Analysis Of the Scrap ship Market

Financial Evaluations Of the Options

A report submitted as part of the requirement for the award of the MBA in marketing from City University Business School.

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☞ EXECUTIVE SUMMARY

✓ ***THE MARKET FOR SCRAP SHIPS***

A scrap ship is a commodity and is traded as such. It forms part of the ferrous scrap market and competes with other sources of scrap. The market for scrap ships is transient. Demolition of ships, as it exists today, is a third world activity. To a large extent, the market is viable only when the country's development is in the "adolescent" stage.

The principal markets for scrap ships are the countries in the subcontinent and China, though there exists a latent demand in other Asian developing countries. The scrap ships are able to command the prices as they do at present, are due to the special Characterstics of developing countries--lax regulations, cheap labour and the priority Of cost over quality.

✓ ***SOURCE FOR SCRAP SHIPS***

Ship owners are loath to send their ships for demolition but are forced to do so by a combination of political, economic, social and technological factors. Age of the ship forms the single most important criterion in the owner's decision to scrap the ship since this has a direct bearing on the other factors.

✓ ***OPPORTUNITIES IN THE MARKET***

There exists a clear cut difference in the preferences of the different geographical markets. It is essential to be cogniscent of the constraints under which the different segments of the market operates and its effect on the latitude when dealing with the customer. The main source of competitive advantage is INFORMATION especially regarding the sourcing of ships. Systematic collection and analysis about the

Demographics, operating and situational variables and to a certain extent the personal characterstics will help in identifying the opportunities.

The options available after buying a ship are either to tow the ship, lay up, or sail with/without cargo to the breakers. The options are largely dependent on the condition and the location of the ship. The loading option may not be always available even though it makes the most economic sense.

This report will help the breakers and the intermediaries in making their operations more viable.

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CHAPTER I

OVERVIEW OF MAIN FEATURES OF THE MARKET

1.1 INTRODUCTION

The international ship scrap market depends largely on for its existence upon the demand of the steel industry. The steel from the ships is used in re-rolling or re-melting processes. In the early 80s the market for scrap ships was largely Taiwan and to a smaller extent S.Korea.The late 80s and the early 90s have seen a dramatic shift in the market to the Indian sub-continent and China. These countries have been able to offer higher prices as the ship steel is mostly used for re-rolling purposes. The re-rolled steel is used mostly in the construction industry. These countries have been able to achieve the dominant position in the scrapping of ships due to a combination of various factors. These countries are perennially hungry for cheap sources of steel. The ship plates are largely re-rolled and used in the construction industry. They are able to offer a higher price than other countries (developed) because the laws governing the civil construction are not as stringent and the steel is reused with a minimum of rework. Ship breaking is mostly carried out as beached operations with a minimum of mechanical input. It is highly labour intensive. These countries have cheap availability of labour, lax environmental regulations (beached operations are highly polluting) and low safety requirements.

There exist around 77,000 ships of more than 100 DWT (Dead Weight Tonnage). They can be broadly classified as Tankers (product, crude, chemical and gas), Bulk carriers, Combined carriers, General cargo carriers etc.They are owned by a plethora of owners whose holdings keep changing, the track of which is kept by various organizations.

Scrapping is the most difficult decision for a ship owner to make. He comes to this decision when the continued operation is not economically viable in the present and the foreseeable future and the lack of buyers in the second hand market for further trading. This decision is dependent upon the inter relationships of several factors:-Political, Economic, Social, and Technological which in turn include Trading profitability, Life extension costs as a result of environmental regulations , survey classification societies regulations (insurance) , Age, Obsolescence , Second hand prices and the scrap market prices.

➢ ***THE MARKET FOR SCRAP SHIPS***

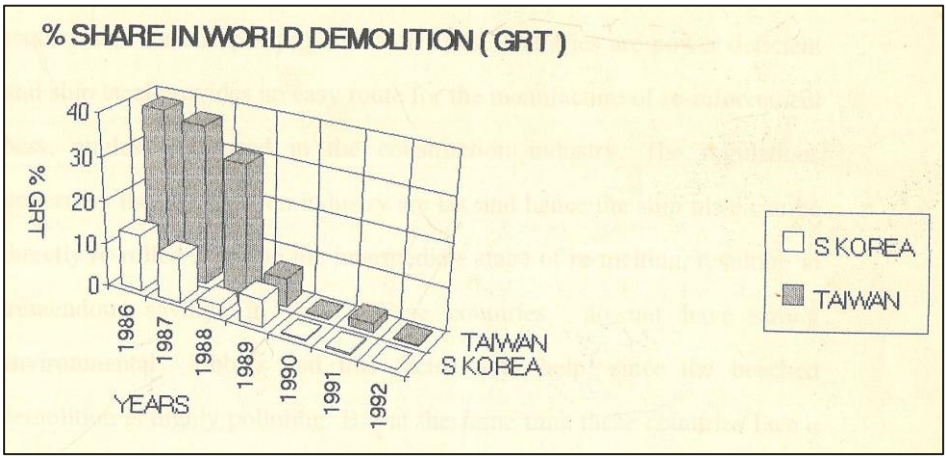
✓ **Historical Perspectives**

Though Taiwan was in the demolition market since the 50s. it came into its own in late 70s and early 80s. It emerged as the largest market for scrap ships during this period which was not due to chance but as a result of its economy taking off and the ship scrap provided a cheap source of steel. The ship breaking facilities were relatively sophisticated. The ship breakers had formed a cartel to force the prices down and this was possible at least for a limited period due to its dominance in the market. After a series of serious accidents, the regulations about ship breaking became stringent, and was one of the reasons for it being priced out of the market. At the same time as its economy became more sophisticated, the demand for this inferior steel decreased and the ship breaking operations became unremunerative with the increase in labour costs.

S.Korea too followed the same path but always played second fiddle to Taiwan. These countries reinforce the argument that the market for scrap ships is transient and the industry is viable only as long as a nation is in the developing stage.

SHIP BREAKING IN TAIWAN AND KORIEA

	1986	1987	1988	1989	1990	1991	1992
COUNTRY	GRT	GRT	GRT	GRT	GRT	GRT	GRT
S KOREA	2,658,960	1,253,870	116,522	158,312	3,798	8,320	1,550
TAIWAN	7,773,450	4,414,564	1,521,397	163,976	2,373	47,842	



- ✓ **The above graph shows the decline in their dominant positions and this coincides with their emergence as developed economies.**

1.2.2 PRESENT MARKET

The market since the late 80s has been dominated by the countries in the sub-continent and China. The reasons for this development are not far to seek. These countries have long coastlines, which facilitate the beaching of ships. They have abundant supply of cheap labour which is willing to carry out the demolition in highly hazardous conditions. All of them are in the process of various stages of development, entailing the requirement for cheap supply of steel. These countries are power deficient and ship steel provides an easy route for the manufacture of re-inforcement bars, angles etc., used in the construction industry. The regulations governing the construction industry are lax and hence the ship plate can be directly re-rolled skipping the intermediate stage of re-melting, resulting in tremendous savings in costs. These countries do not have strong environmental lobbies and this factor does help, since the beached demolition is highly polluting. But at the same time these countries face a common problem—scarcity of foreign exchange.

Turkey, Greece and Spain are major players in the ship demolition market in Europe but they are severely handicapped in relation to the countries in Asia.

➢ 1.2.2.1 GEOGRAPHICAL SEGMENTATION OF THE MARKET

✓ INDIA

India has been specially important in the small ships market. The reasons behind this are varied. These ships are easier to dismantle and the credit exposure is limited. The percentage of non-ferrous content is higher in these ships. Hence they prefer gen. cargo ships, handy size tankers and bulk carriers and chemical carriers. The breakers are particularly keen on chemical carrier tonnage, especially ships with high stainless steel content in their cargo tanks. It is expected to dominate in this market as a renewal of world's chemical fleet is under way. The breakers also continue to maintain a keen demand for small vessels with light displacement of 6,000—12,000 tons. Ships built in Western shipyards are preferred because they tend to have a higher non-ferrous content. Of late this market has become a bit selective about the quality of ship scrap. VLCCs and CAPE SIZE bulkers are not preferred by the breakers. This is due to the larger investment required and a larger element of risk involved. At the same time the percentage of non-ferrous content is less and the credit facility may not be available.

Prior to 1991, the ships were purchased through a central agency but now this procedure has been dropped. The breakers are free to import the ships for scrap. Of late, a few VLCCs have been bought. There is a huge market for cheap steel, since there are over 1000 re-rolling mills which at present are running at only 20% of their capacity due to shortage of cheap inputs. It has foreign exchange constraints but its main advantage lies in the availability of cheap labour.

The principal demolition centre is Port Alang. There are around 90 yards with a capacity of 200 ships per year. There are other centres but are not so prominent. The demolition process is quite primitive by any standards but then it may well be the reason for it being profitable.

ANALYSIS OF VESSELS BROKEN UP (1987-1992)

	TOTAL		TANKERS		BULK/ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	87	1520	2	115	29	829	56	576
1988	52	837	7	151	9	333	36	353
1989	53	911	9	347	10	184	34	379
1990	102	1888	16	562	21	689	65	637
1991	74	1282	7	333	14	358	53	591
1992	135	3617	43	2167	17	546	75	904

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

The above table shows the preference of Indian breakers for small sized ships especially general cargo ships, with their higher non ferrous content.

➢ PAKISTAN

It was a major player in the not too distant past, though of late, it has been playing a subdued role. Small ships do enjoy a premium. In the market for larger tonnage, it is second only to China. VLCCs. Suezmax tankers, combination carriers and Cape Size bulkers do have a strong demand. There is a huge demand for scrap from the re-rolling mills in Punjab.

The products from ship scrap enjoy a price advantage of nearly 30% over other means, even after the 1,000 Rs / ton duty on ship import for scrap.

The ship breaking activities are carried out on Gadani Beach near Karachi. There are more than 100 yards. All the activities are carried out, without any supply of electricity or water.

