches raised above deck level that cover the large cargo holds (International Shipping Federation n.d.a).

Container-based liner service represents only 30 percent of global ton-miles (cargo weight times distance traveled) yet accounts for 80 percent of the total value of shipments. Liquid and dry bulk cargo represents the other 70 percent of ton-miles shipped but only 20 percent of the total value of shipments.

Containerships themselves are expensive, with some gas...
ships costing more than $100 million each. With an economic life of more than 20 years and highly volatile earnings, the investment process in shipping is both risky and complex. One of the primary functions of shipowners is to manage this investment process (Clarkson Research Studies, 2004).

Currently, there are about 26,300 merchant ships trading internationally, transporting every kind of cargo (see Figure 2 and Table 1). As of January 1, 2008, the world trading fleet was made up of 50,525 ships, with a combined tonnage of 728,225,000 gross tons.

**Ship Capacity.** A ship’s capacity is measured by several formulas. Dead weight tonnage (DWT) is the total weight of cargo, supplies, and crew that can be loaded on an “empty” ship. Gross register tonnage (GRT) measures the total internal capacity of a vessel. One GRT is equal to a volume of 100 cubic feet. The average tanker is between 250,000 and 350,000 DWT; dry bulk carriers average 100,000 to 150,000. Twenty-foot equivalent units (TEUs) refer to a container-ship’s total cargo-carrying capacity (see Figure 3). The average containership has a capacity of about 5,000 TEUs and can carry around 3,000 40-foot containers.

**Ship Travel.** Deep-sea ships travel 15 to 20 miles per hour (12 to 15 knots). An average excursion across the Atlantic covers 4,000 miles and takes about 12 days. Generally, 20 crew members sail with the ship. The average age of the U.S. privately owned fleet is 15 years; 40 percent of the fleet was built within the past 10 years. Most ships are rebuilt two or three times in their lifetime, lasting 25 to 40 years before being scrapped.

**Information Systems.** Ships depend on complex information systems to maintain vessel schedules and efficiently manage terminal operations. Deep-sea shippers manage ship routing through real-time, web-based tracking systems. Some

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**Table 1. Merchant Fleet by Company Size**

<table>
<thead>
<tr>
<th>Company Size (# owned vessels)</th>
<th>World Fleet</th>
<th>European Union Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#Companies</td>
<td>#Ships n.Dwt Avg. Ships</td>
</tr>
<tr>
<td>300+</td>
<td>4</td>
<td>2,099 59.5 525</td>
</tr>
<tr>
<td>200–299</td>
<td>3</td>
<td>794 40.3 265</td>
</tr>
<tr>
<td>100–199</td>
<td>9</td>
<td>1,201 61.4 133</td>
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<tr>
<td>50–99</td>
<td>45</td>
<td>3,010 124 67</td>
</tr>
<tr>
<td>10–49</td>
<td>469</td>
<td>8,898 321.8 19</td>
</tr>
<tr>
<td>5–9</td>
<td>584</td>
<td>3,856 107.2 7</td>
</tr>
<tr>
<td>2–4</td>
<td>1,404</td>
<td>3,731 73.3 3</td>
</tr>
<tr>
<td>0–1</td>
<td>2,277</td>
<td>2,194 23.3 1</td>
</tr>
<tr>
<td>Unknown</td>
<td>497</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,795</strong></td>
<td><strong>26,280 817.9 5</strong></td>
</tr>
</tbody>
</table>

*Source: Clarkson Research Studies, 2004.*
shippers outsource route optimization to technology companies that track weather and wind patterns. Radio frequency identification (RFID) tagging allows customers to track containers and cargo throughout the entire voyage. A mandatory international safety protocol, the Global Maritime Distress and Safety System (GMDSS), replaces Morse code by automating distress signaling and locating.

