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**WORLD MARITIME UNIVERSITY**

Malmö, Sweden

**COST REDUCTION IN THE COMMERCIAL  
OPERATIONS OF THE ETHIOPIAN SHIPPING  
LINES-A RESPONSE TO GLOBAL  
COMPETITION**

By

**Kaleayu Tessema Bogale**

**The Federal Democratic Republic of Ethiopia**

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

**MASTER OF SCIENCE**

in

**SHIPPING MANAGEMENT**

2000

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## DECLARATION

I certify that all materials in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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## **ABSTRACT**

Title of Dissertation: **Cost reduction in the commercial operations of the Ethiopian Shipping Lines-a response to global competition**

This dissertation looks at the possible cost saving areas in the commercial operations of the Ethiopian Shipping Lines (ESL). In the present competitive market, small shipping companies like ESL will be able to survive and grow only if they establish proper cost control and look for a potential savings by implementing cost effective measures.

In this paper, attempts are made to examine and analyse the current situation of the company and look for savings from port related expense, in particular from time dependent wharfage/berthing dues, cargo handling and container related expenses. Moreover, detailed comparison is also made on the feasibility of chartering-in vessels vis-à-vis running own vessels, for one specific service route, namely the Persian Gulf and Mumbai service route. A brief look is taken at the unfavourable situation for the national and regional niche players because of the ongoing global trends. Due to the on going global trend most of the national and regional small liner operators; in particular those from the developing countries are on the verge of disappearing from the liner trade. Apparently ESL has already started facing severe financial constraints. Various data and statistics including operational reports of ESL fleet and financial performance from the annual reports of the company are used during the analysis.

Finally, the concluding chapter summarises the most important points and analysis discussed under the different chapters.

**KEYWORDS:** Control, Cost, Ethiopia, Plan, Reduction, Shipping

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## **LIST OF ABBREVIATIONS**

APL	American President Line
BF	Belgium Franc
DWT	Dead weight
ESL	Ethiopian Shipping Lines
FIO	Free in out
GT	Gross tonnage
H&M	Hull and Machinery
HFO	Heavy Fuel Oil
ISL	Institute of Shipping Economics and Logistics
K-LINE	Kawassaki Kisen Kaisha Line
LOA	Length Overall
MDO	Marine Diesel Oil
MISC	Malisian International Shipping Corporation
MOL	Mitsui OSK Line
NOL	Neptune Orient Line
NT	Net Tonnage
NYK	Nippon Yusen Kaisha
OOCL	Orient Overseas Container Line
P&I	Protection and Indeminity
RO/RO	Roll on Roll of
SCL	Safmarine Container Line
SEK	Swedish Kroner
TEU	Twenty Equivalent units
UASC	United Arab Shipping Company
WTO	World Trade Organisation

## **Chapter I**

### **Introduction**

Historically, it is probably true that the costs involved in running ships were modest when compared with the revenue from freights. Nowadays it is no more the case. In the present day shipping, freight rates are in general dominated by downward trend whilst ship costs are still increasing. In view of this, the liner shipping is being dictated by the need to reduce costs.

State owned shipping companies from the developing countries, like the Ethiopian Shipping Lines, are facing all financial problems that states have. Due to the limited resources, most developing countries are not in a position to inject capital to their shipping companies to keep abreast with the latest developments in the shipping industry. In the face of increasing competition and downward trend in freight rates, there is little the Ethiopian Shipping Lines can do on the revenue part of its operation. The success and survival of the company is highly dependent on how cost efficient it is.

As per the company's recent restructuring programme, the marketing department is in charge of the commercial operations. The main tasks under the commercial operations include scheduling, voyage and operational planning, sales and cargo booking, follow-up of the day to day operations and appointment of agents and stevedoring companies. Procurement of bunkers, stores and supplies is handled by the technical department.

Presently, the Ethiopian Shipping Lines is operating under a competitive environment. The existing government as a result of the change in the economy policy has waived the protection ESL used to enjoy in the form of cargo reservation. Therefore, cost reduction is one of the most critical requirements for the survival of ESL. The commercial operation of ESL appears to suffer from lack of proper voyage and operational planning and execution of plans. Often schedules are not adhered to. Among other things, the liner shipping requires strict maintenance of schedule and regularity. To this effect, it is vital for ESL to adhere to advertised schedules in order to remain in the business.

During the last two years ESL has declared negative operating results from its liner operation. As freight rates are not expected to improve significantly for the foreseeable future, it is high time for ESL to focus on minimising its overall costs. The author of this dissertation has no reason to doubt about the need and possibility of reducing costs in the technical operation of the company. However, due the author's limited knowledge in the technical operations and the difficulties to gather data, this paper was made to focus on the commercial operations of the company. The goal of this dissertation is to pinpoint possible cost saving areas in the commercial operations and assess the extent of savings.

Chapter II describes about the establishment, service routes, organisational structure, fleet expansion and analysis of the current situation and the difficulties faced by ESL. The analysis comprises the effects of the continued downward trend in freight rates and the change in the port of entry for the Ethiopian trade. Moreover, it also comprises analysis of the operational performance of the fleet which includes capacity utilisation, time in port, scheduling and the financial performance of the company.

Chapter III discusses the need for cost control in shipping and the different types of cost control techniques applicable in any organisations with clear emphasis on

budgeting and standard costing. It also looks at the different ship costs namely, operating costs, voyage costs, capital costs and cargo handling costs.

Chapter IV deals with detailed analysis of the possible cost savings from port charges, cargo handling and container expenses. The fleet performance and port operation reports of some representative ports have been considered for the purpose of analysis. Furthermore, efforts have been made to show the extent of savings from the proposed cost saving areas. It also looks at the feasibility and possibility of chartering-in vessels for the Red Sea/Persian Gulf service route as an alternative strategy.

Chapter V examines the global trends and their effects on the liner shipping in general and the national and regional niche players in particular. The global trends under discussion include globalisation, alliances, mergers, acquisitions, deregulation, increasing vessel size and logistics management. It also examines the challenges for ESL vis-à-vis the global trends.

Finally chapter VI summarises the most important points and analysis discussed in the previous chapters.

The author undertook this research to highlight the need for cost reduction scheme in the commercial operations of ESL, as it is one of the key success factors in the present shipping environment. As far as practicable, all attempts have been made to make use of relevant latest publications and statistical figures. However, the main obstacles faced in the elaboration of the dissertation have been lack of literature directly related to the topic and the difficulties to obtain experiences from the various field trips and visits to the major shipping companies, as their business philosophy and scope of operation is completely different from that of ESL.

## **Chapter II**

### **Background**

The Ethiopian shipping lines (here after called as ESL) was established in 1964, as a joint venture, with 51% owned by an American company and 49% by the Ethiopian government. It started operation in 1966 with three newly built ships, consisting of two general cargo ships of 6550 dwt each and one oil tanker of 34075 dwt capacity. Subsequently the American Company sold its share to the ministry of finance and ESL became fully Ethiopianised in 1969. The emergence of ESL has the following objectives

- To facilitate the nation's external trade by providing reliable maritime transport.
- To earn and save foreign exchange that would have been paid out to foreign ship owners.
- To create job and opportunities to acquaint young Ethiopians with marine technology and tradition.
- To promote self-sufficiency and self-reliance.

The dry cargo vessels were deployed on a liner service between Red Sea and Northwest European ports while the tanker was chartered out.

#### **2.1 Fleet expansion**

Upon commencement of operations, ESL had faced severe competition from well-established foreign lines. However, after the closure of the Suez Canal in 1967, most of the foreign lines ceased calling at Ethiopian ports due to long voyage time via the Cape. In the course of time, ESL purchased four second hand vessels because of increase of demand for additional shipping spaces. ESL was still not in a position to

meet the country's demand for maritime transport and was forced to charter-in additional tonnage to supplement its shipping service.

The profitability of ESL was adversely affected during the first seven years due to the long voyage via the Cape and various other factors. However, this situation reversed and the company started showing reasonable profits in 1974 which it has been able to maintain there after. In 1974, the then government re-established the Ethiopian Shipping Line by writing off the accumulated losses and adopted supportive measures in the form of cargo reservation. ESL had enjoyed cargo reservation policy until the downfall of the military government in 1991. The present strength of the fleet is eleven cargo ships and one product tanker.

Table 2.1  
ESL fleet in 2000

Vessel	Type	Year built	Dwt	container
Abbay wonz	Multi purpose	1984	15107	363
Abyot	Multi purpose	1985	15107	363
Andinet	Multi purpose	1985	14895	367
Netsanet	Multi purpose	1985	14895	367
Admas	Multi purpose	1986	13593	302
Tekeze	Multi purpose	1990	18145	930
Karamara	Roro	1976	2428	54
Meskerem*	Roro	1978	3276	112
Omowonz	Roro	1981	3500	112
Keiy kokeb	General cargo	1977	4135	152
Wolwol	General cargo	1977	4135	152
Awash	Product tanker	1989	3618	-

Source: ESL

\*Meskerem has been laid up since June 1998

In May 1991, the present government took power from the Marxist military government and Eritrea got separated from Ethiopia with the two ports, Assab and Massawa. At present Ethiopia is one of the land locked countries in the continent. The present government had adopted free market economy policy and ESL is no more in a position to enjoy the protectionist policy, which it used to have during the previous regime.

## **2.2 Service routes**

Thirty four years ago ESL launched its first service along the UK/ North West Europe, which was then the major sector of the country's import and export trade. In the course of its development ESL has further expanded its service routes to include the Mediterranean and Adriatic Sea regions, the Far East areas and the Persian Gulf region in view of the growing traffic movements on these routes.

In the Red Sea areas too, ESL provides coastal services mainly to the port of Jeddah and is also engaged in petroleum product transfer operation. At present ESL uses the port of Djibouti as its base and provides liner services to specific ports abroad on regular sailing schedules. Subject to sufficient inducement, ESL ships also call at other ports enroute. Table 2.2 presents advertised ports of call and service frequency.

## **2.3 Organisation**

The Ethiopian shipping line is managed by a general manager who is responsible to the board of directors. He is responsible for carrying out the board's directions dealing with all major policy issues including finance, senior executive appointments, introduction of new services and major decisions of capital expenditure including acquisition of new and second hand tonnage.

The organisation is departmental where by the line's all activities are split up in to various departments. At present ESL has representative offices in Rotterdam, Dubai,



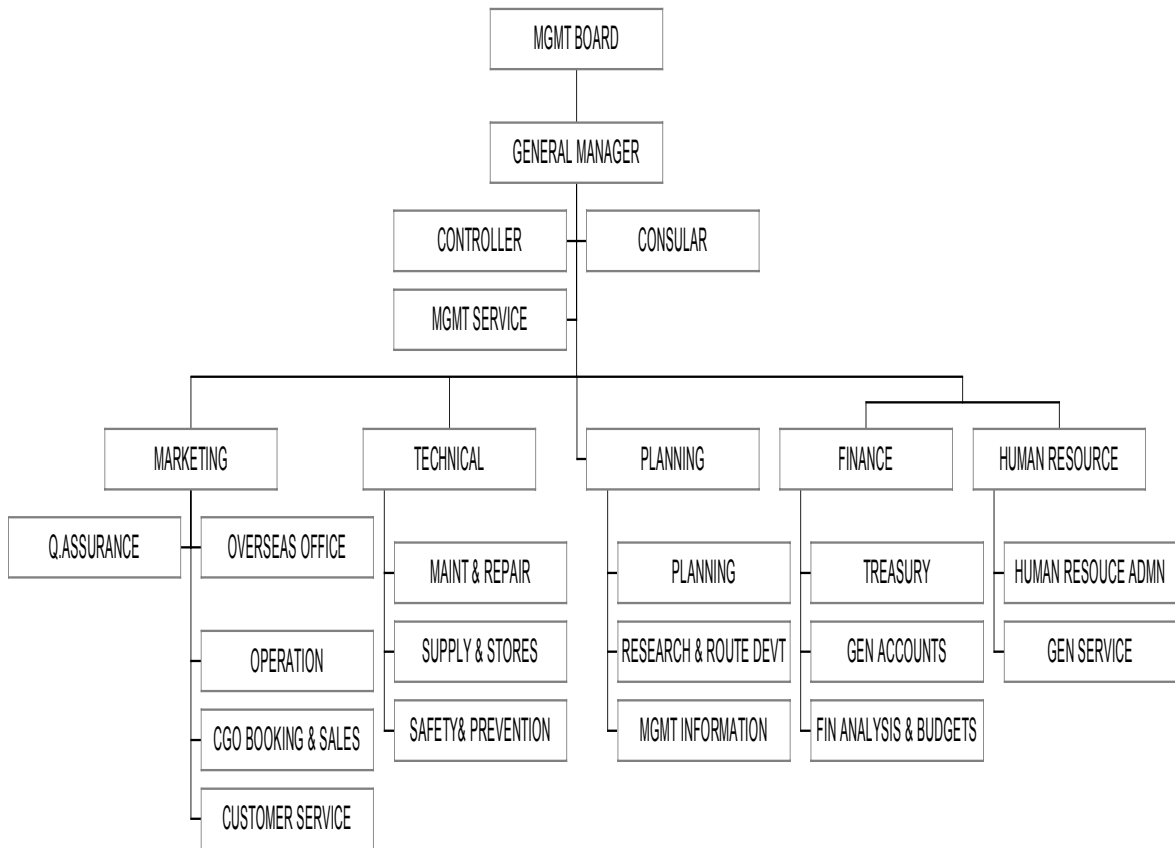
Tianjin and Djibouti. At present the total number of shore based and sea-going personnel stands at about 530. The organisational chart is presented in figure 2.1.