ANALYSIS OF VESSELS BROKEN UP (1987-1992)

	TOTAL		TANKERS		BULK/ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	124	1123	17	255	9	252	98	616
1988	61	419	10	76	9	175	42	169
1989	14	330	4	286	1	17	9	28
1990	5	48	-	-	1	16	4	32
1991	19	1078	6	631	6	398	7	49
1992	30	2209	19	1908	6	255	5	45

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

It occupies the last position among the four leading countries in the demolition market. In the last couple of years, it has become a prominent player in the VLCC and Cape Size bulk carrier market.

✓ **BANGLADESH**

It is in the market for Suezmax and Cape Size bulkers and tankers. It competes strongly with India in the small tonnage market. It has also been active in the VLCC market. One reason that Bangladesh is into the market for large ships is that steel /LDT is cheaper than for small ships.

There are around 15 scrap yards situated around Chittagong. Crude re-rolling mills are situated near the demolition yards and in most cases are owned by the demolition yards, a case of horizontal integration. It does not have the capacity to absorb all of the steel scrap, and there is a view that some of it is smuggled across the border to India.

ANALYSIS OF VESSELS BROKEN UP (1987-1992)

	TOTAL		TANKERS		BULK/ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	35	509	3	60	4	161	28	288
1988	49	682	10	288	3	55	36	339
1989	34	744	5	297	2	195	27	253 .
1990	22	390	3	151	-	-	19	239
1991	34	692	4	311	2	32	28	349
1992	42	2516	16	2124	3	113	23	280

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

Of late, it has made its presence felt in the Cape Size and VLCC market, but there is a strong demand for gen. cargo vessels.

There is no danger of these countries forming a cartel because of the antagonism that exists amongst them. In fact it is possible to play off one against the other.

✓ CHINA

It has been active in the market since the 80s. Its appetite for steel had been insatiable. Since 1991 it had overtaken the countries in the Subcontinent as the leading market. It has tended to concentrate on the larger tonnage especially VLCCs because of the flat plate which requires minimum of rework. The largest buyer is Minmetals. The other majors are China National Ship breaking Corporation and Shangai Corporation. The provincial Govt. too are in the market. Though all the organizations are govt. controlled, they do bid aggressively for tonnage. The presence of China is paramount to the health of the demolition market. Its economy has woken up from its slumber and as a result it has been importing steel from many sources. It has mainly concentrated on tankers and large bulkers. It is mainly interested in the steel content of the ships.

Typical of China's massive development in recent years, the authorities centralized in Beijing overseeing the ship breaking industry are seeking overseas finance and management techniques for the demolition facilities and on numerous occasions, approached the major finance centres for funds primarily aimed at building and developing such yards.

Although there is relatively little to be done in building a ship breaking yard, to develop and continually operate it does need financial support. Instrumental in helping to initiate China's breaking boom has been the International Maritime Industries Forum (IMIF) which has held talks with the China National Ship breaking Corporation (CNSC) and convinced it of the need to more than double its existing breaking capacity to over 4 million light weight tones by end of 1994 , provided sufficient funds were available.

The Guangzhou shipyard, reputedly one of the largest shipbuilders and ship repairers, is to build its own breaking complex at Xinhua. In addition to this, World Bank, Taiwanese, Hong Kong and Japanese industrial groups are either financing or having joint ventures in new facilities. All these developments indicate that China will be hungry for tonnage.

Of late, due to the overheating of the economy, efforts are being made to slow down the growth. It has also been facing foreign exchange problems. As a result, China has been effectively out of the market for the last two months, and the demolition market especially for VLCCs has gone into a tailspin. But the feeling is that China will come back into the market sooner than later.

✓ **ANALYSIS OF VESSELS BROKEN UP (1987-1992)**

	TOTAL		TANKERS		BULK/ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	72	2439	19	1209	25	953	28	277
1988	27	1259	9	1120	1	1	17	138
1989	19	927	5	727	2	58	12	142
1990	2	20	-	-	1	15	1	5
1991	7	437	3	326	2	106	2	6
1992	80	7090	32	4895	29	1965	19	230

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

It shows a strong preference for tankers. This is because tankers are constructed of flat plate and this requires very minimal re-work.

- ✓ **Thailand**

It has been a surprise entrant to the market. It has recently bought large tankers. It does not have any serious currency problems but its relatively higher labour costs may be a deterrent.

ANALYSIS OF VESSELS BROKEN UP (1987-1992)

	TOTAL		TANKERS		BULK/ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	14	619	8	507	2	88	4	24
1988	2	289	1	276	-	-	1	13
1989	7	619	6	616	-	-	1	3
1990	1	8	-	-	-	-	1	8
1991	4	59	1	25	1	22	. 2	12
1992	2	16	1	1	-	-	1	15

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

Though its presence in the market has been minimal so far, it is expected to become an active player in the large sized ship market.

- ✓ **Southern Europe**

Turkey and Greece are the major players but they are restricted to small ships or to ships in distress. This is because the price per LDT is half of the Subcontinent's. Higher labour costs and stricter regulations make the operations on a large scale unviable.

ANALYSIS OF VESSELS BROKEN UP (1987-1992) TURKEY

	TOTAL		TANKERS		BULK / ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	44	414	4	60	7	130	33	224
1988	40	287	8	99	6	93	96	96
1989	25	221	5	31	9	144	11	47
1990	14	72	-	-	-	-	14	72
1991	16	134	3	43	1	27	12	64
1992	14	258	5	148	2	41	7	69

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

ANALYSIS OF VESSELS BROKEN UP (1987-1992) SPAIN

	TOTAL		TANKERS		BULK /ORE		OTHERS	
YEARS	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1987	20	134	3	7	1	53	16	74
1988	15	282	4	102	2	133	9	48
1989	13	16	2	3	-	-	11	14
1990								
1991								
1992	3	13	-	-	-	-	3	13

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

✓ Future Developments

Vietnam, Philippines and Indonesia are expected to enter the market in a big way in the near future. The former American bases in Philippines offer good facilities for this activity to be carried out. Vietnam is opening up its economy and will be needing cheap sources of steel. The market is most likely to be for large tankers and bulkers.

S. Korea's joint venture firm, Milcon Gulf & Prime Consolidation Ltd, has approached the Philippines Government with a plan to develop a ship breaking centre at Pollok in the southern province of Maguindanao. While still in its preliminary stages, the plan is likely to get the nod from the govt, as it has already detailed ship breaking industry as one which would help improve the financial and commercial stature of Philippines in the short-term future.

In Vietnam, Hitachi is starting a joint venture in Da Nang. The venture is in co-operation with two Hong Kong companies. IHI and Jurong Shipyard of Singapore have bid jointly to set up a breaking yard.

The reason why Japanese yards are getting into the act of ship breaking is that by getting rid of the old tonnage, demand for new ships to be built in their yards will be increased.

✓ 1.2.2.2 Uses of Ship Steel

Ferrous scrap has two principal uses------- re-melting (steel industry use) and re-rolling (construction industry use). The changing nature of steel production and steel consumer demand has forced scrap-based steel makers (essentially electric arc furnace and mini-steel mills) to look increasingly to the quality of their ferrous scrap intake. Historically , ship plate was thought of as an attractive source of such material. However such buyers are now faced with the legacy of the age of minimum specification ships, which has pushed ship derived scrap into the last category of source material. The re-roll sector also faces difficulties in terms of source material quality, but the problem is exacerbated by the availability of highly competitive reinforcing bars made from virgin steel.. As a result , ship scrap can only hope to compete with low value products.

It came as no surprise therefore that during the late 80s the high technology ship scrap centers in Taiwan, Japan and S. Korea disappeared from the market. There is very little commercial prospect of their coming into the market in a big way. As a result, ship breaking is now beach oriented, labour intensive, focused on countries facing foreign exchange crisis and in many respects, somewhat primitive.

➢ RECOVERIES FROM SHIP BREAKING

According to a study conducted by Japan Association Of Ship Scrapping Promotion in 1991, a 16000 LDT vessel Provides 15,000 tons of re- cycling materials as follows:

	MATERIALS - GROUP - WISE		
MATERIALS GROUP	RECYCLABLE TONNAGE	% SHARE OF RECYCLABLE TONNAGE	% SHARE OF GROSS LDT
Used steel Material	850	5.67	5.31
Re-roll able Steel Material	9000	60.00	56.25
Steel Melting Scrap	4500	30.00	28.13
Cast Iron	190	1.27	1.19
Forged Steel	170	1.13	1.06
Non-Ferrous Scrap	120	0.80	0.75
Others	170	1.13	1.06
TOTAL	15,000	100.00	93.75

These figs, are based on the international practice followed in respect of scrap. The position in the SUBCONTINENT and CHINA is different when even small sizes are used for re-rolling rather than melting. This practice is more cost effective as re-rolling mills require less investment while if it had been used as re-melting scrap it would have been more expensive, since Electric Arc Furnaces are more sophisticated and highly energy intensive.

➢ 1.2.2.3 DETAIL OF RECOVERIES FROM SHIP
➢ DEMOLITION IN CHINA AND SUB CONTINENT

Ship demolition has emerged in these countries as the cheapest source of supplementing availability of steel as against the other routes of production through setting up of integrated steel plants or importing steel melting scrap for feeding the electric arc or induction furnaces.

✓ THE FERROUS SCRAP MARKET

It is prudent to appreciate that the scrap ships form a small part of the overall steel scrap market. "The key factor in the whole scrap ship conundrum is that while ship scrapping is now very important to the well-being of the shipping industry, ship scrap is virtually irrelevant in the pricing mechanism of the global ferrous market. The latter dictates price levels and puts a ceiling on the price ship breakers can afford to pay." This statement is true for the developed countries but only to a limited extent in the developing countries. As far as the developing countries are concerned, the machinery and the non ferrous material do play a part in the higher premium prices paid. At the same time , the ship steel is for the most part re-rolled and not re-melted which also justifies the higher prices paid by the developing countries. The advantage ship scrap has over other scrap in the developing countries is that re-rolling is not energy intensive unlike the electric arc furnace.