**Shipping Services**

Service takes three different forms: liner, charter, and tanker services. Liner service is regular, scheduled stops at ports along a fixed route. Liner routes are dominated by container ships transporting manufactured goods. Charter service, also known as tramping, is an “as-needed” mode of shipping that moves between ports based on cargo availability. Tramps inexpensively transport a single form of dry bulk cargo (grain, coal, ore, sugar) for a single shipper. Tanker service transports crude oil, petroleum, and other liquid products. Tankers can be chartered, but most are owned and operated by major oil companies.

**Vessel Management**

The commercial management of modern merchant shipping includes the following functions:

1. Selling space on vessels to parties wishing to transport a particular cargo, either on a spot or long-term contract basis. The act of selling space on the vessel is termed “booking a cargo.”
2. Marketing of shipping services and vessels.
3. Administrative and account tasks resulting from the sale of space on a vessel. For example, invoicing for freight due, tracking shipments, and coordination of customs documents.
4. Insuring fulfillment of all contract requirements.
5. Providing vessels with voyage orders, which include ports to call, cargoes to load and discharge, cargo-handling requirements.
6. Arranging services in ports of call relating to loading and discharging of cargoes.
7. Purchasing of voyage supplies and fuel. Voyage supplies are those costs that are directly related to the handling and transportation of a cargo or calling a specific port to load or discharge a cargo.
8. Administrative and accounting tasks resulting from arrangement of port services and voyage supplies.

Items 1 and 2 are typically defined as the responsibility of the chartering department of the commercial management organization. The remaining six functions usually fall into the realm of an operations department. Thus, the chartering department focuses on booking cargoes that will generate the highest income with the least cost. The focus of an operations department is to run the ships as efficiently as possible while providing the customers, called the charterers, with the service that they require.

Often when a commercial manager controls multiple ships in the same market they are treated as one united fleet and are used to support one another and provide a stable transportation system to meet the needs of their customers. It is important to note that the commercial management does not deal with the management of the physical vessel or its crew. The commercial manager is not involved with the repair and maintenance of the vessel or the hiring and placement of the ship’s crew. These functions are the role of a technical management company. Commercial and technical managers manage ships under a variety of arrangements; the three most common are described below.

**Managing on Behalf of Vessel’s Owners.** In this arrangement the manager works directly for the actual owners of the vessel. The technical managers typically work for a yearly fee. Commercial managers generally work for a combination of a yearly fee and commissions on the freight revenues and other monetary transactions, which are handled through the managers. The profit or losses of a ship’s operation are for the account of the vessel’s owners.

**Managing on Behalf of Vessel’s Bareboat Charterers.** The structure of working for a vessel’s bareboat charterer is basically the same as working for the owner but in this case the bareboat charterer is not the actual owner of the vessel. A bareboat charterer contracts to run a ship owned by a separate entity and pays a daily fee for the vessel. The bareboat charterer is responsible for the complete operation of the vessel. Bareboat charters can run from one to fifteen years or longer. This is typically the way ships are operated when they are owned by investors interested in the ships as an investment or those involved in what is known as asset plays. An asset play is the purchasing of a ship cheap in a poor market, operating it for a loss or little profit, and then selling it for a large return in a good market.

**Managing on Behalf of Vessel’s Time Charterers.** The arrangement of the management for a time charterer is slightly different as only a commercial management is needed. When a vessel is time chartered from either an owner or a bareboat charterer, they only take over the commercial management of the vessel. The bareboat charterer or owner remains responsible for the technical and crewing management for the vessel. The basic fee structure and profit arrangements are the same as the previous two scenarios.

There are ship-owning companies, bareboat charterers, and time charterers that handle one or both types of the management (commercial and technical) in-house. Often the division between the managers and their clients, the owner, bareboat charterer, or time charterer is quite blurred. It is not
unusual, especially in the case of the commercial manager, that there is a tie between the manager and the client.