Table 2.2  
Advertised service schedule

Service route	Ports of call	Service frequency
Red Sea/North Europe	Lehavre Antwerp Rotterdam Bremen M'brough Hamburg Uddevalla Gdynia	Every 3 weeks
Red Sea/Mediterranean	Livorno Barcelona	Every 3 weeks
Red Sea/F. East/E. Africa	Yokohama Osaka Kobe Bussan Tianjin Singapore Mombassa	Every 4 weeks
RedSea/PersianGulf& Indian sub continent	Sharjah Mumbai	Every 2 weeks
Red Sea/Adriatic		On inducement

Source: ESL

Figure 2.1  
Organisational chart of ESL



Source: ESL

#### 2.4 Analysis of current situation

Under the existing government the national cargo preference which ESL used to enjoy in the past, have been removed and ESL is required to be efficient and profitable and improve its capability to operate in a competitive environment. In the face of, increasing competition on all its service routes, declining freight rate levels, escalating operating costs and the need of having to replace the greater part of its ageing fleet with in the next few years, the company appears to be at a critical stage of its development.

#### **2.4.1 Depressed freight rate levels**

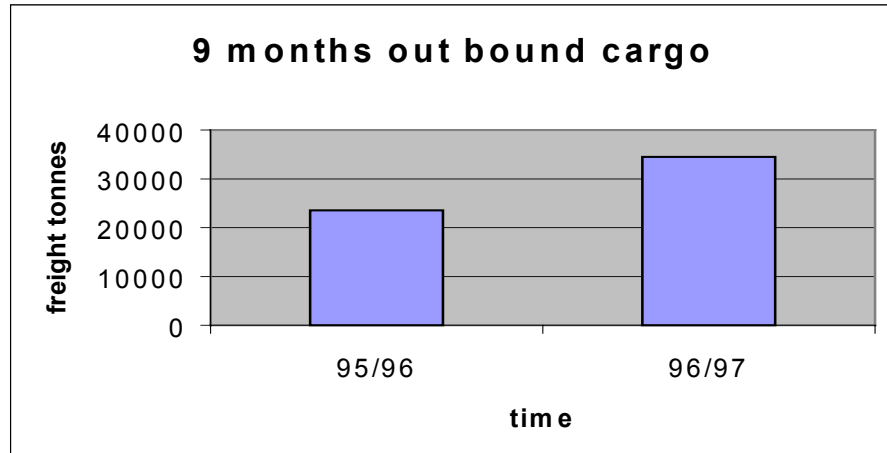
Due to the globalisation and liberalisation of world trade as well as the introduction of free market economy policy in the country, situations became more challenging for ESL because of increasing competition. In the last few years freight rates have been pushed down to their lowest level. For instance, prior to 1996 the sea freight for one twenty-foot container from the port of Assab to Yokohama was USD 2300. However, in 1996, in order to match the competition, ESL was forced to revise its rate to USD 1350, a decrease by about 59%. Similarly the freight rate from Assab to various ports in the North continent and Mediterranean region has decreased from US\$ 1950 to US\$ 1350 for 1x 20 container. Substantial rate decrease has also been noted on the inward cargo during the same period.

The effect of the decrease in freight rates can easily be seen by comparing the line's nine months performance during the 1996/97-budget year (July 1<sup>st</sup> 1996 to march 31<sup>st</sup> 1997) against the same period of 1995/96-budget year. During the 9 months of 1996/97, the Ethiopian shipping line transported a total of 342703 tons of cargo comprising 34513 tons of export and 308190 tons of import cargo. While in 1995/96 the total cargo carried by ESL stood at 325411 tons, comprising 23571 tons of out bound and 301840 tons of inbound cargo. The total cargo lifted during the nine months in 1996/97 has increased by about 5.3%.

When it is split in to outbound and inbound cargo, the outbound cargo has shown an increase by 46% and the inbound cargo increased by 2%. However, during 1996/97, the gross revenue on the export side has increased by only 18% and the import cargo gross revenue has shown a decrease by 8% against the same period of the 1995/96-budget year. The overall gross revenue has decreased by 2% despite an increase in the total cargo lifted. The situation has even become worst after May 1998 when the gateway for the Ethiopian trade has shifted to Djibouti, though the country as a whole has benefited due to very competitive rates to and from Djibouti.

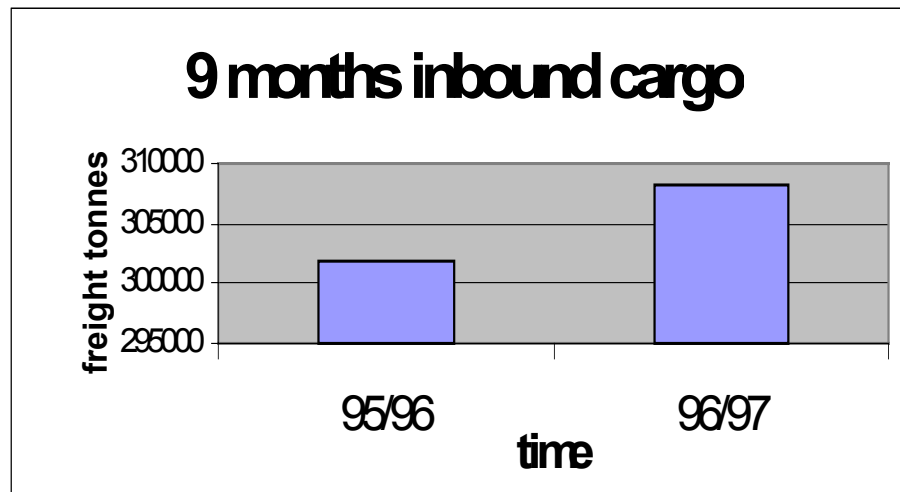
In addition to the shift in base port, the 1998 Asian crisis has also contributed to the decrease in the revenue to a certain extent.

Figure 2.2



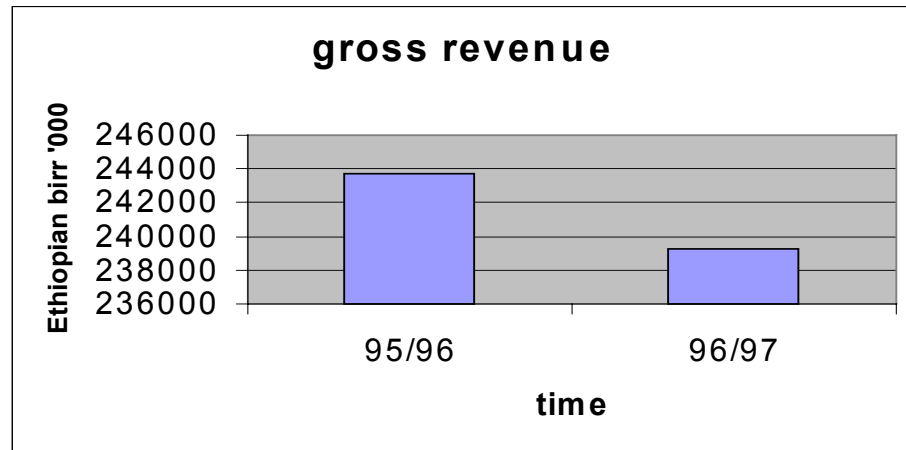
Source: ESL data

Figure 2.3



Source: ESL data

Figure 2.4



Source: ESL data

Prior to May 1998, the Eritrean ports of Assab and Massawa used to serve as the main gateway for the Ethiopian trade. Assab and Massawa have no dedicated container terminal. The fact that they are conventional ports equipped with shore mounted cranes, has made these ports suitable for the type of vessels ESL operates. While the competitor lines mainly container operators, serve Assab and Massawa mainly through the hub ports of Djibouti and Jeddah.

The shifting of Ethiopian trade from the ports of Assab and Massawa to Djibouti has brought ESL in to direct competition with the bigger international container operators who provide regular sailing frequency from Europe and Asia to the port of Djibouti. Due to the shift in port of entry for the Ethiopian trade, all competing lines, which used to serve the Ethiopian trade through Assab and Massawa by way of transshipment, have managed to save about USD 400 to 500 from the container handling alone. That is,

- Loading on to the feeder vessel at Djibouti USD 115/teu
- Terminal handling and tallying at Djibouti about USD 115/teu
- Discharging from the feeder vessel at Assab USD 100/teu
- Shore handling at Assab USD 100/teu

The above estimated saving is computed on the assumption that containers will be connected to the feeder vessel within the allowed free storage time. In addition to the savings from the container handling, the operators have also managed to save:

- ◆ All costs connected with the running of feeder vessels. That is, operating, capital or daily charter hire and voyage costs of feeder vessels.
- ◆ Costs connected with the repositioning of empty boxes from Assab and Massawa to Djibouti, as the number of containers on the inward leg by far exceeds the number of out bound boxes from Assab and Massawa.

Therefore, due to the cost reduction and that of exploiting economies of scale by handling large volumes, the competitor lines have been able to provide a higher quality service at lower competitive container rate than ESL. As a result, the need to compete with the big container operators has seriously affected ESL' financial performance.

In view of the above, the freight rate of one teu from north European ports to Djibouti has gone down from USD 1400 to about USD 800. Moreover, the shift in the port of entry to Djibouti with its container terminal, has assisted the trend of containerisation of general cargo bound to Ethiopia which gives competitor lines higher competitive advantage over ESL. The situation was further aggravated by the 1998 Asian crisis. Unsurprisingly, the effect of economic turmoil in Asia has manifested itself in decreasing freight rates and lower charter revenues. Therefore, competitor lines operating in the main east/west trade were willing to accept very low freight rate from European ports to Djibouti during their eastbound leg.

#### **2.4.2 Operational performance**

The Ethiopian Shipping Line fleet comprises twelve ships of about 110000 dead weight tons (see details of vessels particulars in page 5). The average age of the fleet in terms of the number of ships is about 17 years. The core of the fleet, which is

about 84% of the fleet capacity in terms of dead weight, was built in the mid 80s and early 90. This part consists six multi purpose vessels.

The operational flexibility in terms of the range of cargo they can carry has made these vessels the corner stone for ESL. The remaining are two late 70s built general cargo vessels, three similar age small ro/ro ships and one late 80-built product carrier. Out of the three ro/ro vessels, ro/ro Meskerem, has been put up for sale and is at Djibouti anchorage since June 1998 waiting for suitable candidate to buy her.

The fleet has a total container loading capacity of 3274 teus. The flexible nature of the fleet has made ESL capable of handling a wide range of cargoes. The larger multi purpose vessels (namely Netsanet, Tekeze, Abbay wonz, Andinet, Admas, Abyot) are equipped with cranes which enable them to handle loaded twenty foot and forty foot units from most holds. The smaller general cargo vessels have lower capacity cargo handling equipment in line with non-containerised parcel requirements. The ro/ro vessels have limited general cargo handling equipment as they were originally designed for handling wheeled cargo.

The designed service speed of the larger vessels is around 15 knots and that of other ships is around 10 knots. With the exception of m/v Tekeze, the remaining vessels though generally in good condition, are requiring increased maintenance. Currently ESL owns about 2500 twenty equivalent units. The company also leases a varying number of boxes to meet operational requirements.

#### **2.4.2.1 Capacity utilisation**

Like any other liner companies ESL also deals with imbalance of trade in its four service routes. The North continent service, which is the main operation of ESL, is maintained by the six multi purpose vessels. Each vessel normally calls at about four or five European ports. In 1998/99, on an average, each vessel loaded about 7300 tons of general cargo including containers and vehicles during their southbound leg

and about 1000 tons during their northbound leg. Under the cost reduction scheme, the Mediterranean service is presently covered by the vessels operating in the north continent ports during their north and southbound legs.

The Far East service is provided through the switching of an appropriate number of the north continent scheduled multi purpose vessels on to a Far East route. In 1998/99 westbound parcel size per ship averaged 7150 tons consisting of break-bulk shipments, containers and vehicles, where as the east bound was almost nil. The Persian Gulf and Indian sub continent service has been maintained using the four smaller vessels. Westbound shipment averaged 2000 tons of combined cargo where as the east bound cargo averaged 200 tons per vessel.

Table 2.3  
ESL fleet capacity utilisation during 1997/98 & 1998/99

Service route	1997/98	1998/99
North continent		
Out bound	21%	9%
In bound	63%	68%
Mediterranean		
Out bound	7%	2% *
In bound	56%	59% *
Far east		
Out bound	1%	1%
In bound	64%	77%
Gulf		
Out bound	2%	4%
In bound	79%	67%

Source: ESL data



\*Shows six months performance by m/v Keiy Kokeb and Wolwol in the first half of the year. In the second half of the year, these two vessels were pulled out and the service route was covered by the North continent vessels.

#### **2.4.2.2 Time in port**

One of the disadvantages in operating general cargo and multi purpose vessels is the relatively longer stay in ports. In view of this, the Ethiopian shipping line service seems to suffer from a high level of port related delays. The ships on north continent and far east services, on an average spent equal time in port and at sea. Those on the gulf service spent about 65 percent of the service time in port and the balance 35%, at sea.