MAIN IMPORTERS OF SCRAP AND SHIP DEMOLITION

	1987		1988		1989		1990		1991	
COUNTRY WHERE DEMOLISHED	SCRAP IMPORT 000TON	'000 DWT	SCRAP IMPORT 000TON	'000 DWT	SCRAP IMPORT 000TON	'000 DWT	SCRAP IMPORT 000TON	'000 DWT	SCRAP IMPORT 000TON	'000 DWT
CHINA	498	2439	485	259	470	927	155	20	203	437
INDIA	1800	1520	1846	837	2046	911	2245	1880	1250	1282
BANGLADESH	-	509	-	682	-	744	-	390		692
PAKISTAN	458	1123	-	419	-	330	-	48		1078
TURKEY	2830	414	3037	287	3200	221	3650	72	4443	134
TAIWAN	766	9357	1236	2392	1553	104	1285	35	2262	191
THAILAND	750	619	1158	289	1200	619	1300	8	1300	59

Source: IISL, Lloyds laid up list

In India and Thailand, the ship scrap forms a small percentage of the total scrap imports. Hence there is scope for more ship demolition. Though Turkey appears to be a good market for scrap ships, other factors like higher labour costs, govt, regulations make it unattractive. The same argument holds true for Taiwan. China has become a prominent player in the demolition market in the last two years because of the construction boom in the country even though its scrap imports are minimal. Pakistan and Bangladesh have negligible scrap imports but are dominant players in the demolition market.

LANDED COST OF FERROUS SCRAP / DEMOLITION PRICE PER LDT (US $ / TON)

	YEAR	1988	1989	1990	1991	1992
AREA						
FAR EAST		143.75 --- 239.20	144.60 --- 243.80	142.90 --- 197.30	127.10 --- 156.70	133 --- 145.80
SUB CONTINENT		146.25 --- 230.50	145.60 --- 252.70	138.40 --- 240.60	124.10 --- 171.00	129.00 --- 155.60
SOUTH EUROPE		84.50 --- 121.30	101.20 --- 127.50	123.55 --- 119.40	111.40 --- 85.00	114.00 --- 80.00

Source: Drewery Consultants

The difference between the two is narrowing down in both the sub continent and China. But the ship LDT still has a premium and this is excluding the costs of

Cutting the ship down. This is due to the "extras" in the ship and cost advantage of ship plate in re-rolling (around 30%).

DETAILS OF RECOVERIES FROM SHIP DEMOLITION

DESCRIPTION	WEIGHT (TONES)	PERCENTAGE
Light Displacement (LDT) Tonnage Of Ship Dismantled	20,000 (Assumed)	100%
Recoveries:		
a) Scrap of Re-rollable quality	12,000	60%
b) Steel Melting Scrap	1,200	6%
c) Cast Iron Scrap	1,200	6%
d) Non Ferrous Scrap	300	1.5%
e) Equipment and Machinery	1,700	8.5%
f) other Items Including Wood, Furniture etc.	800	4%
g) Burning and Cutting Losses Including Damage etc.	2,800	14%

END USERS OF SHIP SCRAP

SERIAL NUMBER	ITEM	INDUSTRIAL SECTOR
1	Reroll able Scrap	Rolling Mills
2	Steel Melting Scrap	Electric Arc And Induction Furnace
3	Case IronScrap	Iron Foundries
4	Non-Ferrous Scarp	Non-Ferrous Foundries
5	Equipment And Machinery	Sold As Spares
6	Other Items Including Wood, Furniture etc.	Sold In The Local Market

Source: - Steel Scenario V0l.2 / Q3

1.3 THE SOURCE FOR SCRAP SHIPS

✓ 1.3.1 BEHAVIOUR OF THE OWNERS

Ship owners will often say that the decision to sell a vessel for scrap or lay a vessel up is one of the hardest to be made. The collapse of freight rates, concerns over ageing tonnage and the exposure to unlimited liability under the US pollution act of 1990 have played no mean part in the increase of tonnage sent to scrap yards. In the tanker markets, charterers are becoming increasingly selective about the ships because of the abundant supply of good tonnage. As a result it is the older tonnage which is being left of the charterers lists and have increasingly been laid up or sold for scrap.

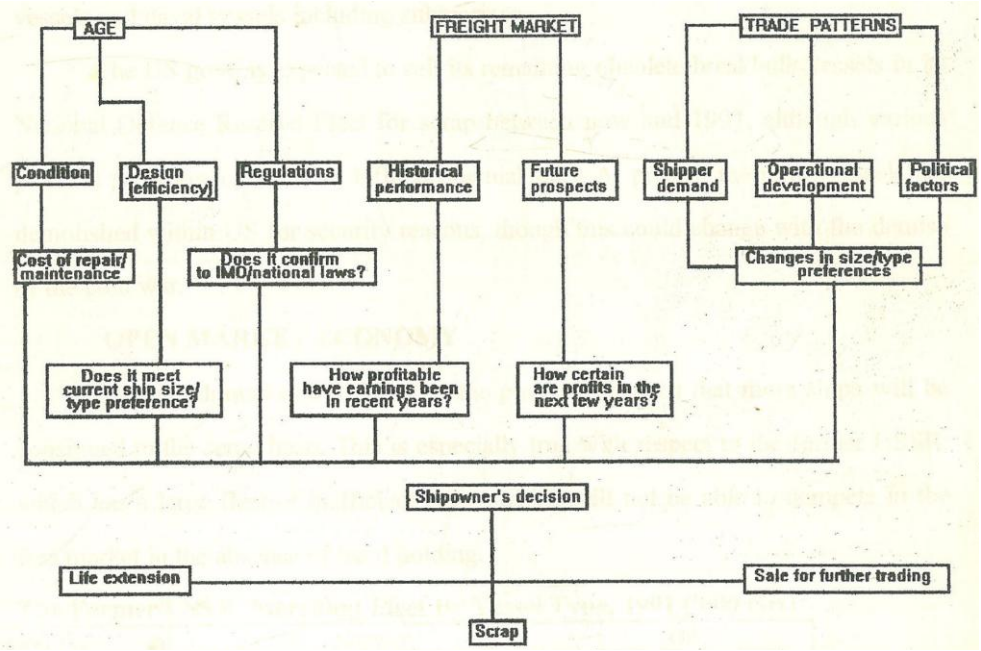
It is proving an enduring paradox that factors encouraging ship owners to scrap tonnage vastly outweigh those promoting continued operation of overage ships, but owners are still hesitant about scrapping. The reasons are varied.

Ship owners are an optimistic breed by nature and are loath to shy from the belief that something positive will turn up to encourage them to continue operating vessels ordinarily destined for break-up. The proliferation of vessel debt within the industry is one reason owners try to avoid the scrapping options. A lot depends on when a vessel was bought and for how much, as well as its current earning potential and what the owner foresees for the future. History has shown that owners will continue to avoid scrapping as long as there are sectors of the chartering market willing to accept lower quality tonnage.. Financial considerations are the main deciding factors behind an owner's decision to continue to trading a vessel or to scrap it. Scrapping becomes more attractive when insurance premium and maintenance and repair costs rise to sufficiently unattractive levels and when the charter market for older vessels, with its lower levels of cash flow, dries up.

A lot of Greek ship owners bought older VLCCs in the mid 80s when the cost were slightly above the scrap values. These owners have recovered their investments many times over and have the sustaining capacity to lay up their ships and wait for scrap prices to increase, if they feel that the prices being offered by the ship breakers are too low.

➢ 1.3.2 SCRAPPING DECISION PROCESS.

The fig. shows the factors and their relationship in the process. The three main groups are 91) Physical Characteristics (2) Freight Market (3) Trade Patterns.



Source: Drewry Consultants

1.3.3 FACTORS DETERMINING SCRAPPING

They can be broadly classified under Political, Economic, Social and Technological groups.

POLITICAL FACTORS

END OF COLD WAR AND CHANGE IN POWER EQUATIONS

This has resulted in making a substantial part of both USA and the former USSR defense fleets redundant. The CIS states are on a selling spree of both support vessels and naval vessels including submarines.

The US govt. is expected to sell its remaining obsolete break bulk vessels in its National Defense Reserve Fleet for scrap between now and 1997, although various political pressures continue to influence actual sales At present the naval vessels are demolished within US for security reasons, though this could change with the demise of the cold war.

OPEN MARKET ECONOMY

The withdrawal of subsidies by the govt. will mean that more ships will be consigned to the scrap heap. This is especially true with respect to the former USSR, which has a large fleet of inefficient ships, which will not be able to compete in the free market in the absence of hand holding

The Former USSR merchant fleet By Vessel Type, 1991 ('000 Grt)

Vessel Type	NUMBER	GRT
Oil Tankers	453	3,924
Other Tankers	26	186
Bulk Carriers	172	2,863
Combined Carriers	59	1,038
General Cargo Ships	1,288	5,404
Container Ships	60	637
Ro-Ros	178	1,858
Refrigerated Cargo Ships	327	1,913
Passenger Ships	238	321
Fishing Vessels	3,197	5,720
Other Vessel Types	1,379	2,541
TOTAL	7,377	26,405

Source Lloyd's Register Statistical Tables 1919

ECONOMIC FACTORS

- **FREIGHT MARKET**

The freight market is directly dependent on the shipping capacity available. The more the excess capacity, the lesser the freight rates.. The freight rates play a large part in an owner's decision whether to go in for scrapping or go in for a life extension. Even then it is done only when there is no likelihood of recovery in the future. And that it has lasted for a long period.

- **THE TANKER MARKET**

The massive increase in oil prices in the 70s led to decreased oil consumption in the world. As a result there was a overcapacity especially in the VLCC/ULCC sector which effected the freight rates very badly. Consequently, a large volume of tonnage was scrapped during the early to mid eighties. The Gulf war (IRAN—IRAQ) was also a factor in sending many ships to the scrap yard. The oil prices dropped dramatically in the mid-80s and the freight rates improved due to increased volumes being transported and the reduced capacity as the result of large-scale scrapping in the early 80s.