**Macro, Industry, and Market Trends**

Demand is driven by macroeconomic trends in global imports and exports. Trade growth is influenced by the world business cycle and is very volatile and unpredictable. Keeping an adequate supply of ships at all times is essential for the free flow of world trade and one of the principal roles of the shipping industry is to invest in anticipation of future growth. Given the complexity of the cargo flows to be transported, this difficult task is tightly controlled by market forces (Clarkson Research Studies, 2004). Between 1980 and 1999, the value of world trade grew at 12 percent per year, while total freight costs during this period increased by only 7 percent, indicating falling unit costs of transportation, including those of ocean freight. In addition, analysis carried out by the United Nations Conference on Trade and Development suggested that the ratio of the various freight costs to import values continues to decline, and that total freight costs in world trade still represent, on average, less than 6 percent of the import value (or shelf price) of consumer goods.

Although the shipping industry enjoyed record markets and freight rates prior to 2009, freight costs for consumer goods have historically represented only a small fraction of the shelf price, and continuous improvements in technology and efficiency have helped ensure that maritime transport costs remain very competitive. The transport cost element in the shelf price of goods varies from product to product, but is ultimately marginal. For example, transport costs account for only 2 percent of a television shelf price and only 1.2 percent of a pound of coffee. (International Shipping Federation, n.d.c).

**Market Structure**

“The commercial structure of the shipping business is very fluid, allowing free entry and exit of companies. In April 2004 the deep-sea merchant fleet (including bulk, specialized and liner fleets) was owned by 4,795 companies. Only 16 of these companies (0.25%) owned more than 100 ships, with the average shipping company having a fleet of 5 ships. Consequently bulk shipowners are generally in the position of price takers, being too small to influence the overall market. An analysis of 7,000 dry cargo fixtures found that 7 percent of the owners had a market share of less than 0.5 percent of the fixtures.

Typical deep-sea shipping customers include energy, chemical, industrial, auto, retail, and consumer product companies. Some carriers work directly with the U.S. government to transport military goods and international mail. Sales are by an internal sales force; ship brokers (intermediaries between carriers and shippers); freight forwarders (booking agents for shippers); and non-vessel-operating common carriers (NVOCCs, resellers of carrier space). These intermediaries are broadly known as Ocean Transportation Intermediaries (OTIs).

Major types of marketing include trade publications, public relations, and trade shows. Account managers focus significant attention on maintaining key client relationships. Carriers often partner with container companies and develop relationships with U.S. and foreign ports, particularly ports that are efficiently run with limited congestion. Customer service is available by phone, email, and web-based chat.

Prior to deregulation under the Ocean Shipping Reform Act of 1998 (OSRA, or the Shipping Act), carriers were exempt from anti-trust laws and met at conferences to collectively agree on shipping rates. Now, an estimated 80 percent of ocean carriers sign private service contracts with shippers (the industry term for customers transporting goods overseas). Carriers are under no obligation to post rates. By law, intermediaries (OTIs) must charge a set rate based on the cargo and route. OTIs publish price quotes on the Internet and typically charge a monthly or per-use fee to access tariff information. Many carriers and OTIs provide online ordering of shipping services.

Shipping prices vary based on demand and direction; for example, December freight rates from China to the United States are much higher than westbound rates. Charter carriers are typically paid daily rates based on cargo classification and volume. A six-month charter rate for a 4,000 twenty-foot equivalent unit (TEU) containership is around $20,000 a day. An average liner service rate for a trans-Pacific voyage is about $2,000 per TEU (westbound) and $1,000 per TEU (eastbound). Rates can increase due to hazardous cargo, less than full containers, or unusual sizes (Deep Sea Shipping: Industry Overview).

**Market Segmentation**

The transport system the shipping industry has developed to carry this diverse range of commodities involves several separate but overlapping segments of the shipping business, each handling a different group of trades. This specialization is based on parcel size (i.e., the size of the individual consignment of cargo) and the cargo’s physical characteristics. The industry can be divided into three broad segments (bulk, specialized, and liner shipping), each of which handles a specific set of cargoes.

**Bulk Shipping** With bulk shipping large cargo parcels are handled in “bulker carriers” and oil tankers designed for the efficient transport of the very large parcels (10 to 450,000 tons) of homogeneous cargoes such as iron ore, coal, grain, and oil. The bulk shipping markets are highly competitive, and satisfy many of the characteristics of the perfect competition model:
• The commodity is homogeneous.
• Entry costs are very low.
• Many companies are competing for business (arguably each ship is a separate competitive unit).
• Information flows make the markets very transparent.