#### **2.4.2.3 Scheduling**

One of the operational features of liner shipping is to be able to provide transport services with fixed sailing schedules. The norm of the present day liner shipping has in fact become fixed day weekly service. Hence adherence to the advertised sailing schedule is very critical for the reliability of a liner company. In 1998 the average arrival variance for the different service routes was as follows: -

- North continent trade route about 6 days
- Mediterranean trade route about 4 days
- Far east trade route about 7 days
- Gulf service about 4 days

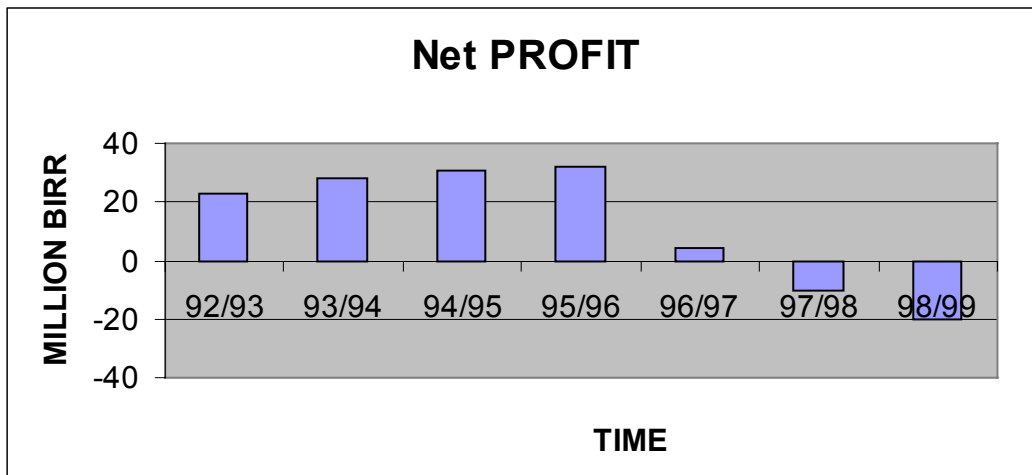
Average arrival variance at Djibouti during 1998 has been 5 days while the average sailing variance was noted to be about 8 days. The low productivity and concentration of calls at Djibouti has significantly increased the departure variance.

#### **2.4.3 Financial performance**

Despite the fierce competition and depressed freight rate levels ESL had managed to enjoy positive operating results until 1996/97-budget year. In 1997/98 the company

showed its first disappointing result. Figure 2.5 presents the net profit/loss of ESL in the past seven years.

Figure 2.5



Source: ESL data

As can be seen from the above figure, ESL made a loss of about USD 1.5 million in 1997/98 and about 2.5 million USD in 1998/99. (As the exchange rate varies from time to time, an average rate of Ethiopian birr 7 & 7.6 to US dollar has been considered for both years respectively). Table 2.4 shows the balance sheet of the company as of June 30 1999.

Having seen the balance sheet it seems the company is in a critical financial condition. The current and quick ratios clearly indicate that the company is not in a position to meet its immediate obligations.

Current ratio = 0.64

Quick ratio = 0.60

Table 2.4

Balance sheet as of June 30, 1999

Cash	65699000	Long term loan	88075000
Receivables	46420000	current maturity	
inventory	8000000	Provision and	31649000
		accruals	
		Other acc.payables	68169000
Total current asset	120119000	Total current liab	187893000
Net fixed asset	229135000	Long term loan	86412000
Investment	30000	State capital	81867000
Deferred charge	23891000	Un-appropriated	17003000
		surplus	
Total fixed asset	253056000		185282000
Total asset	373175000	Total laib&equity	373175000

Source: ESL

With the on going decreasing trend in freight rate and escalating operating costs the future looks consequently bad. Hence it is high time for ESL to look at its financial performance. There are two alternatives to improve the financial status

- A. increase the revenue
- B. reduce the costs

As “item A” is not with in the scope of this paper, the author of this paper will only focus on cost reduction and possible cost saving areas. “The best way to make money is to stop losing it.”

### **Chapter III**

#### **Cost control**

A paper presented by Patrick Donner on the Essential Maritime Transport, Cost Control defines cost as “The price we pay for making or producing goods and services or the price we pay for obtaining goods and services”. Among other things, the primary concern of any business enterprise is to maximise its profit in order to grow and expand. Profit can be maximised by either increasing the revenue or decreasing the cost or applying both simultaneously.

$$\text{Profit} = \text{Revenue} - \text{Cost}$$

Cost can be characterised by the word sacrifice and is in the management’s interest to control and reduce the sacrifices involved in achieving desired results where possible. In the broader sense costs are equivalent to sacrifices of various types as:

- ◆ Non financial costs: costs which are not directly traceable through the company’s cash flow statement, for instance lowering of morale of employees due to dissatisfaction.
- ◆ Non cash costs: costs, which are financial sacrifice that do not involve cash out lays. E.g. depreciation.
- ◆ Cash costs: costs that are reflected in actual cash out lays.

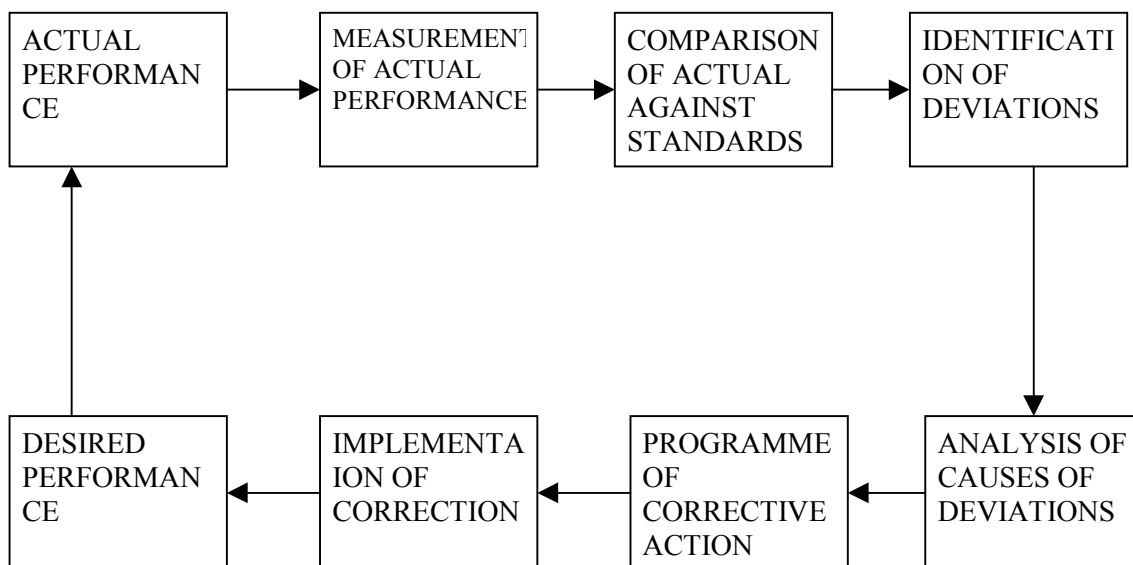
Costs can also be distinguished as direct and indirect costs or variable and fixed costs. Direct costs are costs that are specifically related to a given cost unit and indirect costs are costs, which are not specifically related to a given cost unit. Variable costs are costs that change in accordance with the level of activity and have a different behavioural pattern from fixed costs that only vary with time. One of the

key success factors in today's business environment is cost leadership. In view of this, business enterprises have to make use of their limited resources in a more efficient and effective way in order to remain competitive. In order to ensure maximum efficiency and effectiveness, managers need to plan, organise, implement and control. Controlling is a vital managerial function and is concerned with such tasks as setting goals and objectives, drawing plans and assessing their accomplishment, measuring actual performance against established targets and standards and identifying and rectifying as required, any deviations between actual and desired performance. The existence of control process helps management to know the position of the organisation in relation to a predetermined future position.

Henri Fayol defines control as “ In an undertaking, control consists of verifying whether everything occurs in conformity with the plan adopted, the instructions issued and principles established. It has an objective to point out weaknesses and errors to rectify them and prevent recurrence. It operates on everything, things, people and actions”.

Figure 3.1

The process of controlling



Source: principles of management handout

In short, cost control is concerned with keeping costs at their planned level. That is, conforming in so far as possible to the existing standards and plans. Hence control and planning are complementary to each other. Information is the basis and prerequisite for the success of effective cost control. With respect to this, accounting reports shall be presented in such a way that those related with cost incurrance could understand them fully and react to them as may be appropriate. More over, all concerned with cost incurrance and cost control should be able to get the right information at the right time and in the right place. Information pertaining to actual results should be related to a yardstick of performance, a predetermined plan, budget or standard. In the absence of this comparison there can be no meaningful basis for evaluating achievements and hence no effective way of controlling.

How ever the term right information does not necessarily or always mean that the information must be 100 percent correct. Information is right when it has the right effect at the time of decision for the person who is to decide. There are different types of cost control techniques applicable in different organisations. Such techniques include responsibility accounting, cost accounting, differential costing, discounting techniques, budgeting, standard costing, etc. However, the most widely spread and commonly used tools of cost control are budgeting and standard costing.

Budgeting is an essential management tool used for short term planning and control. Traditionally budgeting was intended for restricting expenditure. But a much more useful and constructive way of looking at is to treat the budgeting process as a means for achieving the most effective and profitable use of the company's resources through planning and control. The following are the steps involved in budgeting in order to secure control over performance and cost.

- ◆ Preparing of budgets.
- ◆ Comparing actual cost and achievement against budgets.
- ◆ Taking remedial actions.

Standard costing or standard costs are costs that should be achieved under efficient operations. They are predetermined costs, which can be used as a benchmark against the actual costs.

### **3.1 Design of a cost control system**

There is no standard or specific system of cost control that can be applied for all organisations. The system designed should perfectly fit the organisation for which it is intended. However, the following points need to be considered at the time of designing and installing a cost control system.

- ◆ Priority to be given to the speed of information. Unless the right data are available in time to influence results, one does not have management at all.
- ◆ The system should be adapted to the size, structure and operation of the organisation and must be simple and easy to operate.
- ◆ The cost of installing and maintaining the system.
- ◆ The system must be fully supported by the top management.
- ◆ The system must be integrated with other systems in operation.
- ◆ The system should consist clear and detailed procedures and include reporting to various levels directly or indirectly concerned with the problems.

### **3.2 Ship costs- an overview and a brief introduction**

So far there is no internationally accepted standard of cost classification in shipping. There are various criteria of cost classification. However the most commonly used approach is to classify ship costs into four categories.

#### **3.2.1 Operating costs**

Operating costs are those costs, which the ship owner has to meet no matter where, if or how the vessel is trading. Some times they are referred as daily running costs. Such costs constitute manning, stores and lubricants, repairs and maintenance including periodic dry-docking, insurance and overhead costs.

- ◆ Manning costs: manning costs are mainly influenced by the type of vessel, the degree of automation, the regulations of the flag registry, the nationality of the crew and how much on-board maintenance is required. The minimum crew requirements are set by the safety aspects of sailing a ship as defined by the International Maritime Organisation. Apart from that, flag states that is, countries under whose flag a ship is registered may impose additional requirements. The nationality of the crew is another important issue in determining manning costs. American or European crew are more expensive than their counter parts from the developing countries. The degree of automation and the amount of maintenance required on-board are also important factors affecting the manning cost. That is, the more automated the less number of crew required. The size of the crew is directly related to the amount of maintenance required on-board. Crew costs are generally divided into three groups:

Wages: basic pay, overtime, special work payments, leave pay, social security, bonuses, etc.

Travel costs: fares, per diem subsistence allowance, baggage etc.

Other costs: medical expenses, training, clothing, etc.

- ◆ Stores and lubricants: stores can be divided into deck, engine and catering or victuals. They are expenditures necessary to maintain the ship and to feed the crew. Apart from victuals they are mainly ropes, wires, paints, grease and spares. Lubricating oils are an essential part of the engine room stores. They are expensive and dependent upon the sailing periods of the ship. Lubricating oil costs tend to increase with the age of the ship.
- ◆ Maintenance and repair costs: Maintenance can be categorised into routine maintenance of such items as main engine, cranes, painting of the hull and maintenance that is required to keep the ship in class. A ship has to be repaired when breakdown or damage occurs. Maintenance and repair costs are usually higher on older vessels, given the natural ageing process and the increased



stringency of checks on older vessels. During low freight rates, this is the area in which ship owners first start to cut the corners, as some of the expenditures are only required for preventive maintenance.

- ◆ Insurance cost: a ship has to be insured against all sorts of risks. The factors, which most affect the cost of insurance, are the actual value of the ship and the scope of coverage. Premium paid by the ship owner is the cost of insurance. The ship owner's most basic insurance covers are hull & machinery (H&M) and protection and indemnity (P&I). In special circumstances the ship owner may insure the ship against war risks, loss of hire, etc. The hull and machinery insurance covers all the physical aspects of the ship; hull, equipment and machinery. In which the owner has a direct insurable interest. The risks are placed with underwriters in the insurance market. The premium depends on various factors such as the flag of the ship, age, type, size, claim history, crew, management, trading area, etc. P & I covers the shipowner for liabilities emanating directly from the operation of the ship. This invariably tends to be third party claims from cargo owners, crew, port authorities or environmental agencies, etc. Traditionally, P&I has been covered by mutual insurance between shipowners handled by the P&I clubs.
- ◆ Overhead costs: the shipowner has to manage the technical operations, commercial operations, crewing and other administrative functions which are required to run a ship. The whole of these management functions are called administration or overhead and the expenditures as overhead costs.

### **3.2.2 Voyage costs**

Voyage costs are costs directly related to a particular voyage of a ship. They comprise fuel or bunker costs, port charges and canal dues, if a vessel is transiting through a canal.