- **THE DRY BULK MARKET**

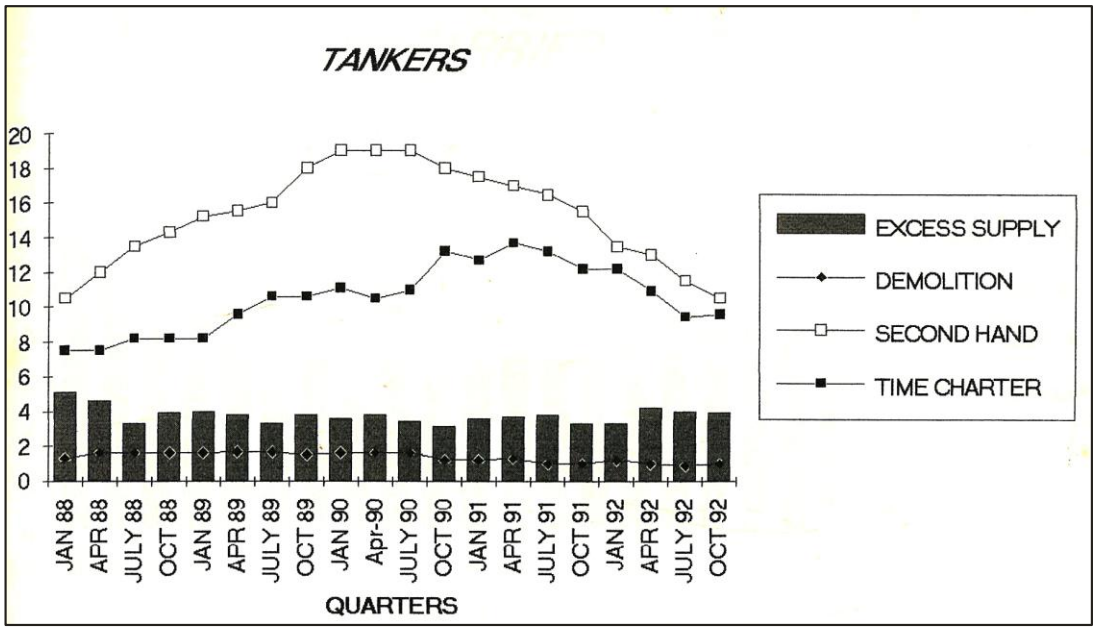
The freight market for bulk carriers was depressed in the early 80s. It was largely as a result of over ordering of new vessels. Consequently a large tonnage was scrapped in the mid-80s. In the late 80s, the world economy improved and the freight rates rose due to increased trading, and scrapping levels dropped.

➢ TWO-TIER FREIGHT MARKET

This already exists in many segments. This may occur due to the age, poor condition or not conforming to the regulations of certain countries like USA. This means that certain ships are permanently disadvantaged in their earning capacities. As a result, when freight markets are depressed, these ships will be the prime candidates for the scrap yards.

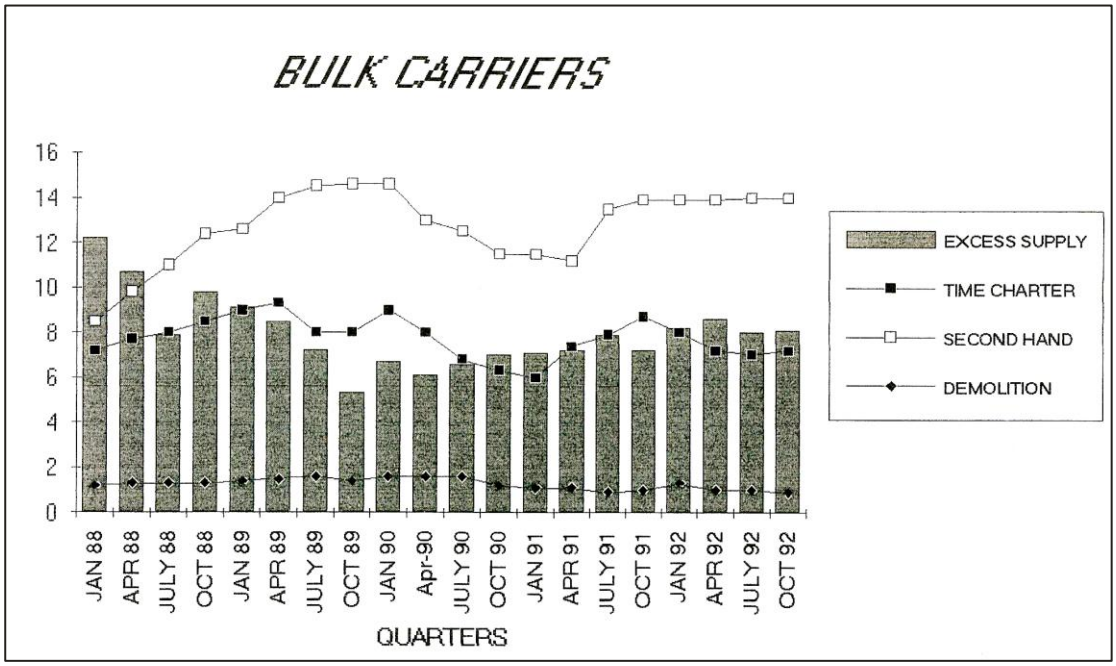
➢ THE SECOND HAND MARKET

When the freight rates are low, the market for second hand ships remains poor and weak. In the mid 80s, when the freight markets had remained weak, the prices for 5 year old ships collapsed dramatically after a long period of poor freight tariffs. In 1986, consequently the price for a 15 year old ship which under normal circumstances would have been sold for further trading was sold for scrap since the price had fallen to that of scrap value. This was also done with the view to pre empty competition from prospective buyers taking advantage of the depressed market in second-hand tonnage.



KEY:- SOURCE :- Lloyd's Shipping Economist

EXCESS SUPPLY	–	'000DWT (10,000-39,999 DWT TANKERS)
TIME CHARTER	–	1 YEAR ($ / DWT/MONTH) FOR 30,000 DWT)
SECOND HAND	–	1980-81 BUILT ($ MIL) 32,000 DWT
DEMOLITION	–	FAR EAST ($MIL) FOR 32,000 DWT



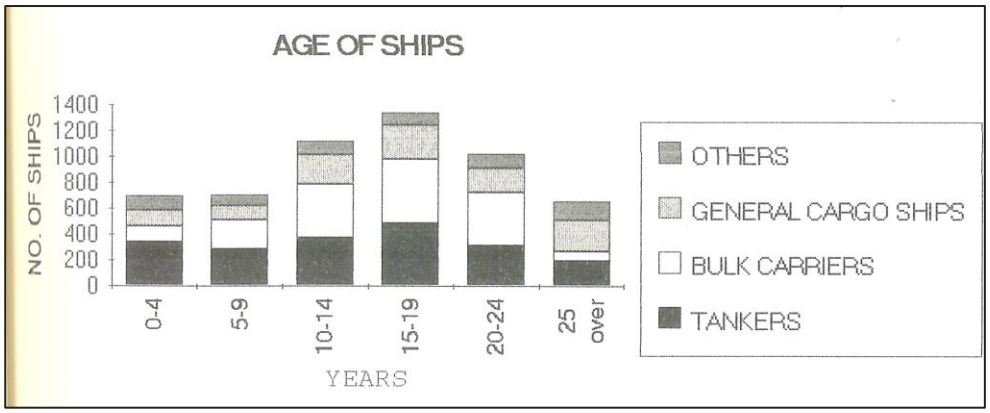
KEY:- SOURCE :- Lloyd's Shipping Economist

EXCESS SUPPLY	–	'000DWT (10,000-39,999 DWT BULK CARRIERS)
TIME CHARTER	–	1 YEAR ($ '000 PER DAY FOR 30,000 DWT)
SECOND HAND	–	5 YEAR OLD ($ MIL) 30,000 DWT
DEMOLITION	–	FAR EAST ($MIL) FOR 30,000 DWT

➢ PHYSICAL FACTORS

AGE

It is the predominant factor in an owner's decision to scrap. There exists a strong correlation between a ship's age and its condition, though there are exceptions. The exceptions are owned or managed by contentious ones. But the older ships do get uneconomical to operate. This is due to increased fuel and lube oil consumption, difficulty in obtaining spares and increased manning requirements. They will not conform to the new regulations and as a result will not be able to operate in the more remunerative trades. The insurance premiums also get higher.



Source: - ISL 1993

Tankers = Oil, Chemical, liquid gas tankers
Bulk Carriers = Bulk and OBO Carriers
General Cargo Ships = Multi - Deck and single - Deck, Special, Reefer and RORO Ships
Others = Container Ships, Passenger, RORO - passenger and Cargo - Passenger ships

➢ REPAIR AND MAINTENANCE

When the freight market is weak, the ship owners in order to make their balance sheets look better invariably adopt the short term method of cutting down on preventive maintenance and this effectively shortens the useful life of the ship. The maintenance, once neglected, in most cases is irretrievable and this factor will be primarily responsible in the increase in scrapings in the 90s which is a result of prolonged weak freight rates in the 80s.

➢ SURVEYS AND LIFE EXTENSIONS

In order to be covered by insurance, it is mandatory for ships to be registered with classification societies. These societies carry out surveys at regular intervals, to make sure that the vessels confirm to the classification society's standards. As the vessels get older, (by 3 or 4 survey) the maintenance costs get stiffer and the vessels have to be taken out of trading to carry out the maintenance. For fourth special survey, the best maintained VLCC requires a steel renewal of 50-100 tons at a cost of around $2 million. But there have been "frightening examples " of steel renewals of upto 500 tons costing $10 million, adding some $10000/day to operating costs over a 5 year period. With earnings for a VLCC down to $16000/day, such a proposition makes little economic sense, especially with so much uncertainty surrounding the future of the tanker freight market.

➢ SOCIAL FACTORS

DECLINE IN SPECIFIC TRADES

The ban on exporting of timber by many countries in the interests of environment has resulted in making many log carriers superfluous. These ships are not suitable for other trades and scrap yards are the only alternative.

➢ LEGISLATION

USA has the strictest regulations regarding the type of ships that can operate in its waters. As it is, ships without sewage treatment systems and incinerators have difficulty in trading in US. The recent requirement for double hull tankers will make many ships unsuitable for USA which is the largest importer of oil.