Business is carried out in four different ways: voyage charters, consecutive voyage charters, contracts of affreightment, and time charters. The freight rates achievable in these markets are highly volatile, depending on market circumstances. Typically bulk shipping freight rates are twice as volatile as the U.S. S&P 500 stock index.

Specialized Shipping. In this type of shipping, large quantities of “specialized” trades (e.g., chemicals, gas, motor vehicles, forest products) are transported using ships built for the purpose. Although these ships are purpose built, they are often designed to allow the carriage of other cargoes. Specialized cargoes are often subject to competition from both the liner and bulk shipping segments. The specialized shipping markets generally have fewer customers and fewer shipping companies. Since the aim is to provide an improved service to these clients, there is often a degree of product differentiation. There is, however, intense competition between specialized shipping companies and outside competitors (e.g., small tankers compete for chemical parcels or containerships competing for reefer or vehicle business).

Liner Shipping. Liner shipping encompasses the transport of small cargo parcels, which do not fill the hold of a ship, on regular services. Today most liner cargo is carried in containerships, but some are still transported in multipurpose vessels or RO ROs. The liner business serves a range of clients from substantial shippers who enjoy service contracts to intermediaries who group cargoes to negotiate volume discounts and with whom the liner companies compete for shipper support. As the cargo capacity of containerships has got bigger, there has been intense competition between the liner, bulk, and specialized segments for specific commodities, especially reefer cargo (Clarkson Research Studies, 2004).

Ease of Entry
Assuming you have the preliminary collateral in which to obtain credit, commercial shipping has relatively few barriers to entry. New investors require equity, but commercial shipping banks will provide loans to acceptable credits against a first mortgage on the ship. A comprehensive network of support services exists to which new investors, subject to sound management controls, can subcontract most business functions. Ship management companies manage the ships for a fee; chartering brokers arrange employment; collecting the revenues and dealing with claims; sale and purchase brokers buy and sell ships; maritime lawyers and accountants under-

take legal and administrative functions; classification societies and technical consultants provide technical support.

These services make it easy for new investors to enter segments of the bulk shipping markets during profitable periods; for instance, two of the largest tanker companies operating today were only set up in 1997. In addition, shipowners in one segment will move into new markets if they see an investment opportunity, such as the recent activity by several oil tanker companies who have ordered LNG tankers. Some specialized sectors, however, require special expertise, which is difficult to acquire quickly.

Information Availability
Information systems in bulk shipping business are very open, giving buyers and sellers of ships, operators, and charterers a timely flow of commercial data. Information about revenues and asset prices are published daily and widely circulated in the industry to both shipowners and charterers by the ship broking business and information publishers. These information services ensure a high degree of transparency. In addition, the costs of operating different types of ships are well known (several companies publish reports documenting them), making it easy for potential investors to estimate prevailing profit levels.

Joint Ventures and Consortiums
Shipping pools operate in every sector of the shipping business. A “pool” is a collection of similar vessels, under different ownerships, operating under a single administration. Pool managers market the vessels as a single, cohesive fleet unit, collect their earnings and distribute them under a pre-arranged “weighting” system. Pools are generally developed for two reasons: (1) to allow participants to provide the service levels required by their major customers; and (2) to improve transport efficiency by special investment and increased ship utilization (e.g., by arranging backhaul cargoes more effectively than a small group of ships could do) (Clarkson Research Studies, 2004).

Competitive Landscape and Substitutes
The deep-sea shipping industry, which transports cargo to and from foreign ports, includes about 500 companies with combined annual revenue of nearly $9 billion. Major carriers include Crowley, Horizon Lines, APL Limited, and Overseas Ship holding Group (OSG). The industry is highly concentrated with 50 largest companies accounting for 95 percent of industry revenue. Ships that travel within the United States or that transport passengers are not included in this industry (www.hoovers.com; SIC codes 4412, deep-sea foreign transportation of freight; 4424, deep-sea domestic transportation of freight; 4449, water transportation of freight; and 4491, marine cargo handling. NIACS codes 48311, deep-sea, coastal,
and Great Lakes water transportation; and 483111, deep-sea freight transportation).