- ◆ **Bunker costs:** Fuel is the most dominant single cost item in the running of ships. The fuel consumption of a ship is dependent on various factors such as the size of the ship, the condition of ship's hull, the laden condition, the speed of the ship, the weather, the type and capacity of the main engine and auxiliaries, the type of fuel and the quality of fuel. Bunker costs depend on the quantity of fuel consumed and the price of the fuel oil. The price of fuel is determined by the world oil price and the location where the fuel is taken on-board. As the volume of oil varies with the temperature, the ship owner has to keep on monitoring the temperature of the fuel while bunkering. Moreover, the quality of the fuel oil has to be specified and tested to ensure optimum engine performance.
  
- ◆ **Port charges:** port charges comprise berth dues, towage, pilotage, light dues, wharf dues and many other costs connected with arrival, port stay and departure of the ship. These charges are mainly dependent on the time spent in ports, ship's size and the applicable tariff rate in a particular port and vary widely from port to port. There is little a shipowner can do about these charges, as he cannot avoid them. However, a fast turn-round service and proper scheduling of voyages to avoid unnecessary waiting in ports can reduce the amount of these costs significantly.
  
- ◆ **Canal dues:** canal dues are paid when ships are transiting through the canal. The most important and commonly used are the Suez and Panama canals. Canal dues are charged according to the size of the vessel, the laden condition (whether in ballast or laden) and the cost of alternative routes for the canal.

### **3.2.3 Capital costs:**

Capital costs are basically related to the acquisition of a vessel. They are dependent on various factors. Some of which are:

- ◆ The new building or second-hand price of the ship, which is highly influenced by the freight market condition and other costs related to acquisition of the ship.
- ◆ The financing arrangement that is, how much money is borrowed and how much is the owner's own capital.
- ◆ The interest rate for borrowed money which depends on the size of the loan, the solidity of the owner, the collateral offered and the general level of interest rates.
- ◆ The opportunity cost for own capital, that is, the return that would have been generated by investing the capital in some other projects.
- ◆ The economic life of the ship.

In short, capital costs are determined by the depreciation, interest payment and return on owner's equity.

#### **3.2.4 Cargo handling costs**

Cargo handling costs are expenses incurred in loading, discharging, stowing, trimming, lashing, securing, weighing, etc. These costs are determined by such elements as the type of commodity, the quantity, the ship type, the terminal and port characteristics. Labour is the principal element of cargo handling cost. Its costs vary from port to port and are usually higher in ports with skilled and efficient work forces than in poorly equipped ports.

### **3.3 Cost control in shipping**

Historically it is probably true that costs involved in operating ships were tolerable and acceptable when compared with the freight revenue. Hence ship owners or shipping companies had managed to have reasonable profit margins which enabled them to re-invest on additional vessels, as the price of new vessels was affordable at that time. Nowadays it is no more the case. The traditional shipping industry has become increasingly exposed to prevailing fierce industry competition. Practically it has become difficult to make sustained profits in the shipping industry. In today's shipping the profit margins earned, if at all there is a profit is very small. Due to this fact many shipping companies including giant global players are declaring

disappointing operating results. The following expression taken from the monthly Containerisation International highlights the situation in a more profound manner.

“The liner shipping industry has been lamenting abysmal financial performance since the age of clipper ships. During testimony before the US congress in May 1999 on anti-trust aspects of the ocean shipping reform act of 1998 evidence was presented that the return on equity of the liner shipping industry was only about 2% on average from 1993 through 1997.” (Containerisation International, September 1999).

As we are living in a time of dynamic global growth and development, shipping companies have to establish strategies on improving the basic service to the customer at a lower cost to the operator. The success of a shipping company will largely depend on how best it can utilise its resources and cost control is an essential tool to achieve better utilisation of resources. Moreover, shipping is an industry of international character; a huge percentage of earnings are spent abroad for running ships. Therefore, it is of a vital importance for a shipping company to analyse and adjust its cost elements. What is required is not only a preventive action (cost control) but a corrective action (cost reduction). In view of this it is necessary to:

- ◆ Examine all costs related to the acquisition and operating of ships.
- ◆ Review standards for operating cost.
- ◆ Review standards for operating performance.
- ◆ Identify areas of operation where the standards are not achieved.
- ◆ Take corrective actions based on variances from desired performance.

In this respect it might be necessary to modify the existing system or develop a new one. As freight rates are driven down due to fierce global competition, the only way to check rising operational cost is to establish proper cost control and look for a potential savings by implementing cost effective measures. Moreover, it is imperative for the shipping industry to take maximum advantage of every possible

technique of cost control. A planned programme of cost control is an invaluable aid to the industry in increasing its efficiency and effectiveness.

The role of cost control in the shipping industry begins before the decision to acquire a vessel is taken. A large number of the costs depend upon decisions taken with respect to the type of the vessel, its suitability for the intended trade, its size, design, tonnage and technology some of which will be reflected in the manning costs and others in the operating costs like repair and maintenance, bunker consumption and cargo handling costs.

## **Chapter IV**

### **Possible cost saving areas in the commercial operations of ESL**

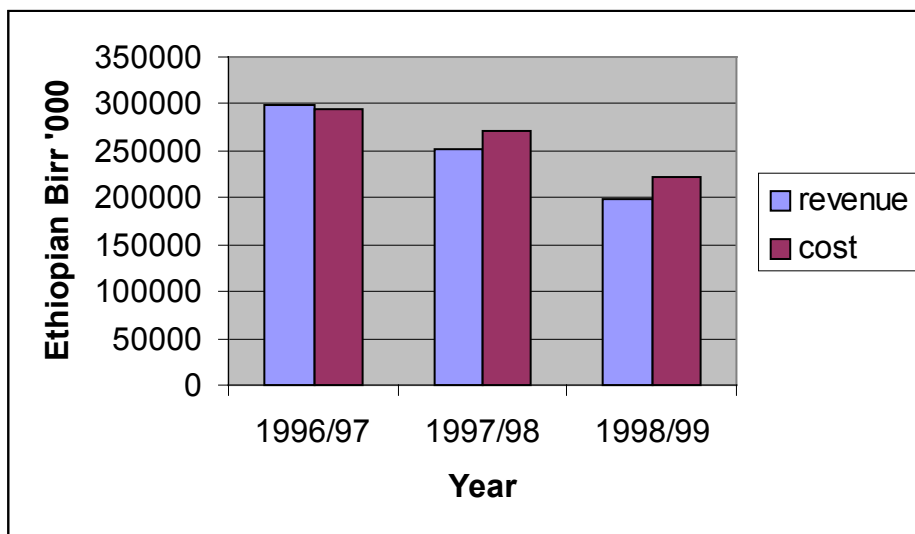
In chapter III we looked at the various types of ship costs in brief. Namely, capital, voyage, cargo handling and operating costs. Unlike tramp shipping, in liner trade almost all ship costs except those of cargo handling are fixed costs. A liner operator is committed to provide fixed service at regular intervals between named ports. Hence fixed itinerary in a regular service, to sail whether filled or not, on the date specified on the schedule are what distinguish liner shipping from tramp. In this respect, expenses such as bunker cost, port charge and canal dues which fall under the variable cost in the tramp shipping are fixed costs under the liner shipping. Due to this fact the organisational requirement and cost structure of a liner operator is quite different from a tramp operator.

Establishing a cost control system is not an end objective by it self. What is important in the present day shipping is to be able to provide quality service to the customer at a lower cost to the operator. In the present competitive market situation, cost reduction and cost leadership are very vital for the survival and success of a shipping company. Therefore, it is high time for ESL to exert maximum degree of control over its operating, voyage and cargo handling costs in order to achieve positive operating results and ensure its survival and long term growth.

Unfortunately the existing trend of economic globalisation, mergers, alliances and acquisition has forced small national shipping companies like ESL to reach their critical stage of development. It is very unlikely that these shipping companies can be part of groupings of big shipping lines for they don't have similar business philosophies and scale of operation, as main line container ships supported by feeder

services are often required to come together to form alliances. During the last few years ESL made disappointing operating results due to low freight rates and escalating costs. Figure 4.1 below presents the poor operating results during the last three fiscal years.

Figure 4.1  
Revenue versus cost



Source: ESL data

This chapter looks at some possible cost saving areas in the commercial operations of ESL.

#### 4.1 Port charges

Expenses incurred within a port fall into one of the two categories, those attributable to the vessel and those related to the cargo. In tramp shipping the responsibility for cargo related costs depends on the charter arrangement under which the ship is being employed, very often concluded on free in free out (FIO) basis. However, in liner shipping, all cargo related costs come under the operator. Port charges include wharfage or berthing dues, light dues, mooring/unmooring, towage or provision of tug assistance, pilotage, lock entry/exit costs, etc.

It is probably true that there is little a shipowner can do on port tariffs as they are official tariffs levied against some ship measure which could be related to dwt, gt, nt, etc. Very often, items such as berthing or wharfage dues are charged as a rate per day or fraction thereof. Nevertheless in privately owned and operated berths the tariffs for berths and other related services such as tug assistance and mooring/unmooring could still be open for negotiation.

In 1998/99 fiscal year, ESL paid Birr 17,380,000 (USD about 2,286,842) for port related expenses, out of which about 50% is estimated to be wharfage or berthing due expenses. Table 4.1 below presents break down of the voyage cost during the 1998/99 fiscal year.

Table 4.1  
Voyage cost breakdown during 1998/99  
‘000 BIRR

Bunker cost	21323	34.6%
Port charge	17380	28.2%
Canal due	22934	37.2%
Total voyage cost	61637	100%

Source: ESL data

As the berthing/wharfage fee is often time dependent, that is, the longer the berth time the higher the berth charge and vice versa, it can be reduced by decreasing the period or time the ship stays at berth. ESL has a long-standing relationship with the most ports its vessels are calling at. Some ports like Hamburg and Bremen have been served by ESL for not less than thirty years. These ports are still the regular ports of call for ESL vessels. This paper will mainly focus on ports where possible cost savings could be realised. However, before discussing the possible cost savings, a quick preview of the tariff structures of some representative ports deserves mention.



The structure of port tariffs in the North continent ports vary from port to port significantly. In ports like Antwerp, Uddevalla and Middlesborough the berthing fee is fixed, irrespective of the time vessels stay in port. Where as in others like Hamburg, Bremen and Rotterdam the berthing fee is directly proportional to the vessels stay in port. Table 4.2 below shows berthing due tariffs of North continent ports applicable for ESL vessels.

Table 4.2  
Berthing due tariffs of representative North continent ports

Port	Applicable tariff
Uddevalla	SEK 4.10 per gross tonnage and additional charge SEK 0.90 per gross tonnage for vessels using bunkers with sulphur content above 1%.
Antwerp	BF 21.8 per gross tonnage.
Middelsborough	UK pound sterling 6386 per ship call
Bremen	DM 0.73 per gross tonnage per day
Hamburg	DM 0.73 per gross tonnage per day
Rotterdam	DFL 5.5 x LOA x no of days

Source: ESL data

In ports like Uddevalla, Antwerp, and Middelsbrough ESL's contracts seem to provide for all-in rates. Hence, no savings can be made by reducing vessels berth time. The only way to minimise the berthing or wharfage due in these ports is to re-negotiate the fixed rates during the annual agency meeting. In ports like Hamburg, Bremen and Rotterdam fast turn-around of vessels could really make substantial amount of savings. In some ports, in addition to the time related wharfage due there is also a fixed charge known as harbour due levied on vessels irrespective of the duration of stay. The berthing charge in the Japanese and Korean ports has both fixed and time dependent components. Port due which is a fixed sum per gt per call and dockage due which varies with the duration of stay in berth. While in the Chinese

port of Tianjin berthing charge is a fixed sum based on the vessel's net tonnage. In the Red Sea port of Djibouti and Mumbai the berthing charges are time dependent, based on the vessels gross tonnage and the duration of stay in berth. In addition to the normal tariffs, the various ports do apply surcharges for the services and work done during the weekends, night hours and outside the normal weekday working hours. Applicable surcharges of some representative ports are presented in table 4.3 below.

Table 4.3  
Surcharges of representative ports

Port	Type of service	Over time	Surcharge
Yokohama	Pilotage, Towage & Mooring/Unmooring	1630-2200hrs	+ 60%
		2200-0600hrs	+ 110%
		0600-0830hrs	+ 70%
		Holidays	+ 50%
Bussan	Pilotage, Towage & Mooring/Unmooring	Night time	+ 50%
		Holidays	+ 50%
		Noon off hours	+ 50%
		2400-0400hrs	+ 100%
Tianjin	Pilotage, Towage & Mooring/Unmooring	Holidays, normal working days night shift	+ 50%
		Holidays night hours	+ 100%
Rotterdam	Towage  “  Mooring/Unmooring	Friday 1700hrs till Monday 0700hrs	+ 25%
		1700hrs the day before holiday till 0700hrs the day after such holiday	+ 25%
		Weekends & holiday	+ 35%

Source: ESL data

#### **4.1 The need for operational planning and standard setting**

In depressed freight markets, erosion of earnings by port charges could be significant and provide unpleasant operating results. With no sign of freight rate improvement, they may be en route to becoming a serious concern. “The best way to make money is to stop losing it” appears to be a good proverb in particular for small national shipping companies like ESL.

As cost control is a key to survival, ESL needs to properly plan the cargo operations of its vessels, set out performance standards and evaluate actual performance against standards. The company’s scheduling procedures should be based on the performance standards established and any variations need to be analysed and timely corrected.

It is worth noting that the duration of vessels’ stay in respective ports is a vital element in the company’s cost structure. In order to achieve quick turnaround of vessels and reduce wharfage dues it is imperative to properly plan and prepare pre stowage of vessels. Information about cargo composition should be made available to ships’ command to facilitate preplanning in time. Occasionally it is not uncommon to note that, cargo on board has to be discharged first prior to commencing loading operations into same hatch which has a negative effect on port expenses.