➢ TECHNOLOGICAL FACTORS

✓ DESIGN & EFFICIENCY

The conventional cargo ships have been rendered obsolete with the increasing popularity of container vessels and suffer from a permanent economic disadvantage as a result of the longer port stay and the manpower required in loading and discharging of the cargo. Bulkers and tankers which have low deballasting capacity have to pay higher dues in ports where the loading rate is high as compared to modem ships whose deballasting capacities are high.

✓ CHANGES IN VESSEL TYPES AND SIZE PREFERENCES

The changing trade patterns can make some ships obsolete. Increasing popularity of containerization has meant the decline of the conventional gen. cargo ships. The deepening of Suez Canal has resulted in the demand for larger ships by the owners for reasons of economy, making much of the smaller vessels obsolete.

CHAPTER II

THE OPERATION OF THE MARKET

✓ 2.1 The buyers' priorities and perspectives

The market for ship scrap, to a certain extent, is one of derived demand. It is to a large extent, dependent on the construction activity in the country which in turn is dependent on the state of the economy.

The principal countries in the demolition market have currency restrictions and the activity is determined by the priorities of the respective Govt.

India leads the way in the small ship demolition market as the Govt. has become increasingly reluctant to allow letters of credit to be released for the payment of large ships. Pakistani breakers are complaining that re-rolled steel from ship steel is being put at an unfair disadvantage compared with ferrous scrap steel because of the considerable taxes on the import of ships (Rs 1000/ ton) for scrap while ferrous scrap steel can be virtually imported tax free. Moreover the Govt. keeps varying the security for the Letter Of Credit. At present the rate is 30%, though it has gone upto 60% in the not too distant past. This is one of the ways in which it regulates the market.

Chinese breakers have to work on the unofficial exchange rate, while the official one is available to tourists only. The difference between the two is nearly double. Chinese breakers are increasingly finding it difficult to obtain US dollars. The banks have become increasingly reluctant to advance credit, and some Japanese Trading Houses have stepped in.

The market in the subcontinent becomes rather subdued during and immediately after the monsoons. The Chinese market becomes more active towards the end of the year when the breakers go on a buying spree to use up the full allocated foreign exchange.

➢

CEMENT CONSUMPTION VS DEMOLITION

	1989		1990		1991	
COUNTRY	CEM	DEM	CEM	DEM	CEM	DEM
CHINA	211092	477	205280	82	232982	172
INDIA	44.477	678	47087	1092	49800	696
PAKISTAN	7215	38	7488	1938	7769	445
BANGLADESH	1859	347	1811	217	1758	512
INDONESIA	11412	30	13779	7	15802	12
PHILIPPINES	6010	2	7348	21	6937	0
THAILAND	15150	34	18960	16	22149	41
VIETNAM	1770		1690		3250	

KEY: -

SOURCE:- LLOYD'S CASUALITY RETURN 1992
EUROPEAN CEMENT ASSOCIATION

DEM = DEMOLITION ('000 GRT)
CEM = CEMENT CONSUMPTION ('000 TONS)

In the subcontinent and China, the steel from ships is mainly used in the construction industry. From the above table, there does not seem to be a direct correlation between the construction activity and the ships demolished. Other factors like the availability of ships, foreign exchange, and Govt. priorities also affect the demolition market and the three year period is too short a time to find a definite relationship. This is compounded by the transient nature of the demolition market. But taking Bangladesh as the basis for comparison, there does seem to be a huge market in countries like Vietnam, Philippines and to a certain extent Indonesia and Thailand, which have the facilities and advantages similar to the present market.

To be cost effective, it is also dependent on the regulating bodies turning a blind eye to the environmental consequences of demolition, quality of steel in construction and the employment practices.

The prices paid by the breakers are dependent on the price of steel plate in the local markets. Scrap ships are traded as a commodity whose prices are determined by demand and supply. This is largely true of the Chinese market. In the subcontinent, the ships do reach the level of a product. But in their particular class, they are bought as a commodity. Smaller sized ships command a higher price because of the lesser costs and risks associated with them. The price is also dependent on the yard in which the ship was built, with the Western yard ships enjoying a premium because of the higher non ferrous content and the quality of construction.

✓ 2.2 Ship owners' priorities and perspectives

Price plays a crucial role in the choice of whom to sell to when a ship-owner finally decides to sells ship for scrap. The following scenario explains the owner/s decision to sell his ship for scrap.

"Freight rates remain flat. More vessels are entering permanent layup. Repair prices are still high and berths scarce. Regulatory pressures which will require ships to be updated are increasing, while classification societies are enhancing their survey requirements. Most societies will now demand stringent survey requirements for reactivation, so a decision to lay up is a far more serious decision than hitherto.

Charters of all types are becoming nervous about taking vessels sight unseen and demanding inspections.

All this presents the owner with an unappealing combination of cost pressures which measured against the rate expectations for the older ship which point increasingly towards the demolition berth."

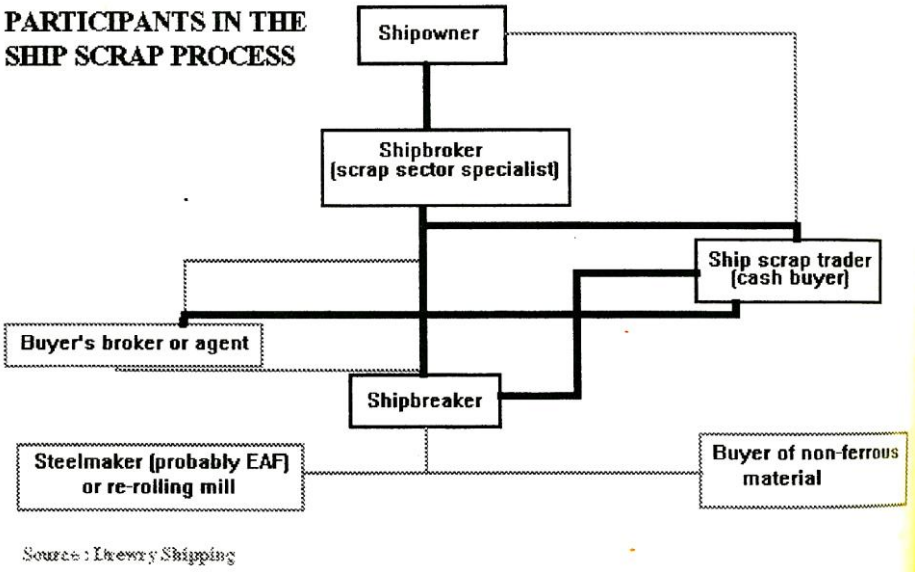
Until recently the owners of large ships had an easy choice to make, since China's breakers were able to offer prices far in excess of its rivals as the bubbling Chinese economy continued to demand greater supplies of steel. At the higher prices ships were sent to China in ballast on the basis of partial Gas-Free Certificates (i.e. safe for human entry, but not for hot work) the higher prices made it worth the extra cost of steaming to China. But in parts of the Subcontinent and in Thailand

(A surprise in the demolition market), fully Gas-Free Certificates are being sought. This has the effect of increasing the costs to a seller by $20 / LDT. For an owner of a tanker selling for scrap, if a cargo cannot be found for the Far East and the prospect of sailing in ballast is the only hope, the voyage to Thailand is shorter, but whether the costs of obtaining the gas- free certificate, makes Thai breakers competitive with respect to Chinese breakers is questionable.

➢ 2.3 THE MECHANICS OF TRANSFER

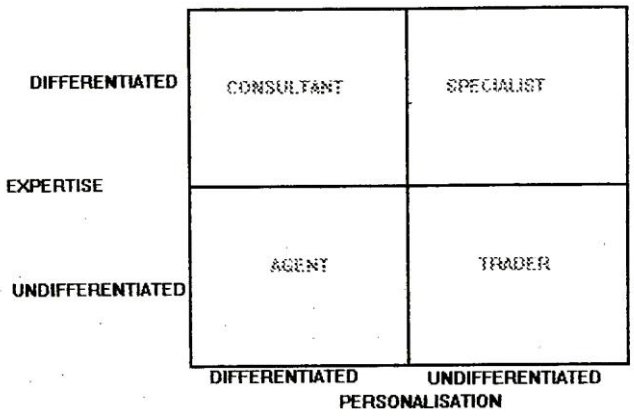
Once a ship owner has decided his vessel to be obsolete---------- whether the decision has been made on conclusions based on political, economic, social or technological grounds, the process of sale to the breaker has to be commenced.

➢ 2.3.1 PARTICIPANTS IN SHIP SCRAP PROCESS



The emphasized part of the chart shows the most common method of transaction. The ship broker's role is important to the owner who follows this process. There are other ways too.

The Ship Broker's Role



Source: S.S Mathur

The demolition broker considers himself to be operating in the consultant mode but the brokers can be classified according to the four categories. In fact the competition derives from this differentiation. The brokers normally operate on 1 to 2 % commission, though there are no hard and fast rules. In the consultant mode, they advise the ship owner on the conditions, pitfalls, legal requirements etc. in the local markets. The brokers generally have trusted agents in the respective countries who keep them advised on the conditions, needs and vagaries in the local markets. The principal role of the broker is to obtain the best deal for the ship owner and the owner may not always go for the highest bid, if the broker advises him on the associated risks.

Most of the brokers are part of the firms which deal in the Sale and Purchase of ships for further trading. These firms do have an advantage because they have already been dealing with the owners.

The larger companies have their trusted brokers which are based more on the personal relationship (e.g. Troodos and Braemar). Some owners invite bids from brokers and there is intense competition between the brokers, and it is not uncommon for a broker to lose on a difference of 5 cents / LDT.

- **CASH BUYERS**

They assume risks involved and purchase the ships outright. Normally they know the markets and how they operate. It is not uncommon to find them involved in counter trade since the customers in the market do face currency restrictions. The prime example is ECHART GMBH of Germany who have excellent relationships with the Chinese breakers. The cash buyers do serve a useful function in the sense the ship-owner gets his money immediately, instead of the normal credit which can be up to 180 days; sometimes they are the relatives of the breakers themselves.

- **BUYER'S BROKER OR AGENT**

This is a rare occurrence, in the sense that the buyer's do not have a regular broker. But sometimes it does occur in the form of relatives of the breakers (subcontinent) acting on their behalf.