According to the International Shipping Federation the international shipping industry is responsible for the carriage of around 90% of world trade. Shipping is the life blood of the global economy. Without shipping, intercontinental trade, the bulk transport of raw materials, and the import/export of affordable food and manufactured goods would simply not be possible.… Seaborne trade continues to expand, bringing benefits for consumers across the world through competitive freight costs. Thanks to the growing efficiency of shipping as a mode of transport and increased economic liberalization, the prospects for the industry’s further growth continue to be strong. The world fleet is registered in over 150 nations, and manned by over a million seafarers of virtually every nationality. (International Shipping Federation, n.d.d.)

The profitability of individual companies depends on their efficient operations and safety record. Large companies have advantages in fleet size and port access. Table 2 lists the top ten container operators.

Small companies can compete effectively by chartering services out of smaller ports and transporting unusual cargo. Average annual revenue per worker for a typical company is nearly $500,000.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Operator</th>
<th>TEU</th>
<th>Share</th>
<th>Existing fleet</th>
<th>Orderbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>APM-Maersk</td>
<td>2,041,416</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mediterranean Shipping Co</td>
<td>1,510,880</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CMA CGM Group</td>
<td>951,459</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Evergreen Line</td>
<td>634,507</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Hapag-Lloyd</td>
<td>505,771</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>COSCO Container L</td>
<td>479,485</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>APL</td>
<td>453,999</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>CSCL</td>
<td>428,021</td>
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</tr>
<tr>
<td>9</td>
<td>NYK</td>
<td>415,351</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Hanjin / Senator</td>
<td>379,328</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: AXS-Alphaliner TOP 100 2008.

Notes
1. The name of the firm and the key characters of the case have been disguised as per request.
2. The twenty-foot equivalent unit (TEU or teu) is an inexact unit of cargo capacity often used to describe the capacity of containerships and container terminals. It is based on the volume of a 20-foot long shipping container, a standard-sized metal box that can be easily transferred between different modes of transportation, such as ships, trains and trucks (Wikipedia, n.d.).
3. A bareboat charter is an arrangement for the hiring of a boat, whereby no crew or provisions are included as part of the agreement; instead, the people who rent the boat from the owner are responsible for taking care of such things (Bareboat Charter).
4. A time charterer is a charter party hiring a vessel for a specified period of time or a particular voyage in which the shipowner provides the vessel and crew while the charterer supplies the cargo (www.usc-ly.com/terms.htm).

References
About the Authors


**ADVA DINUR** (adva.dinur@liu.edu) has been an Assistant Professor at LIU since 2004. Her main research interest is capturing the illusive nature of tacit organizational knowledge and how it transfers within organizations. Prof. Dinur also enjoys combining her research and her teaching. For instance, she received a best-paper award for her work within the classroom, where she measures her own effectiveness as a teacher in achieving learning goals. Prof. Dinur often uses cases in her classes, and besides publishing cases herself, she also does research on finding tools that improve the use of cases in the classroom. Prof. Dinur holds a Ph.D. from Temple University (Philadelphia) and a B.A. from Hebrew University (Jerusalem).

**HERBERT SHERMAN** (Herbert.Sherman@liu.edu) is a professor of Management and acting chair of the Management Science Department at LIU-Brooklyn, New York. He received his Ph.D. in Strategic Management from the Union Institute and University in Cincinnati, Ohio (1988). He is widely published in many journals including *Journal of Management Science and Policy Analysis, Entrepreneurship and Regional Development, Management Development Forum, Business Case Journal, Management Development Journal, The CASE Journal, Management Decisions, and Journal of Behavioral and Applied Management*. Dr. Sherman is a Fellow of CASE and has served the association as program chair and in several other capacities. He is the founding editor of *The CASE Journal*, a peer-reviewed online journal with an acceptance rate rivaling top-tier journals.