However, with proper planning in effect, greater flexibility in respect of holds could be achieved. It is probably good if ESL considers assigning cargo superintendents, who in close co-operation with ship’s command should work out stowage proposals and arrange for discharging/loading programmes by closely working with stevedores and terminals in respective ports. It is worth seeing few operational reports in order to highlight the need for proper planning.

Table 4.4  
Operational report

Vessel	Voyage	Port	Day	Shift	No of gangs	Tons
Abbay Wonz	53	Hamburg	Friday	1st	1	210
			Monday	1st	1	205
			Monday	2nd		176
			Tuesday	1st	2	202
			Tuesday	2nd	1	385
Abbay Wonz	53	Bremen	Friday	1st	1	86
			Monday	1st	2	704
			Monday	2nd	1	113
			Tuesday	1 <sup>st</sup>	1	128
			Tuesday	2nd	1	339
Abyot	50	Hamburg	Monday	1 <sup>st</sup>	1	107
			Monday	2 <sup>nd</sup>	1	121
			Tuesday	1 <sup>st</sup>	1	232
			Tuesday	2 <sup>nd</sup>	1	246
			Wednesday	1 <sup>st</sup>	1	257
			Wednesday	2 <sup>nd</sup>	1	124
			Thursday	1 <sup>st</sup>	1	198
			Thursday	2 <sup>nd</sup>	1	106
			Friday	1 <sup>st</sup>	1	442
Admas	11	Bremen	Monday	1 <sup>st</sup>	1	317
			Monday	2 <sup>nd</sup>	1	231
			Tuesday	1 <sup>st</sup>	1	140
			Tuesday	2 <sup>nd</sup>	2	154
			Wednesday	1st	1	339

Source: ESL data

Having seen the above operational reports, one finds that a lot has to be done with regard to proper planning of cargo operation. Surprisingly, one can hardly see any of the above vessels operating with three gangs at a time, despite the fact that all of them have seven hatches and five holds. For ships trading in German ports which are more or less similar in size with the exception of M/V Tekeze, the average daily wharfage due is about DM 8500. Therefore, for every single day delay in these ports about DM 8500 is always at stake.

It seems there is every reason to believe that the cargo operations of above vessels could have been facilitated if adequate number of gangs were deployed instead of slowing down with one gang per shift. Presumably, at least about 50% of the wharfage or berthing dues would have been saved if the vessels were made to work with adequate number of gangs. It is true that unforeseen events such as weather conditions, technical assistance required by vessels or late arrival of cargo may interfere into loading or discharging programmes, but nevertheless by increasing the number of gangs per shift a fast turnaround of vessels with desired savings in cost structure could be realised.

As a matter of fact quicker turnaround not only reduces the wharfage due but increases the carrying capacity of the fleet as well. Moreover, it is worth mentioning that most of the above vessels have gone alongside during the weekends. As the vessels are often kept idle during the weekends, in view of avoiding overtime payments, it doesn't make sense to bring them to berth during the weekend. In fact, by avoiding weekend calls the surcharges payable would have also been avoided in addition to the savings made by not using the berths. Therefore, more emphasis need to be given to the scheduling and itinerary of the vessels, to be worked out in such a way as to keep vessels at sea during the weekends as long as practicable. With proper voyage planning it is possible to avoid weekend call in the first European port, if by coincidence the vessel is to reach in the first European port from the last Red Sea port during the weekend. Under normal conditions, for vessels trading

between the Red Sea and North continent ports, it takes about 15 days from the last Red Sea port mainly Djibouti to the first North continent port.

After considering all the external factors such as the sea and weather conditions, if a vessel's expected time of arrival at the first European port fall into the weekend the proper action would be to adjust the expected time of arrival by slowing down and steaming at economic speed. This helps not only to minimise the wharfage due by avoiding weekend call but to make savings from the bunker consumption as well. It is estimated that about four to five tons of fuel oil per day can be saved by steaming at economic speed which in turn would be a saving of about USD 500 to 700 per day depending on the bunker price. Table 4.5 below shows weekend calls at North continent ports in 1999.

Table 4.5

Weekend calls at North continent ports in 1999

Vessel	Voy	Port	Berthing date	Remark
Abbay Wonz	64	Hamburg	Sunday 28/11	1 <sup>st</sup> European port
Abbay Wonz	63	Bremen	Saturday 25/9	1 <sup>st</sup> European port
Abbay Wonz	63	Rotterdam	Sunday 3/10	
Abyot	57	Bremen	Saturday 1/5	1 <sup>st</sup> European port
Abyot	58	Bremen	Sunday 17/7	
Admas	21	Bremen	Saturday 24/7	1 <sup>st</sup> European port
Andinet	56	Rotterdam	Sunday 17/1	
Andinet	56	Hamburg	Saturday 23/1	
Andinet	58	Hamburg	Saturday 3/7	
Netsanet	55	Bremen	Saturday 20/3	1 <sup>st</sup> European port
Netsanet	55	Hamburg	Sunday 28/3	
Netsanet	56	Hamburg	Saturday 5/6	
Netsanet	58	Hamburg	Saturday 13/11	
Tekeze	2	Bremen	Saturday 2/10	

Source: ESL data

As can be seen from the above table, it seems that with proper voyage and operational planning in place, there is a potential for cost saving from port related expenses. In ports like Antwerp, where the wharfage due is fixed irrespective of the duration of stay, surcharges that are payable to such ports could be reduced by minimising weekend calls. Where as in ports like Bremen in addition to the surcharges the daily wharfage dues could also be avoided. After all no cargo operation is carried out during the weekends. Based on historical data, ESL seems to suffer from port related delays mainly in its North continent service. In 1998/99 the average port stay for vessels trading in the major North continent ports was around four to five days. The range varies from 2.5 days in Uddevalla to about 5.5 days in Antwerp. During the same period the average berth stays in Rotterdam, Bremen and Hamburg were 5.3, 5.1 and 3.7 days respectively. In the Mediterranean service the average stay was about two days. For the vessels trading in the Persian Gulf and Indian subcontinent service the average stay was about 7 days.

Port related delays are noticed to be rare in the Far East service route. During the same period, port calls in Japan, Singapore and South Korea have been completed within one to two working days. Djibouti being considered as homeport, the average port stay varied between 13 to 17 days. As most of the cargoes loaded from the various service routes are mainly destined for Djibouti, the average stay for the smaller vessels was about 13 days while it was about 17 days for the bigger vessels. Surprisingly, the duration of port stay for the smaller vessels seems higher vis-à-vis their cargo capacity. The reason for such longer stay can be attributed to their low cargo handling capacity. In addition to the discharge of cargo all vessels are expected to load outbound cargoes from this port. Table 4.6 summarises the ports where ESL is deemed to make savings and their average daily wharfage dues. The other ports are excluded partly because the wharfage dues are fixed irrespective of the duration of stay such as Antwerp, Uddevalla, etc. or the duration of stay is reasonably acceptable such as in Yokohama, Singapore, Barcelona, etc.

Table 4.6

Time related average wharfage due of some selected ports

PORT	Average wharfage due per day	Vessels
Hamburg	DM 8500	Abyot, Abbay Wonz, Admas, Tekeze, Andinet, Netsanet
Bremen	DM 8500	-do- -do-
Rotterdam	DFL 791	-do- -do-
Mumbai	USD 546	WelWel, Kei Kokeb, Karamara, Omo Wonz
Djibouti (1)	USD 338	Abyot, Abbay Wonz, Admas, Tekeze, Andinet, Netsanet
Djibouti (2)	USD 195	WelWel, Kei Kokeb, Karamara, Omo Wonz

Source. ESL data

M/t Awash has been excluded from the table because very often the cargo operation is completed in less than 24 hours implying that there is little or no room for cost saving. Above figures are computed on the basis of the size of vessels calling at the respective ports and the prevailing tariffs applicable to each port. However, as all the vessels calling at each port are not identical in size, an average of the various ships size relevant to the particular port has been considered for the purpose of computing the figures.

In 1998/99, ESL paid German Mark (DM) 546944 for wharfage/berthing due in German ports of Hamburg and Bremen. Considering the flexibility of the vessels serving these ports, the quantity of cargo lifted and/or discharged and the efficiency of these ports, it would be reasonable to set the duration of port stay at these ports



between 2 to 2.5 days. That is, with a proper voyage and operational planning which includes increasing the number of gangs per shift and avoiding weekend calls when ever possible, the average duration of stay could come down from 3.7 and 5.1 days to around 2.5 days each at Hamburg and Bremen. Consequently the wharfage/berthing due paid could have been reduced to DM 326774 resulting a saving of DM 220170. For most practical reasons, the average duration of stay in Rotterdam could be set at 2 days, as it is very often the last port of call in the North continent ports. In 1998/99 ESL paid DFL 66572 for wharfage/berthing due in the port of Rotterdam. In the same manner, a saving of DFL 41450 could have been made if the average duration of stay was decreased to a bare minimum of 2 days.

With proper operational planning and cargo co-ordination the average duration of stay in Mumbai could probably be reduced from 7 to 3.5 days. In 1998/99 ESL paid USD 87643 for wharfage dues in the port of Mumbai. Based on the 3.5 days stay about 50% of the total amount paid during 1998/99, that is, about USD 43821 could have been saved. During the same period ESL paid USD 210178 for wharfage dues at Djibouti. Out of which USD 117499 was paid for the bigger vessels (Djibouti (1) table 4.7) and the remaining USD 92679 for the smaller vessels (Djibouti (2) table 4.7). Nevertheless, with a proper planning the average duration of stay for the smaller vessels could reasonably be reduced from 13 to 7 days while the bigger vessels'port stay could come down to about 10 days. In line to this, the wharfage due could have been reduced to USD 69117 and 49904 for the bigger and smaller vessels respectively.

Table 4.7 summarises the estimated saving which would have been realised from the various ports in 1998/99 if performance standards were set based on proper operational and voyage planning. It is worth noting that, as cargo volumes and types vary from voyage to voyage, performance standards have to be set on voyage to voyage basis. To this effect, the established standards need to be communicated with

the ships' command for their view and comment during the commencement of each voyage.

Table 4.7  
Estimated savings during 1998/99

Port	Average duration of stay per vessel (days) in 1998/99	Actual wharfage due paid in 1998/99	Duration of stay based on performance standard setting (days)	Estimated wharfage due as per standards	Saving
Hamburg	3.7	DM 316282	2.5	DM 213704	DM 102578
Bremen	5.1	DM 230662	2.5	DM 113070	DM 117592
Rotterdam	5.3	DFL 66572	2.0	DFL 25122	DFL 41450
Mumbai	7	USD 87642	3.5	USD 43821	USD 43821
Djibouti(1)	17	USD 117499	10	USD 69117	USD 48382
Djibouti(2)	13	USD 92679	7	USD 49904	USD 42775

Source: ESL data

#### 4.2 Cargo handling costs

Cargo handling costs comprise all kinds of costs attributable to the cargo, such as loading/unloading, tallying, storage and other logistical elements relating to the cargo. Cargo handling costs are dependent on a number of factors, such as the type of commodity, the quantity, the ship type, the terminal and port characteristics. They may be divided in to two groups.

A) Basic rates per ton, per cbm or per unit: - The basic rates or tariffs are usually negotiated and agreed between a stevedoring company and a shipping company or in the case of state owned stevedoring company, they are fixed tariffs issued

by the authorities. The tariff will also specify which operations are included in the rates and which are considered as extras and what charges in that case will be. In the traditional liner shipping most stevedoring contracts stipulate the basic rate per ton or per unit for normal handling of cargo during normal working hours. For any work out side of the normal working hours extra charges are stipulated on the contract.

B) Extra costs not covered under A:- The most commonly known extra charges in the traditional liner shipping are:-

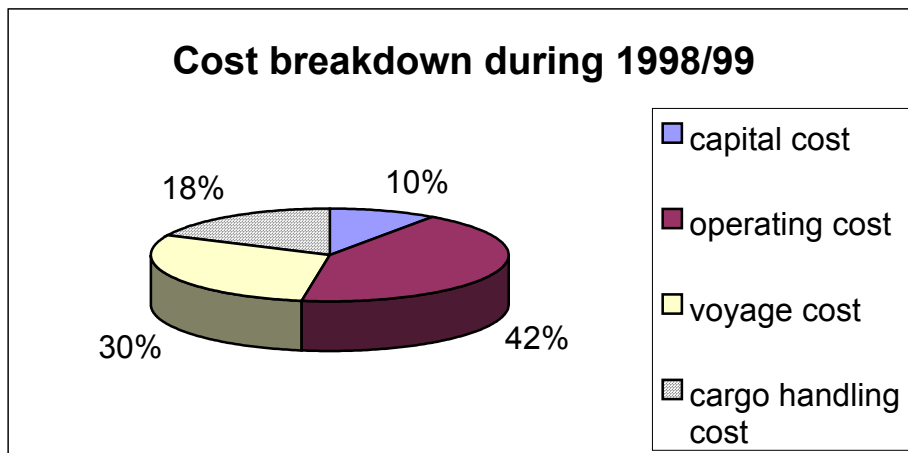
- ◆ Overtime: - with the exception of some container terminals where the rates cover round the clock work, most stevedoring contracts are based on normal working hours. Any work out side the normal hours will be subject to additional surcharges. The applicable surcharges may vary from 10% to 100% depending on the geographical location and the timing of the work such as holiday, Sunday, night shift, etc.
- ◆ Waiting time: - Very often the stevedoring contract is based on normal conditions what ever that may be. If the work is interrupted for reasons beyond the stevedore's control, waiting time charge will be levied on the ship. The main causes for waiting time charge are late arrival of cargo, break down of cranes and equipment, bad weather and late arrival of vessel.
- ◆ Un used time: - Some stevedoring contracts stipulate minimum guaranteed working hours for their dockers. Hence it is essential to properly plan in such a way that the working period could be utilised in the best possible manner.
- ◆ Extra equipment & labour: - In many ports the use of equipments such as cranes, forklifts, slings, etc are included in the basic rates. Where as the use of mobile cranes and heavy lifts might be considered extras and are billed for whenever used. In the same manner when extra men are needed for some cargo operations extra labour charge is levied on the ship.