- **2.3.3 DOCUMENTATION**

It occupies an important position in the transaction. There are various versions but the major elements are common to them. Each owner or broker uses the version he is comfortable with. The following elements are found in a typical Memorandum of Agreement Document.

- ✓ **Vessel Description**

Type, Flag. Tonnage (LDT, GRT, DWT), Year of build, Builder are specified. The equipment that go along with the ship and the items to be excluded are listed out.

- ✓ **Sale Price and Deposit**

The price is normally quoted in US $. Otherwise the currency is specified. The breaker provides a 10 to 15% deposit of the vessel's costs to show his good intentions. Once arrangements have been completed to provide a satisfactory Irrevocable Letter Of Credit for the full sale price, the deposit is released back to the buyer.

Alternatively should the purchaser default in some way and fail to provide a satisfactory letter of credit, the seller has the option of retaining the deposit.

- ✓ **PAYMENT**

Within a certain period of time, following the completion of negotiations the buyer has to provide proof of the funds available. This is done through the letter of credit (irrevocable). A letter of credit arranges between two banks for what were the buyer's funds to be automatically released to the sellers when certain documents are produced to the seller’s bank within a specified time limit. This letter of credit will quite likely be established with a bank chosen by the seller, having been confirmed by a bank of the purchaser's choice, so that both may be confident of the validity of the document.

➢ FINANCIAL DOCUMENTATION

The letter of credit sets up the conditions to be fulfilled before the funds are released. These consist of:

a. A legal bill of sale
b. Various copies of a signed commercial invoice setting out the vessel's particulars.
c. The vendor's written undertaking to instruct the ship's master or their representatives, to release the vessel to the purchasers, upon the vendor's receipt of the sale proceeds.
d. The vendor's written undertaking to promptly effect the deletion from the registry, following the sale.
e. A message from the purchaser's bank or the local Lloyd's agent confirming that the vessel has arrived at the agreed port and is ready for delivery.

✓ BANK CHARGES

Both the buyers and sellers are responsible for reimbursing their respective banks for the expenses incurred by them.

✓ TAXES

Taxes or fees etc. levied by the ship's registration authority are paid by the seller while those expenses connected with the country of demolition are paid by the buyer.

✓ INSPECTION

The ships are sold on "as is where basis is" and under no circumstances are they to be sold on "subject to inspection "clause. The breaker is provided with the original documents of the ship on which the sale price is based. They should be sold only on "partially gas free basis.

- ✓ **PLACE AND DATE OF DELIVERY**

These would be clearly spelt out. The breaker should be kept informed of the vessel's position and the expected time of arrival at regular intervals.

CANCELLING PROCEDURE

The reasons and the procedure will be clearly spelt out for cancelling the agreement.

- ✓ **DEMURAGE**

The owner may not be able to hand over the vessel for reasons beyond his control. For example, this may occur due to the congestion at the breaker's yard. In such cases a prior agreed sum would be specified and it has to be borne by the breaker.

- ✓ **HAND-OVER PROCEDURE**

This would specify the exchange of funds and the ship. It would also provide readiness stipulations.

- ✓ **RESPONSIBILITIES**

It stipulates when the seller's responsibility ceases and when the breaker's responsibility starts. This is to protect the owner against third party claims.

- ✓ **PURPOSE OF SALE**

It may take the specific form that the vessel is sold for demolition purposes only. This clause is important especially for car carriers where a "scrap and build policy" is followed.

- ✓ **DISPUTE PROCEDURE**

The method of arbitration is specified in case of any dispute arising

- ✓ **GOVERNING LAWS**

Due to the involvement of various nationalities involved in the transaction, the laws governing it are clearly specified.

CHAPTER III

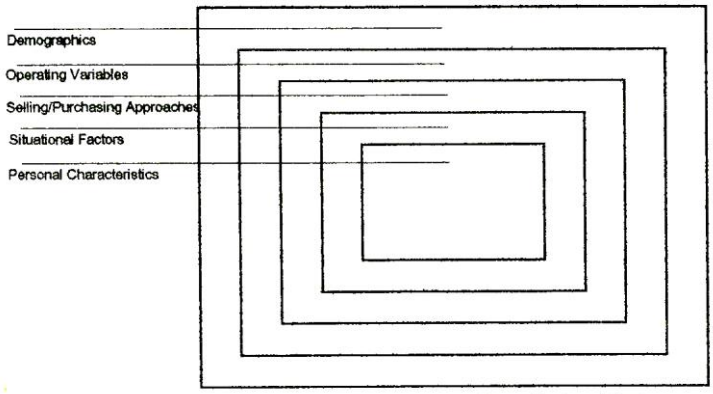
THE RANGE OF MARKET OPPORTUNITIES

When the economy of the world looks up, the freight rates almost immediately increase. This sends the owners scurrying to the builders to order more ships. Ships which had been laid up are brought back into service. All these factors serve to depress the freight market. The freight market is volatile and the in a short time the supply of ships is "accelerated" relative to the change in freight rates.

A better understanding of the market and the opportunities can be obtained by segmenting the buyers and sellers according to five general segmentation criteria which are arranged as a nested hierarchy— like a set of boxes that fit one into the other or a set of wooden Russian dolls. Moving from the outer nest toward the inner, these criteria are: demographics, operating variables, purchasing / selling approaches, situational factors, and personal characteristics of the buyers and sellers.

The following figure shows how the criteria relate to one another as nests. The segmentation criteria are of the largest, outermost nest are demographics— general, easily observable characteristics; those of the smallest, inmost nest are personal characteristics specific, subtle, hard to assess traits. The marketer moves from the more general, easily observable segmentation characteristics to the more subtle ones.

NESTED APPROACH



Source: Shapiro and Bondma

➢ 3.1 ANALYSES OF SHIPS AND OWNERS

✓ 3.1.1 DEMOGRAPHICS

The ships are classified according to age, size, type, yard of build etc. Emphasis is placed on ships which are above 20 years, since these are most likely to come into the demolition market. Analysis of size, type and yard will help in focusing the attention on the specific owners and operators of these ships and the required strategy can be formulated for approaching them.

AVERAGE AGE OF BROKEN SHIPS BY TYPE SHIPS OF 300 GRT AND OVER

YEARS	TANKERS	BULK CARRIERS	CONTAINER SHIP	GENERAL CARGO SHIPS (A)	OF WHICH SINGLE DECK SHIP	MULTI DECK SHIP	PASSENGER SHIPS (b)	TOTAL
1985	20.9	20.1	23.1	22.3	25.2	24.8	35.3	23.2
1986	21.3	19.4	21.7	23.6	23.7	24.1	33.5	22.3
1987	24.4	19.8	24.9	23.8	24.6	24.2	34.3	23.5
1988	24.6	22.4	25.1	24.2	24.3	25.9	32.2	24.4
1989	24.9	23.1	27.2	25.5	25.3	27.0	31.6	25.6
1990	26.4	21.7	19.5	25.1	25.2	26.6	30.0	25.1
1991	25.3	22.0	19.0	24.8	27.4	25.8	30.3	25.5
1992	25.8	22.9	19.1	25.7	26.2	25.7	32.8	25.3

NUMBER OF SHIPS BY DIVISION OF AGE AND TYPE 300 GRT AND OVER

SHIP TYPE	0-4	5-9	10-14	15-19	20-24	25 AND ABOVE	TOTAL	AVERAGE AGE (YEARS)
OIL TANKERS	239	228	297	377	224	151	1516	13.8
CHEMICAL TANKERS	52	34	41	63	46	7	243	12.3
LIQUID GAS TANKERS	49	23	33	43	43	37	228	14.2
BULK CARRIERS	105	218	397	465	362	70	1617	14.4
OBO CARRIERS	16	9	20	28	48	4	125	15.0
CONTAINER SHIPS	78	65	90	65	65	7	370	11.3
GENERAL CARGO SHIPS OF WHICH	319	393	738	909	592	574	3525	16.2
SINGLE DECK	128	107	226	268	189	243	1161	17.4
MULTI DECK	51	86	250	399	242	172	1200	17.1
REEFER	95	103	145	79	68	80	570	12.8
SPECIAL	36	85	81	87	68	54	411	14.3
RO-RO CARGO	9	12	36	76	25	25	183	16.8
PASS/CARGO SHIPS OF WHICH	27	16	10	28	40	133	254	23.7
PASS	22	14	4	6	12	64	122	22.4
CARGO AND RO-RO PASS	5	2	6	22	28	69	132	25.0
TOTAL NO. OF SHIPS	885	986	1626	1978	1420	983	7878	15.2

SOURCE: - ISL APR ‘93

By comparing the two tables, it is obvious that there exists a large supply of ships which are potential candidates for the demolition market. By compiling a list of their owners, it is possible to direct the efforts towards them.

➢ 3.1.2 OPERATIONAL VARIABLES

✓ FREIGHT MARKET

Analysis of the freight market for the specific ships if interest will show whether the operation of these ships is still profitable for the owners. If the freight market is weak, then in most cases it will be as a result of excess tonnage in the market. In such cases it will help in determining which owners to target.

✓ LAY UP

A systematic study of the vessels in lay up will yield a useful database of ships to target at. If the ships have been in lay up for longer than say 6 months and if they had been built prior to 1973, they are in all likelihood prime candidates for demolition.

TABLE OF VESSELS LAID UP BY YEAR OF BUILD

	BULK / ORE		TANK		REEFERS		UNITISED		OTHERS	
YEAR OF BUILD	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT	NO.	'000 DWT
1990-1994	2	103	-	-	1	12	3	4	1	3
1985-1989	5	296	2	86	-	-	3	42	2	1
1980-1984	11	565	5	142	2	16	3	37	8	35
1975-1979	3	117	25	3,211	3	32	17	92	19	106
1970-1974	12	394	30	2,688	8	64	17	46	30	213
1965-1969	4	94	13	268	11	66	9	51	31	102
1960-1964	3	33	17	81	-	-	5	4	30	86
1955-1959	1	32	3	38	-	-	1	1	15	45
PREV - 1955	14	191	5	74	-	-	4	1	35	103
TOTAL	55	1,826	100	6.589	25	190	62	282	171	693

SOURCE: - LLOYYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

Their owners can be traced through the data base or through the agent in the port in which they are laid up. Depending on the type of ship, the reason for it being in the layup can be deduced.