ESL's operation is mainly based on the traditional port to port shipments although some arrangements are underway to include door to door service upon request from

shippers. So far very few door to door services have been undertaken by the company. The existing fleet structure has enabled the company to be able to provide a flexible combination of break bulk and container shipments in all its service routes. The type of break bulk shipments handled by ESL range from the traditional bagged cargo to various kinds of project cargoes.

In 1998/99 ESL paid Birr 37,731,000 (USD about 4,964,605) for cargo handling in all its service routes. This amount accounted for about 18% of the total cost incurred by ESL during the same period. Figure 4.2 presents cost breakdown of the company during 1998/99.

Figure 4.2  
Cost breakdown



Source: ESL data

#### 4.2.1 Stevedoring contracts

In ports where stevedoring tariffs are issued by government bodies such as the port authority, there is little that can be done to reduce the official tariffs by way of negotiating. However, in most ports of the world, stevedoring tariffs are subject to negotiation between the shipping company and the stevedoring company. As a huge amount of money is at stake, stevedoring contracts have to be negotiated with utmost

care. It is worth noting that the level of tariffs might, to a large extent, depend on the ability to negotiate. To this effect, it is very important to have the required knowledge and operational details of the port prior to commencement of negotiations. Moreover, negotiating on the level of the basic rate alone may not be enough, what is more important is what operations are included there in. It is worth to recall the old saying “ what you don’t make on tonnage, you make on dunnage”. Suffice to say that, what matters is the total cost per ton not the basic rate per ton.

The following are some of the operations that need to be negotiated along with the stevedoring contracts.

- Quay dues on cargo
- Tallying and delivery of goods
- Overtime charges
- Idle time
- Extra labour
- Equipment
- Lashing and securing cargo
- Opening and closing of hatches

As a matter of fact it might be possible to incorporate all the activities and negotiate an all-inclusive rate but it might turn out to be expensive. Nevertheless, all the normal operations should be included in the basic rate. In some ports Saturdays and night shift works are considered overtime works, this is the case in most European ports. However, when the market is offering poor returns as is the case at present for most shipping companies, ship owners should convince stevedoring companies to include such shifts under the normal working conditions. In fact, it is high time for the stevedoring companies to understand the problems and poor returns of shipping companies and support them for the sake of mutual benefits. After all, they are the first to loose their jobs when shipping companies get out of business due to poor market conditions.

According to the report compiled by the finance department, ESL has paid USD 2,282,208.66 for cargo handling in all its service routes during the second half of 1998/99 (January 1<sup>st</sup> to June 30 1999). This figure is by far lower than the amount paid during the first half mainly because the quantity of cargo transported during the first half was higher than the second half. Breakdown of the cargo handling cost paid during the second half is presented in table 4.8. There is no reason to doubt that with proper voyage and operational planning, some of the costs such as early finish, idle time, storage, shifting and stevedoring over time would have been avoided or at least reduced to a bare minimum.

Table 4.8

Cargo handling cost breakdown during the second half of 1998/99

Cost item	USD
Cargo watchman	589.59
stevedoring	1,833,034.87
Early finish	5,618.86
Equipment hire	35,639.47
Idle time	12,666.22
Storage	33,030.98
Lashing and securing	4,852.30
Tally	81,348.30
Receiving/delivery	97,277.33
Shifting	30,759.85
Stevedoring overtime	135,285.28
Trucking	12,105.61
Total	2,282,208.66

Source: ESL

- ◆ Early finish: - completing cargo operation earlier than the minimum guaranteed period stipulated in the stevedoring contract involves additional surcharge. For

instance, if the minimum guaranteed period per gang per shift is seven hours and if any one or all gangs complete their work within four hours, the vessel pays for the remaining three hours as per the rate agreed in the contract. Presumably uneven distribution of cargo is one of the reasons that lead to such extra charges. That is, some of the holds could be heavy and others light resulting in one hold completing early, whereas another hold had to work over time. Therefore, in order to avoid an early finish surcharge cargo stowage need to be planned properly. Moreover, depending on the circumstances, attempts should be done to switch gangs from one hold to the other whenever the work on the later hold does not justify having a full shift gang. In fact, ESL needs to exert maximum efforts to avoid such surcharges during the negotiation of stevedoring contracts.

- ◆ Idle time: - Idle time charges include for delays caused by weather, crane breakdown, cargo delays, etc. ESL needs to stand firm and strong while negotiating stevedoring contracts in order to avoid idle time charges. In line to this, there is no reason why ESL should accept idle time charges caused by weather as it is beyond the control of ESL. In fact the same arguments could be raised for idle times caused by cargo delays as well. After all, the cargo delays might have been caused because of labour strikes or traffic congestion which might be peculiar to the port in which case ESL has no control whatsoever. As ESL is being penalised by paying unnecessary wharfage dues due to the cargo delay there seems no reason to penalise it again unless such delays are caused by want of due diligence on the part of ESL. Even if the delay is caused by the ship, ESL should insist to obtain certain grace periods per gang per shift. Say, one or two hours per gang per shift. Apart from the points mentioned above ESL has to arrange a kind of in-house seminar for on-board senior officers and shore employees directly involved with commercial operations in order to develop awareness and make them cost conscious. In addition to the above suggestions more emphasis need to be given to properly co-ordinate and plan ship's cargo

operation. Apparently proper planning would also assist to avoid unnecessary shifting costs.

- ◆ Storage: - In general all ESL contracts provide free storage of cargo for certain specified time. The free storage period varies from one port to another. For instance, the free storage for full containers in Hamburg is 7 days while it is 14 days in Rotterdam and so on. Apart from attempts to increase the storage time ESL needs to maintain its sailing schedule in order to avoid such charges. In 1998 arrival times at North continent ports were on average 5 to 8 days later than originally scheduled. Table 4.9 shows the average variance for major destination ports between their first advertised estimated time and the actual arrival date.

Table 4.9  
Sailing schedule variance in 1998

Port	Average arrival variance	Cancelled calls (numbers)
Antwerp	5	1
Barcelona	8	5
Bremen	5	0
Hamburg	8	1
Middlesborough	6	2
Rotterdam	6	1
Uddevalla	7	0

Source: ESL data

- ◆ Stevedoring overtime: - stevedoring overtime cost accounted for about 6% of the total cargo handling cost paid by ESL during the second half of 1998/99. It is true that at times it might be more economical to work on overtime particularly in ports like Hamburg and Bremen where the warfare dues are deemed to be exorbitant. That is, if the savings from the port charge exceed the overtime charge there is no reason why the ship should not work out side of the normal working hours. What is required is conducting cost/benefit analysis. Apparently



the kind of operations presented in tables 4.4 and 4.5 indicate that there is a need for proper operational planning. Once again the core point will be to properly plan the voyage and cargo operations of the fleet and compare performance with the plan. Planning and measuring performance against plans needs to be conducted continuously. Furthermore, it is worth noting that in order to cope with the unemployment situation caused by containerisation and other labour saving devices, there is a trend that many ports are trying to extend their normal working shifts. Therefore, ESL should try to convince stevedoring companies to extend their normal working time. At least efforts need to be done to include Saturdays as a normal working day in particular in the North continent ports.

From the fore goings, at least about 50% of the extra costs paid by ESL during the second half of 1998/99 could have possibly been saved if not avoided at all. The extra charges paid by ESL during the second half of 1998/99 is shown in table 4.10 below.

Table 4.10  
Extra charges during the second half of 1998/99

Cost item	Amount paid (USD)	50% saving
Early finish	5,618.86	2,809.43
Idle time	12,666.22	6,333.11
Storage	33,030.98	16,515.49
Shifting	30,759.85	15,379.92
Stevedoring overtime	135,285.28	67,642.64
Total	217361.19	108,680.60

Source: ESL data

Considering the higher cargo handling cost paid during the first half (USD about 2,682,397) it is very likely that a saving of around USD 235,000 would have been realised during 1998/99.

### **4.3 Chartering-in /an alternative strategy**

As mentioned in the previous chapters, the ESL fleet consists twelve vessels out of which the four vessels operating in the Persian Gulf are relatively older and smaller than the other vessels. The Persian Gulf service route mainly connects Djibouti with Sharjah in the United Arab Emirates and Mumbai in India. This part compares the performance of ESL vessels currently deployed in the Persian Gulf with an alternative strategy, which is maintaining the service by chartering other vessels. Currently this service route is served by M/v Keiy Kokeb, M/v Wolwol, Ro/Ro Karamara and Ro/Ro Omo Wonz. Except Ro/Ro Omo Wonz which is closer to 20 years, the remaining three vessels are over 23 years old. In addition to their ageing, their limited cargo handling capacity has made these vessels apparently unsuitable for the trade they are intended to serve. Table 4.11 shows cargo handling gears, speed and other relevant particular of these vessels.

Basically the cargo traffic in this service route consists various types of loose merchandise goods, drums, iron bars, steel sheets and containers. In order to cope up with the trade requirements it is imperative to have self sustained vessels. Apparently none of the vessels deployed in this trade route seem to be able to lift heavy cargo, in particular containers, with their own gears. In view of this expensive shore mobile cranes have to be used to accommodate such heavy cargoes. During the second half of 1998/99, ESL has paid USD 35640 for equipment hires in all its service routes, about 75% of which are estimated to be incurred in the Persian Gulf trade route.

Rough estimate indicates that the annual equipment hire in this region is about 50000 to 55000 US dollars. To start with, Ro/Ro Karamara and Omo Wonz are not built for the purpose they are now intended. They were purposely built for wheeled cargoes. Presumably, purchasing mafi trailers could have been an option to make these vessels suitable for the purpose they are intended now. However, as this is a major capital expenditure, it does not give any economic sense due to their age

factors. Nevertheless, Ro/Ro Karamara is still comparatively better equipped than Ro/Ro Omo Wonz as far as this service route is concerned.

Table 4.11  
Relevant particulars of vessels operating in the Gulf route

VESSEL	YEAR BUILT	DWT	GEAR	SPEED*
Karamara	1976	2428	2 x 10t cranes	8.5
Omo Wonz	1981	3500	1 x 35t lift 2 x 3t lifts	9
Wolwol	1977	4135	2 x5/10t cranes 2 x10t derricks	8
Keiy Kokeb	1977	4135	2 x5/10t cranes 2 x10t derricks	8

\* Average actual speed made good by respective vessels

Source: ESL data

Despite their limited capacity, frequent break down of the cargo handling gears has so far been a major draw back on Ro/Ro Karamara, M/v Keiy Kokeb and M/v Wolwol. In contrast to the ro/ro vessels M/v Keiy Kokeb and Wolwol are basically general cargo ships. Except for their cargo handling gears, size and poor technical conditions these vessels are more or less suitable for the type of purpose they are intended to serve. It is also worth mentioning that spare parts for these vessels are at times not readily available in the region they are trading, requiring spare parts to be ordered in advance and air freighted from some where else. In general, the repair and maintenance cost of these vessels including Ro/Ro Omo Wonz has increased significantly in the last few years mainly due to their ageing. The need for frequent repairs has not only affected the repair and maintenance cost of these vessels but also their earning capacity due to the off hires arising from unscheduled repairs and docking.

In fact, the unpredictable repair periods have been one of the factors for ESL not to be able to strictly maintain its sailing schedules. To this effect ESL have had difficulties in maintaining shipper credibility as the number of off hire days are presumably higher than one could expect due to their poor technical conditions. For instance, in one single incident Ro/Ro Karamara has spent 128 days in a repair yard in 1998. During the same year, the off hire days of this particular vessel could most probably reach five to six months if all the incidents that led to off hires were accounted for. Consequently the need to maintain shipper credibility by providing efficient transport services has been severely affected.

Very often, ESL has maintained the Gulf service by providing two separate service strings for connecting Djibouti with Sharjah and Mumbai. On an average the sea transit time from Djibouti to Sharjah has so far been about 8 to 8.5 days and about 9 to 9.5 days to Mumbai. The average round voyage time for each string has been around 47 days including the off hire days. At times attempts have been made to connect Sharjah and Mumbai using one vessel which proved to be uneconomical due to limited carrying capacity of the vessels. In view of the foregoing, it would sound economical to substitute the four vessels by two self sustained ships in the range of 7000 to 8000 dwt and an operational speed of around 14 knots each. Due to the financial constraints in recent years, ESL might not be in a position to purchase the types of ships suitable for the service route. Nevertheless, bearing in mind the financial constraints, ESL can adopt an alternative strategy to substitute its ageing vessels presumably by chartering the kind of vessels mentioned above until such time that its financial position improves.

#### **4.3.1 Cost comparison**

Based on the 47 days round voyage which includes off hire days, each vessel is expected to make 7.75 voyage per annum. That is,

$$365/47 = 7.75 \text{ voyages per vessel}$$

$$4 \times 7.75 = 31 \text{ voyages per year}$$

However, if two self-sustained vessels with 14 knots speed are chartered to combine Sharjah and Mumbai in one string they will complete 23 voyages per year. That is,

Djibouti/Mumbai = 1869 miles (distance from a distance table plus 5% allowance)

Djibouti/Sharjah = 1698 miles ( -do- -do- -do- )

Sharjah/Mumbai = 1170 miles ( -do- -do- -do- )

@ 14 knots, transit time Djibouti/Sharjah = 5 days

Sharjah/Mumbai = 3.5 days

Mumbai/Djibouti = 5.5 days

Total transit time 14 days

Assuming 8 days in Djibouti and 4 days each in Sharjah and Mumbai

Total voyage time = 30 days

350 on hire days per year, 350/30 = 11.5 voyages per vessel per year

The sailing frequency is not adversely affected, as the two vessels will complete 23 voyages per year, more or less in line with the advertised frequency which requires 24 sailing per year.

The daily running (operating) cost of own vessels is presented in table 4.12 below.

Table 4.12

Daily running (operating) cost of own vessels

Vessel	Daily running cost (USD)
Ro/Ro Karamara	1,830
Ro/Ro Omo Wonz	3,580
M/v Keiy Kokeb	3,410
M/v Wolwol	2,680
Total	11,500

Source: ESL data

As can be seen from the above table, ESL incurs USD 11,500 per day to run the four vessels. According to Ocean Shipping Consultants, the average daily hire for vessels between 7500 to 15000 dwt in the second quarter of 1998 was USD 9.02/dwt/month. Taking the average of the last four years (95 to 98) reveals an average of USD

11.6/dwt/month. Therefore, if two vessels of 8000 dwt each were chartered the average daily hire for both will be USD 6106. That is,

$$2 \times 8000 \times 11.6/30.4 = 6106$$

The quarterly time charter rate development during 95 to 98 is presented in table 4.13 below.

Table 4.13  
General cargo vessels (7500-15000 dwt) time charter rate development 1995/98  
USD/dwt/month

95	12.87
	14.97
	13.60
	12.53
96	13.20
	12.65
	8.15
	11.75
97	12.50
	10.55
	10.95
	10.90
98	8.67
	9.02

Source: Ocean Shipping Consultants

However, as larger vessels tend to consume more bunkers than smaller vessels we need to consider the bunker consumption for the purpose of the comparison. Table 4.14 and table 4.15 below show estimated daily bunker consumption of own and chartered vessels respectively.

Table 4.14

Daily bunker consumption of own vessels (tonnes/day)

Vessel	Consumption at sea (MDO)	Consumption in port (MDO)
Ro/Ro Karamara	4.20	0.5
Ro/Ro Omo Wonz	7.20	0.8
M/v Wolwol	4.85	0.9
M/v Keiy Kokeb	4.85	0.9
Total	21.1	3.1

Source: ESL data

Table 4.15

Typical general cargo (5000-10000 dwt) fuel consumption (tonnes /day)

At sea		In port	
HFO	MDO	HFO	MDO
19.4	1.5	1.5	1.5

Source: Ocean Shipping Consultants

According to Ocean Shipping Consultants the estimated daily fuel consumption level for 8000 dwt would be 19.4 tonnes HFO and 1.5 tonnes MDO at sea and 1.5 tonnes HFO and 1.5 tonnes MDO in port. For the purpose of computing the cost comparison, we will consider the price of bunkers in Singapore during 1999 as a representative price. According to Drewry Shipping Consultants, the average prices of fuel and diesel oil in Singapore in 1999 were USD 68 and USD 107 respectively.

◆ Cost of running own vessels

Based on the past experience, 35% of their service time has been spent at sea and 65% in port. Accordingly the estimated annual bunker cost for own vessels is computed as follows: -

At sea,

$$21.1 \text{ tonnes/day} \times 35\% \times 365 \times 107 = \text{USD } 288421.17$$

In port,

$$3.1 \text{ tonnes/day} \times 65\% \times 365 \times 107 = \text{USD } 78695.82$$

$$\text{Total bunker cost} = \text{USD } 367,116.99$$

$$\text{Annual running cost} = 11500/\text{day} \times 365 = \text{USD } 4,197,500$$

$$\text{Annual running (operating) + bunker cost} = \text{USD } 4,564,616.99$$

◆ Cost of running chartered vessels

To be on safe side we can assume daily hire for both vessels USD 7000/day instead of USD 6106 as shown above. Accordingly,

Annual charter hire expense =  $350 \times 7000 = \text{USD } 2,450,000$  (assuming 350 days on hire).

Assuming 16 days in port and 14 days at sea;

Bunker cost at sea will be:

$$2 \times 19.4 \times 47\% \times 350 \times 68 = \text{USD } 434,016.80$$

$$2 \times 1.5 \times 47\% \times 350 \times 107 = \text{USD } 52,804.50$$

Bunker cost in port:

$$2 \times 1.5 \times 53\% \times 350 \times 68 = \text{USD } 37,842$$

$$2 \times 1.5 \times 53\% \times 350 \times 107 = \text{USD } \underline{59,545.50}$$

$$\text{Total bunker cost} = \text{USD } 584,208.80$$

$$\text{Annual charter hire + bunker cost} = \text{USD } 3,034,208.80$$

$$\text{Difference} = 4564616.99 - 3034208.80 = \text{USD } 1,530,408.19$$

From the foregoing, an estimated annual saving of around 1.5 million could have been gained if the four vessels were substituted by two chartered vessels. Even if we try to be more conservative by allocating USD 4000 charter hire per day for



each vessel there is still a room to save around 1.2 million per year. Moreover, as ESL is currently employing around 30 expatriate officers on board its ships, getting rid of the four vessels would have enabled ESL to run all its ships by Ethiopian officers and engineers.

#### **4.4 Container costs**

Container costs represent a significant part in a shipping line's total cost. They include capital, maintenance, repositioning, storage and survey costs. For shipping lines an important competitive edge lies in the container management. Apparently Container management has been one of the areas where shipping lines have not been particularly efficient so far. The single major cost associated with container is repositioning cost. That is, moving empty containers to the loading locations. According to Fairplay's July 99 publication the total annual repositioning cost has been estimated 10 billion dollars.

“Ten billion dollars. An astronomical figure. But that is what one firm of consultants estimates the total annual cost of empty container repositioning for container operators by sea, road and rail. Astronomical indeed, for if the dollar notes were laid out end to end, they would stretch to the moon and back-twice. But perhaps it is worth bringing container operators down to earth by stating that the same number of dollar notes would encircle the equator 38 times and no doubt clog the propellers of some ships in the Atlantic and Pacific oceans”. (<http://www.Fairplay.co.uk>).

ESL is not an exception, as it is adversely affected by the imbalance of trade in all its service routes. The imbalances are being met either through repositioning of empty containers or using leased containers. Table 4.16 below shows ESL's imbalance of container flows during 1998.

Table 4.16  
ESL container trade imbalance 1998  
(TEU)

Service route	Outbound flow	Inbound flow	imbalance
North Continent	1346	2143	797
Mediterranean	65	458	393
Far East	13	1213	1200
Persian Gulf	19	469	450

Source: ESL data

Apart from the imbalance of container trade, ESL also seems to suffer from poor utilisation of containers. Container utilisation mainly depends on container turnover time, ship service interval, the number and capacity of ships and container off service for repair. However, ESL appears to suffer more from container turnover time and ships service interval. It has been observed that significant number of ESL containers involve long inland dwell time particularly in the Red Sea port of Djibouti. In some circumstances an inland dwell time of one to two years have been reported mainly due to poor container tracking and follow-up. Nevertheless, a dwell time of three to four months is common for most containers. Some of the main factors contributing to longer inland dwell time are:

- Poor container tracking and follow-up.
- Provisions in the leasing agreement that limit the number of containers to be redelivered to a leasing company at any one time.
- Inadequate service schedule particularly in the Far East service, where it has become a problem to re-position empty boxes.

In view of the above, ESL has become highly dependent on the use of leased containers which given their daily hire, delivery and redelivery costs create significant expenditure.

As shown in table 4.16, in 1998, ESL moved 5726 teus in all its service routes. To accomplish this task ESL has managed around 2642 teu (2062 own and 580 leased containers). Apparently, these figures indicate poor container management and inefficient use of containers by ESL. Due to the significant imbalances of container trade, ESL incurs substantial repositioning cost for its own boxes and leasing charge for hired boxes. Though it has been difficult to quantify repositioning costs due to the absence of compiled data, substantial amount of money is estimated to have been spent in simply moving empty boxes. Due to the structural trade imbalances no one assumes that repositioning moves would be prevented. However, with improved container management substantial cost could be saved. One of the ways to improve container management is through co-operative arrangements with other lines. As huge number of similar type of empty containers are moving both into and out of several of the same world ports, there is a huge potential for substantial savings if lines co-operate to make use of one's container by the other.

“The liner shipping industry; an industry that for too long has fooled itself into believing that making deals with other lines and using their equipment was somehow intrinsically wrong. The principle is straight forward and is simply a case of one operator with an equipment deficit in a specific area making use of equipment controlled by another operator which has a surplus and when the cargo movement is completed, returning the container to a mutually acceptable location” (Fairplay July 29, 1999).

Having seen the trade imbalance, many of the containers unloaded in Djibouti are repositioned at a high cost to either loading or redelivery locations, in the case of

leased containers. Therefore, in order to minimise the repositioning cost and daily hires of leased containers, ESL needs to make a deal with other lines in particular with those who have imbalance of trade on the opposite direction. That is, as ESL is relatively weak on the export side it can make an arrangement with those who run short of empty units in Djibouti to make use of its equipments and deliver the units at mutually agreed ports. At the same time ESL can also make use of other line's empty units to be delivered in Djibouti. Moreover, as the inland dwell time of empty containers appears to be high in Djibouti, ESL should improve its container management in this port. Due to poor container management, often, it has been noted that late coming containers which could still enjoy free storage time being used for export cargo or moved to loading locations before those which are already overdue.

At times the sales (cargo booking) people do not seem to be aware of the full cost implications of their decisions. The result is that, containers are supplied without due regard to the cost of an empty move, daily hire, pick-up and delivery charges or whether the shipment even warrants the expenditure or not. Therefore, the sales people need to work with the container section in order to avoid unnecessary costs, in particular for shipments destined to or originated from out port calls.

Although ESL's core business is providing port to port shipments, occasionally it undertakes door to door shipments when requested by shippers. In such instants, the clearing and custom formalities are handled by the Marketing staff who has limited knowledge and experience in clearing goods. As this will affect container related expenses, such as storage, container handling cost, etc. it would be economical if ESL considers to out source such activities to third party service providers who have the required knowledge and expertise in clearing and custom formalities.

## **Chapter V**

### **The effects of global trends**

This chapter looks in brief at the on going major global trends and their effect on the liner shipping in general and ESL in particular. The evolution in the liner shipping during the last few years is that many smaller national and regional niche players have been disappearing from the market because of bankruptcy or other economic reasons. The future doesn't look promising either. Similar to the smaller liner operators, smaller shippers are also disappearing from the scene. The disappearance of smaller companies is accelerated by their inefficiencies to cope up with on going global trends. The major global trends include:

- ◆ Globalisation
- ◆ Alliances, mergers and acquisitions
- ◆ Deregulation
- ◆ Increasing vessel sizes
- ◆ Logistics management

#### **5.1 Globalisation**

Globalisation can be described as a trend towards greater integration of the world economy through the flow of goods, services and capital around the world. According to the World Trade Organisation (WTO), three key tendencies can be identified as the driving force of globalisation. “The first, and perhaps most

profound influence, is technological change. Second, an increasing number of governments have pursued liberalisation policies, opening markets and removing regulatory obstacles to economic activity. Third, the combination of new technologies and freer markets has enabled the business sectors in a growing number of countries to internationalise their activities, an ever more intricate web of inter-linked activities around the globe. Between them, these forces have made nations more economically interdependent, creating unprecedented opportunities as well as new economic, political and social challenges". (WTO, 1998).

These factors have forced producers to look for strategies that would allow them to exploit all available resources to strengthen their competitive edge in the international market. Such strategies include outsourcing and processing of different parts of various products in different locations in order to minimise resource cost or to have easier market accesses. This has resulted in the increase of the volume of trade and changed the structure of production, resource allocation and distribution of goods and services in such a way that would minimise the transaction costs and maximise efficiency and profits.

Due to the economic globalisation, world trade has consistently out paced world GDP growth. Apparently, the liner shipping, in particular container shipping appears to be closely connected with the liberalisation and globalisation of world trade. This situation has forced liner operators to adjust and rearrange themselves in order to meet the trade requirements, as transport users seem to say that they want a deal with fewer first class service providers on broader geographical basis. This has led shipping companies in particular container operators to be big enough and diversify their activities in order to meet customers' requirements. Apart from meeting the trade requirements, shipping companies need to be big enough in order to be quoted on the stock exchange and attract employees, as people prefer to work for large companies due to the normal human nature or attitude.

In the 1990s, many of the traditional liner operators went out of the liner trade because they were not able to compete with big carriers operating fully containerised vessels. Those who have managed to stay in the business are in their critical stage of development. Consequently their fleet is getting old, as they are not making enough money from their operations to reinvest on ships.

## **5.2 Alliances, mergers and acquisitions**

Ocean going ships are becoming bigger and more expensive. The need for wider geographical coverage, higher frequency and economies of scale in international liner shipping has made it difficult for a lot of shipowners including the mega carriers to satisfy the market requirements individually. One of the strategies to obtain economies of scale and scope is through strategic alliance where by shipping companies basically agree for better utilisation of assets through shared resources.