✓ 3.1.3 SELLING APPROACHES

It is difficult but still possible to segment the owners according to the selling approaches they adopt. Many of the oil majors invite bids from brokers. It may not be profitable to approach them because they have financial staying power and will not be prepared to sell in a hurry. Others have a fixed broker where it is based more on personal relationships (Troodos with Braemar).Again approaching such owners may not be worth the effort.

➢ 3.1.4 SITUATIONAL FACTORS

✓ REJECTION BY CHARTERERS

With the increasing liability of the charterers for any mishap, charterers are becoming very wary about the tonnage they employ. This is especially true about the oil majors in the light of the recent oil disasters. If a ship has been rejected for some reason, it may not be possible for it to find profitable trade. News such as this is hard to come by except if one has good contacts with the charter brokers. But focusing one's attention on such ships is sure to pay dividends.

✓ PROBLEMS WITH PORT AUTHORITIES

Some owners do find themselves in situations where their ships are arrested by port authorities for nonpayment of dues.In most cases only local trade journals carry such information. it is worth the effort to keep track of such information.

➢ 3.1.5 PERSONAL CHARACTERISTICS

Collection of this data with respect to the owners is difficult and expensive. Some owners are meticulous in their approach to selling-they shop around for the best deal. Others rely on old friends and past relationships. Segmentation of this nature is worthwhile only while owners of large fleets.

➢ 3.2 ANALYSIS OF BREAKERS

✓ 3.2.1 DEMOGRAPHICS

By analyzing the historical data, one can safely predict the preferences of the breakers. The market has been segmented geographically for the previously mentioned reasons.

	TOTAL		TANKERS		BULK/ORE		OTHERS	
COUNTRY WHERE DEMOLISHED	NO	'000 DWT	NO	'000 DWT	NO	'000 DWT	NO	'000 DWT
CHINA	80	7,090	32	4,895	29	1,965	19	230
INDIA	135	3,617	43	2,167	17	546	75	904
BANGLADESH	42	2,516	16	2,214	3	113	23	280
PAKISTAN	30	2,209	19	1,908	6	255	5	45
TURKEY	14	258	5	148	2	41	7	69
TAIWAN	2	26	-	-	-	-	2	26
THAILAND	2	16	1	1	-	-	1	15
OTHERS	36	123	8	33	-	-	29	90
TOTAL	341	15,855	123	11,275	57	2,920	161	1,660

SOURCE: - LLOYD'S MONTHLY LIST OF LAID UP VESSELS JULY 1993.

China, Pakistan and Bangladesh are in the market for large tankers (ave.above 100,000 DWT) while India demolished smaller sized tankers (Ave.50, 000 DWT). Turkey's Ave. was 30,000 DWT.

In Bulkers too the same preferences are holding, with India going for the smaller tonnage and the other principal countries going for the larger ones.

There is a strong demand for general cargo ships in all the markets, with India bidding aggressively.

- **3.2.2 OPERATING VARIABLES.**

BALANCE OF PAYMENT.

DEMOLITION VS TRADE BALANCE

	1987		1988		1989		1990		1991		1992	
COUNTRY	DEM	T.B	DEM	T.B	DEM	T.B	DEM	T.B	DEM	T.B	DEM	T.B
CHINA	1,886	607	556	-3,522	477	-2,853	82	12,869	172	11,943	2,213	
INDIA	1,684	-6,624	462	-8,346	678	-6,839	1092	-7,122	696	-2,040	1925	
PAKISTAN	645	-2,592	209	-3,117	38	-3,164	1938	-3,150	445	-3,113	729	
BANGLADESH	390	-1,576	480	-1,767	347	-2,103	217	-2,220	512	-1,676	1181	
INDONESIA	22	1.299	185	2,441	30	3,100	7	1,272	12	2,036	4	
PHILIPPINES	93	204	20	47	2	-900	21	-2,500	0	-1,484	9	
THAILAND	135	304	49	-908	34	-1,836	16	-6,471	41	-7030	4	
VIETNAM		-406		-679		-350		10		-69		

KEY: -

SOURCE:-LLOYD'S CASULTY RETURN 1992 World Bank

DEM-DEMOLITION ('000 GRT)
TB-TRADE BALANCE (US $ million)

The countries in the market do suffer from deficit in their trade balance. Their economies are controlled in varying degrees by their respective governments. Though there does not seem to be a direct correlation between their trade balance and the funds made available for purchase of scrap ships, it is safe to assume that in times of severe crisis in their position, scrap ship market will be among the most likely to be effected as it has recently happened in the case of China.

- ✓ CONSTRUCTION ACTIVITY

In periods of a boom in construction, there will be an increase in the ship breaking activity as it had happened with China in 1992.

- ✓ **SEASONAL CHARACTERISTICS**

Chinese market tends to pick up at the end of the year when the organizations try to consume the funds which had been allotted to this sector. The market in the subcontinent becomes subdued during and immediately after the monsoons.

- ✓ **3.2.3 PURCHASING APPROACHES**

In china the activity is centrally controlled, though the individual organizations compete with each other. In the subcontinent it is a free market with some constraints. Some customers have excellent relationships with some brokers. For e.g. some Chinese organizations have good and enduring relationships with ECHART.

More often than not, it is brokers who contact the breakers.

- ✓ **3.2.4 SITUATIONAL FACTORS**

Analysis of the number of ships at the breakers in each market, the price of steel plate locally and the financial solvency of each individual breaker will help in determining the requirement of ships

- ✓ **3.2.5 PERSONAL CHARACTERISTICS**

This becomes all the more important in this market when the breaker can create problems once the ship has reached that particular country. It has been described as a “cow boy business” by a prominent player in the market. In china, the evaluation becomes difficult because one deals with the officialdom.

➢ 3.3 ANALYSIS OF THE ATTRACTIVENESS OF THE MARKET

✓ BARRIERS TO ENTRY

Each ship costs between $1 million and upwards of $6million. A player should have access to such funds and the repayment period may be anywhere between 30 and 180 days. In most cases he has to take over the role of a broker and a an owner.

✓ THREAT FROM SUBSTITUTES

The brokers can be considered as substitutes to other kinds of intermediaries in the market. They are normally part of an organization which deals deals with other aspects of shipping like chartering, sale and purchase of ships for their customers. It is uncommon for them to go looking for demolition tonnage and in most cases they wait for the tonnage to come on the market.

✓ INTENSITY OF RIVALRY

There are quite a few intermediaries who actively bid for the tonnage. Some of them act as fronts for the breakers (India). They are normally stationed at the principal ports but there does not seem to be any kind of joint efforts by them.

✓ CUSTOMERS

They operate under several constraints like access to foreign exchange, credit facilities etc. The price they can pay is governed by the cost of other forms of scrap and virgin steel. A scrap ship is a commodity and is a commodity and is bought as such—largely on price.

- ✓ **SUPPLIERS**

They are the ship owners and they tend to look for the best price, credit worthiness and the method of payment being the other important factors only the oil majors and companies having large fleets have some form of demolition policy. For the vast majority, it is dictated by market forces.

- ✓ **Conclusions**

The opportunity exists in finding a cheap source of ships since the price paid by the breaker is dictated by factors beyond the market's control.

CHAPTER IV

FINANCIAL EVALUATION OF THE OPTIONS

There are four options in taking a ship to the breakers. They are a) towing a ship to the breakers: b) laying up the ship: - c) loading with cargo; d) sailing on ballast

- ✓ TOWING A SHIP

When the ship is immobilized, towing it is the only available option. On an average, only 10% of the ships are towed to the breakers due to the high costs involved.

- ✓ LAYING UP

This is a common practice followed, when buyers for the ship are yet to be found. This is cost effective only where layup charges are minimal. Even then costs are incurred for keeping the ship in a state of readiness and to satisfy the port, class and insurance conditions.

- ✓ LOADING WITH CARGO

This is the most preferable option. But all ships going to the breakers may not have this option available. This is because the ship may not be able to get the cargo or may not be in a condition to carry the cargo. Among the ships that do get the cargo, some quote freight rates much below the prevailing market rate, so that at least part of the ship operating costs can be recovered.

- ✓ SAILING ON BALLAST

This option may be forced on the owner since it means he has to bear the operating costs which will be reflected in the price of the ship.

➢ 4.1 TOWING OF SHIPS

The ships are of Victory class (each about 4500 LDT) lying off Norfolk on the east coast of USA. They are being towed to Alang in India. It takes about 90 days for a tandem towage travelling at a speed of 5 knots to reach India. The ships are assumed to be lying outside the port limits of Norfolk where they would have already cleared their dues. The tug will be refueling at Abidjan and Cape Town.

Selling price of each ship (to the breakers)	@$ 160/LDT	$720,000
Selling price of two ships		$1,440,000
Cost of hiring the tug		$ 520,000
Bunkering expenses at cape town		$10,000
Insurance charges	@9.5 %	$136,800
Total expenses incurred		$666,800
Cost of finance for 5 months on $1,440,000	@6.5 %	$39,000
GRAND TOTAL		**$ 705,800**
Breakeven price at which they can be bought		$81.58/LDT

ANY PRICE PAID BELOW THIS WILL REULT IN A POSITIVE CASH FLOW.

ASSUMPTIONS

1) The ships are lying outside the port limits of Norfolk where they do not have to pay any port charges.
2) No delays occurring at sea due to bad weather etc. causing the tonnage to deviate and hence no payment of demurrage charges.
3) No delays occurring in ports at either end.
4) The vessels are beached on arrival.

Normally a free time of about 48 hours at each end are written into the contract with the tug owner. Free time is the time allowed for the tug to connect up and disconnect.

If it takes more time then the demurrage is charged at the port rate. This equates to the cost of fuel consumed. At sea, in case of any delays, a different rate is charged, since more fuel is consumed.

➢ 4.2 LAY UP

The vessel is 9000 LDT (around 40,000 DWT) tanker which is anchored off Fujairah in international waters (about 10-12 miles offshore) where there are no port dues to be paid. The vessel is always in a state of readiness to sail and hence it is to have a full crew complement (min.) of 18 people.

Selling price to the breakers	@ $ 160/LDT	$1,440,000
COSTS INCURRED IN LAY UP		
Crew wages		$900 / day
Victual ling costs		$72 / day
D.O. costs	@1 ton / day	$200 / day
L.O. costs	@20l / day	$ 22 / day
Fresh water costs	@7 t / day	$49 / day
Communication costs		$30 / day
Cost of finance	@6.5 %	$256.5 / day
TOTAL COSTS INCURRED IN LAYUP		**$1529.5 / day**

If the vessel is in layup for 7 days it will result in a decrease in realization of $1.19/LDT

Hence the decision in laying up is to be balanced against the expected increase in prices paid by the breakers.

If the ship stays longer than ten days, additional expenses like boat service, bunker and water barge costs are likely to be incurred.

➢ 4.3 LOADING THE SHIP WITH CARGO

The ship is in Liverpool and is a 17,500 DWT mini bulk carrier. It is of 4700 LDT. The ship is loading shredded scrap for Bombay and it will then proceed to the breakers at Alang. The ship has been sold to the breakers for $ 160/LDT.

The freight rate for the cargo is	$ 38/ton	
Costs for new set of certificates		$21,999
Crew joining expenses (18 people) (include airfare, hotel and agency fees)		$16,200
Crew Salaries for 2 months		$54,000
Crew victualling expenses		$ 4,320
Water expenses @ $ 7/ton		$5,040
PORT EXPENSES		
Loading port dues		$70,000
Discharge port dues		$30,000
Suez Canal dues		$100,000
BUNKER COSTS		
IFO costs from Liverpool to Bombay (21 days+3 days safety margin)		$42,240
D.O costs from Liverpool to Bombay (21 days + 3 days safety margin)		$8,640
D.O costs for maneuvering including Suez passage		$2,800
L.O. costs from Liverpool to Bombay (22days+3days safety margin		$6,600
D.O costs in ports		$10,800
L.O costs in ports		$720
IFO costs from Bombay to Alang		$3520
DO costs from Bombay to Alang		$720
L.O costs from Bombay to Alang		$528
Total Bunkers costs		$76,568
Insurance costs @ 3.5%		$26,320
Communication costs		$600
TOTAL COSTS INCURRED		$405,040
Freight earned		$608,000
Less broker's commission		$577,600
Net earnings from carrying cargo		$172,560
Break-even point of freight rate	$27.50/ton	
Cost of finance at @ 6.5%for 3 months		$12,220
Break-even price for buying the ship	$157.4/LDT	

✓ ASSUMPTIONS

1. Vessel speed is 12 knots
2. Overage insurance on charterers account. Cargo is basis FIOS (Free in/out stowed)
3. Basis 2000 MT load per week working day (PWWD) of 24 hours, Saturday, Sunday, holidays excluded (SSHEX) and 1200 MT discharge PWWD of 24hrs SSHEX

➢ 4.4 SAILING ON BALLAST

The ship is a mini bulk carrier of 17,500 DWT (4700 LDT).She is lying outside Liverpool and all her port dues have been paid. She has not been able to get any cargo and she is proceeding to Alang for demolition on ballast and has been sold to the breakers for $ 160/LDT.

Selling price to the breakers			$752,000
Costs of new set of classification certificates			$22,000
Agency fees for clearance			$5,000
CREW EXPENSES			
Crew joining expenses (18 people)			$16,200
Crew salaries (1month)			$27,000
Crew Victualling expenses			$ 2,160
Water expenses			$2,520
Suez Canal dues			$89,000
BUNKER COSTS			
IFO costs from Liverpool to Alang (21 days+3 days margin)			$38,400
D.O costs from Liverpool to Alang (21 days + 3 days margin)			$8,640
D.O costs for Manoeuvring including Suez passage			$2,400
L.O. costs from Liverpool to Alang (22days+3days)			$6,600
Cost of insurance	@3.5%		$26,320
Costs of finance at 6.5% for 3months			$12,220
TOTAL COSTS INCURRED			**$258460**
Which works out to		**$55 LDT**	
Hence to break-even price that can be paid (max)is		**$105/LDT**	

RECOMMENDATIONS
AND
OBSERVATIONS

The scrap ship market is reactive rather than proactive. At present most of the transactions are carried out through brokers. The ship owners approach the brokers to help them in finding a customer. Greater opportunities exist if one takes on the mantle of both the owner and the broker. At present there are very few brokers who specialize only in demolition. They are normally part of larger organizations which are a one stop shop offering other brokering services like chartering, sale and purchase etc. The brokers do not actively go after seeking information regarding the availability of tonnage for demolition.

➢ STRATEGY FOR A NEW ENTRANT

Maintain a low profile in the market. Till one gets to know the ropes, it may be necessary to buy through the broker.

Recognize the needs of different geographical markets and the factors behind the preferences.

Prepare a database of owners and their ships (17 years and above). Maintain a database of ships in lay up.

Be informed about ships in financial distress and in problems with the port authorities through the port journals.

Approach the owners or port authorities of the targeted ships concentrating on this niche will offer more opportunities.

There is not much leeway when dealing with the breaker because of the substitutes which exist for ship scrap. Hence opportunity lies in the sourcing of the ships.

Prepare the costs for different scenarios like towing, sailing on ballast and with cargo and laying up for different sizes of ships. This will help to determine the maximum price that can be paid for a particular type of ship.

Develop contacts (which can happen only over a period of time) with salvaging companies, charterers etc. who will be good sources of information.

While fixing charters for ships going for demolition, deal with brokers who do only chartering and nothing else. This will ensure that additional competition is not created.

Do not venture into the second hand market, but if an opportunity exists in selling a ship which has been bought for scrap, explore it. But do not lay up the ship in the expectations of selling it in the second hand market unless a detailed analysis of this market has been done and cost of laying up and the expected price in the demolition market have been worked out.

The CIS countries have a surfeit of obsolete naval vessels lying in their ports. Establish contacts (personal) with the co-operatives which deal with them. There is an emerging market for them especially for submarines in Egypt and some Middle East countries. Indian breakers are also interested because of the ease in cutting them.

Prepare a data base of the breakers (prominent ones).

The ship plate prices, forex and the re-rolling mills positions and construction activites are to be monitored.

Always an irrevocable letter of credit is to be negotiated. There should not be an inspection clause on delivery. The sale should always be negotiated on “As is where “basis. Is Quite a few operators have burnt their fingers by not having this clause. When dealing with tankers, it is to be sold on “partially gas free” basis only. It becomes too expensive to make it “totally gas-free” and the owner can be held liable for any accidents. Under no circumstances, should the ship be taken and anchored near the breakers before the deal has been finalized. This is because it brings down the price of the ship.

If possible the same crew who were operating the ship prior to the purchase should be retained for the voyage to the breakers. It does make a difference in the insurance premium.

At present China is effectively out of the market. Hence VLCCs and Cape Size Bulk carriers are taboo until China comes back into the market. The market in the subcontinent is subdued during and immediately after the monsoons.

The Chinese market picks up before their new year since they have to exhaust their allocated forex for that year (it cannot be carried over).

The margins in this market seem low but one gets a return of around 10% on his investment in 3 to 4 months. A player should aim for volume in this market.

➢ OPPORTUNITIES FOR THE FUTURE

At present (in the subcontinent) the machinery parts in the scrap ships are sold as scrap ($270to$400 per ton). Quite a few of the parts are likely to be in good condition.

Initially concentrate on the ships that have been personally sold to the breakers. Parts like Main engine liners, governors, turbochargers and motors are fast moving items. All these parts are to be checked and surveyed by the classification society. The database which has been prepared will be of use here too. Companies with similar ships on their register can be approached. It is cost effective for the owners since their ships are likely to be nearing the end of their trading life and it makes good economic sense to buy second hand parts. All the four Ps in the marketing mix can be utilized to differentiate the offering from that of competitors (at present there are none). This market will in time cushion the volatility of the other SBU (scrap ships).

APPENDIX

➢ GLOSSARY OF SHIPPING TERMS

- ✓ DWT: - DEAD WEIGHT TONNAGE

Weight in tons of cargo, stores, fuel, passenger, crew, etc., carried by the ship when loaded to her maximum summer load line.

- ✓ GROSS TONNAGE

In broad terms all the vessels “closed in” spaces expressed in volume terms on the basis of one hundred cubic feet equals one gross registered ton.

- ✓ GRT

Gross registered ton---ship cubic measurement based on 100 cubic feet equals one GRT.

- ✓ LDT: - LIGHT WEIGHT TONS

It is the vessel’s scrappable content and represents the weight of the empty ship (Without cargo, stores, bunkers etc.)

- ✓ NET TONNAGE

Passenger and / or cargo accommodation expressed in cubic feet equals one net registered on. It is usually referred to as net registered tonnage.

- ✓ NRT

One NRT equals 100 cubic feet.

VLCC: - VERY LARGE CRUDE CARRIER

ULCC: - ULTRA LARGE CRUDE CARRIER

BULK CARRIERS

CAPESIZE	PANAMAX	HANDYMAX
80,000 DWT+	50,000-80,000 DWT	10,000-50,000 DWT

TANKERS

VLCC	SUEZMAX	AFRAMAX
200,000 DWT+	100-200,000 DWT	60-100,000 DWT

➢ APPROXIMATE DWT / LDT CONVERSION RATIO

VESSEL TYPE	SIZE (DWT)	RATIO LDT/DWT
TANKERS		
	20,000	.325
	40,000	.290
	60,000	.225
	80,000	.225
	100,000	.200
	150,000	.165
	220,000	.145
	280,000	.130
COMBINED CARRIERS		
	45,000	.205
	65,000	.200
	120,000	.190
	200,000	.170
BULK CARRIERS		
	25,000	.230
	40,000	.210
	65,000	.200
	120,000	.190
GENERAL CARGO SHIPS		
	8,000	.500
	15,000	.320

SOURCE: DREWRY SHIPPING CONSULTANTS

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