Alliances are a kind of consortia with the main objective based on technical agreements between container operators having similar philosophies and scale of operation. So far the major alliances operating around the globe are:

- Grand alliance: P&O Nedlloyd, NYK, HapagLloyd, OOCL, MISC
- Maersk/SeaLand: Maersk/SeaLand
- New World alliance: APL(NOL), MOL, Hyundai
- COSCO, K-Line, Yangming
- United alliance: Hanjin, DSR-Senator, Choyang, UASC

Even though there are clear advantages to be achieved from the realisation of economies of scale and scope, maintaining alliances in container liner shipping has been difficult due to the economies of single organisations and diseconomies of joint ventures. Hence the rules of the game in container liner shipping are shifting from mere co-operation in the form of alliance and joint ventures to take-overs (acquisitions) and mergers. At present it is not uncommon to see significant cross border and multi national deals around the globe. Apparently, the trend of

globalisation will speed up the process of consolidation already underway in a more profound manner.

“If the size and scope of recent corporate megadeals have taken your breath away, fasten your seat belt. The race is just getting started. Given the activity we’ve already seen, that may seem startling. In 1996, 211 megadeals (mergers and acquisitions worth more than \$1 billion) were announced. By 1999 that figure had risen to 476. Overall announced volume rose to more than \$3.8 trillion. The most impressive growth was in cross-border activity which surged from \$314 billion to \$1.2 trillion in announced deals”. (Newsweek January 31, 2000). In line to this development, major structural changes have taken place within the shipping industry in general and container liner shipping in particular.

As the global trends are becoming irresistible, they are driving consolidation within the liner shipping industry. The trend in globalisation is going to continue, hence shipping companies in particular container operators have to be big enough to be able to provide tailor made services to customers. Surprisingly, in 20 to 30 years time 5 to 6 giant liner operators are expected to operate in the world. Over the past few years the industry has experienced an increasing number of take-overs and mergers. To mention some:

- In 1996, Safmarine formed the joint venture Safmarine CMBT lines (SCL) with Belgian carrier CMBT and CMA bought French State owned CGM.
- In 1997, the merger of P&O containers and Nedlloyd lines became effective, Hanjin took over 80% of DSR-senator’s shares and Neptune Orient Lines (NOL) acquired American President Lines (APL).
- In 1998, Evergreen acquired Italian carrier Lloyd Triestino.
- In 1999, Maersk acquired Safmarine container lines and Sealand.

### **5.3 Deregulation**



In the past few years many countries around the globe have gone through economic reforms. Due to the internal and external pressures, many of them are transforming from the closed and highly regulated economy to a free market economy. The process of change is still underway though it has not been as fast and drastic as the World Bank or World Trade Organisation would like it to be. Deregulation of the transportation industry in the late 1970s and early 1980s assisted organisations to have many more options. This has increased the competition within and between modes of transportation. Consequently carriers became more creative, flexible, customer-focused and competitive in order to succeed. Since there are more transportation options shippers can now focus on the rate negotiations, terms and conditions in order to secure the best transportation service at the lowest possible cost.

De-regulation in the shipping industry has seriously affected the role of conference systems. In the 1960s and 1970s liner companies were in a strong position through their conference systems by establishing a kind of cartel in order to restrict and abolish competition. However, by the late 80s and 90s conferences had become seriously weakened due to the expansion of containerisation and the less sympathetic regulatory environments around the world. Such regulations include the 1984 shipping act and the 1998 ocean shipping reform act in the US. In fact, deregulation is one of the driving forces that led shipping companies to switch their strategies into alliances and mergers. De-regulation in the industry includes:

- Shippers and ocean carriers are allowed to negotiate and reach confidential service contracts.
- Prohibition of capacity management programmes
- Elimination of tariff filling requirements
- Elimination of anti-competitive practices etc.

Moreover, recent developments indicate that the protectionist and discriminatory policy which had been pursued by most developing countries to protect their

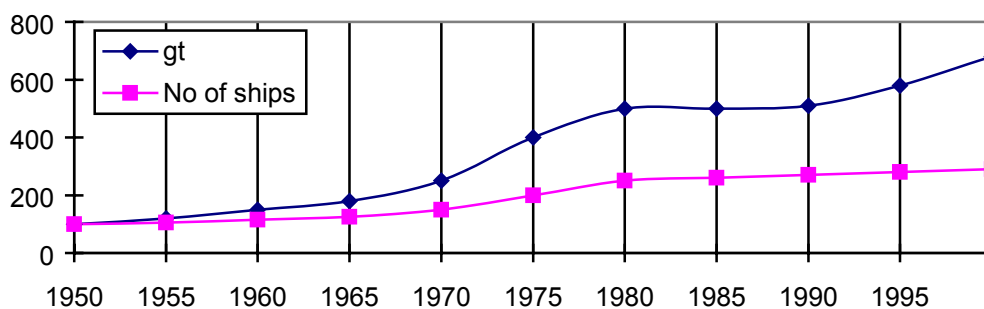
national lines is on the verge of disappearing due to the change in economy policies. As a result most national shipping lines are exposed to fierce competition.

#### 5.4 Increasing vessel sizes

The liner shipping is being dictated by the need to reduce unit cost. In this regard the trend has been towards bigger ships which offer economies of scale. It is cheaper to construct and operate a 2000 teu vessel than two 1000 teu each vessels, as the price and operating cost of a 2000 teu vessel will not be double of the 1000 teu vessel though the earning capacity is apparently twice that of the 1000 teu vessel.

However, even though the unit cost of bigger vessels is lower than the smaller vessels the investment required to own them is still huge. Due to the high barrier to entry most of the developing countries are no more participating in the liner business. Between 1950 and 1995, the total number of ships increased by about 2.6 times while the gross tonnage of ships increased by about 5.7 times during the same period (ISL 1997). Figure 5.1 presents the consistent growth of vessels during the last five decades.

Figure 5.1  
Structural change in world fleet



Source: ISL 1999

#### 5.5 Logistics management

“Logistics is the process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.” (Council of Logistics Management (CLM), USA, 1992). The existing fierce competition has caused shipping companies to look for new ways to differentiate their service from others. To this effect, logistics is a logical choice to look at, because bigger and well established liner operators should be able to provide much more reliable logistics solution and value added services than smaller and conventional liner operators.

Factors contributing to the growing interest in logistics include:

- The advances in information technology
- An increased emphasis on customer service
- Growing recognition of the total cost concept
- The realisation that logistics can be used as a strategic weapon in competition
- The profit leverage from logistics

Not all shipping companies can provide logistics service to their customers. Apparently, as customers keep on demanding better service and lower costs, those who can differentiate their service through better logistics management can survive and prosper in the present highly competitive environment. The focus of logistics is on co-ordination across the entire supply chain, both within a corporation and linking backward to suppliers and forward to end consumers. The ability to respond rapidly to constant changes will emerge as a major competitive edge among shipping companies.

It is worth noting that at present shipping companies make profit not from the increase of revenue but from excellent supply chain management, which includes efficiency, rationalisation, information technology, etc. By giving unique services to customers, shipping companies could ensure long term strategic partnership with customers. Surprisingly, the consequence of such development has given rise to the

emergence of virtual organisations. Thanks to the Internet technology, at present few powerful supply chain specialists are offering transport service/logistics service without owning a single vessel.

### **5.6 The challenges for ESL**

The consolidation taking place within the industry coupled with the other global trends discussed above have become of great concern for ESL's future liner operation. Due to the change in the economy policy of the government, ESL is no more in a position to enjoy the support it used to have in the form of cargo reservation. The old conference that ESL belonged to, (Red Sea, UK and Continent conference) has disappeared since the early 80s although ESL have continued to use the tariff published by the conference until the early 90s.

The global players serving the Ethiopian trade (namely MSC, P&O Nedlloyds and Maersk/Sea Land) do offer more competitive freight rates and higher frequency of sailing than ESL due to their economies of scale. The economies of scale exist on both the vessel size and on the organisational side (scale and scope of the companies). With respect to the vessel size, the unit/slot cost of the competitor lines is by far lower than ESL as they are operating bigger, faster and fully containerised vessels. With respect to the organisational side, economies of scale can be realised in all business processes such as container logistics and IT systems and support. The advantage comprises the following factors:

- Larger ships with higher speeds and thus more round voyages per year and improved schedule.
- Substantial reduction in container expenses that is, reduced imbalances due to scope of coverage, lower leasing rates and optimised container depots.
- Reduction in stevedoring contracts. For instance, the port authority of Djibouti charges ESL USD 115 per teu whilst it charges the competitor lines USD 85 per teu.
- Reduction in procurement (bunkers, stores, etc).

- Reduction in communication cost due to IT interlinks with customers while ESL still very much dependent on telefax, telex and telephone.
- Reduction in overhead/administration expenses (spreading overhead and communication costs over a large volume of cargo).

Moreover, the global players are consolidating their marketing position by opening representative offices in the capital city. In 1998/99, ESL's market share dropped by 13% as compared to the preceding year even though the country's general cargo sea borne trade has increased by 14% during the same period. In parallel with alliances, mergers, acquisitions and deregulation taking place within the industry, freight rates are substantially decreasing from time to time. ESL cannot be a global player because of its fleet structure, marketing capacity and business philosophy. In addition to this, it does not seem to be able to offer logistics solution to its customers in the foreseeable future. As it is now, ESL is not making profit from its operations. In the face of the on going global trends the future does not seem attractive either. On the other hand the ageing fleet needs to be replaced in three to five years time, where as the competition only seems to be getting tougher. In view of these developments ESL appears to have reached in its critical stage of development.

## **Chapter VI**

### **Conclusion**

In the present competitive market, cost reduction is a key to survival hence it is of prime interest to all shipping companies. “The best way to make money is to stop losing it” seems to be a good proverb. Due to this fact, the liner shipping is being dictated by the need to reduce costs. We are living in a time of dynamic global growth and development. Apparently nothing seems closely connected with the liberalisation and globalisation of world trade as the shipping industry. Hence, shipping companies in particular container operators are getting bigger by forming alliances, merging or taking over others. This situation is accelerated by the economy deregulation taking part in most parts of the world. Parallel to this development, freight rates have continued to fall due to fierce competition and volume focused sales philosophy of the global players. Moreover, the global players are making use of their advance in information technology and logistics management to differentiate their services. As a result national and regional niche players are on the verge of disappearing.

The Ethiopian Shipping Lines is not an exception. ESL has already started feeling severe financial constraints. Being a small company, ESL cannot be part of any strategic alliance due to its fleet structure, scope of coverage and business philosophy. As freight rates are falling down, it is imperative for ESL to check the rising costs by establishing proper cost control system and looking for potential savings by implementing cost effective measures. In this respect, the Marketing department responsible for the commercial operation needs to properly plan the voyage and cargo operations of each vessel. As vessels are often kept idle during the

weekend they shouldn't come along side during the weekend whenever practical.

The advantages of proper planning include:

- ◆ Avoidance of weekend calls hence less berthing dues.
- ◆ Possible savings from bunker consumption, as vessels might be required to proceed at economical speed.
- ◆ Increase the cargo capacity of the fleet and decrease port related expenses as proper cargo planning facilitates fast turnaround of vessels.

In order to realise the above advantages the Marketing department needs to establish performance standards of each port of call. When setting the performance standard, one needs to consider the productivity and efficiency of the port, the type of vessel and the quantity and type of cargo. Areas of operation where standards are not achieved should be identified, analysed and corrected. Moreover, the department should also review the standards where and when necessary. With proper planning and standard setting, an estimated saving of around USD 280,000 from time dependent berthing dues and around USD 235,000 from cargo related expenses could have been realised during 1998/99 budget year.

Furthermore, as a huge amount of money is at stake, stevedoring contracts need to be negotiated with utmost care. What is important during the stevedoring agreements is not the basic rate alone but also what is included therein. It is possible to agree a very low basic rate with some vital operations excluded. However, what matters at the end of the day is the total cost per ton not the basic tariff per ton.

Currently ESL serves the Persian Gulf and Mumbai by deploying four old smaller vessels namely, Keiy Kokeb, Wolwol, Karamara and Omo Wonz. These vessels are technically in poor condition. In addition to their ageing, their limited cargo handling capacity has made these vessels unsuitable for the trade they are

intended to serve. The need for frequent unscheduled repairs and docking has not only affected the repair and maintenance cost but their carrying capacity as well. The unpredictable repair periods have been one of the factors for ESL not to be able to maintain its sailing schedule. Therefore, it sounds economical to substitute these vessels by two self-sustained ships in the range of 7000 to 8000 dwt each. The estimated saving from the substitution could reach around USD 1.5 million per year.

The other cost element requiring attention is container-related expense. In today's liner shipping, an important competitive edge lies in the management of containers. ESL is adversely affected by imbalance of trade in all its service routes. The imbalances are met by either repositioning of empty containers or using leased containers. Apart from the imbalance of trade, ESL also seems to suffer from poor utilisation of containers. Though it has been difficult to quantify repositioning expense due to lack of adequate data, significant amount of money is estimated to have been spent in moving empty containers. Therefore, in order to alleviate the problems the following measures need to be considered:

- ◆ To make a deal with other lines, in particular with those who have imbalance of trade in the opposite direction to make use of equipments and deliver same at mutually agreed ports.
- ◆ Arrange in house seminars and training for employee in order to make them cost conscious and aware of the implications of their decisions.
- ◆ Proper follow-up of containers.

Based on the cost reduction scheme mentioned, an estimated saving of around 2,3 million USD could have been realised in 1998/99. This saving which is about 6.7% of the total cost incurred by ESL during 1998/99, would have been sufficient to offset the loss declared by the company during the same period.



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